

A Danish Diabetes Register 2020

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Contents

1	Background and definitions	1
1.1	A new register	1
1.1.1	Type of diabetes	2
1.1.2	Gestational Diabetes (GDM)	3
1.1.3	PolyCystic Ovarian Syndrome (PCOS)	3
1.1.4	Summary	3
2	DMreg and other files in R-format	4
2.1	The diabetes register	4
2.2	Population file	4
2.3	The migration file	5
2.4	The population Lexis object	5
2.5	Status file	5
2.6	Complication files	5
2.7	Prescription register files	6
2.8	LABKA files	6
3	Documentation of the conversion to R-format	7
3.1	SAS-version of DMreg converted to R	7
3.1.1	The administrative diabetes register	8
3.1.2	The epidemiological diabetes register	10
3.1.3	The diabetes drug register	10
	Comparison of DMreg and DMdreg	12
3.2	The population files	12
3.2.1	The migration file	17
3.3	The status file	17
3.3.1	Converting the SAS dataset to .Rda format	18
3.3.2	Creating income deciles	20
3.3.3	Saving the file for future use	20
3.4	The population Lexis object	21
3.4.1	Reading migration data	23
3.4.2	Carving out the emigrated time	23
3.4.3	Reading population data	27
3.4.4	Adding diabetes status	27
3.4.5	The population by diabetes status, corrected for migration pattern	28
3.4.6	Comparison with the raw DMreg	29
3.5	Follow-up by sex, age and calendar time	31

3.5.1	Tabulation for international consortium	34
3.6	The complications files	40
3.6.1	The SAS programs generating the complications files	41
3.6.2	Converting SAS datasets to .Rda format	41
	Complication grouping	42
	Complication names	45
	Number of recurrent events per person	46
	Grooming the data frames	47
3.6.3	Microvascular complications	48
3.6.4	Using the complications data sets	52
3.7	The RMPS database	54
3.7.1	The ATC codes with names	54
3.7.2	Converting to .Rda	54
3.7.3	Retrieving the data for each ATC group	59
3.8	The LABKA database	60
3.8.1	SAS splitting of the LABKA data.	60
3.8.2	Converting to .Rda	60
4	SAS programs	64
4.1	Rationale and overview	64
4.2	Program execution	66
4.3	Program documentation	67
4.3.1	optslibs.sas	67
4.3.2	xgdm.sas	68
4.4	00-base	68
4.4.1	00-base.lst	71
4.5	00d-base	79
4.5.1	00d-base.lst	82
4.6	00y-base	150
4.6.1	00y-base.lst	185
4.7	01-npr	188
4.7.1	01-npr.lst	201
4.8	02-dvdd	211
4.8.1	02-dvdd.lst	215
4.9	03-nhsr	219
4.9.1	03-nhsr.lst	222
4.10	04-rmps	224
4.10.1	04-rmps.lst	231
4.11	05-diab	233
4.11.1	05-diab.lst	235
4.12	05-hba1c	237
4.12.1	05-hba1c.lst	243
4.13	06-define	246
4.13.1	06-define.lst	250
4.14	06d-define	255
4.14.1	06d-define.lst	257
4.15	10-labcomp	259

4.15.1	10-labcomp.lst	268
4.16	10-compl	271
4.16.1	10-compl.lst	281
4.17	00-labka	291
4.17.1	00-labka.lst	297
4.18	00-rmps	306
4.18.1	00-rmps.lst	312
4.19	00-fmts	321

Chapter 1

Background and definitions

The maintenance of the National Diabetes Register (NDR) was discontinued by the Health Data Authority (Sundhedsdatastyrelsen) after 2012. It has been replaced by the Register of Selected Chronic Diseases (RUKS — Register for Udvalgte Kroniske Sygdomme) which however does not encompass precisely the same persons. As was the NDR, RUKS is based only on the National Patient register (NPR) and the Register for Medicinal Products Statistics (RMPS) (Lægemiddelstatistikregisteret or in colloquial terms, the Prescription Register).

1.1 A new register

The following is an attempt to construct a national Danish diabetes register, with a special view to define type of diabetes, where we not only distinguish type 1 (T1) and type 2 (T2) diabetes but also include type X (Tx), that is persons classified with “other” types of diabetes.

The first attempt was in 2016, and the current (February 2022) is covering the period of diabetes diagnoses from 1996-1-1 through 2020-12-31, a period of 25 years.

The basic structure of the register is a file with one record per person with person-id, sex, type of diabetes and dates of birth, diagnosis of diabetes and death.

Additionally, there will also be a version of the register will have the dates for meeting each of the defining criteria (name of the date in the register):

doNPR, doNPR2 Dates of the first and second recorded contact date with a diagnosis of diabetes in the NPR.

doOAD, doOAD2 Dates of the first and second recorded purchases of OAD (A10B).

doIns, doIns2 Date of first and second recorded purchases of insulin (A10A).

doDVD Earliest recorded date of diagnosis in the Danish adult diabetes register (DVDD). If no date of diagnosis is in the record, the date of reporting to DVDD is used.

doPod Earliest date of billing for podiatry in the NHR.

doDia First recorded date of eye-screening in the Danish eye-screening database for diabetes patients.

doHbA Date of second consecutive HbA_{1c} greater or equal to 48 mmol/mol, as recorded in the Danish laboratory data base.

As in RUKS we do not include persons based on only one drug purchase or one record in NPR—two of these dates are required for inclusion; and from an epidemiological point of view we make the date of the second of these the criterion date (unlike RUKS that uses the first)..

For the other criteria (DVDD, podiatry, diaBase, HbA_{1c}) we only require one date to include a person—and we use the earliest recorded.

Thus there are ten possible criteria, depending on the sequence of the two earliest dates among records from NPR and RMPS.

1.1.1 Type of diabetes

The classification of patients as T1, T2 or Tx (“other type of diabetes”) based on register data only is not accurate, and the approach chosen here is primarily designed to identify persons with T1 with reasonably high specificity.

Thus T2 and Tx will be equivalent to “cannot be classified as T1D with reasonable certainty”, and hence the classification should be used cautiously. Persons recorded as T1 are most likely to be T1, but there is some under-reporting. So some T1 patients are erroneously classified as T2; the precise size of this problem is unknown, but is likely to be largest in the earlier parts of the register, particularly before the advent of the DVDD in 2006.

We will base the definition of type of diabetes on the most recent recording of type in the registers. This entails a conditioning on the future since we classify persons’ type based on information obtained late in the course. The clinical background for this is that the most recent classification most likely is the most precise.

The practical implementation of the type classification is therefore as follows

- use the DVDD recordings of diabetes type (T1, T2, Other) and classify persons as:
 - T1 if the last record in DVDD classifies the person as T1
 - T2 if the last record in DVDD classifies the person as T2
 - Tx if the last record in DVDD classifies the person as other (“Anden type”)
- if not classified from DVDD, then use the NPR to classify persons as:
 - T1 if the last record in NPR has ICD-8 code 249xx or ICD-10 code E10xx
 - T2 if the last record in NPR has ICD-8 code 250xx or ICD-10 code E11xx
 - Tx if the last record in NPR has ICD-10 code E12xx, E13xxx or E14xx

Note, that before 1994, where the NPR used ICD-8, classification a Tx from NPR does not occur. This is a minor thing, very few persons alive at 1996-1-1 have a last NPR record before 1994-12-31.

- Persons that have purchased insulin before age 30 are always classified as T1, except if classified as T2 or Tx in DVDD.
- Persons without insulin purchase are always reclassified from T1 to T2, but not from Tx
- Any persons not classified by the above are classified as T2.

The reason that we cannot entirely dispose with the NDR in classification of diabetes is that the DVDD was not established till 2005, so the classification of patients dead before 2005 is very sparse in the DVDD.

1.1.2 Gestational Diabetes (GDM)

GDM diagnoses that are less than 200 days from the previous one are disregarded; so from the earliest GDM for a given person, no GDM diagnosis in the next 200 days is counted, from the next after this, another window of 200 days is used etc.

If a person is recorded with a diagnosis of GDM in the NPR, the person cannot enter the register on any criterion during the period from 280 days before till 280 days after the GDM diagnosis.

1.1.3 PolyCystic Ovarian Syndrome (PCOS)

If a person is recorded with PCOS in the NPR, this person cannot be included on the basis of metformin purchase in the period from the earliest PCOS diagnosis until the person's 40th birthday.

Moreover, if a person's only drug dispensations are metformin between age 20 and 40, the person is considered a possible PCOS case and these dispensations are not counted. Dispensation of metformin after age 40 for women with a PCOS diagnosis are considered diabetes medication and lead to inclusion in the register at the first date of purchase after the 40th birthday.

1.1.4 Summary

The register we attempt to build is a register where persons are captured by a set of criteria and then kept in the register with this inclusion date.

Chapter 2

DMreg and other files in R-format

On the DST project 707655 there are files available with the diabetes register, as well as files with various that may be of interest in practical analyses. Most of these contain information from the entire Danish population, not only for diabetes patients.

While the register and accompanying files are constructed using SAS, and the resulting datasets are SAS datasets, most of the analyses will be conducted using R. Therefore the SAS files have been converted to R datasets. In the process all date variables have been converted to class `cal.yr`, that is scaled to years instead of days.

The files (that have extension `.Rda`) are all in the folder: `e:\workdata\707655\DMreg2020\data\`, so when the `xxx` is mentioned it is implicit that we refer to the file `e:\workdata\707655\DMreg2020\data\xxx.Rda`.

Note however, that this section is only a brief overview of the files, when you use them you must first consult the section describing the construction of the `.Rda` files below. Some of the files have special features or shortcomings you need to be aware of

2.1 The diabetes register

The diabetes register you normally use is in the file `DMreg`, but there are three variants of it:

- `DMreg` — the diabetes register with one record per person and only essential variables.
- `DMxreg` — the extended diabetes register with one record per person, but with a number of extra variables relating to the construction of the register included too. Same persons as in `DMreg`
- `DMdreg` — the diabetes drug register; only contains persons with at least two drug purchases recorded in the RMPS. Fewer persons than in `DMreg`

2.2 Population file

The file is called `pop`; it has one record per person in the entire Danish population alive anywhere between 1995-1-1 and 2020-12-31. It contains sex, date of birth, date of death and cause of death.

Note that cause of death is not complete because the coding of cause of death is always lagging about one year relative to other registers.

2.3 The migration file

Persons migrate, but migration status is ignored in the construction of `DMreg`.

We have therefore constructed a file of migration dates; it is a file that has at least one record for each persons that has ever emigrated (left Denmark) or immigrated (entered Denmark). The file contains the variables `pnr`, `doEm` and `doIm`, where `doEm < doIm`.

This means that if a person is first immigrated to Denmark and later emigrated again the person will have two records, the first with a missing value of `doEm` and valid value of `doIm`, and the second record with valid value of `doEm` and a missing value of `doIm`. Thus each record in the file represents a period where the person is *not* in Denmark, hence the name `xDK`.

2.4 The population Lexis object

The file is called `DMfup` (DM follow-up).

We have taken the entire population file and constructed a `Lexis` object of the follow-up from 1995-1-1 through 2020-12-31, with time outside of Denmark removed, and with follow-up classified by diabetes state (`noDM / T1 / T2`).

2.5 Status file

The file is called `popstat`.

This file has one record per person (`pnr`) and year (`yr`). At 1 January each year 1995 through 2020 there is a record for each person in the Danish population alive.

It contains information on the person's status at this date:

- `kommune`: `kom`
- `region`: `reg`
- `education`: `udddk`, `eduen`
- `family income` `find`
- `family income decile` `findec`
- `family id`, `familie_id`
- `children in the family`, `antboernh`

2.6 Complication files

The files are called `wcompl` and `rcmpl`.

There are two complications files; both with dates of complications from the *entire* Danish population:

- `wcompl` — one record per person with at least one of 34 complications recorded. The date of the earliest occurrence of each is given. If the date of a given complication is

missing it means that no complication of the type is recorded in the period 1994-1-1 through 2020-12-31.

The key to the dataset is `pnr`. There are 34 other variables called `doXX`, date of complication `XX`.

- `rcomp1` — one record per recording of each of the complications included (hypoglycemia, `HpoG`; ketoacidosis, `Keto`; myocardial infarction, `MI`; stroke, `Str`)

The key to the dataset is (`pnr`, `comp1`, `doC`) and there are no other variables in the dataset.

2.7 Prescription register files

The Danish name of RMPS is Lægemiddelstatistikresisteret (LMS).

The prescription register is very large and only some of the drugs are of interest; we have selected 7 groups of drugs and collected all dispensations of these in 7 separate files. Included in each of the files is a data frame with ACT-codes and corresponding names.

There are 7 files in the folder `e:\workdata\707655\DMreg2020\data\rmps\`, each with the filled prescriptions of a certain group.

2.8 LABKA files

The LABKA database is very large, so in order to facilitate use of it, it has been split in 26 separate files, each with only one type of measurement. The date of measurement, `SAMPLINGDATE` has been converted to `cal.yr`.

There are 26 files, each with a group of measurement types; they are in the folder `e:\workdata\707655\DMreg2020\data\labka\`.

Chapter 3

Documentation of the conversion to R-format

The following sections describe how R data files were created by reading SAS-files and converting to R format. In the process a few extra features are added.

In addition to the diabetes register it is the following files:

- pop (population files),
- stat (status file),
- DMfup (Lexis object of entire population follow up migration-corrected and classified by diabetes status)
- compl (complications files).
- labka (LABKA files),
- rmeps (RMPS (prescription) files),

```
> library(Epi)
> library(tidyverse)
> library(haven)
> setwd("e:/workdata/707655/DMreg/r")
> clear()
> source("../..../util/elapsed.R")
> folder <- "e:/workdata/707655/DMreg2020/data/"
```

3.1 SAS-version of DMreg converted to R

```
> start()
```

```
-----
Code: e:/workdata/707655/DMreg/r/mkDMreg.rnw
Time: 2022-01-25 at 14:52:46
-----
```

We have created the DMreg as a SAS-file; the entire process is available in the document <http://bendixcarstensen/DMreg/DMreg2020.pdf>. Also available as `v:\sdc\469drive\DMreg\tex\DMreg2020.pdf`; it should have a creation date earlier than that of this document, but not too much earlier.

In this section we document the conversion of the SAS-version of the register to an R-version with variables defined as factors where necessary, with date variables converted to `cal.yr` and a logical ordering of the variables. There will be two versions, one with only the epidemiologically relevant variables, and one where also the administrative variables involved in defining the register are included. For comparison purposes we also provide a register solely based on drug purchases; this definition is commonly used in many register studies.

3.1.1 The administrative diabetes register

We first read the SAS-version of the register:

```
> system.time(DMxreg <- as.data.frame(read_sas(paste0(folder,
+                                             "DMreg.sas7bdat"))))
  bruger    system forløbet
    9.05      0.21    20.45
```

We want the variable labels for reference so we get the variable labels from the attributes extracted by `read_sas`:

```
> cbind(vlabs <- sapply(DMxreg, FUN = function(x) attr(x, "label")))
      [,1]
pnr    "Person-id"
sex    "Sex"
doBth  "Date of birth"
doDM    "Date of inclusion"
doLast  "Date of latest criterion"
doDth  "Date of death"
DMtp    "Type of DM (T1/T2)"
DMtx    "Type of DM (T1/T2/Tx)"
dvdtyp  "Type from DVDD"
nprtyp  "Type from NPR"
only1   "Only one criterion"
hasdvd  "has DVDD record"
inCr    "Incl. criterion"
do2nd   "Date of 2nd of Ins/OAD/NPR"
doNPR   "Date of 1st NPR"
doNPR2  "Date of 2nd NPR"
doOAD   "Date of 1st OAD"
doOAD2  "Date of 2nd OAD"
doIns   "Date of 1st Ins"
doIns2  "Date of 2nd Ins"
doPod   "Date of Podiatry"
doHbA   "Date of HbA1c"
doDia   "Date of diaBase"
doDVD   "Date of DVDD"
```

Thus, `vlabs` is now a character vector with *values* that are the *labels* of the variables, and with a `names` attribute that is the variable *names* in `DMxreg`.

We do not want to carry variable attributes around with the data frame, and we want the date variables in `cal.yr` format:

```
> for(vn in names(DMxreg))
+ for(at in c("label","format.sas") ) attr(DMxreg[,vn], at) <- NULL
> DMxreg <- cal.yr(DMxreg)
```

Further, we define factors as needed. Note that `dvdtyp` and `nprtyp` will have missing values — they are character variables and one value that occur is "" (a zero-length character string—the SAS-representation of missing values in character variables).

```
> DMxreg <- transform(DMxreg,
+   sex = factor(sex),
+   DMtp = factor(DMtp),
+   DMtx = factor(DMtx),
+   inCr = factor(inCr),
+   only1 = factor(only1, labels=c("N","Y")),
+   hasdvd = factor(hasdvd, labels=c("N","Y")),
+   dvdtyp = factor(dvdtyp, levels=c("", "T1", "T2", "Tx"),
+     labels=c("unkn", "T1", "T2", "Tx")),
+   nprtyp = factor(nprtyp, levels=c("", "T1", "T2", "Tx"),
+     labels=c("unkn", "T1", "T2", "Tx")))
> str(DMxreg, v = 0)
```

```
'data.frame':      549852 obs. of  24 variables:
 $ pnr   : chr   ...
 $ sex   : Factor w/ 2 levels "M","W": NULL ...
 $ doBth : 'cal.yr' num  NULL ...
 $ doDM  : 'cal.yr' num  NULL ...
 $ doLast: 'cal.yr' num  NULL ...
 $ doDth : 'cal.yr' num  NULL ...
 $ DMtp  : Factor w/ 2 levels "T1","T2": NULL ...
 $ DMtx  : Factor w/ 3 levels "T1","T2","Tx": NULL ...
 $ dvdtyp: Factor w/ 4 levels "unkn","T1","T2",...: NULL ...
 $ nprtyp: Factor w/ 4 levels "unkn","T1","T2",...: NULL ...
 $ only1 : Factor w/ 2 levels "N","Y": NULL ...
 $ hasdvd: Factor w/ 2 levels "N","Y": NULL ...
 $ inCr  : Factor w/ 13 levels "Dia","DVD","HbA",...: NULL ...
 $ do2nd : 'cal.yr' num  NULL ...
 $ doNPR : 'cal.yr' num  NULL ...
 $ doNPR2: 'cal.yr' num  NULL ...
 $ doOAD : 'cal.yr' num  NULL ...
 $ doOAD2: 'cal.yr' num  NULL ...
 $ doIns : 'cal.yr' num  NULL ...
 $ doIns2: 'cal.yr' num  NULL ...
 $ doPod : 'cal.yr' num  NULL ...
 $ doHbA : 'cal.yr' num  NULL ...
 $ doDia : 'cal.yr' num  NULL ...
 $ doDVD : 'cal.yr' num  NULL ...
```

Finally, we save the register *and* the vector `vlabs` with the variable labels in the same file; it is a handy feature of `save`, that you can save several R-objects in one file, in this case `DMxreg.Rda`; the load command will then load all objects stored in the file (`v=T` causes load to print the objects it loads.)

```
> system.time(save(DMxreg, vlabs,
+   file = paste0(folder, "DMxreg.Rda")))
  bruger    system forløbet
    4.30     0.10     5.17
> system.time(load(file = paste0(folder, "DMxreg.Rda"), v = TRUE))
```

Loading objects:

```
DMxreg
vlab
bruger    system forløbet
  0.73     0.03     0.78
```

3.1.2 The epidemiological diabetes register

Now DMxreg is the extended register with all the administrative variables, so for convenience we also provide a cut-down version that only contains the epidemiologically relevant variables—this will be the register that most persons use.

```
> wh <- match(c("pnr", "sex", "doBth", "doDM", "doDth", "DMtp", "DMtx"),
+           names(DMxreg))
> DMreg <- DMxreg[,wh]
> vlab <- vlab[wh]
> cbind(vlab)
      vlab
pnr   "Person-id"
sex   "Sex"
doBth "Date of birth"
doDM  "Date of inclusion"
doDth "Date of death"
DMtp  "Type of DM (T1/T2)"
DMtx  "Type of DM (T1/T2/Tx)"

> system.time(save(DMreg, vlab,
+                 file = paste0(folder, "DMreg.Rda")))
bruger    system forløbet
  1.75     0.06     2.01

> system.time(load(file = paste0(folder, "DMreg.Rda"), v = TRUE))
```

Loading objects:

```
DMreg
vlab
bruger    system forløbet
  0.83     0.03     0.89
```

3.1.3 The diabetes drug register

There is also a version of the diabetes register where persons are included only on the basis of diabetes drug purchase. They are included at the date of the second drug purchase, but where the type of diabetes is taken from the DMreg. It is thus a subset of the DMreg.

```
> system.time(
+ DMdreg <- as.data.frame(read_sas(paste0(folder, "DMdreg.sas7bdat"))) )
bruger    system forløbet
  2.97     0.06     6.78
```

We want the variable labels for convenience so we get the variable labels from the attributes extracted by read_sas:

```
> cbind(vlab <- sapply(DMdreg, FUN = function(x) attr(x, "label")))
```

```

      [,1]
pnr    "Person id"
sex    "Sex"
DMtp   "Type of DM"
DMtx   "Type of DM (T1/T2/Tx)"
doBth  "Date of birth"
doDM   "Date of inclusion"
doDth  "Date of death"
inCr   "Incl. criterion"
doOAD  "Date of 1st OAD"
doIns  "Date of 1st Ins"

```

Thus, `vlab`s is now a character vector with *values* that are the labels of the variables, and with a `names` attribute that is the variable names.

We do not want to carry variable attributes around with data frame, and we want the date variables in `cal.yr` format:

```

> for(vn in names(DMreg))
+ for(at in c("label","format.sas") ) attr(DMreg[,vn], at) <- NULL
> DMreg <- cal.yr(DMreg)

```

Further, we define factors:

```

> DMreg <- transform(DMreg,
+                   sex = factor(sex),
+                   DMtp = factor(DMtp),
+                   DMtx = factor(DMtx),
+                   inCr = factor(inCr))
> str(DMreg, v = 0)
'data.frame':      478294 obs. of  10 variables:
 $ pnr   : chr    ...
 $ sex   : Factor w/ 2 levels "M","W": NULL ...
 $ DMtp  : Factor w/ 2 levels "T1","T2": NULL ...
 $ DMtx  : Factor w/ 3 levels "T1","T2","Tx": NULL ...
 $ doBth : 'cal.yr' num  NULL ...
 $ doDM  : 'cal.yr' num  NULL ...
 $ doDth : 'cal.yr' num  NULL ...
 $ inCr  : Factor w/ 4 levels "I-I","I-O","O-I",...: NULL ...
 $ doOAD : 'cal.yr' num  NULL ...
 $ doIns : 'cal.yr' num  NULL ...

```

```

> system.time(save(DMreg, vlab,
+                 file = paste0(folder, "DMreg.Rda")))

  bruger    system forløbet
    1.77      0.03      2.26

> system.time(load(file = paste0(folder, "DMreg.Rda"), v=T))

```

Loading objects:

```

DMreg
vlab
  bruger    system forløbet
    0.45      0.03      0.48

```

Comparison of DMreg and DMdreg

For the sake of completeness we compare the two by the dates of inclusion and type of diabetes (we adjust a few rounding errors in DMdreg, coming from `cal.yr` conversion of dates):

```
> tworeg <- rbind(cbind(DMreg [,c("doDM","DMtx")], reg = "DMreg" ),
+               cbind(DMdreg[,c("doDM","DMtx")], reg = "DMdreg"))
> tt <- with(tworeg, table(floor(pmax(doDM, 1996)), " " = DMtx, " " = reg))
> rCtable(addmargins(tt, 1:2), w = 7, row.vars = 1)
```

	T1		T2		Tx		Sum	
	DMdreg	DMreg	DMdreg	DMreg	DMdreg	DMreg	DMdreg	DMreg
1996	29,031	29,881	51,340	65,880	3,422	4,031	83,793	99,792
1997	1,657	1,526	8,509	10,104	412	472	10,578	12,102
1998	1,595	1,554	9,465	11,181	399	443	11,459	13,178
1999	1,435	1,422	9,869	11,756	418	495	11,722	13,673
2000	1,428	1,385	9,960	11,831	419	492	11,807	13,708
2001	1,377	1,390	10,841	12,028	402	471	12,620	13,889
2002	1,356	1,364	10,782	14,814	397	549	12,535	16,727
2003	1,327	1,323	12,573	16,374	445	582	14,345	18,279
2004	1,260	1,208	13,539	16,710	482	568	15,281	18,486
2005	1,165	1,156	13,378	14,490	438	528	14,981	16,174
2006	1,200	1,201	13,881	14,039	425	500	15,506	15,740
2007	1,148	1,141	15,030	15,377	439	502	16,617	17,020
2008	1,140	1,127	16,726	17,344	433	502	18,299	18,973
2009	1,110	1,142	17,557	18,453	433	511	19,100	20,106
2010	1,078	1,074	19,618	21,354	443	535	21,139	22,963
2011	994	1,020	22,510	28,288	475	610	23,979	29,918
2012	957	938	21,088	23,050	461	577	22,506	24,565
2013	969	996	15,906	18,067	447	552	17,322	19,615
2014	943	957	14,032	18,289	432	560	15,407	19,806
2015	955	985	15,148	19,547	461	592	16,564	21,124
2016	984	968	17,164	21,400	493	564	18,641	22,932
2017	958	951	16,998	19,615	471	566	18,427	21,132
2018	932	951	16,882	18,586	472	494	18,286	20,031
2019	878	786	18,116	19,286	263	227	19,257	20,299
2020	676	640	17,233	18,808	214	172	18,123	19,620
Sum	56,553	57,086	408,145	476,671	13,596	16,095	478,294	549,852

```
-----
Code: e:/workdata/707655/DMreg/r/mkDMreg.rnw
Ends: 2022-01-25 at 14:53:35
Time elapsed:          00:00:48
-----
```

3.2 The population files

First the paraphernalia:

```
-----
Code: E:/workdata/707655/DMreg2020/r/mkPop.rnw
Time: 2022-01-27 at 16:13:18
-----
```


The file we produce contains the `pnr`, sex, dates of birth and death from the population files and the reclassified causes of death and country of birth from the cause of death files. We retrieve data from the SAS-files POP (population) and COD (cause of death):

```
> system.time(pop <- as.data.frame(read_sas("../data/pop.sas7bdat")))
  bruger    system forløbet
  38.63     0.61    45.24

> attr( pop$pnr, "label"      ) <- NULL
> attr( pop$pnr, "format.sas" ) <- NULL
> str(pop, v = 0)

'data.frame':      8298837 obs. of  4 variables:
 $ pnr  : chr    ...
 $ sex  : chr    ...
 ..- attr(*, "label")= chr    ...
 $ doBth: Date, format:  ...
 $ doDth: Date, format:  ...
 - attr(*, "label")= chr    ...

> system.time(cod <- as.data.frame(read_sas("../data/cod.sas7bdat")))
  bruger    system forløbet
  11.62     0.09    14.74

> attr( cod$pnr, "label"      ) <- NULL
> attr( cod$pnr, "format.sas" ) <- NULL
> str(cod, v = 0)

'data.frame':      1319351 obs. of  10 variables:
 $ pnr  : chr    ...
 $ doDth: Date, format:  ...
 $ cod4 : chr    ...
 ..- attr(*, "label")= chr    ...
 $ codX : chr    ...
 ..- attr(*, "label")= chr    ...
 $ codD : chr    ...
 ..- attr(*, "label")= chr    ...
 $ daar : chr    ...
 ..- attr(*, "label")= chr    ...
 $ daa1 : chr    ...
 ..- attr(*, "label")= chr    ...
 ..- attr(*, "format.sas")= chr    ...
 $ daa2 : chr    ...
 ..- attr(*, "label")= chr    ...
 ..- attr(*, "format.sas")= chr    ...
 $ daa3 : chr    ...
 ..- attr(*, "label")= chr    ...
 ..- attr(*, "format.sas")= chr    ...
 $ daa4 : chr    ...
 ..- attr(*, "label")= chr    ...
 ..- attr(*, "format.sas")= chr    ...
```

There is not the same number of deaths in the two files; and even the two dates of death do not always match:

```
> fCp(table(!is.na(pop$doDth)))
  FALSE    TRUE
6,891,367 1,407,470

> fCp(table(!is.na(cod$doDth)))
```

```

TRUE
1,319,351
> jj <- left_join( pop[,c("pnr","doDth","doBth","sex")],
+               cod[,c("pnr","doDth","cod4","codX")],
+               by = "pnr")
> jj <- cal.yr(jj)
> dim(jj) ; cbind(sapply(jj, function(x) class(x)[1]))
[1] 8298837      7
      [,1]
pnr      "character"
doDth.x  "cal.yr"
doBth    "cal.yr"
sex      "character"
doDth.y  "cal.yr"
cod4     "character"
codX     "character"
> tt <- table(cod = floor(jj$doDth.y),
+            pop = floor(jj$doDth.x),
+            exclude=NULL )
> tt <- tt / ifelse(tt>10^5, 1000, 1)
> rCtable( tt[, 1:10 ], w=6 )
      pop  1995  1996  1997  1998  1999  2000  2001  2002  2003  2004
cod
1995      283      .      .      .      .      .      .      .      .      .
1996      . 60,406      .      .      .      .      .      .      .      .
1997      .      * 59,556      *      .      .      .      .      .      .
1998      .      .      . 58,002      .      .      .      .      .      .
1999      .      .      .      . 58,468      .      .      .      .      .
2000      .      .      .      .      . 56,677      .      .      .      .
2001      .      .      .      .      .      . 57,339      .      .      .
2002      .      .      .      .      .      .      . 58,264      11      *
2003      .      .      .      .      .      .      .      . * 57,073      *
2004      .      .      .      .      .      .      .      .      . 55,116
2005      .      .      .      .      .      .      .      .      .      .
2006      .      .      .      .      .      .      .      .      .      .
2007      .      .      .      .      .      .      .      .      .      .
2008      .      .      .      .      .      .      .      .      .      .
2009      .      .      .      .      .      .      .      .      .      .
2010      .      .      .      .      .      .      .      .      .      .
2011      .      .      .      .      .      .      .      .      .      .
2012      .      .      .      .      .      .      .      .      .      .
2013      .      .      .      .      .      .      .      .      .      .
2014      .      .      .      .      .      .      .      .      .      .
2015      .      .      .      .      .      .      .      .      .      .
2016      .      .      .      .      .      .      .      .      .      .
2017      .      .      .      .      .      .      .      .      .      .
2018      .      .      .      .      .      .      .      .      .      .
2019      .      .      .      .      .      .      .      .      .      .
2020      .      .      .      .      .      .      .      .      .      .
NA         6     794     858  1,116  1,264  1,621  1,568  1,141  1,225  1,272
> rCtable( tt[, 11:20 ], w=6 )
      pop  2005  2006  2007  2008  2009  2010  2011  2012  2013  2014
cod
1995      .      .      .      .      .      .      .      .      .      .
1996      .      .      .      .      .      .      .      .      .      .

```

```

1997      .      .      .      .      .      .      .      .      .      .
1998      .      .      .      .      .      .      .      .      .      .
1999      .      .      .      .      .      .      .      .      .      .
2000      .      *      7      8      6      .      4      .      *      *
2001      .      .      *      *      *      61     98      8      *      7
2002      .      .      *      *      *      *      .      *      .      .
2003      .      .      *      *      *      .      .      .      8      .
2004      *      .      5      *      *      *      *      .      .      12
2005      54,401  8      *      7      *      .      .      .      .      .
2006      . 55,099  11     5     11     *      .      .      .      .
2007      .      * 55,038  46     6      .      .      .      .      .
2008      *      .      * 53,755  62     *      .      *      *      .
2009      .      .      *      * 54,238  27     .      .      *      .
2010      .      .      .      *      * 53,869  101    52     8     8
2011      .      .      .      .      .      5 51,801  61     4     7
2012      .      .      .      .      .      . 11 51,508  228   20
2013      .      .      .      .      .      .      * 10 51,712  58
2014      .      .      .      .      .      .      *      . 13 50,795
2015      .      .      .      .      .      *      .      .      *      *
2016      .      .      .      .      .      .      .      .      .      *
2017      .      .      .      .      .      .      .      .      .      .
2018      .      .      .      .      .      .      .      .      .      .
2019      .      .      .      .      .      .      .      *      .      .
2020      .      .      .      .      .      .      .      .      .      .
NA        1,331  1,287  1,400  1,480  1,451  1,490  1,537  1,625  1,735  1,825

```

```
> rCtable( tt[,-(1:20)], w=9 )
```

```

      pop      2015      2016      2017      2018      2019      2020      NA
cod
1995      .      .      .      .      .      .      .
1996      .      .      .      .      .      .      .      *
1997      .      .      .      .      .      .      .
1998      .      .      .      .      .      .      .
1999      .      .      .      .      .      .      .
2000      .      .      .      .      .      .      .
2001      .      6      *      7      *      *      .
2002      .      .      .      .      .      .      .      *
2003      .      .      .      .      .      .      .
2004      .      .      .      .      .      .      .
2005      .      14     .      .      .      .      .
2006      .      .      14     .      .      .      .
2007      .      .      .      23     *      .      .
2008      .      *      .      .      13     .      .
2009      .      .      .      .      .      *      .
2010      .      6      12     6      4      *      .
2011      .      5      *      5      *      *      .
2012      .      10     10     *      *      *      .
2013      .      4      15     .      *      *      .
2014      .      60     *      13     *      .      .
2015      .      51,855  67     *      *      *      .
2016      .      21     52,006  29     *      *      .
2017      .      *      12     52,619  21     *      .
2018      .      .      .      4      54,741  17     .
2019      .      .      .      *      4      53,205  .
2020      .      .      .      .      .      *      .
NA        1,796  1,842  2,020  2,170  2,323  51,947  6,891

```

We see that the cause of death file (doDth.y) only have dates of death till 2019 incl. and that

there is a tendency that discrepancies are concentrated around dates of death from `cod` being 10 years earlier the date of death in the `pop` file. So we conclude that the date of death obtained from the `pop` file is the correct one; essentially we ascribe discrepancies to misrecordings of dates of death on death certificates. Also this is more complete over the years 2018 and 2019 too.

```
> pop <- data.frame(pnr = jj$pnr,
+                   sex = factor(jj$sex),
+                   doBth = jj$doBth,
+                   doDth = jj$doDth.x,
+                   cod4 = factor(jj$cod4),
+                   codX = factor(jj$codX),
+                   stringsAsFactors = FALSE)
> with( pop, rCtable( addmargins(table(has.cod = !is.na(codX),
+                                     has.doDth = !is.na(doDth) )), w=9 ) )
```

	has.doDth	FALSE	TRUE	Sum
has.cod				
FALSE		6,891,36*	88,12*	6,979,489
TRUE			* 1,319,34*	1,319,348
Sum		6,891,367	1,407,470	8,298,837

```
> with( pop, rCtable( addmargins(table(codX, cod4)), w=9 ) )
```

	cod4	Can	CVD	Oth	Res	Sum
codX						
Cancer		369,885	.	.	.	369,885
CVD		.	407,051	.	.	407,051
Diab		.	.	884	.	884
Digest		.	.	61,809	.	61,809
Extern		.	.	61,220	.	61,220
Infect		.	.	20,137	.	20,137
Other		.	.	235,110	.	235,110
Renal		.	.	9,936	.	9,936
Respir		.	.	.	141,597	141,597
Urinal		.	.	11,719	.	11,719
Sum		369,885	407,051	400,815	141,597	1,319,348

Note the there are very few deaths from diabetes; this is because this cause of death has been taken as the secondary or tertiary cause if the first or two first recorded causes were diabetes. This is specific for this project because we are primarily interested in comparing mortality between diabetes patients and other persons, and so diabetes as a cause of death in itself is not relevant, we would want to see the underlying cause(s) instead.

```
> str(pop, v=0)
'data.frame':      8298837 obs. of  6 variables:
 $ pnr  : chr    ...
 $ sex  : Factor w/ 2 levels "M","W": NULL ...
 $ doBth: 'cal.yr' num  NULL ...
 $ doDth: 'cal.yr' num  NULL ...
 $ cod4 : Factor w/ 4 levels "Can","CVD","Oth",...: NULL ...
 $ codX : Factor w/ 10 levels "Cancer","CVD",...: NULL ...
> save(pop,          file = "../data/pop.Rda")
> system.time(load(file = "../data/pop.Rda"))

bruger    system forløbet
 6.69      0.10      6.83
```

3.2.1 The migration file

The migration file has one record for each period a person is *outside* of Denmark, signified by `doEm < doIm`. Thus a person that is born outside of Denmark and immigrates to Denmark has a first record with `doEm=NA`. A person that has left Denmark and not (yet) come back will have a last record with `doIm=NA`.

We read the SAS dataset, remove the variable attributes and convert dates to `cal.yr` format:

```
> system.time(xDK <- as.data.frame(read_sas("../data/xDK.sas7bdat")))
  bruger    system forløbet
  5.89     0.11     7.23
> names(xDK)[1] <- "pnr"
> attr(xDK$pnr, "label"      ) <- NULL
> attr(xDK$pnr, "format.sas" ) <- NULL
> xDK <- cal.yr(xDK)
> str(xDK, v = 0)
'data.frame':      2179873 obs. of  3 variables:
 $ pnr : chr  ...
 $ doEm: 'cal.yr' num  NULL ...
 $ doIm: 'cal.yr' num  NULL ...
 - attr(*, "label")= chr  ...
> attr(xDK, "label")
[1] "Periods spent outside DK: doEm < doIm"
> rCtable(with(xDK, table(hasEm = !is.na(doEm),
+                        hasIm = !is.na(doIm),
+                        doEm < doIm,
+                        exclude = NULL))))
      TRUE      NA
hasEm hasIm
FALSE FALSE      .      .
      TRUE      . 869,505
TRUE  FALSE      . 758,003
      TRUE 552,365      .
> save(xDK, file = "../data/xDK.Rda")
```

```
-----
Code: E:/workdata/707655/DMreg2020/r/mkPop.rnw
Ends: 2022-01-27 at 16:15:36
Time elapsed:      00:02:18
-----
```

3.3 The status file

```
-----
Code: E:/workdata/707655/DMreg2020/r/mkStat.rnw
Time: 2022-03-15 at 11:53:23
-----
```

The status file is classified by `pnr` and `yr`, each record representing a person's status at 1 January of the year `yr`. There are records for *all* residents in Denmark. The status variables are place of residence, family income and highest achieved education. They all appear in different forms.

3.3.1 Converting the SAS dataset to .Rda format

We now read the SAS dataset and convert it to an R-dataset for easier (and quicker) access:

```
> system.time(
+   popstat <- as.data.frame(read_sas("../data/popstat.sas7bdat"))
  bruger    system forløbet
2605.55     9.57  2857.00

> names(popstat) <- tolower(names(popstat))
> for(v in names(popstat))
+   {
+     attr(popstat[,v], "label") <- NULL
+     attr(popstat[,v], "format.sas") <- NULL
+   }
> str(popstat, v = 0)

'data.frame':      148346675 obs. of  10 variables:
 $ pnr           : chr   ...
 $ antboernh     : num  NULL ...
 $ kom           : chr   ...
 $ reg           : chr   ...
 $ yr           : num  NULL ...
 $ familie_id   : chr   ...
 $ find         : num  NULL ...
 $ udd          : num  NULL ...
 $ udddk        : num  NULL ...
 $ eduen        : num  NULL ...
- attr(*, "label")= chr   ...
```

We then read the file with the character formats for geography and education (generated in the SAS program 00y-base.sas) in order to get the correct factor levels for kom, reg, udddk and eduen:

```
> labs <- read_sas("../data/statlabels.sas7bdat")
> labs$START <- as.numeric(labs$START)
> table( labs$FMTNAME )

AUDD_HOVED_L5L5_T  AUDD_LEVEL_L4L4_T      KOM_V4_T      REG_V4_T
                15                    9             99             6

> (kl <- labs[grep("KOM" ,labs$FMTNAME),c("LABEL","START")])

# A tibble: 99 x 2
  LABEL      START
  <chr>      <dbl>
1 København  101
2 Frederiksberg  147
3 Ballerup    151
4 Brøndby     153
5 Dragør      155
6 Gentofte    157
7 Gladsaxe    159
8 Glostrup   161
9 Herlev      163
10 Albertslund 165
# ... with 89 more rows

> (rl <- labs[grep("REG" ,labs$FMTNAME),c("LABEL","START")][,-1,])
```

```
# A tibble: 5 x 2
  LABEL      START
  <chr>      <dbl>
1 Nordjylland      81
2 Midtjylland      82
3 Syddanmark       83
4 Hovedstaden      84
5 Sjælland         85

> (ul <- labs[grep("HOVED",labs$FMTNAME),c("LABEL","START")])

# A tibble: 15 x 2
  LABEL      START
  <chr>      <dbl>
1 Førskoleuddannelser      5
2 Grundskole                10
3 Forberedende uddannelser  15
4 Gymnasiale uddannelser    20
5 Danskundervisning ved sprogcentre  25
6 Erhvervsfaglige grundforløb  29
7 Erhvervsfaglige uddannelser  30
8 Adgangsgivende uddannelsesforløb  35
9 Arbejdsmarkedsuddannelser, AMU  39
10 Korte videregående uddannelser, KVVU  40
11 Mellemlange videregående uddannelser, MVU  50
12 Bacheloruddannelser, BACH  60
13 Lange videregående uddannelser, LVU  70
14 Ph.d. og forskeruddannelser  80
15 Uoplyst mv.                90

> (el <- labs[grep("LEVEL",labs$FMTNAME),c("LABEL","START")])

# A tibble: 9 x 2
  LABEL      START
  <chr>      <dbl>
1 Early childhood education      0
2 Primary                        1
3 Lower secondary                 2
4 Upper secondary                 3
5 Short cycle tertiary            5
6 Bachelor or equivalent          6
7 Master or equivalent            7
8 Doctoral or equivalent          8
9 Not elsewhere classified        9
```

These are the in turn used to define the relevant variables as factors:

```
> system.time(
+ popstat <-
+ mutate(popstat,
+   kom = factor(kom, levels = k1$START, labels = k1$LABEL),
+   reg = factor(reg, levels = r1$START, labels = r1$LABEL),
+   udddk = factor(udddk, levels = ul$START, labels = ul$LABEL),
+   eduen = factor(eduen, levels = el$START, labels = el$LABEL))
  bruger      system forløbet
248.73      1.65    250.39
```

3.3.2 Creating income deciles

Income levels change over a period as long as the the one covered by these data (1996–2020, 24 years), so we construct a factor of deciles of income for each year, `findec`, family income decile, and finally `ungroup` the tibble before we save it:

```
> system.time(
+ popstat <- ( group_by(popstat, yr)
+             %>% mutate(findec = factor(
+                 as.integer(
+                 cut(find,
+                     quantile(find,
+                               0:10/10,
+                               na.rm = TRUE))))))
+             %>% ungroup()
+             )
+ bruger      system forløbet
+ 49.92       2.66      52.57
> attr(popstat$findec, "label") <- "fam. indk. decil pr. yr"
```

3.3.3 Saving the file for future use

Finally, we save the data as an R-file and load it again to demonstrate the time it likely takes to load it. First we rearrange the order of the variables to make it more logical.

```
> popstat <- as.data.frame(popstat[,c("pnr", "yr", "reg", "kom",
+                                     "udd", "udddk", "eduen",
+                                     "find", "findec",
+                                     "familie_id", "antboernh")])
> str(popstat, v = 0)
'data.frame':      148346675 obs. of  11 variables:
 $ pnr      : chr   ...
 $ yr       : num  NULL ...
 $ reg      : Factor w/ 5 levels "Nordjylland",...: NULL ...
 $ kom      : Factor w/ 99 levels "København","Frederiksberg",...: NULL ...
 $ udd      : num  NULL ...
 $ udddk    : Factor w/ 15 levels "Førskoleuddannelser",...: NULL ...
 $ eduen    : Factor w/ 9 levels "Early childhood education",...: NULL ...
 $ find     : num  NULL ...
 $ findec   : Factor w/ 10 levels "1","2","3","4",...: NULL ...
 ..- attr(*, "label")= chr   ...
 $ familie_id: chr   ...
 $ antboernh : num  NULL ...
> rCtable(cbind(table(popstat$yr)))
      A
1995  5,210,466
1996  5,245,127
1997  5,268,800
1998  5,288,526
1999  5,308,412
2000  5,324,505
2001  5,344,465
2002  5,363,002
```



```

2003  5,378,270
2004  5,391,853
2005  5,406,591
2006  5,423,306
2007  5,447,075
2008  5,475,682
2009  5,511,247
2010  5,534,637
2011  5,560,522
2012  5,580,429
2013  5,602,535
2014  5,627,159
2015  5,659,654
2016  5,707,176
2017  5,748,720
2018  5,781,131
2019  5,806,044
2020  5,711,375
2021  5,639,966

> system.time(save(popstat, file="../data/popstat.Rda"))
  bruger    system forløbet
  884.92    10.84  1053.29

> rm(popstat)
> system.time(load(          file="../data/popstat.Rda"))
  bruger    system forløbet
  237.12     3.73   292.31

```

So the R-version of the `popstat` dataset loads about 10 times faster than the SAS-version, and it is properly equipped with factors for residence (`kom`, `reg`), income decile (`findex`) and educational level (`udddk`, `eduen`).

```

-----
Code: E:/workdata/707655/DMreg2020/r/mkStat.rnw
Ends: 2022-03-15 at 13:12:56
Time elapsed:          01:19:34
-----

```

```

-----
Code: E:/workdata/707655/DMreg2020/r/inDK.rnw
Time: 2022-02-17 at 12:55:14
-----

```

3.4 The population Lexis object

In order to have the entire population as a Lexis object, we read the Danish population data and set up a Lexis object:

```

> system.time(
+ load("../data/pop.Rda", v = TRUE))
Loading objects:
  pop
  bruger    system forløbet
  21.85     0.20   22.08

```

```
> rpop <- pop
> str(rpop, v = 0)
'data.frame':      8298837 obs. of  6 variables:
 $ pnr   : chr      ...
 $ sex   : Factor w/ 2 levels "M","W": NULL ...
 $ doBth: 'cal.yr' num  NULL ...
 $ doDth: 'cal.yr' num  NULL ...
 $ cod4  : Factor w/ 4 levels "Can","CVD","Oth",...: NULL ...
 $ codX  : Factor w/ 10 levels "Cancer","CVD",...: NULL ...
```

We set up a Lexis object with FU from entry to death in the period 1996–2020 incl.:

```
> rpop$doE <- pmax(rpop$doBth, 1996, na.rm = TRUE)
> rpop$doX <- pmin(rpop$doDth, 2021, na.rm = TRUE)
> system.time(
+ pL <- Lexis(entry = list(per = doE,
+                          age = doE - doBth),
+            exit = list(per = doX,
+                        exit.status = factor(!is.na(doDth) & doDth < 2021,
+                                           labels = c("noDM", "Dead")),
+            id = pnr,
+            data = rpop) %>% select(-pnr))
NOTE: entry.status has been set to "noDM" for all.
NOTE: Dropping 2775 rows with duration of follow up < tol
  bruger  system forløbet
  15.46    0.55    16.02
> summary(pL, timescales = TRUE)
```

Transitions:

```
To
From      noDM    Dead  Records:  Events:  Risk time:  Persons:
noDM 6891367 1404695  8296062  1404695  168669007  8296062
```

```
> str(pL, v = 0)
```

```
Classes 'Lexis' and 'data.frame':      8296062 obs. of  13 variables:
 $ per   : num  NULL ...
 $ age   : num  NULL ...
 $ lex.dur: num  NULL ...
 $ lex.Cst: Factor w/ 2 levels "noDM","Dead": NULL ...
 $ lex.Xst: Factor w/ 2 levels "noDM","Dead": NULL ...
 $ lex.id : chr      ...
 $ sex   : Factor w/ 2 levels "M","W": NULL ...
 $ doBth : num  NULL ...
 $ doDth : num  NULL ...
 $ cod4  : Factor w/ 4 levels "Can","CVD","Oth",...: NULL ...
 $ codX  : Factor w/ 10 levels "Cancer","CVD",...: NULL ...
 $ doE   : num  NULL ...
 $ doX   : num  NULL ...
 - attr(*, "time.scales")= chr [1:2] ...
 - attr(*, "time.since")= chr [1:2] ...
 - attr(*, "breaks")=List of 2
 ..$ per: NULL
 ..$ age: NULL
```

pL is now a Lexis object with one record per person who has been residing in DK between 1996-1-1 and 2020-12-31. Some persons in pop were outside this window, hence the dropped persons when constructing pL.

3.4.1 Reading migration data

We read the Danish migration data and restrict to the persons present in the Lexis object `p1`:

```
> load("../data/xDK.Rda", v = TRUE)
Loading objects:
  xDK
> xDK <- subset(xDK, pnr %in% pL$lex.id)
```

Now create a long-form version of the movements, with missing emigration dates recoded as 1990 (assuming that those with only an immigration date have left a long time ago) and missing immigration date as 2030 (assuming that those with only an emigration date will stay out way beyond follow-up):

```
> migx <- transform(xDK,
+                   doEm = ifelse(is.na(doEm), 1990, doEm),
+                   doIm = ifelse(is.na(doIm), 2030, doIm))
> migr <- rbind(transform(migx,
+                         lex.id = pnr,
+                         new.state = "out",
+                         cut = doEm),
+               transform(migx,
+                         lex.id = pnr,
+                         new.state = "noDM",
+                         cut = doIm))[,c("lex.id", "cut", "new.state")]
> str(migr, v = 0)
'data.frame':      4359738 obs. of  3 variables:
 $ lex.id   : chr    ...
 $ cut      : num  NULL ...
 $ new.state: chr    ...
> who.migr <- unique(migr$lex.id) # any person with at least one migration record
> rCp(length(who.migr))
[1] 1,525,052
> rCp( sum(who.migr %in% pop$pnr))
[1] 1,525,052
```

The point is now to use this to create the relevant "holes" in the initial Lexis object; we call the "being in Denmark" state `noDM` because we eventually will add diabetes status to the data. The dataset has alternating values of `new.state`, (`noDM` / `out`), and the aim is to exclude the time in the `out` state.

3.4.2 Carving out the emigrated time

We subdivide the population by the presence of migration records (and who are in the population file):

```
> onlyDK <- subset(pL, !(lex.id %in% who.migr)) ; nrow(onlyDK)
[1] 6771010
> migrDK <- subset(pL, lex.id %in% who.migr ) ; nrow(migrDK)
[1] 1525052
```

```
> migr <- subset(migr, lex.id %in% migrDK$lex.id)
> rCp(c(nrow(migr), nrow(migrDK)))
[1] 4,359,738 1,525,052
```

First we cut the follow-up at the migration dates for those that have at least one migration record. We do this in 100 chunks of persons; experiments showed that computing time increased more than linearly by the number of persons in the dataset:

```
> N <- length(who.migr)
> nch <- 100
> lim <- floor(seq(0, N, length.out = nch+1))
> mL <- NULL
> for (i in 1:nch)
+   {
+     cat(format(t0 <- Sys.time(), "%F, %T,")
+         xwho <- who.migr[(lim[i]+1):lim[i+1]]
+         mL <- rbind(mL,
+                     rcutLexis(subset(migrDK, lex.id %in% xwho),
+                                 subset(migr , lex.id %in% xwho)))
+         cat(formatC(Sys.time() - t0,
+                     format = "f",
+                     digits = 1,
+                     width = 5), "seconds for chunk", i, "\n")
+     }
```

```
2022-02-17, 12:56:45, 21.5 seconds for chunk 1
2022-02-17, 12:57:06, 31.1 seconds for chunk 2
2022-02-17, 12:57:38, 21.0 seconds for chunk 3
2022-02-17, 12:57:59, 26.0 seconds for chunk 4
2022-02-17, 12:58:25, 25.5 seconds for chunk 5
2022-02-17, 12:58:50, 28.0 seconds for chunk 6
2022-02-17, 12:59:18, 41.7 seconds for chunk 7
2022-02-17, 13:00:00, 23.5 seconds for chunk 8
2022-02-17, 13:00:23, 21.5 seconds for chunk 9
2022-02-17, 13:00:45, 31.8 seconds for chunk 10
2022-02-17, 13:01:17, 24.3 seconds for chunk 11
2022-02-17, 13:01:41, 29.6 seconds for chunk 12
2022-02-17, 13:02:10, 37.3 seconds for chunk 13
2022-02-17, 13:02:48, 23.9 seconds for chunk 14
2022-02-17, 13:03:12, 21.8 seconds for chunk 15
2022-02-17, 13:03:33, 24.3 seconds for chunk 16
2022-02-17, 13:03:58, 22.0 seconds for chunk 17
2022-02-17, 13:04:20, 25.2 seconds for chunk 18
2022-02-17, 13:04:45, 25.6 seconds for chunk 19
2022-02-17, 13:05:11, 23.6 seconds for chunk 20
2022-02-17, 13:05:34, 21.1 seconds for chunk 21
2022-02-17, 13:05:55, 23.3 seconds for chunk 22
2022-02-17, 13:06:19, 26.5 seconds for chunk 23
2022-02-17, 13:06:45, 29.4 seconds for chunk 24
2022-02-17, 13:07:14, 18.8 seconds for chunk 25
2022-02-17, 13:07:33, 34.6 seconds for chunk 26
2022-02-17, 13:08:08, 27.3 seconds for chunk 27
2022-02-17, 13:08:35, 28.2 seconds for chunk 28
2022-02-17, 13:09:03, 38.8 seconds for chunk 29
2022-02-17, 13:09:42, 18.9 seconds for chunk 30
2022-02-17, 13:10:01, 29.4 seconds for chunk 31
2022-02-17, 13:10:30, 25.3 seconds for chunk 32
2022-02-17, 13:10:56, 21.2 seconds for chunk 33
```

2022-02-17, 13:11:17,	26.6 seconds for chunk	34
2022-02-17, 13:11:44,	37.2 seconds for chunk	35
2022-02-17, 13:12:21,	26.4 seconds for chunk	36
2022-02-17, 13:12:47,	43.9 seconds for chunk	37
2022-02-17, 13:13:31,	24.2 seconds for chunk	38
2022-02-17, 13:13:55,	35.1 seconds for chunk	39
2022-02-17, 13:14:30,	32.6 seconds for chunk	40
2022-02-17, 13:15:03,	26.4 seconds for chunk	41
2022-02-17, 13:15:29,	27.9 seconds for chunk	42
2022-02-17, 13:15:57,	29.8 seconds for chunk	43
2022-02-17, 13:16:27,	54.0 seconds for chunk	44
2022-02-17, 13:17:21,	36.5 seconds for chunk	45
2022-02-17, 13:17:58,	37.8 seconds for chunk	46
2022-02-17, 13:18:35,	41.7 seconds for chunk	47
2022-02-17, 13:19:17,	32.6 seconds for chunk	48
2022-02-17, 13:19:50,	22.0 seconds for chunk	49
2022-02-17, 13:20:12,	24.6 seconds for chunk	50
2022-02-17, 13:20:36,	49.5 seconds for chunk	51
2022-02-17, 13:21:26,	37.5 seconds for chunk	52
2022-02-17, 13:22:03,	38.2 seconds for chunk	53
2022-02-17, 13:22:42,	36.0 seconds for chunk	54
2022-02-17, 13:23:18,	32.4 seconds for chunk	55
2022-02-17, 13:23:50,	31.8 seconds for chunk	56
2022-02-17, 13:24:22,	52.7 seconds for chunk	57
2022-02-17, 13:25:15,	30.8 seconds for chunk	58
2022-02-17, 13:25:45,	22.6 seconds for chunk	59
2022-02-17, 13:26:08,	26.1 seconds for chunk	60
2022-02-17, 13:26:34,	26.4 seconds for chunk	61
2022-02-17, 13:27:01,	34.0 seconds for chunk	62
2022-02-17, 13:27:35,	25.1 seconds for chunk	63
2022-02-17, 13:28:00,	30.9 seconds for chunk	64
2022-02-17, 13:28:31,	17.8 seconds for chunk	65
2022-02-17, 13:28:48,	21.3 seconds for chunk	66
2022-02-17, 13:29:10,	24.4 seconds for chunk	67
2022-02-17, 13:29:34,	25.2 seconds for chunk	68
2022-02-17, 13:29:59,	23.5 seconds for chunk	69
2022-02-17, 13:30:23,	24.5 seconds for chunk	70
2022-02-17, 13:30:47,	28.9 seconds for chunk	71
2022-02-17, 13:31:16,	30.8 seconds for chunk	72
2022-02-17, 13:31:47,	34.7 seconds for chunk	73
2022-02-17, 13:32:22,	28.2 seconds for chunk	74
2022-02-17, 13:32:50,	30.7 seconds for chunk	75
2022-02-17, 13:33:21,	24.2 seconds for chunk	76
2022-02-17, 13:33:45,	25.2 seconds for chunk	77
2022-02-17, 13:34:10,	25.2 seconds for chunk	78
2022-02-17, 13:34:35,	30.1 seconds for chunk	79
2022-02-17, 13:35:05,	35.5 seconds for chunk	80
2022-02-17, 13:35:41,	23.2 seconds for chunk	81
2022-02-17, 13:36:04,	54.1 seconds for chunk	82
2022-02-17, 13:36:58,	24.8 seconds for chunk	83
2022-02-17, 13:37:23,	33.9 seconds for chunk	84
2022-02-17, 13:37:57,	22.4 seconds for chunk	85
2022-02-17, 13:38:19,	23.0 seconds for chunk	86
2022-02-17, 13:38:42,	29.1 seconds for chunk	87
2022-02-17, 13:39:11,	23.0 seconds for chunk	88
2022-02-17, 13:39:34,	29.3 seconds for chunk	89
2022-02-17, 13:40:04,	31.8 seconds for chunk	90

```

2022-02-17, 13:40:35, 19.6 seconds for chunk 91
2022-02-17, 13:40:55, 31.2 seconds for chunk 92
2022-02-17, 13:41:26, 25.0 seconds for chunk 93
2022-02-17, 13:41:51, 30.3 seconds for chunk 94
2022-02-17, 13:42:22, 22.9 seconds for chunk 95
2022-02-17, 13:42:44, 23.5 seconds for chunk 96
2022-02-17, 13:43:08, 32.0 seconds for chunk 97
2022-02-17, 13:43:40, 31.2 seconds for chunk 98
2022-02-17, 13:44:11, 22.2 seconds for chunk 99
2022-02-17, 13:44:33, 27.8 seconds for chunk 100

```

```
> summary(mL)
```

```
Transitions:
```

```

      To
From   noDM      out  Dead  Records:  Events: Risk time:  Persons:
noDM  748794 1079262 18993   1847049  1098255   13953489   1357995
out   1417189  745845 12268   2175302  1429457   21979163   1522154
Sum   2165983 1825107 31261   4022351  2527712   35932652   1525052

```

We now exclude the follow-up in the `out` state, and also merge the states `noDM` and `out`—the latter only exists in `lex.Xst` after excluding records with `lex.Cst` equal to `out`:

```

> inDK <- Relevel(subset(mL, lex.Cst != "out"),
+               list("noDM" = 1:2))
> summary(inDK)

```

```
Transitions:
```

```

      To
From   noDM  Dead  Records:  Events: Risk time:  Persons:
noDM 1828056 18993   1847049   18993   13953489   1357995

```

```

> inDK <- rbind(inDK, onlyDK)
> summary(inDK)

```

```
Transitions:
```

```

      To
From   noDM      Dead  Records:  Events: Risk time:  Persons:
noDM  7225632 1392427   8618059  1392427  146689844   8129005

```

Finally we save the population Lexis object:

```
> save(inDK, file = "../data/inDK.Rda")
```

```

-----
Code: E:/workdata/707655/DMreg2020/r/inDK.rnw
Ends: 2022-02-17 at 13:45:51
Time elapsed:      00:50:38
-----

```

```

-----
Code: E:/workdata/707655/DMreg2020/r/mkTabs/fuDM.rnw
Time: 2022-03-11 at 17:24:41
-----

```

3.4.3 Reading population data

We read the Danish population data in the form of a `Lexis` object with holes of non-residency in the follow-up, and the anonymized person-id is in the variable `lex.id`:

```
> getwd()
[1] "E:/workdata/707655/DMreg2020/r/mkTabs"
> system.time(load(file = ".././data/inDK.Rda", v = TRUE))
Loading objects:
  inDK
  bruger    system forløbet
    20.37    0.20    20.60
> summary(inDK)
Transitions:
  To
From      noDM    Dead  Records:  Events: Risk time:  Persons:
  noDM 7225632 1392427   8618059 1392427 146689844   8129005
> str(inDK, v = 0)
Classes 'Lexis' and 'data.frame':      8618059 obs. of  13 variables:
 $ per      : num  NULL ...
 $ age      : num  NULL ...
 $ lex.dur  : num  NULL ...
 $ lex.Cst  : Factor w/ 2 levels "noDM","Dead": NULL ...
 $ lex.Xst  : Factor w/ 2 levels "noDM","Dead": NULL ...
 $ lex.id   : chr    ...
 $ sex      : Factor w/ 2 levels "M","W": NULL ...
 $ doBth    : num  NULL ...
 $ doDth    : num  NULL ...
 $ cod4     : Factor w/ 4 levels "Can","CVD","Oth",...: NULL ...
 $ codX     : Factor w/ 10 levels "Cancer","CVD",...: NULL ...
 $ doE      : num  NULL ...
 $ doX      : num  NULL ...
- attr(*, "breaks")=List of 2
..$ per: NULL
..$ age: NULL
- attr(*, "time.scales")= chr [1:2] ...
- attr(*, "time.since")= chr [1:2] ...
```

3.4.4 Adding diabetes status

The purpose is now to subdivide the follow-up in `inDK` by diabetes status.

To this end we merge with the diabetes register (join by `pnr/lex.id`) and then cut the `Lexis` object at `doDM`. The result should be a follow-up `Lexis` object with follow up time only while resident in Denmark, classified by diabetes status (`noDM/T1/T2`):

```
> system.time(
+   load(".././data/DMreg.Rda", v = TRUE))
Loading objects:
  DMreg
  vlabs
  bruger    system forløbet
    0.64    0.02    0.67
```

```

> DMreg <- rename(DMreg, "lex.id" = "pnr")
> str(DMreg, v = 0)
'data.frame':      549852 obs. of  7 variables:
 $ lex.id: chr      ...
 $ sex   : Factor w/ 2 levels "M","W": NULL ...
 $ doBth : 'cal.yr' num  NULL ...
 $ doDM  : 'cal.yr' num  NULL ...
 $ doDth : 'cal.yr' num  NULL ...
 $ DMtp  : Factor w/ 2 levels "T1","T2": NULL ...
 $ DMtx  : Factor w/ 3 levels "T1","T2","Tx": NULL ...

> system.time(dL <- left_join(inDK,
+                             select(DMreg, c(lex.id, doDM, DMtp))))
  bruger    system forløbet
    5.03     0.20     5.25

> summary(dL)
Transitions:
  To
From    noDM    Dead  Records:  Events: Risk time:  Persons:
  noDM 7225632 1392427   8618059 1392427 146689844   8129005

> system.time(DMfup <- cutLexis(dL,
+                               cut = dL$doDM,
+                               new.state = as.character(dL$DMtp)))
  bruger    system forløbet
 797.71     7.73   805.45

> summary(DMfup)
Transitions:
  To
From    noDM    T2    T1    Dead  Records:  Events: Risk time:
  noDM 6893318 431635 28752 1172893   8526598 1633280 141768456.6
  T2      0 298631     0 194962   493593 194962 4183399.1
  T1      0     0 33683 24572   58255 24572 737988.8
  Sum 6893318 730266 62435 1392427   9078446 1852814 146689844.5

Transitions:
  To
From    Persons:
  noDM   8041897
  T2     490953
  T1     56969
  Sum    8129005

```

DMfup is now a Lexis object with follow-up in three states: noDM, T1 and T2—some 8.1 mil. persons and 9.1 mil. records.

3.4.5 The population by diabetes status, corrected for migration pattern

For persons with a migration history, only time registered as being resident in DK is included; so some persons have several records if the person has had distinct periods of residency in DK. Moreover persons with a diagnosis of diabetes will have separate records for the time before and after diagnosis of diabetes.


```
> save(DMfup, file = ".././data/DMfup.Rda")
> system.time(
+   load(file = ".././data/DMfup.Rda", v = TRUE))
```

Loading objects:

```
DMfup
bruger    system forløbet
 10.91     0.30     11.67
```

3.4.6 Comparison with the raw DMreg

We can check out how many persons with T1, resp T2 there are in the Lexis object DMfup:

```
> t1pnr <- unique(subset(DMfup, lex.Cst == "T1")$lex.id)
> t2pnr <- unique(subset(DMfup, lex.Cst == "T2")$lex.id)
> alpnr <- unique(
+   DMfup
+   $lex.id)
> rCp(c(T1 = length(t1pnr),
+   T2 = length(t2pnr),
+   DM = length(t1pnr) + length(t2pnr),
+   noDM = length(alpnr) -
+   length(t1pnr) - length(t2pnr)))
```

T1	T2	DM	noDM
56,969	490,953	547,922	7,581,083

```
> with(DMreg, rCp(addmargins(table(DMtp))))
```

```
DMtp
  T1      T2      Sum
57,086 492,766 549,852
```

We see there are about 2000 of the persons in DMreg that are not in the migration-corrected data DM.

We also see that some of the persons in DMfup with a valid doDM are diagnosed outside active follow-up — well we cannot see this directly because it would be listing of microdata.

```
> DMout <-
+ as.data.frame( # only persons with a DM diagnosis
+   subset(DMfup, !is.na(doDM))
+   %>% select(-c(sex, age, doDth, cod4, codX, doE, doX, doBth, DMtp))
+   # doDM in a follow-up interval
+   %>% mutate(inFU = (per <= doDM &
+   doDM <= (per + lex.dur)),
+   perX = per + lex.dur)
+   # process by person
+   %>% group_by(lex.id)
+   # only those with all intervals without doDM
+   # that is the doDM is outside of DK residency
+   %>% filter(all(!inFU))
+   # remove grouping
+   %>% ungroup
+   )
> # head(subset(DMout, doDM > 1996)[,c(5,1,8,6,2,3,4)], 15)
```

DMout is now a dataset (Lexis object, actually) with a valid doDM outside DK:

```
> with(subset(DMout, lex.Cst=="noDM"), nrec(doDM, lex.id))
```

```

No. recs (Nrec),
no. valid: Val(doDM)
no. distinct: Dis(lex.id)
table of lex.id by no. valid n(doDM)
-----
Nrec          1,137
Val(doDM)     1,137
Dis(lex.id)   959
n(doDM)=1     810
2             123
3             23
4             *

> with(subset(DMout, lex.Cst!="noDM"), nrec(doDM, lex.id))

```

```

No. recs (Nrec),
no. valid: Val(doDM)
no. distinct: Dis(lex.id)
table of lex.id by no. valid n(doDM)
-----
Nrec          88,535
Val(doDM)     88,535
Dis(lex.id)   87,535
n(doDM)=1     86,734
2             650
3             121
4             22
5             4
6             *
7             *
10+          *

```

We see that there are many persons with a valid `doDM` not in the follow-up in the data set. Most of these records represent follow-up in one of the diabetes states (T1, T2), i.e. with the `doDM` *before* the follow-up.

This presumably means that the persons may not really have been outside DK when diagnosed; `doDM` by construction correspond to a recorded date in one of the registers used. We cannot include these periods as valid follow-up on the basis of an existing `doDM`, because similar intervals could not be included for persons without a valid `doDM`.

An alternative approach would be to only exclude follow-up prior to immigration, that is to count everyone as permanently in DK after the first recorded entry.

```

-----
Code: E:/workdata/707655/DMreg2020/r/mkTabs/fuDM.rnw
Ends: 2022-03-11 at 17:40:17
Time elapsed:      00:15:35
-----

```

```

-----
Code: E:/workdata/707655/DMreg2020/r/rtDM.rnw
Time: 2022-02-18 at 11:14:10
-----

```

3.5 Follow-up by sex, age and calendar time

First we load the `Lexis` object with the follow-up in states by diabetes and restricted to residency in Denmark:

```
> system.time(
+   load(file = "../data/DMfup.Rda", v = T))
Loading objects:
  DMfup
  bruger    system forløbet
    25.94    0.41    26.47
> summary(DMfup)
Transitions:
  To
From    noDM    T2    T1    Dead  Records:  Events:  Risk time:
noDM 6893318 431635 28752 1172893 8526598 1633280 141768456.6
T2      0 298631      0 194962 493593 194962 4183399.1
T1      0      0 33683 24572 58255 24572 737988.8
Sum 6893318 730266 62435 1392427 9078446 1852814 146689844.5
```

```
Transitions:
  To
From  Persons:
noDM 8041897
T2   490953
T1   56969
Sum 8129005
```

We split the follow-up by age and calendar time in 1-year intervals in order to allocate the follow-up in groups; note that the `floor` defines the classes; no piece of follow-up crosses any age or period-border:

```
> system.time(
+ sL <- splitMulti(DMfup,
+                 age = 0:100,
+                 per = 1996:2021))
  bruger    system forløbet
 786.14 1456.28 740.74
> system.time(
+ sL <- mutate(sL,
+              a1 = floor(age),
+              p1 = floor(per)))
  bruger    system forløbet
 4.61    0.61    5.22
> summary(sL)
Transitions:
  To
From    noDM    T2    T1    Dead  Records:  Events:  Risk time:
noDM 283783055 431573 28752 1163789 285407169 1624114 141711129.7
T2      0 8472498      0 194286 8666784 194286 4182208.9
T1      0      0 1479078 24550 1503628 24550 737954.1
Sum 283783055 8904071 1507830 1382625 295577581 1842950 146631292.7
```

```
Transitions:
```

```

      To
From  Persons:
  noDM  8041165
   T2   490877
   T1   56969
  Sum   8128259

```

We now have FU split in the pieces we need, so now we can define the events of interest (T1, T2 and Dead) and the risk time (person-years, `lex.dur`).

```

> system.time(
+ xL <- transform(sL,
+               T1 = lex.Xst == "T1" & lex.Xst != lex.Cst,
+               T2 = lex.Xst == "T2" & lex.Xst != lex.Cst,
+               Dth = lex.Xst == "Dead",
+               Y = lex.dur))
  bruger    system forløbet
   33.69     2.89    36.58
> names(xL) ; fCp(dim(xL))
 [1] "lex.id"  "per"    "age"    "lex.dur" "lex.Cst" "lex.Xst" "sex"
 [8] "doBth"   "doDth"  "cod4"   "codX"    "doE"     "doX"     "doDM"
[15] "DMtp"    "a1"     "p1"     "T1"      "T2"      "Dth"     "Y"
 [1] 295,577,581      21

```

We want these new variables aggregated (added) for all combinations of sex, age and calendar time:

```

> system.time(
+ DMtab <- aggregate(xL[,c("T1", "T2", "Dth", "Y")],
+                   by = xL[,c("sex", "p1", "a1", "lex.Cst")],
+                   FUN = sum))
  bruger    system forløbet
 974.86    28.33 1003.26
> names(DMtab)
 [1] "sex"      "p1"      "a1"      "lex.Cst" "T1"      "T2"      "Dth"
 [8] "Y"
> rCp(nrow(DMtab))
 [1] 14,838
> table(DMtab$lex.Cst)
noDM  T2  T1  Dead
5000 4889 4949 0

```

Thus, `DMtab`, has events and person-years classified by sex, age and calendar time.

We can see how many of the events occur in cells with too few:

```

> rCp(addmargins(tapply(DMtab$T1, DMtab$T1 < 3, sum)))
  FALSE    TRUE    Sum
 27,626    1,126  28,752
> rCp(addmargins(tapply(DMtab$T2, DMtab$T2 < 3, sum)))
  FALSE    TRUE    Sum
 430,968    605  431,573
> rCp(addmargins(tapply(DMtab$Dth, DMtab$Dth < 3, sum)))

```

```

      FALSE      TRUE      Sum
1,380,469      2,156 1,382,625

```

We now have the tabulation of events both in 1-year intervals; we save these for subsequent use and analysis.

```
> save(DMtab, file = "../data/DM-inc-mort.Rda")
```

```
-----
Code: E:/workdata/707655/DMreg2020/r/rtDM.rnw
Ends: 2022-02-18 at 11:45:46
Time elapsed:      00:31:36
-----
```

```
-----
Code: E:/workdata/707655/DMreg2020/r/mkTabs/a5Tab.rnw
Time: 2022-03-16 at 07:38:32
-----
```

```
> load(file = "../data/DM-inc-mort.Rda", v = TRUE)
```

Loading objects:

```
DMtab
```

```
> str(DMtab, v = 0)
```

```
'data.frame':      14838 obs. of  8 variables:
 $ sex      : Factor w/ 2 levels "M","W": NULL ...
 $ p1       : num  NULL ...
 $ a1       : num  NULL ...
 $ lex.Cst  : Factor w/ 4 levels "noDM","T2","T1",...: NULL ...
 $ T1       : int  NULL ...
 $ T2       : int  NULL ...
 $ Dth      : int  NULL ...
 $ Y        : num  NULL ...
 - attr(*, "time.scales")= chr [1:2] ...
 - attr(*, "time.since")= chr [1:2] ...
 - attr(*, "breaks")=List of 2
 ..$ per: num [1:26] NULL ...
 ..$ age: num [1:101] NULL ...
```

This is a tabulated dataset, classified by sex (`sex`), age in 1-year classes (`a1`), calendar time in 1-year classes (`p1`) and diabetes status, (`noDM`, `T1`, `T2` — `lex.Cst`). But we do not want the silly name of the variable nor the extra unused level:

```
> DMtab$DMst <- factor(DMtab$lex.Cst)
> table(DMst = DMtab$DMst, lex.Cst = DMtab$lex.Cst)
```

```

      lex.Cst
DMst  noDM  T2   T1 Dead
noDM 5000   0    0   0
T2    0 4889   0    0
T1    0    0 4949   0

```

In each of the combinations of the states is counted the number of T1 incidents (`T1`), T2 incidents (`T2`) and deaths (`Dth`), and aggregated the amount of risk time (`Y`).

The primary use of this is for analysis of rates of T1 and T2 and death.

3.5.1 Tabulation for international consortium

We need a tabulation that is exportable, so we coarsen the age-distribution to 0–20, 20–25, ..., 85–90, 90+. Actually the 90+ is only 90–100; persons over 100 were excluded in the age-split by `splitMulti`:

```
> DMtab$a5 <- cut(DMtab$a1,
+               c(0, seq(20, 90, 5), Inf),
+               right = FALSE)
> print(with(DMtab, table(a1, a5)), z = ".")
```

a1	a5									
	[0,20)	[20,25)	[25,30)	[30,35)	[35,40)	[40,45)	[45,50)	[50,55)	[55,60)	[60,65)
0	97	.	.	.	.	.	.	.	.	.
1	127	.	.	.	.	.	.	.	.	.
2	136	.	.	.	.	.	.	.	.	.
3	139	.	.	.	.	.	.	.	.	.
4	138	.	.	.	.	.	.	.	.	.
5	144	.	.	.	.	.	.	.	.	.
6	145	.	.	.	.	.	.	.	.	.
7	149	.	.	.	.	.	.	.	.	.
8	150	.	.	.	.	.	.	.	.	.
9	150	.	.	.	.	.	.	.	.	.
10	150	.	.	.	.	.	.	.	.	.
11	149	.	.	.	.	.	.	.	.	.
12	150	.	.	.	.	.	.	.	.	.
13	150	.	.	.	.	.	.	.	.	.
14	150	.	.	.	.	.	.	.	.	.
15	150	.	.	.	.	.	.	.	.	.
16	150	.	.	.	.	.	.	.	.	.
17	150	.	.	.	.	.	.	.	.	.
18	150	.	.	.	.	.	.	.	.	.
19	150	.	.	.	.	.	.	.	.	.
20	.	150	.	.	.	.	.	.	.	.
21	.	150	.	.	.	.	.	.	.	.
22	.	150	.	.	.	.	.	.	.	.
23	.	150	.	.	.	.	.	.	.	.
24	.	150	.	.	.	.	.	.	.	.
25	.	.	150	.	.	.	.	.	.	.
26	.	.	150	.	.	.	.	.	.	.
27	.	.	150	.	.	.	.	.	.	.
28	.	.	150	.	.	.	.	.	.	.
29	.	.	150	.	.	.	.	.	.	.
30	.	.	.	150	.	.	.	.	.	.
31	.	.	.	150	.	.	.	.	.	.
32	.	.	.	150	.	.	.	.	.	.
33	.	.	.	150	.	.	.	.	.	.
34	.	.	.	150	.	.	.	.	.	.
35	.	.	.	.	150	.	.	.	.	.
36	.	.	.	.	150	.	.	.	.	.
37	.	.	.	.	150	.	.	.	.	.
38	.	.	.	.	150	.	.	.	.	.
39	.	.	.	.	150	.	.	.	.	.
40	.	.	.	.	.	150	.	.	.	.
41	.	.	.	.	.	150	.	.	.	.
42	.	.	.	.	.	150	.	.	.	.
43	.	.	.	.	.	150	.	.	.	.
44	.	.	.	.	.	150	.	.	.	.

45	.	.	.	.	.	.	150	.	.	.
46	.	.	.	.	.	.	150	.	.	.
47	.	.	.	.	.	.	150	.	.	.
48	.	.	.	.	.	.	150	.	.	.
49	.	.	.	.	.	.	150	.	.	.
50	.	.	.	.	.	.	.	150	.	.
51	.	.	.	.	.	.	.	150	.	.
52	.	.	.	.	.	.	.	150	.	.
53	.	.	.	.	.	.	.	150	.	.
54	.	.	.	.	.	.	.	150	.	.
55	.	.	.	.	.	.	.	.	150	.
56	.	.	.	.	.	.	.	.	150	.
57	.	.	.	.	.	.	.	.	150	.
58	.	.	.	.	.	.	.	.	150	.
59	.	.	.	.	.	.	.	.	150	.
60	.	.	.	.	.	.	.	.	.	150
61	.	.	.	.	.	.	.	.	.	150
62	.	.	.	.	.	.	.	.	.	150
63	.	.	.	.	.	.	.	.	.	150
64	.	.	.	.	.	.	.	.	.	150
65	.	.	.	.	.	.	.	.	.	.
66	.	.	.	.	.	.	.	.	.	.
67	.	.	.	.	.	.	.	.	.	.
68	.	.	.	.	.	.	.	.	.	.
69	.	.	.	.	.	.	.	.	.	.
70	.	.	.	.	.	.	.	.	.	.
71	.	.	.	.	.	.	.	.	.	.
72	.	.	.	.	.	.	.	.	.	.
73	.	.	.	.	.	.	.	.	.	.
74	.	.	.	.	.	.	.	.	.	.
75	.	.	.	.	.	.	.	.	.	.
76	.	.	.	.	.	.	.	.	.	.
77	.	.	.	.	.	.	.	.	.	.
78	.	.	.	.	.	.	.	.	.	.
79	.	.	.	.	.	.	.	.	.	.
80	.	.	.	.	.	.	.	.	.	.
81	.	.	.	.	.	.	.	.	.	.
82	.	.	.	.	.	.	.	.	.	.
83	.	.	.	.	.	.	.	.	.	.
84	.	.	.	.	.	.	.	.	.	.
85	.	.	.	.	.	.	.	.	.	.
86	.	.	.	.	.	.	.	.	.	.
87	.	.	.	.	.	.	.	.	.	.
88	.	.	.	.	.	.	.	.	.	.
89	.	.	.	.	.	.	.	.	.	.
90	.	.	.	.	.	.	.	.	.	.
91	.	.	.	.	.	.	.	.	.	.
92	.	.	.	.	.	.	.	.	.	.
93	.	.	.	.	.	.	.	.	.	.
94	.	.	.	.	.	.	.	.	.	.
95	.	.	.	.	.	.	.	.	.	.
96	.	.	.	.	.	.	.	.	.	.
97	.	.	.	.	.	.	.	.	.	.
98	.	.	.	.	.	.	.	.	.	.
99	.	.	.	.	.	.	.	.	.	.
	a5									
a1	[65,70)	[70,75)	[75,80)	[80,85)	[85,90)	[90,Inf)				

0	.	.	.	.	.	.
1	.	.	.	.	.	.
2	.	.	.	.	.	.
3	.	.	.	.	.	.
4	.	.	.	.	.	.
5	.	.	.	.	.	.
6	.	.	.	.	.	.
7	.	.	.	.	.	.
8	.	.	.	.	.	.
9	.	.	.	.	.	.
10	.	.	.	.	.	.
11	.	.	.	.	.	.
12	.	.	.	.	.	.
13	.	.	.	.	.	.
14	.	.	.	.	.	.
15	.	.	.	.	.	.
16	.	.	.	.	.	.
17	.	.	.	.	.	.
18	.	.	.	.	.	.
19	.	.	.	.	.	.
20	.	.	.	.	.	.
21	.	.	.	.	.	.
22	.	.	.	.	.	.
23	.	.	.	.	.	.
24	.	.	.	.	.	.
25	.	.	.	.	.	.
26	.	.	.	.	.	.
27	.	.	.	.	.	.
28	.	.	.	.	.	.
29	.	.	.	.	.	.
30	.	.	.	.	.	.
31	.	.	.	.	.	.
32	.	.	.	.	.	.
33	.	.	.	.	.	.
34	.	.	.	.	.	.
35	.	.	.	.	.	.
36	.	.	.	.	.	.
37	.	.	.	.	.	.
38	.	.	.	.	.	.
39	.	.	.	.	.	.
40	.	.	.	.	.	.
41	.	.	.	.	.	.
42	.	.	.	.	.	.
43	.	.	.	.	.	.
44	.	.	.	.	.	.
45	.	.	.	.	.	.
46	.	.	.	.	.	.
47	.	.	.	.	.	.
48	.	.	.	.	.	.
49	.	.	.	.	.	.
50	.	.	.	.	.	.
51	.	.	.	.	.	.
52	.	.	.	.	.	.
53	.	.	.	.	.	.
54	.	.	.	.	.	.
55	.	.	.	.	.	.
56	.	.	.	.	.	.


```

57      .      .      .      .      .      .
58      .      .      .      .      .      .
59      .      .      .      .      .      .
60      .      .      .      .      .      .
61      .      .      .      .      .      .
62      .      .      .      .      .      .
63      .      .      .      .      .      .
64      .      .      .      .      .      .
65      150     .      .      .      .      .
66      150     .      .      .      .      .
67      150     .      .      .      .      .
68      150     .      .      .      .      .
69      150     .      .      .      .      .
70      .      150     .      .      .      .
71      .      150     .      .      .      .
72      .      150     .      .      .      .
73      .      150     .      .      .      .
74      .      150     .      .      .      .
75      .      .      150     .      .      .
76      .      .      150     .      .      .
77      .      .      150     .      .      .
78      .      .      150     .      .      .
79      .      .      150     .      .      .
80      .      .      .      150     .      .
81      .      .      .      150     .      .
82      .      .      .      150     .      .
83      .      .      .      150     .      .
84      .      .      .      150     .      .
85      .      .      .      .      150     .
86      .      .      .      .      150     .
87      .      .      .      .      150     .
88      .      .      .      .      150     .
89      .      .      .      .      150     .
90      .      .      .      .      .      150
91      .      .      .      .      .      150
92      .      .      .      .      .      150
93      .      .      .      .      .      150
94      .      .      .      .      .      150
95      .      .      .      .      .      150
96      .      .      .      .      .      149
97      .      .      .      .      .      145
98      .      .      .      .      .      139
99      .      .      .      .      .      131

```

```
> names(DMtab)
```

```
[1] "sex"      "p1"      "a1"      "lex.Cst" "T1"      "T2"      "Dth"      "Y"
[9] "DMst"     "a5"
```

```
> DMtab5 <- aggregate(DMtab[,c("T1","T2","Dth","Y")],
+                      by = DMtab[,c("sex","p1","a5","DMst")],
+                      FUN = sum)
> str(DMtab5, v = 0)
```

```
'data.frame':      2400 obs. of  8 variables:
 $ sex : Factor w/ 2 levels "M","W": NULL ...
 $ p1  : num  NULL ...
 $ a5  : Factor w/ 16 levels "[0,20)","[20,25)",...: NULL ...
```

```

$ DMst: Factor w/ 3 levels "noDM","T2","T1": NULL ...
$ T1  : int  NULL ...
$ T2  : int  NULL ...
$ Dth : int  NULL ...
$ Y   : num  NULL ...
> summary(DMtab5)
sex      p1      a5      DMst      T1      T2
M:1200  Min.   :1996  [0,20) : 150  noDM:800  Min.   : 0.00  Min.   : 0.0
W:1200  1st Qu.:2002  [20,25): 150  T2 :800   1st Qu.: 0.00  1st Qu.: 0.0
        Median :2008  [25,30): 150  T1 :800   Median : 0.00  Median : 0.0
        Mean   :2008  [30,35): 150          Mean   : 11.98  Mean   : 179.8
        3rd Qu.:2014  [35,40): 150          3rd Qu.: 12.00  3rd Qu.: 113.0
        Max.   :2020  [40,45): 150          Max.   :246.00  Max.   :2798.0
        (Other):1500
      Dth      Y
Min.   : 0.0  Min.   : 22.8
1st Qu.: 13.0 1st Qu.: 930.3
Median : 84.0 Median : 3478.2
Mean   : 576.1 Mean   : 61096.4
3rd Qu.: 544.0 3rd Qu.: 91142.3
Max.   :5771.0 Max.   :740800.9
> addmargins(table(pmin(DMtab5$T1 , 5)))
  0  1  2  3  4  5 Sum
1627 18 21 20 18 696 2400
> addmargins(table(pmin(DMtab5$T2 , 5)))
  0  5 Sum
1600 800 2400
> addmargins(table(pmin(DMtab5$Dth, 5)))
  0  1  2  3  4  5 Sum
157 120 85 42 26 1970 2400

```

We cannot export entries under 3, so we convert these to NA before exporting them, and check that no entries less than 3 are left:

```

> cnt <- c("T1", "T2", "Dth")
> for (cc in cnt)
+   DMtab5[,cc] <- ifelse(DMtab5[,cc] > 0 &
+                         DMtab5[,cc] < 3,
+                         NA,
+                         DMtab5[,cc])
> addmargins(table(pmin(DMtab5$T1 , 5)))
  0  3  4  5 Sum
1627 20 18 696 2361
> addmargins(table(pmin(DMtab5$T2 , 5)))
  0  5 Sum
1600 800 2400
> addmargins(table(pmin(DMtab5$Dth, 5)))
  0  3  4  5 Sum
157 42 26 1970 2195

```

Finally we can subdivide the tabulated object by status and provide the relevant tables:

```
> names(DMtab5)
```

```
[1] "sex" "p1" "a5" "DMst" "T1" "T2" "Dth" "Y"
> T1tab <- subset(DMtab5,
+               DMst == "T1",
+               select = c(sex, p1, a5, Dth, Y)) %>%
+   rename("T1Dth" = "Dth",
+          "T1pY" = "Y")
> T2tab <- subset(DMtab5,
+               DMst == "T2",
+               select = c(sex, p1, a5, Dth, Y)) %>%
+   rename("T2Dth" = "Dth",
+          "T2pY" = "Y")
> nDtab <- subset(DMtab5,
+               DMst == "noDM",
+               select = c(sex, p1, a5, T1, T2, Dth, Y)) %>%
+   rename("nDT1i" = "T1",
+          "nDT2i" = "T2",
+          "nDDth" = "Dth",
+          "nDpY" = "Y")
> imTab <- full_join(full_join(T1tab, T2tab), nDtab)
> str(imTab, v = 0)

'data.frame':      800 obs. of  11 variables:
 $ sex   : Factor w/ 2 levels "M","W": NULL ...
 $ p1    : num  NULL ...
 $ a5    : Factor w/ 16 levels "[0,20)","[20,25)",...: NULL ...
 $ T1Dth: int  NULL ...
 $ T1pY  : num  NULL ...
 $ T2Dth: int  NULL ...
 $ T2pY  : num  NULL ...
 $ nDT1i: int  NULL ...
 $ nDT2i: int  NULL ...
 $ nDDth: int  NULL ...
 $ nDpY  : num  NULL ...
```

A final check of no small counts:

```
> for(cc in c("T1Dth", "T2Dth", "nDT1i", "nDT2i", "nDDth"))
+   {
+   cat("\n", cc, "-----")
+   print(table(pmin(imTab[,cc], 5), exclude = NULL))
+   }

T1Dth -----
  0   3   4   5 <NA>
49 31 19 592 109

T2Dth -----
  0   3   4   5 <NA>
108 11   7 578  96

nDT1i -----
  0   3   4   5 <NA>
27 20 18 696  39

nDT2i -----
  5
800

nDDth -----
```

```

5
800
> head(imTab, 20)
  sex  p1    a5 T1Dth    TipY T2Dth    T2pY nDT1i nDT2i nDDth    nDpY
1  M 1996 [0,20)    0 915.8905    0 42.84873 149    8 345 702821.6
2  W 1996 [0,20)    0 789.8946    0 40.32649 125    6 232 677245.7
3  M 1997 [0,20)    0 930.4257    NA 42.82546 134   13 352 708399.7
4  W 1997 [0,20)   NA 805.4004    0 38.58658 120   14 206 684744.5
5  M 1998 [0,20)   NA 922.9090    0 41.96372 123    7 288 712590.6
6  W 1998 [0,20)    0 828.0520    0 45.39014 124   15 210 690977.5
7  M 1999 [0,20)    0 928.6530    0 41.83641 152    8 293 716362.7
8  W 1999 [0,20)   NA 835.4524    0 50.76728 117    7 171 697057.8
9  M 2000 [0,20)   NA 967.2642    0 45.82341 149   18 312 720429.5
10 W 2000 [0,20)   NA 860.5414    0 45.38193 132    5 202 701878.7
11 M 2001 [0,20)   NA 1013.1328   0 57.19918 152   19 308 726136.7
12 W 2001 [0,20)   NA 902.5797    0 47.74196 138   16 226 707429.0
13 M 2002 [0,20)   NA 1064.6167   0 66.05133 155   28 268 730884.1
14 W 2002 [0,20)   NA 941.1170    0 64.95483 125   34 188 711979.8
15 M 2003 [0,20)    0 1114.4812   0 84.16496 149   22 281 734680.0
16 W 2003 [0,20)   NA 988.9774    0 92.75496 148   36 157 715787.6
17 M 2004 [0,20)    0 1187.5188   0 99.23477 174   31 253 737986.9
18 W 2004 [0,20)   NA 1066.9528   0 114.03970 151   36 180 719160.4
19 M 2005 [0,20)   NA 1248.2033   NA 109.44011 188   15 261 739806.6
20 W 2005 [0,20)   NA 1118.5640   0 125.65229 143   32 146 721192.7

```

We can then export the incidence-mortality file to a dump file and a .csv file:

```

> dump("imTab", file = "./imTab.R")
> write.csv(imTab, file = "./imTab.csv",
+           quote = FALSE, row.names = FALSE)

```

```

-----
Code: E:/workdata/707655/DMreg2020/r/mkTabs/a5Tab.rnw
Ends: 2022-03-16 at 07:38:32
Time elapsed:      00:00:00
-----

```

3.6 The complications files

First the paraphernalia:

```

> library( Epi )
> library( tidyverse )
> library( haven )
> source("E:/workdata/707655/util/elapsed.r")
> setwd("E:/workdata/707655/DMreg2020/r")
> start()

```

```

-----
Code: E:/workdata/707655/DMreg2020/r/mkCompl.rnw
Time: 2022-01-26 at 13:28:40
-----

```

Complications occurring in the entire Danish population (*i.e.* not only among diabetes patients) have been gathered in two SAS files:

wcompl: One record per person with at least one complication, key is **pnr**, and with further 34 variables, namely the date of first occurrence of each of the 34 (groups of) complications.

rcmpl: One record per person and recurrent complication (hypoglycaemia: **HpoG**, ketoacidosis: **Keto**, myocardial infarction: **MI** and stroke: **Str**). The key in the file is (**pnr**, **compl**, **doC**), and there are no other variables in the dataset.

3.6.1 The SAS programs generating the complications files

The first program, `10-labcomp` defines complications based on the lab-measurements in LABKA and DVDD. Since some measurements may actually be the same between the two data bases, we exclude any measurement less than 4 days after a previous one of the same kind.

We compute eGFR based on the plasma creatinine measurement and the sex and age of the persons at the date of measurement.

The diagnoses of moderate, severe and end stage kidney disease (**ModL**, **SevL**, **ESRL**) are defined as two measurements of eGFR below 60, 30, resp. 15 with at least 60 days interval. Correspondingly, diagnoses of micro- and macro-albuminuria (**MicA**, **MacA**) are defined as two measurements of albumin/creatinine ratio (mg/g) or albumin excretion (mg/24 h) above 30 resp. 300 with at least 60 days interval. Both for kidney disease and albuminuria, the date of the complication is defined as the date of the second measurement beyond the threshold.

Note that there are also kidney complications based exclusively on diagnosis and procedure codes (**ModL**, **SevL**, **ESRL**)

The first of each of the dates where these criteria are met are stored in a SAS data set `DMdat.micompl` with key (**pnr**,**compl**), and only non-key variable **doC**, date of first occurrence of the complication.

The second program, `10-compl` extracts complications from NPR, (from all types of records), and for each type of complication takes the first of these within each person.

The full listings of `.log` and `.lst` files from these SAS-programs (plus quite a few more) are in the document `v:\sdc\469drive\DMreg2020\tex\DMreg2020.pdf`

3.6.2 Converting SAS datasets to .Rda format

We now read the SAS datasets and convert them to R-datasets for easier access:

```
> system.time(wcompl <- read_sas("../data/wcompl.sas7bdat"))
  bruger    system forløbet
  28.95      0.48    53.80

> system.time(rcmpl <- read_sas("../data/rcmpl.sas7bdat"))
  bruger    system forløbet
   6.09      0.11     8.94

> names(wcompl) ; fCp(nrow(wcompl)) ; fCp(object.size(wcompl))
 [1] "PNR"      "doESRD" "doHypD" "doMI"    "doMedA" "doMinA" "doReti" "doTCI"  "doUppA"
[10] "doAFib"   "doIHDx" "doIStr" "doMicA"  "doModL" "doMAtd" "doModC" "doHF"   "doHpoG"
[19] "doHStr"   "doSevL" "doNeur" "doMacA"  "doKeto" "doESRL" "doSevC" "doAmp"  "doCVD"
[28] "doCbVD"   "doNefr" "doDNef" "doNefL"  "doIHD"  "doStr"  "doACD"  "doMajA"

 [1] 1,961,504
```

```
[1] 674,786,544
> names(rcompl) ; fCp(nrow(rcompl)) ; fCp(object.size(rcompl))
[1] "pnr" "compl" "doC"
[1] 2,389,593
[1] 103,650,064
```

Complication grouping

The grouping of complications comes from two different places; the formats defined the file `complfmt.csv`:

```
> fmt <- read.csv('../fmts/compfmt.csv', as.is = TRUE)
> a2t <- subset(fmt, FMTNAME == "$ab2abtx" & LABEL != 'Other')
> abn <- a2t$LABEL
> names(abn) <- a2t$START
> abb <- subset(fmt, FMTNAME == "$sub2grp" & LABEL != 'Other')
> print(with(abb, table(START, LABEL)), z = '.')
```

START	Amp	CbVD	CVD	DNef	HpoG	Keto	MAtd	NefL	Nefr	Neur	Reti
AFib	.	.	1	.	.	.	.	.	.	.	.
ESRD	1	.	.
ESRL	1	.	.	.
HF	.	.	1	.	.	.	.	.	.	.	.
HpoG	1	.	.	.	.	.	.
HStr	.	1	.	.	.	.	.	.	.	.	.
HypD	.	.	1	.	.	.	.	.	.	.	.
IHDx	.	.	1	.	.	.	.	.	.	.	.
IStr	.	1	.	.	.	.	.	.	.	.	.
Keto	1	.	.	.	.	.
MacA	.	.	.	1	.	.	.	.	.	.	.
MAtd	1	.	.	.	.
MedA	1	.	.	.	.	.	.	.	.	.	.
MI	.	.	1	.	.	.	.	.	.	.	.
MicA	.	.	.	1	.	.	.	.	.	.	.
MinA	1	.	.	.	.	.	.	.	.	.	.
ModC	1	.	.
ModL	1	.	.	.
Neur	1	.
Reti	1
SevC	1	.	.
SevL	1	.	.	.
TCI	.	1	.	.	.	.	.	.	.	.	.
UppA	1	.	.	.	.	.	.	.	.	.	.

```
> tt <- data.frame(with(abb, table(START, LABEL)))
> tt <- tt[tt$Freq==1,2:1]
> diag <- as.character(tt$START)
> grp <- as.character(tt$LABEL)
```

We can then list the groupings of the complications:

```
> print(data.frame(grp, abn[diag]),
+       right = FALSE,
+       row.names = FALSE)
```

```

grp  abn.diag.
Amp  MedA: Medium amputation
Amp  MinA: Minor amputation
Amp  UppA: Upper amputation
CbVD HStr: Haemmoragic stroke
CbVD IStr: Ischaemic stroke
CbVD TCI: Transient cerebral ischaemia
CVD  AFib: Atrial fibrillation
CVD  HF: Heart failure
CVD  HypD: Hypertensive disease
CVD  IHDx: non-MI Ischeamic heart disease
CVD  MI: Myocardial Infarction
DNef MacA: Macro-abuminuria
DNef MicA: Micro-abuminuria
HpoG HpoG: Hypoglyceamia
Keto Keto: Ketoacidosis
MAtd MATd: Macrovascular atherosclerotic disease
NefL ESRL: End-stage CKD (lab)
NefL ModL: Moderate CKD (lab)
NefL SevL: Severe CKD (lab)
Nefr ESRD: End-stage CKD
Nefr ModC: Moderate CKD
Nefr SevC: Severe CKD
Neur Neur: Neuropathy
Reti Reti: Retinopathy

```

The other source is the programming statements in the SAS-program `10-compel.sas`, where `min()` is used to define a new complication data as the earliest of a set of existing:

```

> prg <- read.table('../sas/10-compel.sas', sep='|', as.is=TRUE)[,1]
> (prg <- prg[grep('min\\(', prg)])
[1] " doIHD = min(doIHDx, doMI) ;"
[2] " doStr = min(doHStr, doIStr) ;"
[3] " doACD = min(doStr, doTCI, doIHD, doMAtd) ;"
[4] " doMajA= min(doUppA, doMedA) ;"
> vars <- gsub(' ', '',
+           gsub('= min\\(', ' ', ', ',
+           gsub(') ;', ' ', ', ',
+           gsub('do', ' ', prg)))
> (lv <- strsplit(vars, ' '))
[[1]]
[1] "IHD" "IHDx" "MI"

[[2]]
[1] "Str" "HStr" "IStr"

[[3]]
[1] "ACD" "Str" "TCI" "IHD" "MAtd"

[[4]]
[1] "MajA" "UppA" "MedA"
> pr <- function(x) cbind(x[01], x[-1])
> (xtra <- do.call(rbind, lapply(lv, pr)))
      [,1] [,2]
[1,] "IHD" "IHDx"
[2,] "IHD" "MI"

```

```

[3,] "Str"  "HStr"
[4,] "Str"  "IStr"
[5,] "ACD"  "Str"
[6,] "ACD"  "TCI"
[7,] "ACD"  "IHD"
[8,] "ACD"  "MAtd"
[9,] "MajA" "UppA"
[10,] "MajA" "MedA"
> grp <- c(grp, xtra[,1])
> diag <- c(diag, xtra[,2])
> dgr <- data.frame(grp, abn[diag])
> dgr <- dgr[!duplicated(dgr),]
> oo <- order(dgr[,1],dgr[,2])

```

Once this has been collected, can print the data frames that shows the groupings of the complications—note that this is not a hierarchical grouping, some complications occur twice on the right hand side:

```

> print(data.frame(Groups = abn[unique(dgr[,1])]),
+       right = FALSE,
+       row.names = FALSE)
Groups
Amp: Amputation
CbVD: Cerebrovascular disease
CVD: Cardiovascular Disease
DNef: Diabetic nephropathy
HpoG: Hypoglyceamia
Keto: Ketoacidosis
MAtd: Macrovascular atherosclerotic disease
NefL: Nephropathy (lab)
Nefr: Nephropathy
Neur: Neuropathy
Reti: Retinopathy
IHD: Ischeamic heart disease
Str: Stroke
ACD: Atherosclerotic cardiovascular disease
MajA: Major amputation
> print(dgr[oo,],
+       right = FALSE,
+       row.names = FALSE)
grp  abn.diag.
ACD  IHD: Ischeamic heart disease
ACD  MAtd: Macrovascular atherosclerotic disease
ACD  Str: Stroke
ACD  TCI: Transient cerebral ischaemia
Amp  MedA: Medium amputation
Amp  MinA: Minor amputation
Amp  UppA: Upper amputation
CbVD HStr: Haemmoragic stroke
CbVD IStr: Ischaemic stroke
CbVD TCI: Transient cerebral ischaemia
CVD  AFib: Atrial fibrillation
CVD  HF: Heart failure
CVD  HypD: Hypertensive disease
CVD  IHDx: non-MI Ischeamic heart disease
CVD  MI: Myocardial Infarction

```



```

DNef MacA: Macro-abuminuria
DNef MicA: Micro-abuminuria
HpoG HpoG: Hypoglyceamia
IHD IHDx: non-MI Ischeamic heart disease
IHD MI: Myocardial Infarction
Keto Keto: Ketoacidosis
MajA MedA: Medium amputation
MajA UppA: Upper amputation
MAtd MAtd: Macrovascular atherosclerotic disease
NefL ESRL: End-stage CKD (lab)
NefL ModL: Moderate CKD (lab)
NefL SevL: Severe CKD (lab)
Nefr ESRD: End-stage CKD
Nefr ModC: Moderate CKD
Nefr SevC: Severe CKD
Neur Neur: Neuropathy
Reti Reti: Retinopathy
Str HStr: Haemmoragic stroke
Str IStr: Ischaemic stroke

```

Here is a bit more elaborate print of the groupings:

```

> dd <- sapply(dgr[oo,], as.character)
> wh <- cumsum(2 - duplicated(dd[,1]) )
> xx <- dd[1,,drop=FALSE]
> xx[,1] <- '-----'
> xx[,2] <- ''
> xx <- xx[rep(1,wh[length(wh)]+1),]
> xx[wh,] <- dd

```

Complication names

In order to get the long informative names of the complications we read the `.csv` file which is the base for the generating the format used for grouping and labeling of complications. This has the long form of the complications labels:

```

> cnam <- read.csv( "../fmts/compfmt.csv", header=TRUE )
> cnam <- subset( cnam, FMTNAME=="$abb2txt" )
> compl.names <- as.character( cnam$LABEL )
> names( compl.names ) <- cnam$START
> cbind( compl.names )
      compl.names
AtCV "Atherosclerotic CVD"
MAtd "Macrovascular atherosclerotic disease"
ACD  "Atherosclerotic cardiovascular disease"
AFib "Atrial fibrillation"
HF   "Heart failure"
IHD  "Ischeamic heart disease"
IHDx "non-MI Ischeamic heart disease"
MI   "Myocardial Infarction"
HypD "Hypertensive Disease"
HpoG "Hypoglyceamia"
CbVD "Cerebrovascular disease"
Str  "Stroke"
IStr "Ischaemic stroke"
HStr "Haemmoragic stroke"

```

```

TCI "Transient cerebral ischaemia"
Keto "Ketoacidosis"
MajA "Major amputation"
UppA "Upper amputation"
MedA "Medium amputation"
MinA "Minor amputation"
Neur "Neuropathy"
Reti "Retinopathy"
ModC "Moderate CKD"
SevC "Severe CKD"
ESRD "End-stage CKD"
ModL "Moderate CKD (lab)"
SevL "Severe CKD (lab)"
ESRL "End-stage CKD (lab)"
Amp "Amputation"
CVD "Cardiovascular Disease"
Nefr "Nephropathy"
NefL "Nephropathy (lab)"
DNef "Diabetic nephropathy"
MicA "Micro-abuminuria"
MacA "Macro-abuminuria"

```

Now `compl.names` is a character vector with the long names of the complications. The `names` attribute of this vector is the abbreviations of the complications used in `fcompl` and `wcompl`; we see that they are all there:

```

> (zz <- sort(match(paste0("do", names(compl.names)), names(wcompl))))
 [1]  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29
[29] 30 31 32 33 34 35
> table(diff(zz))
 1
33

```

—if they were not, there would be NAs in the vector or the sequence would not be complete. The `table` also demonstrates that there are 33 entries in `zz`.

The point of using the abbreviations as `names` attributes of the `compl.names` is that you can get the official long text by indexing with the abbreviation:

```

> compl.names["CbVD"]
           CbVD
"Cerebrovascular disease"

```

which is useful when labeling tables and graphs.

Number of recurrent events per person

Here is an account of how many persons have how many recurrences of each of the recurrent types of complications:

```

> nn <- data.frame(N=1)
> for( nm in unique(rcompl$compl) )
+   {
+     dd <- data.frame(with(subset(rcompl, compl == nm), table(table(pnr))))
+     names(dd) <- c("N", nm)
+     dd$N <- as.numeric(as.character(dd$N))
+   }

```

```

+   nn <- merge(dd, nn, all=TRUE)
+ }
> mm <- as.matrix(nn[,-1])
> row.names(mm) <- nn$N
> rCtable( mm[1:30,] )

```

	Keto	HpoG	Str	MI
1	7,339	27,173	145,540	105,892
2	3,533	12,666	99,791	70,329
3	1,718	5,152	58,389	45,505
4	972	2,771	36,139	33,995
5	606	1,518	21,627	25,283
6	351	971	13,361	17,954
7	242	640	8,175	12,189
8	185	407	5,129	8,344
9	134	325	3,310	5,533
10	94	266	2,198	3,968
11	94	190	1,434	2,746
12	62	147	1,008	1,991
13	54	92	664	1,354
14	48	106	475	1,034
15	40	70	319	754
16	44	67	232	579
17	21	42	178	399
18	31	49	134	335
19	27	41	101	258
20	21	28	69	199
21	16	30	40	136
22	11	25	40	103
23	15	20	32	89
24	7	16	26	75
25	7	19	17	63
26	11	16	17	51
27	9	11	11	38
28	6	17	11	23
29	7	12	11	27
30	11	10	9	18

Grooming the data frames

We want to store the datasets as `data.frames`, we remove the `label` and the `format.sas` attributes of the `pnr` variable:

```

> wcompl <- plyr::rename(as.data.frame(wcompl), c("PNR"="pnr"))
> attr(wcompl$pnr, "format.sas") <- NULL
> attr(wcompl$pnr, "label") <- NULL
> attr(wcompl$doIHD, "label") <- NULL
> attr(wcompl$doStr, "label") <- NULL
> attr(wcompl$doACD, "label") <- NULL
> attr(wcompl$doMajA, "label") <- NULL
> rcompl <- as.data.frame(rcompl)
> attr(rcompl$pnr, "format.sas") <- NULL
> attr(rcompl$pnr, "label") <- NULL
> attr(rcompl$compl, "label") <- NULL

```

Finally we convert the date variables in data frames to class `cal.yr`:

```
> wcompl <- cal.yr(wcompl)
> rcompl <- cal.yr(rcompl)
```

We save these as R-datasets and document how long it takes to read them back in—note that we save the names vector with each of the files, too.

```
> save(wcompl, compl.names, file = "../data/wcompl.Rda")
> system.time( load(file = "../data/wcompl.Rda", v=T))
```

```
Loading objects:
wcompl
compl.names
bruger system forløbet
3.47 0.03 3.52
```

```
> save(rcompl, compl.names, file = "../data/rcompl.Rda")
> system.time( load(file = "../data/rcompl.Rda", v=T))
```

```
Loading objects:
rcompl
compl.names
bruger system forløbet
1.84 0.03 1.87
```

Thus these data sets provide for a reading time which is a factor 5–10 smaller than reading from the SAS files.

3.6.3 Microvascular complications

The dates for microvascular complications are a bit special. The lab-based complications `doMicA`, `doMacA`, `doModL`, `doSevL` and `doESRL` are difficult to use; only information after 2010 is available, and information for Region Midt is absent.

Moreover the lab-based micro-vascular complications are always ordered, such that `doMicA < doMacA`, the opposite inequality does not occur:

```
> with(wcompl,
+   ftable(mic = !is.na(doMicA),
+         mac = !is.na(doMacA),
+         "mic<mac" = doMicA < doMacA,
+         exclude = NULL,
+         col.vars = 1:2))
      mic FALSE TRUE TRUE
      mac FALSE TRUE FALSE TRUE
mic<mac
TRUE      0      0      0 21565
NA      1751180 23462 165297      0
```

You will note that there are occurrences of a valid value of `doMacA`, with NA for `doMicA`. So the meaning of `doMicA` is “date of microalbuminuria only”. If you want the date of “date of *at least* microalbuminuria”, you must use for example:

```
> doalMicA <- pmin(doMicA, doMacA, na.rm = TRUE)
```

This is also the case for the lab-based kidney measurements:


```

      NA    FALSE      .      .      .      .      .      .      .
      TRUE      .      .      .      .      .      .      .
      NA      .      .      .      .      .      .      3053
NA    FALSE FALSE      .      .      .      .      .      .
      TRUE      .      .      .      .      .      .      .
      NA      .      .      .      .      .      11699      .
      TRUE FALSE      .      .      .      .      .      .
      TRUE      .      .      .      .      .      .      .
      NA      .      .      .      .      .      11027      .
      NA    FALSE      .      .      .      253      .      .
      TRUE      .      .      .      .      406      .      .
      NA      1837804  28830  2525      .      62440      .      .

```

Finally note that valid dates for the microvascular complications vary considerably by calendar time:

```

> MicA <- data.frame(table(pmax(1995,floor(wcompl$doMicA)))) %>% rename(MicA = Freq)
> MacA <- data.frame(table(pmax(1995,floor(wcompl$doMacA)))) %>% rename(MacA = Freq)
> ModL <- data.frame(table(pmax(1995,floor(wcompl$doModL)))) %>% rename(ModL = Freq)
> SevL <- data.frame(table(pmax(1995,floor(wcompl$doSevL)))) %>% rename(SevL = Freq)
> ESRL <- data.frame(table(pmax(1995,floor(wcompl$doESRL)))) %>% rename(ESRL = Freq)
> ModC <- data.frame(table(pmax(1995,floor(wcompl$doModC)))) %>% rename(ModC = Freq)
> SevC <- data.frame(table(pmax(1995,floor(wcompl$doSevC)))) %>% rename(SevC = Freq)
> ESRD <- data.frame(table(pmax(1995,floor(wcompl$doESRD)))) %>% rename(ESRD = Freq)
> MicA <- mutate(MicA, Var1 = as.numeric(as.character(Var1)))
> MacA <- mutate(MacA, Var1 = as.numeric(as.character(Var1)))
> ModL <- mutate(ModL, Var1 = as.numeric(as.character(Var1)))
> SevL <- mutate(SevL, Var1 = as.numeric(as.character(Var1)))
> ESRL <- mutate(ESRL, Var1 = as.numeric(as.character(Var1)))
> ModC <- mutate(ModC, Var1 = as.numeric(as.character(Var1)))
> SevC <- mutate(SevC, Var1 = as.numeric(as.character(Var1)))
> ESRD <- mutate(ESRD, Var1 = as.numeric(as.character(Var1)))
> when <- full_join(MicA,
+                   MacA) %>%
+   full_join(ModL) %>%
+   full_join(SevL) %>%
+   full_join(ESRL) %>%
+   full_join(ModC) %>%
+   full_join(SevC) %>%
+   full_join(ESRD)
> M <- as.matrix(when[order(when$Var1),])
> M <- ifelse(is.na(M), 0, M)
> rownames(M) <- M[,1]
> M <- addmargins(M, 1)
> # print so that small numbers are masked
> rCtable(M[,-1], w = 7)

```

	MicA	MacA	ModL	SevL	ESRL	ModC	SevC	ESRD
1995	.	.	.	.	.	1,675	.	366
1996	.	.	.	.	.	732	.	661
1997	.	.	.	.	.	825	.	592
1998	.	.	.	.	.	909	.	593
1999	.	.	.	.	.	1,364	.	841
2000	*	.	.	.	.	1,419	.	1,532
2001	*	*	.	.	.	1,702	.	1,784
2002	*	5	.	.	.	2,083	.	1,877
2003	11	*	.	.	.	2,421	.	1,989

2004	28	8	.	.	.	2,675	*	2,165
2005	199	55	.	.	.	2,913	.	2,271
2006	440	84	.	.	.	3,093	.	2,458
2007	1,715	485	.	.	.	3,443	*	2,560
2008	2,098	679	.	.	.	3,571	10	2,529
2009	2,746	816	32	7	5	4,114	7	2,664
2010	4,553	1,266	6,630	497	164	4,804	6	2,610
2011	7,977	2,784	11,904	839	389	6,143	41	2,656
2012	11,072	2,846	15,270	1,129	348	5,655	422	2,797
2013	10,815	2,043	15,420	1,372	342	6,118	937	2,811
2014	12,351	3,166	46,568	3,952	1,047	5,868	819	2,810
2015	14,301	3,506	46,600	4,165	1,204	5,947	1,027	2,784
2016	20,077	4,845	63,689	6,797	1,451	6,378	1,146	2,911
2017	24,422	5,492	44,267	6,402	1,502	5,387	1,420	2,818
2018	26,968	6,021	39,326	7,357	2,027	4,236	970	2,661
2019	27,131	6,265	37,680	8,948	2,618	4,709	1,688	2,564
2020	19,953	4,659	28,627	7,292	2,207	3,502	1,209	2,442
Sum	186,862	45,027	356,013	48,757	13,304	91,686	9,704	54,746

Note that this table is a table of persons in the entire Danish population with each of these complications, tabulated by the `first` occurrence of the complication.

3.6.4 Using the complications data sets

This is the only part of the section you need read. There are two datasets available, both with complications in the *entire* Danish population.

Essentially the SAS datasets have been read and converted to R-datasets

wcompl: One record per person with at least one complication, key is **pnr**, and with further 34 variables, namely the date of first occurrence of each of the 34 (groups of) complications. The variable with data of complication **XXX** is **doXXX**

rcmpl: One record per person and recurrent complication (**HpoG**, **Keto**, **MI**, **Str**); the key is (**pnr**, **compl**, **doC**—date of complication), and there are no other variables in the dataset.

When loading each of the datasets you do not only get the complications datasets, but also the human readable labels of each of the variables in `compl.names`.

```
> system.time(load(file = "../data/wcompl.Rda", v=T))
Loading objects:
  wcompl
  compl.names
  bruger    system forløbet
    3.35     0.08     3.43
> names(wcompl)
 [1] "pnr"      "doESRD" "doHypD" "doMI"    "doMedA" "doMinA" "doReti" "doTCI"  "doUppA"
[10] "doAFib"  "doIHDx" "doIStr" "doMicA"  "doModL" "doMAtd" "doModC" "doHF"   "doHpoG"
[19] "doHStr"  "doSevL" "doNeur" "doMacA"  "doKeto" "doESRL" "doSevC" "doAmp"  "doCVD"
[28] "doCbVD"  "doNefr" "doDNef" "doNefL"  "doIHD"  "doStr"  "doACD"  "doMajA"
> system.time(load(file = "../data/rcmpl.Rda", v=T))
Loading objects:
  rcmpl
  compl.names
  bruger    system forløbet
    1.84     0.00     1.84
> names(rcmpl)
 [1] "pnr"      "compl"  "doC"
```

The vector `compl.names` is a *named* character vector, the names are the abbreviations, they can be used as indices, e.g.:

```
> compl.names['CVD']
      CVD
"Cardiovascular Disease"
```

The grouping of complications are as follows; note that some groups appear both sides, and some appear more than once on the RHS—it is not a strict hierarchical grouping:

```
> print(as.data.frame(xx),
+       row.names = FALSE,
+       col.names = FALSE,
+       right = FALSE)
```



```

grp    abn.diag.
-----
ACD    IHD: Ischeamic heart disease
ACD    MATd: Macrovascular atherosclerotic disease
ACD    Str: Stroke
ACD    TCI: Transient cerebral ischaemia
-----
Amp    MedA: Medium amputation
Amp    MinA: Minor amputation
Amp    UppA: Upper amputation
-----
CbVD   HStr: Haemmoragic stroke
CbVD   IStr: Ischaemic stroke
CbVD   TCI: Transient cerebral ischaemia
-----
CVD    AFib: Atrial fibrillation
CVD    HF: Heart failure
CVD    HypD: Hypertensive disease
CVD    IHDx: non-MI Ischeamic heart disease
CVD    MI: Myocardial Infarction
-----
DNef   MacA: Macro-abuminuria
DNef   MicA: Micro-abuminuria
-----
HpoG   HpoG: Hypoglyceamia
-----
IHD    IHDx: non-MI Ischeamic heart disease
IHD    MI: Myocardial Infarction
-----
Keto   Keto: Ketoacidosis
-----
MajA   MedA: Medium amputation
MajA   UppA: Upper amputation
-----
MATd   MATd: Macrovascular atherosclerotic disease
-----
NefL   ESRL: End-stage CKD (lab)
NefL   ModL: Moderate CKD (lab)
NefL   SevL: Severe CKD (lab)
-----
Nefr   ESRD: End-stage CKD
Nefr   ModC: Moderate CKD
Nefr   SevC: Severe CKD
-----
Neur   Neur: Neuropathy
-----
Reti   Reti: Retinopathy
-----
Str    HStr: Haemmoragic stroke
Str    IStr: Ischaemic stroke
-----

```

The basic hierarchical grouping of all ICD-10-codes is in the output file
v:\sdc\469drive\DMreg2020\sas\10-compl.lst

Code: E:/workdata/707655/DMreg2020/r/mkCompl.rnw

```
Ends: 2022-01-26 at 13:30:36
Time elapsed:      00:01:56
```

3.7 The RMPS database

```
> library( Epi )
> library( tidyverse )
> library( haven )
> setwd("E:/workdata/707655/DMreg2020/r")
> clear()
> source("E:/workdata/707655/util/elapsed.r")
> start()
```

```
Code: E:/workdata/707655/DMreg2020/r/mkRMPS.rnw
Time: 2022-01-25 at 17:02:02
```

The RMPS (prescription register) is very large, each year some 30 mil. records, so it is a tall order to read this by R, so we read it by SAS and created a number of SAS-files, each with a subgroup of drugs, see 00-rmps. These are then read in turn by R and saved in R-format.

3.7.1 The ATC codes with names

We extract the ATC codes and corresponding names from the DST format file and saved it as a character vector with a names attribute equal to the ATC codes:

```
> atcnam <- read_sas( paste0("../data/rmps/atcnam.sas7bdat") )
> names(atcnam) <- tolower(names(atcnam))
> atclab <- atcnam$label
> names(atclab) <- atcnam$start
> cbind(atclab[1:10])
      [,1]
A      "A Fordøjelsesorganer og stofskifte"
A01    "A01 midler mod sygdomme i mundhulen"
A01A   "A01A stomatologica"
A01AA  "A01AA midler mod caries"
A01AA01 "A01AA01 natriumfluorid"
A01AA02 "A01AA02 natriummonofluorophosphat"
A01AA03 "A01AA03 olaflur"
A01AA04 "A01AA04 stannofluorid"
A01AA30 "A01AA30 kombinationer"
A01AA51 "A01AA51 natriumfluorid, komb."
```

This means that we can subset the `atclab` by ATC-codes to mimic the format machinery of SAS.

3.7.2 Converting to .Rda

The SAS program 00-labka contains the names and the labels of the files, so we read the SAS-code and extract the file names and the labels for use in the R-files:

```
> whf <- shell("dir ..\\data\\rmps", intern=TRUE)
> whf <- gsub(".sas7bdat", "",
+           fgrep("s7b",
+           unlist(strsplit(fgrep('s7b', whf), " "))))
> (whf <- whf[whf != "atcnam"])
[1] "ins" "oad" "plate" "card" "blpr" "renal" "lipid"
```

We now have the filenames (without extension) — note all filenames are in lower case.

Then we read the SAS-files, coerce them to `data.frames`, strip the disturbing attributes of the variables, convert the dispense date to `cal.yr`, assigns the proper label to the `label` attribute of the data frame. It is then assigned to a object with the proper name and subsequently saved in an R-file with the same name. For convenience the `atcnam` is saved in the same file too.

```
> for( fn in whf )
+ {
+ cat( "\n-----\n",
+      fn, " start at", format( Sys.time(), "%T" ) )
+ system.time(
+ xx <- read_sas( paste0("../data/rmps/", fn, ".sas7bdat") ) )
+ names(xx) <- tolower(names(xx))
+ xx <- cal.yr(as.data.frame(xx))
+ for( i in names(xx)) attr( xx[,i], "format.sas" ) <- NULL
+ for( i in names(xx)) attr( xx[,i], "label" ) <- NULL
+ xx <- mutate(xx, doso = factor(doso),
+             atc = factor(atc))
+ attr(xx, "label") <- fn
+ assign( fn, xx )
+ system.time(
+ save( list = c(fn,'atclab'),
+       file = paste0("e:/workdata/707655/DMreg2020/data/rmps/", fn, ".Rda" ) ) )
+ cat(", ended at", format(Sys.time(), "%T"), '---',
+     fn, "has", fCp(nrow(xx)), "rows.\n" )
+ tt <- table(xx$atc)
+ names(tt) <- atclab[names(tt)]
+ print(fCp(cbind(tt), w=15))
+ rm(list = fn)
+ }
```

```
-----
ins start at 17:02:03, ended at 17:03:53 --- ins has 12,975,778 rows.
tt
A10AB01 insulin (human) 1,566,324
A10AB04 insulin lispro 133,300
A10AB05 insulin aspart 2,315,408
A10AB06 insulin glulisin 36,834
A10AC01 insulin (human) 3,328,285
A10AD01 insulin (human) 1,014,185
A10AD04 insulin lispro 20,547
A10AD05 insulin aspart 1,397,187
A10AD06 insulin degludec og insulin aspart 723
A10AE01 insulin (human) 186
A10AE04 insulin glargin 1,604,904
A10AE05 insulin detemir 991,378
A10AE06 insulin degludec 536,802
A10AE54 insulin glargin og lixisenatid 188
A10AE56 insulin degludec og liraglutid 29,527
```

 oad start at 17:03:54, ended at 17:08:09 --- oad has 26,420,327 rows.

	tt	
A10BA02	metformin	15,212,104
A10BB01	glibenclamid	1,298,487
A10BB03	tolbutamid	428,308
A10BB04	glibornurid	117
A10BB07	glipizid	676,523
A10BB09	gliclazid	608,828
A10BB12	glimepirid	3,132,822
A10BD03	metformin og rosiglitazon	115,270
A10BD04	glimepirid og rosiglitazon	282
A10BD07	metformin og sitagliptin	463,355
A10BD08	metformin og vildagliptin	400,093
A10BD09	pioglitazon og alogliptin	69
A10BD10	metformin og saxagliptin	669
A10BD11	metformin og linagliptin	3,981
A10BD13	metformin og alogliptin	16,822
A10BD15	metformin og dapagliflozin	26,496
A10BD16	metformin og canagliflozin	694
A10BD19	linagliptin og empagliflozin	307
A10BD20	metformin og empagliflozin	54,166
A10BD21	saxagliptin og dapagliflozin	1,076
A10BD23	metformin og ertugliflozin	82
A10BD24	sitagliptin og ertugliflozin	120
A10BF01	acarbose	112,753
A10BG02	rosiglitazon	41,560
A10BG03	pioglitazon	21,648
A10BH01	sitagliptin	607,901
A10BH02	vildagliptin	116,271
A10BH03	saxagliptin	47,726
A10BH04	alogliptin	17,629
A10BH05	linagliptin	179,837
A10BJ01	exenatid	47,574
A10BJ02	liraglutid	1,490,359
A10BJ03	lixisenatid	3,627
A10BJ05	dulaglutid	52,492
A10BJ06	semaglutid	367,327
A10BK01	dapagliflozin	268,353
A10BK02	canagliflozin	22,905
A10BK03	empagliflozin	351,631
A10BK04	ertugliflozin	307
A10BX02	repaglinid	229,665
A10BX03	nateglinid	91

 plate start at 17:08:11, ended at 17:15:58 --- plate has 41,299,591 rows.

	tt	
B01AC04	clopidogrel	5,045,362
B01AC06	acetylsalicylsyre	29,876,832
B01AC07	dipyridamol	4,926,849
B01AC11	iloprost	1*
B01AC13	abciximab	*
B01AC22	prasugrel	43,876
B01AC24	ticagrelor	264,868
B01AC30	kombinationer	1,141,793

 card start at 17:15:59, ended at 17:17:11 --- card has 7,886,282 rows.

tt
 C01DA02 glyceryltrinitrat 2,508,482
 C01DA08 isosorbiddinitrat 1,800,430
 C01DA14 isosorbidmononitrat 3,370,900
 C01DX16 nicorandil 206,470

 blpr start at 17:17:12, ended at 17:45:06 --- blpr has 115,522,295 rows.

tt
 C02AB01 methyldopa (L-form) 78,782
 C02AC01 clonidin 15,387
 C02AC02 guanfacin 12,342
 C02AC05 moxonidin 552,574
 C02CA01 prazosin 171,743
 C02CA04 doxazosin 925,237
 C02CA06 urapidil 228
 C02DB02 hydralazin 21,260
 C02DG01 pinacidil 13,460
 C02KX01 bosentan 9
 C03AB01 bendroflumethiazid og kalium 20,160,600
 C03AB02 hydroflumethiazid og kalium 76,876
 C03BA02 quinethazon 5
 C03BA03 clopamid 78,018
 C03BA04 chlortalidon 15,957
 C03BA05 mefrusid 15,114
 C03BA08 metolazon 79
 C03BA11 indapamid 448,937
 C03BB03 clopamid og kalium 20,769
 C03CA01 furosemid 19,492,530
 C03CA02 bumetanid 552,479
 C03CB02 bumetanid og kalium 163,788
 C03DA01 spironolacton 4,222,439
 C03DA02 kaliumcanrenoat 23
 C03DA04 eplerenon 112,124
 C03DB01 amilorid 75,666
 C03EA01 hydrochlorthiazid og kaliumbesparende midler 2,656,043
 C03EB01 furosemid og kaliumbesparende midler 164,943
 C03EB02 bumetanid og kaliumbesparende midler 24,067
 C03XA01 tolvaptan 334
 C03AA01 bendroflumethiazid 389,460
 C03AA02 hydroflumethiazid 2,728
 C03AA03 hydrochlorthiazid 40,361
 C03AA04 chlorthiazid 705
 C03AA05 polythiazid 653
 C07AB02 metoprolol 20,796,059
 C07AB03 atenolol 2,837,214
 C07AB04 acebutolol 38,062
 C07AB05 betaxolol 34,949
 C07AB07 bisoprolol 1,993,659
 C07AB12 nebivolol 173,400
 C07AG01 labetalol 173,422
 C07AG02 carvedilol 3,122,148
 C07BA06 timolol og thiazider 4,281
 C07BB02 metoprolol og thiazider 191,685

C07BB12	nebivolol og thiazider	293
C07CA03	pindolol og andre diuretica	12,050
C07CB03	atenolol og andre diuretica	278,888
C07FB02	metoprolol og felodipin	84,825
C07AA01	alprenolol	10,363
C07AA02	oxprenolol	9,280
C07AA03	pindolol	266,693
C07AA05	propranolol	3,015,618
C07AA06	timolol	41,138
C07AA07	sotalol	987,377
C07AA16	tertatolol	261
C08CA01	amlodipin	19,351,278
C08CA02	felodipin	2,814,323
C08CA03	isradipin	231,268
C08CA04	nicardipin	3,199
C08CA05	nifedipin	1,060,674
C08CA06	nimodipin	1,640
C08CA08	nitrendipin	79,457
C08CA09	lacidipin	137,392
C08CA10	nilvadipin	4,612
C08CA13	lercanidipin	1,628,898
C08CX01	mibefradil	2,800
C08DA01	verapamil	3,026,825
C08DA51	verapamil, kombinationer	20,658
C08DB01	diltiazem	2,581,886

 renal start at 17:45:11, ended at 17:55:36 --- renal has 54,315,285 rows.
 tt

C09BA01	captopril og diuretica	21,535
C09BA02	enalapril og diuretica	3,502,485
C09BA03	lisinopril og diuretica	654,469
C09BA04	perindopril og diuretica	217,794
C09BA05	ramipril og diuretica	1,021,665
C09BA07	benazepril og diuretica	1,458
C09BA15	zofenopril og diuretica	*
C09BB02	enalapril og lercanidipin	144
C09BB04	perindopril og amlodipin	1,083
C09CA01	losartan	10,951,981
C09CA02	eprosartan	106,462
C09CA03	valsartan	535,351
C09CA04	irbesartan	636,247
C09CA06	candesartan	1,971,856
C09CA07	telmisartan	355,332
C09CA08	olmesartanmedoxomil	64,885
C09DA01	losartan og diuretica	6,100,039
C09DA02	eprosartan og diuretica	38,061
C09DA03	valsartan og diuretica	520,336
C09DA04	irbesartan og diuretica	368,190
C09DA06	candesartan og diuretica	571,726
C09DA07	telmisartan og diuretica	202,328
C09DA08	olmesartanmedoxomil og diuretica	29,728
C09DB01	valsartan og amlodipin	92,615
C09DX01	valsartan, amlodipin og hydrochlorthiazid	7,642
C09DX04	valsartan og sacubitril	36,989
C09XA02	aliskiren	79,962
C09XA52	aliskiren og hydrochlorthiazid	3,647

C09AA01	captopril	1,064,796
C09AA02	enalapril	12,344,386
C09AA03	lisinopril	1,345,729
C09AA04	perindopril	1,553,092
C09AA05	ramipril	7,541,692
C09AA06	quinapril	147,955
C09AA07	benazepril	41,480
C09AA09	fosinopril	67,706
C09AA10	trandolapril	2,109,950
C09AA13	moexipril	4,478
C09AA15	zofenopril	*

lipid start at 17:55:38, ended at 18:02:10 --- lipid has 38,393,211 rows.

	tt	
C10AB01	clofibrat	2,504
C10AB02	bezafibrat	66,157
C10AB04	gemfibrozil	457,747
C10AC01	colestyramin	256,383
C10AC02	colestipol	33,726
C10AC04	colesevelam	19,689
C10AD06	acipimox	59,837
C10AD52	nicotinsyre, kombinationer	11,373
C10AX09	ezetimib	803,225
C10AX13	evolocumab	393
C10AX14	alirocumab	257
C10BA02	simvastatin og ezetimib	36,692
C10BA05	atorvastatin og ezetimibe	13,742
C10AA01	simvastatin	24,553,309
C10AA02	lovastatin	267,562
C10AA03	pravastatin	814,887
C10AA04	fluvastatin	215,550
C10AA05	atorvastatin	8,599,412
C10AA06	cerivastatin	28,651
C10AA07	rosuvastatin	2,152,115

3.7.3 Retrieving the data for each ATC group

Thus, for example if you need the lipid lowering drugs you just do:

```
> system.time(load("e:/workdata/707655/DMreg/data/rmps/lipid.Rda", v = T))
```

Loading objects:

```
lipid
atclab
bruger    system forløbet
26.99    0.29    27.44
```

```
> str(lipid, v = 0)
```

```
'data.frame':      36224144 obs. of  8 variables:
 $ pnr      : chr    ...
 $ eksd     : 'cal.yr' num  NULL ...
 $ apk      : num  NULL ...
 $ doso     : Factor w/ 221 levels "", "0000000", "0000001", ...: NULL ...
 $ atc      : Factor w/ 20 levels "C10AB01", "C10AB02", ...: NULL ...
 $ strnum   : num  NULL ...
 $ strunit  : chr    ...
```

```

$ packsize: num NULL ...
- attr(*, "label")= chr ...
> attr(lipid, "label")
[1] "lipid"
> fCp(object.size(lipid))
[1] 2,105,797,376

```

The last use of `attr` is necessary because `v=0` also cuts the the first (and only) element of the `label` attribute, so if you want a human readable label this is what to do.

```

-----
Code: E:/workdata/707655/DMreg2020/r/mkRMPS.rnw
Ends: 2022-01-25 at 18:02:42
Time elapsed:      01:00:40
-----

```

3.8 The LABKA database

```

> library(Epi)
> library(tidyverse)
> library(haven)
> folder <- "E:/workdata/707655/DMreg2020/data/"
>   setwd("E:/workdata/707655/DMreg2020/r")
>   source("E:/workdata/707655/util/elapsed.r")
> start()

```

```

-----
Code: E:/workdata/707655/DMreg2020/r/mkLABKA.rnw
Time: 2022-01-31 at 19:57:28
-----

```

LABKA measurements are in a very large file, approx. 350 mil. records, so we have read the file and created 26 sas-files each with a separate type of measurement in the folder:
E:\workdata\707655\DMreg2020\data\labka.

3.8.1 SAS splitting of the LABKA data.

3.8.2 Converting to .Rda

The SAS program 00-labka contains the names and the labels of the files, so we read the SAS-code and extract the file names and the labels for use in R:

```

> ll <- read.table("../sas/00-labka.log", sep="/")[,1]
> ll <- grep("label", ll, value = TRUE)
> dot <- sapply(strsplit(ll, ""), function(x) which(x == "."))
> eql <- sapply(strsplit(ll, ""), function(x) which(x == "="))
> rbr <- sapply(strsplit(ll, ""), function(x) which(x == "))")
> nam <- gsub(" ", "", substr(ll, dot+1, dot+4))
> lab <-      substr(ll, eql+2, rbr-2)
> nam <- tolower(nam)
> names(lab) <- nam
> cbind(lab)

```



```

lab
hba1 "Hba1c"
gluc "Glukose"
glu0 "Glukose 0"
gl30 "Glukose 30"
gl120 "Glukose 120"
tchl "Total kolesterol"
ldl "LDL kolesterol"
hdl "HDL kolesterol"
vldl "VLDL kolesterol"
trig "Triglycerid"
plcr "Plasma Kreatinin"
uacr "Ualbcrea"
pota "Kalium"
sodi "Natrium"
tsh "TSH"
cpep "C-peptid/Proinsulin"
crp "CRP"
gad "GAD65"
egfr "eGFR"
gfr "GFR"
alat "ALAT"
alcp "Basisk fosfatase"
cobl "Cobalamin"
trmb "Trombocytter"
leuc "Leucocytter"
hmgb "Hæmoglobin"

```

We now have the filenames (without extension) — note all filenames are in lower case; they are in the `names` attribute of the `lab` vector of labels of the various types of measurements.

Then we read the SAS-files, coerce them to `data.frames`, strip the disturbing attributes of the variables, assigns the proper label to the `label` attribute of the data frame, and convert the date variable to `cal.yr`. It is then assigned to a object with the proper name and subsequently saved in an R-file with the correct name.

```

> for (fn in names(lab))
+ {
+   cat(substr(paste0(fn, " "), 1, 4),
+       "start at", format(Sys.time(), "%T"))
+   xx <- read_sas(paste0(folder, "labka/", fn, ".sas7bdat"))
+   xx <- as.data.frame(xx)
+   for (i in names(xx)) attr(xx[,i], "format.sas") <- NULL
+   attr(xx$SAMPLINGTIME, "units") <- NULL
+   attr(xx, "label") <- lab[fn]
+   xx <- cal.yr(xx)
+   xx$numval <- as.numeric(gsub(",", ".", xx$VALUE))
+   assign(fn, xx)
+   save(list = fn,
+       file = paste0(folder, "labka/", fn, ".Rda"))
+   cat(" end at", format(Sys.time(), "%T"),
+       "Nrow =", paste(fCp(nrow(xx), w = 10), "\n"))
+   rm(list = fn)
+ }
hba1 start at 19:57:28 end at 20:00:01 Nrow = 11,944,532
gluc start at 20:00:01 end at 20:01:50 Nrow = 8,299,695
glu0 start at 20:01:50 end at 20:02:00 Nrow = 755,395

```

```

gl30 start at 20:02:00 end at 20:02:01 Nrow =    10,117
gl120 start at 20:02:01 end at 20:02:01 Nrow =    68,027
tchl start at 20:02:01 end at 20:04:28 Nrow = 11,553,805
ldl start at 20:04:28 end at 20:06:45 Nrow = 10,943,118
hdl start at 20:06:45 end at 20:09:03 Nrow = 11,169,095
vldl start at 20:09:03 end at 20:09:25 Nrow =  1,799,649
trig start at 20:09:25 end at 20:11:53 Nrow = 11,486,195
plcr start at 20:11:53 end at 20:18:29 Nrow = 31,203,065
uacr start at 20:18:29 end at 20:18:59 Nrow =  2,468,127
pota start at 20:18:59 end at 20:24:45 Nrow = 29,228,335
sodi start at 20:24:45 end at 20:30:39 Nrow = 29,211,285
tsh start at 20:30:39 end at 20:33:22 Nrow = 12,638,509
cpep start at 20:33:22 end at 20:33:24 Nrow =   175,615
crp start at 20:33:24 end at 20:37:21 Nrow = 19,725,052
gad start at 20:37:21 end at 20:37:22 Nrow =    34,598
egfr start at 20:37:22 end at 20:43:03 Nrow = 28,886,389
gfr start at 20:43:03 end at 20:43:03 Nrow =    1,991
alat start at 20:43:03 end at 20:47:21 Nrow = 21,494,445
alcp start at 20:47:21 end at 20:50:35 Nrow = 15,829,034
cobl start at 20:50:35 end at 20:51:57 Nrow =  5,914,858
trmb start at 20:51:57 end at 20:56:22 Nrow = 20,616,979
leuc start at 20:56:22 end at 21:01:35 Nrow = 24,539,594
hmgb start at 21:01:35 end at 21:07:37 Nrow = 29,581,634

```

Thus, for example if you need the cobalamin measurements you just do:

```

> system.time(load("e:/workdata/707655/DMreg2020/data/labka/cobl.Rda",
+                 v = T))
Loading objects:
  cobl
  bruger  system forløbet
    9.71    0.11    10.84
> str(cobl, v = 0)
'data.frame':    5914858 obs. of  8 variables:
 $ pnr          : chr ...
 $ SAMPLINGDATE : 'cal.yr' num NULL ...
 $ SAMPLINGTIME : 'hms' num ...
 $ ANALYSISCODE : chr ...
 $ LABORATORIUM_IDCODE: chr ...
 $ VALUE        : chr ...
 $ UNIT         : chr ...
 $ numval       : num NULL ...
 - attr(*, "label")= Named chr ...
 ..- attr(*, "names")= chr ...
> attr(cobl, "label")
  cobl
"Cobalamin"
> fCp(object.size(cobl))
[1] 494,296,136
> cbind(with(subset(cobl, is.na(numval)),
+         rCp(table(VALUE), w = 7)))
      [,1]
<33  "      4"
>1400 " 3,074"

```

The last use of `attr` is necessary because `v=0` also cuts the the first (and only) element of the `label` attribute, so if you want a human readable label this is what to do.

```
-----  
Code: E:/workdata/707655/DMreg2020/r/mkLABKA.rnw  
Ends: 2022-01-31 at 21:07:50  
Time elapsed:      01:10:23  
-----
```

Chapter 4

SAS programs

4.1 Rationale and overview

The following documented programs sequentially construct data sets with dates of diagnosis of DM according to different criteria, then merge these to pick the earliest. All computing is done at the server of Statistics Denmark.

All created data will be in the data folder as SAS-datasets, and the SAS log and `lst` files will be printed here verbatim for documentation (the latter after removal of numbers less than 4).

We have the following programs (also described in more detail in connection with the listing of the output):

`00-fmts` creates a number of useful formats used for annotation and grouping of diagnoses etc. They are in the format file `DMfmt.DMreg` (see `optslibs.sas`)

`00-base` creates:

1. `DMdat.pop` with demographic information about the entire population (sex, date of birth); key: `(pnr)`
2. `DMdat.xDK` with IM-migration and E-migration records for persons with at least one IM or Emigration (so not for from the entire population). In the file, `doEm < doIm`, so in principle each record represents a period OUT of the country (hence the `x`); key: `(pnr, doIm)`.

`00d-base` creates `DMdat.CoD` with cause of death for the population that died between 1996-1-1 and 2017-12-31. Not all deaths are in this file, only those with a cause; key: `(pnr)`

`00y-base` creates `DMdat.popreg` with information for all persons at 1 Jan each year: kommune and region of residence, highest attained educational level and family income. The classification variables may be missing for some persons. key: `(pnr, yr)`.

`01-npr` Uses the national patient register (NPR) to generate three data sets, all with `pnr` as key:

- a dataset `npr` with the two earliest dates of DM diagnosis in the NPR, `doNPR` and `doNPR2`, as well as a variable `nprtyp` with values T1 (ICD10: E10) or T2 (ICD10:

E11) or Tx (E12, E13 and E14), based on the diagnosis recorded on the last of the person's NPR entries.

Thus formally some of the follow-up will be based on type-information from future recordings—*i.e.* records later than doNPR; key: (pnr)

- a dataset pcos with the earliest date of registered PCOS, doPCOS; key: (pnr)
- a dataset gdm with recorded dates of GDM that are at least 200 days apart, doGDM1, doGDM2, ...; key: (pnr)

02-dvdd Uses the DVDD to identify persons from outpatient clinics (and in due course from GPs) and to seek out persons deemed to be T1D patients. It creates a dataset, DMdat.DVDD with key pnr and a variable for type of diabetes dvdtyp, based on whether T1, T2 or other is recorded on the person's last record in DVDD. Thus formally some of the follow-up will be based on type-information from a future recording. The variable dvdtyp has missing values; key: (pnr)

03-nhsr Uses the NHSR to get the date of the first podiatry (foot-therapy) service for diabetes patients and excludes records with examination date in the GDM grace interval. Creates the dataset DMdat.foot with the date variable doPod; key: (pnr)

04-rmps Generates a dataset DMdat.pRMPS with one record per person, with dates of first and second purchase of OAD (doOAD, doOAD2) resp. insulin (doIns, doIns2); key: (pnr).

05-diab Extracts data from the DiaBase, excludes records with examination date in the GDM grace interval, and selects the earliest record for each person and defines the date in the variable DMdat.doDiaB.

05-hba1 Extracts data from DVDD and the LABKA file of HbA_{1c} measurements, and selects persons with two consecutive HbA_{1c} measurements of 48 mmol/mol or more. The date of meeting the criterion is the date of the last of the two consecutive measurements over the limit.

06-define Collects data from the 6 previously created data sets and defines date of diagnosis and type of diabetes (T1/T2/Tx), and thus generates a DM-register with sex, date of birth, date of death, date of inclusion (“diagnosis”).

However, some 67% dates of diagnosis in the DVDD are either 1st January or 15th June; both of which we interpret as “sometime during the year”. The consequence of this that if a person meets any other criterion, the diagnosis date from DVDD will be ignored and the person will be included at the date of the other criterion. In short, the date from DVDD will only be used if no other criterion is met.

For persons with a record from DVDD with type of diabetes defined, this is used. If different types are given in different records, the most frequent type is used, but only if present in more than half of the records. If a person is not classified from DVDD, the classification from NPR is used.

Further, a person is classified as T1 if insulin has been taken out before age 30 (unless classified as T2 or Tx in DVDD, but regardless of the NPR classification).

Finally, a person cannot be classified as T1 if no insulin purchase is recorded.

- 10-labcomp1 Extracts clinical measurements from LABKA and DVDD and defines dates of severe, moderate and end stage kidney disease, as well as dates of micro- and macro-ablunimuria. This is done for the *entire* Danish population.
- 10-comp1 Defines complication dates based on NPR-records and appends the lab-defined complications from 10-labcomp1. This is done for the *entire* population.
- 00-labka Reads the (very large) file of LABKA-measurements and subdivides it into 26 smaller files with one type of lab-measuremenmt in each.
- 00-rmps Reads the (very large) file of drug dispenstions and subdivides it into 7 smaller files with one group of drugs in each.

4.2 Program execution

All data analyses are run on the servers at Statistics Denmark. In order to have a thorough documentation of the data processing all SAS-programs have been run in sequence as batch jobs from the command prompt (`cmd`), where the program in the file `xxx.sas`, say, is run and produces the files `xxx.log` and `xxx.lst`. Since the code from `xxx.sas` is contained in `xxx.log`, it suffices to show the files `xxx.log` and `xxx.lst` to provide full documentation of the data acquisition process.

The practical execution of the SAS-programs is done using the `cmd`-script `sj.bat` which reads:

```
start "sas job" /min sjx %~n1
```

The running of the program `xxx.sas` is started by issuing “`sj xxx`” at the command prompt.

The script `sj.bat` just starts a new process which in turn runs the script `sjx.bat`, which reads:

```
"C:\Program Files\SASHome\SASFoundation\9.4\sas.exe" ^
-CONFIG "C:\Program Files\SASHome\SASFoundation\9.4\nls\en\sasv9.cfg" ^
-$lognotel "Program: %~n1.sas" -nonews -linesize 90 ^
-autoexec optslibs.sas -sysin %~n1.sas
copy %~n1.log + %~n1.lst %~n1.yt
rem del %~n1.log
rem del %~n1.lst
exit
```

The second last line in the script simply copies the two result-files from SAS into one for convenience of inspection. It is the two resulting files `.log` and `.log` that are transferred from DST to a local computer for inclusion in a documentation report (after removal of too small table entries). Thus the `.lst` files on the served have been edited to meet the criteria for transfer out of DST. But the original contents of the `.lst` is part of the `.yt` file so it can be retrieved—but only on DST/FSE.

Note that the script (`sjx.bat`) runs SAS with `-autoexec=optslibs.sas`, so effectively all programs are preceded by execution of `optslibs.sas`. The file `optslibs` contains definitions of libraries and a couple of macro constants used throughout the programs.

This way there is a reasonable documentation that the results are actually produced by the listed code (in the `.log` file). Hopefully the code in the SAS-programs is reasonably human-readable, too.

4.3 Program documentation

The following is a listing of the SAS-programs and -results (that is the .log and .lst files) used to generate the base data sets. Each one is preceded by a brief description; the main technical points are included as comments in the program code, found in the .log files.

Note that according to rules of DST, all table entries of 3 or less in .lst file are masked as a “*”. This is done in an automated process, so also occurrences of 1, 2 and 3 not strictly necessary to mask have been masked.

4.3.1 optslibs.sas

This is common set of declarative commands that defines a couple of options, the location of the raw and the derived data sets and some global macro variables used for handling GDM and PCOS and definition of T1D. It is included as autoexec file in all runs, note the `options nonotes` for brevity of output:

```
* options used throughout ;
options nocenter nonotes nomprint nosource2
      ps = 10000 /* 105 */
      ls = 90    /* 160 */
      obs = max
      formchar = ' - '
      nofmterr /* dont crash with missing formats */
/* format libraries we use */
fmtsearch = ( dsfmt.times_personstatistik
              dsfmt.brancher
              dsfmt.uddannelser
              dsfmt.disced
              dsfmt.geokoder
              dsfmt.sundhed
              dsfmt.statistikbank
              DMfmt.DMreg ) ;

* data libraries ;
libname grund 'E:\rawdata\707655\Grunddata\' ;
libname popul 'E:\rawdata\707655\Population\' ;
libname ekstn 'E:\rawdata\707655\Eksterne data\' ;
libname nydat 'E:\rawdata\707655\Eksterne data\SDS_17122020' ;
libname DMdat 'E:\workdata\707655\DMreg2020\data\' ;
libname lbdatt 'E:\workdata\707655\DMreg2020\data\labka' ;
libname drdat 'E:\workdata\707655\DMreg2020\data\rmpps' ;

* format libraries ;
libname DMfmt 'E:\workdata\707655\DMreg2020\fmts' ;
libname dsfmt '\\srvfsenas1\data\Formater\SAS formater i Danmarks Statistik\FORMATKATALOG' ;

* useful constants ;
%let yrf = 1995 ; * Range of years of population data ;
%let yrl = 2020 ;
%let ini = '01JAN1996'd ; * Range of follow-up period ;
%let end = '31DEC2020'd ;
* %let tload = 15 ; * Age limit for OAD to define T1 - obsolete ;
%let t1ins = 30 ; * Age limit for Insulin to define T1 ;
%let pc oslo = 18 ; * Age interval for pc os (years) ;
%let pcoshi = 40 ;
%let fbwin = 30 ; * Window from metformin to first fertility drug defining co-treatment ;
%let gdmint = 200 ; * distance between GDM dates to constitute 2 GDM events (days) ;
```

```

* macro to exclude observations with dates in GDM grace period (days) ;
%macro xgdm( xdate,
            gdmpr = 280, /* 30, */
            gdmwin = 280) ; /* 365) ;*/
/* this loop should produce a warning to be sure all instances of GDM are covered */
%do n = 1 %to 12 ;
    if ( doGDM&n. - &gdmpr. ) < &xdate. < ( doGDM&n. + &gdmwin. ) then delete ;
%end ;
%mend ;

* page ;
options notes ;

```

4.3.2 xgdm.sas

Note that the file `optslibs.sas` also contains the definition of the `xgdm` macro: For each of the criteria it is necessary to exclude dates of meeting the criterion which fall within a grace period after a diagnosis of GDM. This is what the macro `xgdm` is for; it relies on the structure of the GDM dataset constructed in the `01-npr` program, which has the GDM dates in the wide form for person with at least one date of GDM. It iterates up to 12 in order to produce a note from the SAS system, that documents that only 11 GDM dates were needed.

4.4 00-base

Reads the files with all person ids (`pnr`), for each calendar year of data, and forms a total roster of all `pnr` with demographic information (sex, date of birth, date of death).

Also reads all migration records, and forms a dataset of time spent *outside* of Denmark, which is used by the program `08-mkFU` to count only events and person-years among persons actually present in Denmark.

```
1 "Program: 00-base.sas" 15:26 Wednesday, January 26, 2022
```

```
NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.
NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)
      Licensed to FORSKNING 2, Site 50800723.
NOTE: This session is executing on the X64_SR12R2 platform.
```

```
NOTE: Updated analytical products:
      SAS/STAT 14.3
```

```
NOTE: Additional host information:
      X64_SR12R2 WIN 6.3.9600 Server
```

```
NOTE: SAS initialization used:
      real time      0.10 seconds
      cpu time       0.10 seconds
```

```
NOTE: AUTOEXEC processing beginning; file is
      E:\workdata\707655\DMreg2020\sas\optslibs.sas.
```

```
NOTE: AUTOEXEC processing completed.
```



```

1      * The base populations (entire Danish population 1995-2020) ;
2      data DMdat.pop ( keep = pnr sex doBth doDth
3                    label = 'Total population 1968-2020 incl.' ) ;
4          label pnr = 'person id'
5                sex = 'sex'
6                doBth = 'date of birth'
7                doDth = 'date of death' ;
8      format doBth doDth ddmmyy10. ;
9      set nydat.t_person ;
10     doBth = D_FODDAT0 ;
11     if doBth > .z ;
12     if c_status eq '90' then doDth = D_STATUS_HEN_START ;
13     if c_kon eq 'K' then sex = "W" ; else sex = "M" ;
14     * born after end date: late Born ;
15     lBrn = ( doBth > &end. ) ;
16     * dead before start date: early Death ;
17     eDth = ( .z < doDth < &ini. ) ;
18     * collect only persons contributing risk 1996-2018 ;
19     if ^lBrn and ^eDth ;
20     run ;

```

NOTE: There were 9845458 observations read from the data set NYDAT.T_PERSON.

NOTE: The data set DMDAT.POP has 8298837 observations and 4 variables.

NOTE: DATA statement used (Total process time):

real time	4.59 seconds
cpu time	1.28 seconds

```

21
22     * Dmdat.pop now has all persons contributing between (end) and (ini) ;
23     title1 "The total population contributing between &ini. and &end." ;
24     proc sort data = DMdat.pop ; by pnr ; run ;

```

NOTE: There were 8298837 observations read from the data set DMDAT.POP.

NOTE: The data set DMDAT.POP has 8298837 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	3.98 seconds
cpu time	5.92 seconds

```

25     proc contents data = DMdat.pop varnum ; run ;

```

NOTE: PROCEDURE CONTENTS used (Total process time):

real time	0.03 seconds
cpu time	0.03 seconds

NOTE: The PROCEDURE CONTENTS printed page 1.

```

26     proc tabulate data = DMdat.pop noseps missing ;
27         class doBth doDth sex ;
28         table all doBth doDth,
29               ( all sex ) * f=comma10. / rts = 6 ;
30         format doBth doDth year4. ;
31         keylabel n = ' ' ;
32     run ;

```

NOTE: There were 8298837 observations read from the data set DMDAT.POP.

NOTE: The PROCEDURE TABULATE printed page 2.

NOTE: PROCEDURE TABULATE used (Total process time):

real time	2.04 seconds
cpu time	3.70 seconds

```

33
34     title2 "Are deaths complete for 2020?" ;
35     proc tabulate data = DMdat.pop
36                   (where = (doDth > '31dec2019'd))
37                   noseps missing ;
38     class doDth sex ;

```

```

39         table doDth,
40             ( all sex ) * f=comma10. / rts = 9 ;
41         format doDth yymms7. ;
42         keylabel n = ' ' ;
43     run;

```

NOTE: There were 52117 observations read from the data set DMDAT.POP.
WHERE doDth>'31DEC2019'D;

NOTE: The PROCEDURE TABULATE printed page 3.

NOTE: PROCEDURE TABULATE used (Total process time):

```

real time          0.35 seconds
cpu time           0.35 seconds

```

```

44         title1 ;
45
46         * Here comes the migrations ;
47         proc sort  data = grund.vnds2020  out = migr ;
48             by pnr haend_dato ;
49     run ;

```

NOTE: There were 3838237 observations read from the data set GRUND.VNDS2020.

NOTE: The data set WORK.MIGR has 3838237 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time          0.96 seconds
cpu time           1.39 seconds

```

```

50
51         * if multiple records with same type of movement, only take the first ;
52         data migr ups ;
53             set migr ;
54             by pnr ;
55             if first.pnr or
56                 indud_kode ne lag1(indud_kode) then output migr ;
57             else output ups ;
58     run ;

```

NOTE: There were 3838237 observations read from the data set WORK.MIGR.

NOTE: The data set WORK.MIGR has 3822949 observations and 4 variables.

NOTE: The data set WORK.UPS has 15288 observations and 4 variables.

NOTE: DATA statement used (Total process time):

```

real time          0.76 seconds
cpu time           0.76 seconds

```

```

59
60         * How many persons have fishy data ;
61         proc sort data = ups  nodupkey ; by pnr ; run ;

```

NOTE: There were 15288 observations read from the data set WORK.UPS.

NOTE: 1294 observations with duplicate key values were deleted.

NOTE: The data set WORK.UPS has 13994 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time          0.00 seconds
cpu time           0.01 seconds

```

```

62
63         * We keep track of period OUTSIDE of DK in the period ;
64         * each record represents a period OUTSIDE of DK ;
65         * so in all records we have that doEm < doIm ;
66         data DMdat.xDK ( keep = pnr doIm doEm
67             label = 'Periods spent outside DK: doEm < doIm' ) ;
68         merge migr ( in = mig )
69             DMdat.pop ( in = pop ) ;
70         by pnr ;
71         if mig and pop ;
72         retain doEm ;
73         if first.pnr then doEm = . ;

```

```

74         if ( indud_kode eq "U" ) then doEm = haend_dato ;
75         if ( indud_kode eq "I" ) then doIm = haend_dato ;
76         * Not relevant if entered back in before start ;
77         if ( .z < doIm < &ini. ) then delete ;
78         if ( .z < doIm < doEm ) then put "This should never print!" ;
79         if ( indud_kode eq "I" or last.pnr ) then output ;
80         format doEM doIm ddmmyy10. ;
81         run ;

```

NOTE: There were 3822949 observations read from the data set WORK.MIGR.

NOTE: There were 8298837 observations read from the data set DMDAT.POP.

NOTE: The data set DMDAT.XDK has 2179873 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time      2.26 seconds
cpu time       2.06 seconds

```

```

82
83         title1 'Periods spent outside of DK: doEm < doIm' ;
84         proc contents data = DMdat.xDK ; run ;

```

NOTE: PROCEDURE CONTENTS used (Total process time):

```

real time      0.00 seconds
cpu time       0.00 seconds

```

NOTE: The PROCEDURE CONTENTS printed page 4.

```

85         proc tabulate data = DMdat.xDK noseps missing ;
86         class doEm doIm ;
87         table all doEm,
88             all * f=comma9.
89             doIm * f=comma7.
90             / rts = 7 ;
91         format doEm doIm year4. ;
92         title1 ;

```

NOTE: There were 2179873 observations read from the data set DMDAT.XDK.

NOTE: The PROCEDURE TABULATE printed pages 5-7.

NOTE: PROCEDURE TABULATE used (Total process time):

```

real time      0.40 seconds
cpu time       1.09 seconds

```

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414

NOTE: The SAS System used:

```

real time      15.64 seconds
cpu time       16.74 seconds

```

4.4.1 00-base.lst

The total population contributing between '01JAN1996'd and '31DEC2020'd 1
15:26 Wednesday, January 26, 2022

The CONTENTS Procedure

Data Set Name	DMDAT.POP	Observations	8298837
Member Type	DATA	Variables	4
Engine	V9	Indexes	0
Created	26/01/2022 15:26:36	Observation Length	32
Last Modified	26/01/2022 15:26:36	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	YES
Label	Total population 1968-2020 incl.		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

```

Data Set Page Size      65536
Number of Data Set Pages 4071
First Data Page        *
Max Obs per Page       2039
Obs in First Data Page 1992
Number of Data Set Repairs 0
ExtendObsCounter       YES
Filename                E:\workdata\707655\DMreg2020\data\pop.sas7bdat
Release Created         9.0401M5
Host Created            X64_SR12R2
Owner Name              DSTFSE\FDIY7655
File Size               255MB
File Size (bytes)      266862592

```

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	pnr	Char	12	\$12.	\$10.	person id
2	sex	Char	*			sex
3	doBth	Num	8	DDMMYY10.		date of birth
4	doDth	Num	8	DDMMYY10.		date of death

Sort Information

```

Sortedby      pnr
Validated     YES
Character Set  ANSI

```

The total population contributing between '01JAN1996'd and '31DEC2020'd 2
15:26 Wednesday, January 26, 2022

```

-----
                        sex
-----
All      M      W
-----
All 8,298,837 4,158,178 4,140,659
date
of
bir-
th
1858      *      *      *
1859      *      *      *
1875      *      *      *
1877      *      *      *
1878      4      *      *
1879      *      .      *
1880      5      *      *
1881      5      *      *
1882      7      *      5
1883      4      .      4
1884      7      4      *
1885      6      *      *
1886     15      7      8
1887     10      *      8
1888     17      6     11
1889     25      7     18
1890     45     13     32
1891     57     18     39
1892     65     17     48
1893    103     31     72
1894    146     34    112
1895    251     55    196

```

1896	385	88	297
1897	557	137	420
1898	799	173	626
1899	1,160	260	900
1900	1,698	417	1,281
1901	2,475	574	1,901
1902	3,350	797	2,553
1903	4,250	1,065	3,185
1904	5,681	1,439	4,242
1905	6,940	1,844	5,096
1906	8,648	2,392	6,256
1907	10,323	2,968	7,355
1908	12,740	3,794	8,946
1909	15,101	4,720	10,381
1910	17,212	5,638	11,574
1911	19,169	6,544	12,625
1912	21,815	7,692	14,123
1913	23,942	8,723	15,219
1914	25,753	9,524	16,229
1915	26,450	10,189	16,261
1916	28,563	11,189	17,374
1917	30,153	12,043	18,110
1918	32,900	13,567	19,333
1919	33,420	14,138	19,282
1920	40,402	17,034	23,368
1921	40,986	17,549	23,437
1922	39,960	17,579	22,381
1923	42,545	18,832	23,713
1924	43,953	19,908	24,045
1925	44,119	20,109	24,010
1926	45,066	20,887	24,179
1927	44,889	21,086	23,803
1928	46,877	22,362	24,515
1929	46,300	22,160	24,140
1930	48,169	23,190	24,979
1931	48,207	23,482	24,725
1932	49,409	23,976	25,433
1933	49,713	24,563	25,150
1934	52,388	25,916	26,472
1935	53,696	26,751	26,945
1936	56,216	28,151	28,065
1937	58,489	29,278	29,211
1938	60,892	30,891	30,001
1939	61,892	31,747	30,145
1940	65,141	33,315	31,826
1941	67,498	34,613	32,885
1942	75,974	39,188	36,786
1943	81,230	41,659	39,571
1944	88,265	45,514	42,751
1945	92,934	48,119	44,815
1946	96,578	50,090	46,488
1947	94,289	48,588	45,701
1948	89,419	46,011	43,408
1949	85,659	43,945	41,714
1950	86,518	44,194	42,324
1951	83,932	43,213	40,719
1952	85,704	43,737	41,967
1953	87,127	44,575	42,552
1954	85,838	43,855	41,983
1955	87,122	44,894	42,228
1956	88,149	45,321	42,828
1957	87,426	45,173	42,253
1958	88,104	45,364	42,740
1959	87,836	45,222	42,614
1960	91,384	46,915	44,469
1961	91,432	47,096	44,336
1962	93,985	48,437	45,548
1963	99,674	51,466	48,208
1964	101,771	52,744	49,027
1965	104,310	53,795	50,515

1966	107,910	55,717	52,193
1967	102,007	52,572	49,435
1968	96,462	49,980	46,482
1969	93,652	48,414	45,238
1970	94,340	48,369	45,971
1971	97,979	50,527	47,452
1972	99,649	50,876	48,773
1973	96,372	49,327	47,045
1974	97,240	49,707	47,533
1975	98,598	50,316	48,282
1976	92,915	47,861	45,054
1977	91,133	46,724	44,409
1978	92,432	47,338	45,094
1979	91,588	47,069	44,519
1980	91,513	46,766	44,747
1981	88,333	45,203	43,130
1982	89,653	46,179	43,474
1983	88,874	45,366	43,508
1984	90,989	46,551	44,438
1985	93,909	47,759	46,150
1986	96,733	49,503	47,230
1987	97,550	49,645	47,905
1988	101,504	51,187	50,317
1989	103,099	51,821	51,278
1990	104,942	52,579	52,363
1991	103,347	51,661	51,686
1992	105,083	52,634	52,449
1993	102,276	50,994	51,282
1994	103,492	51,338	52,154
1995	100,701	50,042	50,659
1996	95,709	47,570	48,139
1997	92,401	45,914	46,487
1998	87,511	43,489	44,022
1999	82,522	41,267	41,255
2000	79,075	40,212	38,863
2001	74,912	38,195	36,717
2002	72,260	37,053	35,207
2003	72,430	36,989	35,441
2004	72,229	36,911	35,318
2005	71,743	36,604	35,139
2006	72,591	37,326	35,265
2007	71,711	36,749	34,962
2008	72,699	37,477	35,222
2009	70,209	36,063	34,146
2010	70,531	36,176	34,355
2011	65,613	33,379	32,234
2012	64,270	33,113	31,157
2013	61,626	31,520	30,106
2014	62,183	32,007	30,176
2015	62,573	32,070	30,503
2016	65,237	33,658	31,579
2017	64,211	32,919	31,292
2018	63,498	32,703	30,795
2019	62,550	32,229	30,321
2020	58,533	29,939	28,594
date of dea- th .	6,891,367	3,457,909	3,433,458
1996	61,490	30,685	30,805
1997	60,414	29,882	30,532
1998	58,913	29,302	29,611
1999	59,723	29,185	30,538
2000	58,513	28,628	29,885
2001	58,907	28,782	30,125
2002	59,202	28,718	30,484
2003	58,294	28,648	29,646
2004	56,609	28,027	28,582
2005	55,734	27,302	28,432

2006	56,250	27,708	28,542
2007	56,432	27,596	28,836
2008	55,499	27,458	28,041
2009	55,786	27,554	28,232
2010	55,302	27,394	27,908
2011	53,544	26,637	26,907
2012	53,436	26,632	26,804
2013	53,715	26,941	26,774
2014	52,571	26,525	26,046
2015	53,802	27,136	26,666
2016	54,128	27,331	26,797
2017	54,732	27,850	26,882
2018	56,811	29,002	27,809
2019	55,546	28,474	27,072
2020	52,117	26,872	25,245

The total population contributing between '01JAN1996'd and '31DEC2020'd 3
 Are deaths complete for 2020? 15:26 Wednesday, January 26, 2022

	sex		
	All	M	W
date of death			
2020/01	4,959	2,572	2,387
2020/02	4,487	2,305	2,182
2020/03	4,971	2,556	2,415
2020/04	4,876	2,520	2,356
2020/05	4,479	2,305	2,174
2020/06	4,302	2,221	2,081
2020/07	4,465	2,286	2,179
2020/08	4,424	2,246	2,178
2020/09	4,393	2,258	2,135
2020/10	4,575	2,410	2,165
2020/11	4,638	2,396	2,242
2020/12	1,548	797	751

Periods spent outside of DK: doEm < doIm 15:26 Wednesday, January 26, 2022 4

The CONTENTS Procedure

Data Set Name	DMDAT.XDK	Observations	2179873
Member Type	DATA	Variables	*
Engine	V9	Indexes	0
Created	26/01/2022 15:26:44	Observation Length	32
Last Modified	26/01/2022 15:26:44	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label	Periods spent outside DK: doEm < doIm		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	1070
First Data Page	*
Max Obs per Page	2039
Obs in First Data Page	1996
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\xdk.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655

2015	.	.	.	.	.	.	.	.	.	.
2016	.	.	.	.	.	.	.	.	.	.
2017	.	.	.	.	.	.	.	.	.	.
2018	.	.	.	.	.	.	.	.	.	.
2019	.	.	.	.	.	.	.	.	.	.
2020	.	.	.	.	.	.	.	.	.	.

(Continued)

15:26 Wednesday, January 26, 2022 7

doIm							
	2014	2015	2016	2017	2018	2019	2020
	N	N	N	N	N	N	N

All	79,337	90,999	85,410	80,404	76,490	23,127	22,087
doEm	55,595	66,724	61,261	56,129	52,231	196	167
.
1968	.	.	.	.	.	.	.
1969	.	.	.	.	.	.	.
1970	.	.	.	.	.	.	.
1971	.	.	.	.	.	.	.
1972	.	*	.	*	*	.	.
1973	9	1*	10	*	1*	4	6
1974	19	15	16	16	15	5	5
1975	23	16	11	21	21	8	5
1976	10	10	11	10	17	4	7
1977	12	16	13	16	8	17	8
1978	14	20	20	11	10	11	21
1979	27	19	20	11	11	12	18
1980	26	36	22	20	17	24	22
1981	30	13	35	28	23	23	19
1982	31	16	14	21	26	17	11
1983	26	29	21	31	26	17	17
1984	34	24	28	18	34	19	26
1985	34	31	39	39	31	44	24
1986	16	18	29	31	22	17	30
1987	27	27	28	29	23	19	14
1988	40	30	22	30	27	28	24
1989	43	47	24	19	34	26	40
1990	36	32	29	24	40	27	28
1991	42	33	42	24	33	29	34
1992	43	45	34	37	47	31	29
1993	54	39	39	39	40	34	31
1994	71	64	53	57	49	36	35
1995	63	69	54	58	54	44	52
1996	81	109	78	56	53	60	57
1997	117	81	94	84	75	55	42
1998	117	113	111	100	87	74	59
1999	134	123	132	115	110	98	80
2000	171	168	132	130	135	103	118
2001	203	192	161	161	134	127	101
2002	239	217	197	159	168	130	102
2003	258	230	191	207	199	155	143
2004	333	326	248	255	204	185	175
2005	397	382	351	271	271	202	210
2006	512	492	418	338	284	273	220
2007	636	505	503	430	348	283	294
2008	757	649	459	437	343	297	242
2009	983	740	567	556	334	317	266
2010	1,281	955	739	538	487	342	342
2011	2,034	1,341	986	712	574	459	360
2012	3,409	1,990	1,347	929	716	536	458
2013	7,758	3,385	2,046	1,346	930	696	594
2014	3,592	7,954	3,126	1,955	1,338	886	672
2015	.	3,659	8,048	3,195	2,056	1,315	979

2016	.	.	3,601	8,043	3,287	2,033	1,340
2017	.	.	.	3,658	7,923	3,093	1,969
2018	.	.	.	.	3,583	7,483	3,215
2019	.	.	.	.	.	3,233	7,283
2020	.	.	.	.	.	.	2,093

4.5 00d-base

Reads the cause of death register files and classifies deaths by cause in four categories: CVD, Cancer, Respiratory and Other. Also defines a 10-level categorization of causes of death.

1 "Program: 00d-base.sas" 10:50 Tuesday, January 18, 2022

NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.

NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)
Licensed to FORSKNING 2, Site 50800723.

NOTE: This session is executing on the X64_SR12R2 platform.

NOTE: Updated analytical products:

SAS/STAT 14.3

NOTE: Additional host information:

X64_SR12R2 WIN 6.3.9600 Server

NOTE: SAS initialization used:

real time 0.13 seconds
cpu time 0.12 seconds

NOTE: AUTOEXEC processing beginning; file is
E:\workdata\707655\DMreg2020\sas\optslibs.sas.

NOTE: AUTOEXEC processing completed.

```
1      proc format ;
2          value $grX /* 10 levels */
3              "A00"- "B999" = "Infect"
4              "C00"- "D099" = "Cancer"
5              "I00"- "I999" = "CVD"
6              "E10"- "E149" = "Diab"
7              "J00"- "J999" = "Respir"
8              "K00"- "K939" = "Digest"
9              "N00"- "N169" = "Urinal"
10             "N20"- "N999" = "Urinal"
11             "N17"- "N199" = "Renal"
12             "V01"- "Y999" = "Extern"
13             other = "Other" ;
NOTE: Format $GRX has been output.
```

```
14
15         value $grX2IV /* 4 levels */
16             "Cancer" = "Can"
17             "CVD" = "CVD"
18             "Respir" = "Res"
19             other = "Oth" ;
NOTE: Format $GRX2IV has been output.
```

```
20     run ;
```

NOTE: PROCEDURE FORMAT used (Total process time):

real time 0.00 seconds
cpu time 0.00 seconds

```

21
22     data d01 ;
23         keep pnr daa1 daa2 daa3 daa4 doDth ;
24         length daa1 daa2 daa3 daa4 $8 ;
25         set grund.dodsaars2001 ( rename = ( C_DOD1 = daa1
26                                         C_DOD2 = daa2
27                                         C_DOD3 = daa3
28                                         C_DOD4 = daa4
29                                         D_DODSDTO = doDth ) ) ;
30     run ;

```

NOTE: There were 1444199 observations read from the data set GRUND.DODSAARS2001.

NOTE: The data set WORK.D01 has 1444199 observations and 6 variables.

NOTE: DATA statement used (Total process time):

```

real time      0.37 seconds
cpu time       0.20 seconds

```

```

31
32     * Endret fra 2017 til 2019 (PFR/LDIA);
33     data d19 ;
34         keep pnr daa1 daa2 daa3 daa4 doDth ;
35         length daa1 daa2 daa3 daa4 $8 ;
36         set grund.dodsaasg2019 ( rename = ( C_DODTILGRUNDL_ACME = daa1
37                                         C_DOD_1A = daa2
38                                         C_DOD_1B = daa3
39                                         C_DOD_1C = daa4 ) ) ;
40         if D_DODSDATO le .z then doDth = D_STATDATO ;
41         else doDth = D_DODSDATO ;
42     run ;

```

NOTE: There were 968637 observations read from the data set GRUND.DODSAASG2019.

NOTE: The data set WORK.D19 has 968637 observations and 6 variables.

NOTE: DATA statement used (Total process time):

```

real time      0.85 seconds
cpu time       0.20 seconds

```

```

43
44     proc sort data = d01 ; by pnr ; run ;

```

NOTE: There were 1444199 observations read from the data set WORK.D01.

NOTE: The data set WORK.D01 has 1444199 observations and 6 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time      0.33 seconds
cpu time       0.65 seconds

```

```

45     proc sort data = d19 ; by pnr ; run ;

```

NOTE: There were 968637 observations read from the data set WORK.D19.

NOTE: The data set WORK.D19 has 968637 observations and 6 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time      0.29 seconds
cpu time       0.45 seconds

```

```

46
47     data DMdat.CoD ( keep = pnr doDth cod4 codX codD daar
48                   daa1 daa2 daa3 daa4 ) ;
49     retain pnr doDth cod4 codX codD daar
50           daa1 daa2 daa3 daa4 ;
51     merge d01 d19 ;
52     by pnr ;
53     if ( doDth ge &ini. and doDth le &end. ) ;
54     codX = put( daa1, $grX. ) ;
55     codD = codX ;
56     * Reclassify death from diabetes to secondary causes ;

```

```

57                                     daar = daa1 ;
58     if codX eq "Diab" then do ; codX = put( daa2, $grX. ) ; daar = daa2 ; end ;
59     if codX eq "Diab" then do ; codX = put( daa3, $grX. ) ; daar = daa3 ; end ;
60     if codX eq "Diab" then do ; codX = put( daa4, $grX. ) ; daar = daa4 ; end ;
61     * well, except for hypoglycaemia and ketoacidosis ;
62     if ( daa1 in ("E159","E160","E161","E162","E101","E111") or
63         daa2 in ("E159","E160","E161","E162","E101","E111") or
64         daa3 in ("E159","E160","E161","E162","E101","E111") or
65         daa4 in ("E159","E160","E161","E162","E101","E111") )
66     then codX = "Diab" ;
67     cod4 = put( codX, $grX2IV. ) ;
68     * to comply with the convention of the format $ICD10_L1L1_KT. ;
69     daar = "D" || daar ;
70     daa1 = "D" || daa1 ;
71     daa2 = "D" || daa2 ;
72     daa3 = "D" || daa3 ;
73     daa4 = "D" || daa4 ;
74     label cod4 = "CoD 4 groups"
75           codD = "CoD 10 groups"
76           codX = "CoD 10 groups w/ DM recoded"
77           daar = "CoD revised"
78           daa1 = "Primary CoD"
79           daa2 = "Secondary CoD"
80           daa3 = "Tertiary CoD"
81           daa4 = "Quarternary CoD" ;
82     run ;

```

NOTE: There were 1444199 observations read from the data set WORK.D01.
NOTE: There were 968637 observations read from the data set WORK.D19.
NOTE: The data set DMDAT.COD has 1319351 observations and 10 variables.
NOTE: DATA statement used (Total process time):
real time 1.85 seconds
cpu time 1.21 seconds

```

83
84     title 'Cause of death for entire population' ;
85     proc tabulate data = DMdat.CoD missing noseps ;
86         class daar cod4 codX codD doDth ;
87         table cod4 * codX * daar,
88             N * f=comma10.
89             / rts = 75 indent = 2 ;
90         table doDth, ( all cod4 * codX="Recoded coD" ) * f=comma6.
91             / rts = 11 ;
92         table codD="Original cod",
93             ( all cod4 * codX="Recoded coD" ) * f=comma6.
94             / rts = 11 ;
95         format doDth year.
96         daar $ICD10_L1L1_KT. ;
97     run ;

```

NOTE: There were 1319351 observations read from the data set DMDAT.COD.
NOTE: The PROCEDURE TABULATE printed pages 1-3.
NOTE: PROCEDURE TABULATE used (Total process time):
real time 1.07 seconds
cpu time 1.32 seconds

```

98
99     proc contents data = DMdat.CoD varnum ; run ;

```

NOTE: PROCEDURE CONTENTS used (Total process time):
real time 0.01 seconds
cpu time 0.01 seconds

NOTE: The PROCEDURE CONTENTS printed page 4.

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414
NOTE: The SAS System used:
real time 5.11 seconds

cpu time 4.23 seconds

4.5.1 00d-base.lst

Cause of death for entire population 10:50 Tuesday, January 18, 2022 1

-----		N
-----		-----
CVD		
CVD		
DI009	Gigtfeber uden hjertesygdom	10
DI010	Akut reumatisk perikarditis	*
DI011	Akut reumatisk endokarditis	*
DI012	Akut reumatisk myokarditis	*
DI018	Anden form for akut reumatisk hjertesygdom	*
DI019	Akut reumatisk hjertesygdom UNS	27
DI020	Reumatisk chorea med affektion af hjertet	*
DI029	Reumatisk chorea uden affektion af hjertet	*
DI050	Reumatisk mitralstenose	31
DI051	Reumatisk mitralinsufficiens	28
DI052	Reumatisk mitralstenose med insufficiens	22
DI058	Anden form for reumatisk mitralklapaffektion	8
DI059	Reumatisk mitralklapaffektion UNS	57
DI060	Reumatisk aortaklapstenose	74
DI061	Reumatisk aortaklapinsufficiens	17
DI062	Reumatisk aortaklapstenose med insufficiens	695
DI068	Anden form for reumatisk aortaklapaffektion	*
DI069	Reumatisk aortaklapaffektion UNS	17
DI070	Reumatisk trikuspidalstenose	*
DI071	Reumatisk trikuspidalinsufficiens	*
DI080	Affektioner af både mitralklap og aortaklap	118
DI081	Affektioner af både mitralklap og trikuspidalklap	15
DI082	Affektion af både trikuspidalklap og aortaklap	17
DI083	Affektioner af både mitralklap, trikuspidalklap og aortaklap	7
DI088	Anden form for affektion inddragende flere hjerteklapper	61
DI089	Affektion af flere hjerteklapper UNS	58
DI090	Reumatisk myokarditis	*
DI091	Reumatisk endokarditis uden angivelse af afficeret klap	11
DI092	Kronisk reumatisk perikarditis	5
DI098	Anden reumatisk hjertesygdom	*
DI099	Reumatisk hjertesygdom UNS	26
DI10	Blodtryksforhøjelse af ukendt årsag	842
DI109	Essentiel hypertension	8,536
DI110	Hypertensiv hjertesygdom med inkompenaseret hjertesvigt	3,083
DI119	Hypertensiv hjertesygdom uden inkomensation	1,311
DI120	Hypertensiv nyresygdom med nyresvigt	1,272
DI129	Hypertensiv nyresygdom uden nyresvigt	111
DI130	Hypertensiv hjertesygdom og nyresygdom med hjertesvigt	1,144
DI131	Hypertensiv hjertesygdom og nyresygdom med nyresvigt	229
DI132	Hypertensiv hjertesygdom og nyresygdom m. hjerte- og nyresvigt	2,133
DI139	Hypertensiv hjertesygdom og nyresygdom UNS	236
DI152	Hypertension sekundært til endokrin sygdom	*
DI200	Ustabil angina pectoris	110
DI201	Prinzmetals angina pectoris	11
DI208	Anden form for angina pectoris	25
DI209	Angina pectoris UNS	981
DI210	Anteriort akut myokardieinfarkt med Q-taksudvikling	1,562
DI211	Inferiort/posteriort akut myokardieinfarkt med Q-taksudv.	395
DI212	Infarctus myocardi acutus transmuralis m anden lokalisation	576
DI213	ST-elevations akut myokardieinfarkt	1,199
DI214	Non-ST-elevations akut myokardieinfarkt	1,324
DI219	Akut myokardieinfarkt UNS	62,847
DI220	Infarctus myocardi acutus recidivans anterioris	4

DI221	Infarctus myocardii acutus recidivans inferioris	*
DI228	Infarctus myocardii acutus recidivans m anden lokalisation	5
DI229	Infarctus myocardii acutus recidivans uden specifikation	3,312
DI230	Hæmoperikardium efter akut myokardieinfarkt	*
DI233	Ruptur i hjertevæg u hæmoperikardium eft AMI	*
DI240	Koronar trombose uden infarkt	26
DI241	Postmyokardieinfarktsyndrom	16
DI248	Anden form for akut iskæmisk hjertesygdom	732
DI249	Akut iskæmisk hjertesygdom UNS	7,751
DI250	Arteriosclerosis cardiovascularis	3,727
DI251	Arteriosklerotisk hjertesygdom	46,714
DI252	Gammelt myokardieinfarkt	5,563
DI253	Hjerteaneurisme	35
DI254	Koronararterieaneurisme og -dissektion	14
DI255	Iskæmisk kardiomyopati	1,190
DI256	Stum myokardieiskæmi	25
DI258	Anden form for kronisk iskæmisk hjertesygdom	3,471
DI259	Kronisk iskæmisk hjertesygdom UNS	16,233
DI260	Lungeemboli med akut cor pulmonale	580
DI269	Lungeemboli uden akut cor pulmonale	4,765
DI270	Essentiel pulmonal arteriel hypertension	425
DI271	Kyfoskoliotisk hjertesygdom	28
DI272	Kronisk tromboembolisk pulmonal hypertension	49
DI278	Anden pulmonal hjertesygdom	35
DI279	Pulmonal hjertesygdom UNS	563
DI281	Aneurysme i lungearterie	*
DI288	Anden sygdom i lungekredsløbet	5
DI289	Sygdom i lungekredsløb UNS	15
DI300	Akut idiopatisk perikarditis	38
DI301	Akut infektiøs perikarditis	22
DI308	Anden form for akut perikarditis	12
DI309	Akut perikarditis UNS	15
DI310	Kronisk adhesiv perikarditis	11
DI311	Kronisk restriktiv perikarditis	64
DI312	Hæmoperikardium ikke klassificeret andetsteds	47
DI313	Non-inflammatorisk ekssudativ perikarditis	25
DI318	Anden sygdom i perikardiet	11
DI319	Sygdom i perikardiet UNS	56
DI320	Perikarditis ved bakteriel sygdom klassificeret andetsteds	*
DI330	Akut eller subakut infektiøs endokarditis	440
DI339	Akut endokarditis UNS	399
DI340	Mitralinsufficiens	1,335
DI341	Mitralklapsprolaps	93
DI342	Ikke-reumatisk mitralstenose	182
DI348	Anden sygdom i mitralklap	24
DI349	Ikke-reumatisk mitralklaplidelse UNS	119
DI350	Aortastenose	6,266
DI351	Aortainsufficiens	591
DI352	Aortastenose med insufficiens	506
DI358	Anden form for aortaklapsygdom	74
DI359	Aortaklapsygdom UNS	429
DI360	Ikke-reumatisk trikuspidalstenose	4
DI361	Ikke-reumatisk trikuspidalinsufficiens	59
DI362	Ikke-reumatisk trikuspidalklapstenose med insufficiens	*
DI368	Anden form for ikke-reumatisk trikuspidalklapsygdom	4
DI369	Ikke-reumatisk trikuspidalklapsygdom UNS	4
DI370	Pulmonalklapstenose	*
DI371	Pulmonalklapinsufficiens	4
DI378	Anden form for pulmonalklapsygdom	*
DI379	Pulmonalklapsygdom UNS	*
DI38	Endokarditis uden angivelse klapaffektion	81
DI389	Endokarditis UNS	684
DI390	Affektion af mitralklappen ved sygdom klas. andetsteds	*
DI398	Endokarditis UNS ved sygdom klassificeret andetsteds	*
DI400	Infektiøs myokarditis	32
DI408	Anden form for akut myokarditis	8
DI409	Akut myokarditis UNS	220
DI420	Dilateret kardiomyopati	1,036
DI421	Obstruktiv hypertrofisk kardiomyopati	127
DI422	Hypertrofisk kardiomyopati, non-obstruktiv	203

DI423	Endomyocarditis eosinophilica	4
DI424	Fibroelastosis endocardii	17
DI425	Anden form for restriktiv kardiomyopati	43
DI426	Alkoholisk kardiomyopati	342
DI427	Kardiomyopati forårsaget af lægemiddel eller andet agens	15
DI428	Anden form for kardiomyopati	94
DI429	Kardiomyopati UNS	1,330
DI431	Kardiomyopati ved metabolisk sygdom klassificeret andetsteds	*
DI440	1° Forlænget AV-overledning	78
DI441	2° Intermitterende AV-overledning	83
DI442	3° Ophævet AV-overledning (AV-blok)	721
DI443	Atrioventrikulært hjerteblok UNS	278
DI445	Venstresidigt posteriort fascikelblok	*
DI446	Andet eller ikke specificeret venstresidigt grenblok	12
DI447	Venstresidigt grenblok UNS	24
DI450	Højresidigt fascikelblok	*
DI451	Anden eller ikke specificeret form for højresidigt grenblok	*
DI452	Bifascikulært blok	20
DI453	Trifascikulært blok	20
DI454	Intraventrikulært blok UNS	17
DI455	Andet hjerteblok	103
DI456	Præexcitationssyndrom	13
DI458	Anden ledningsforstyrrelse i hjertet	36
DI459	Ledningsforstyrrelse i hjertet UNS	127
DI460	Hjertestop med vellykket genoplivning	1,258
DI461	Pludselig hjertedød	2,000
DI469	Hjertestop UNS	5,264
DI470	Ventrikulær takykardi (reentry)	14
DI471	Supraventrikulær takykardi med smalle QRS-komplekser	103
DI472	Ventrikulær takykardi	105
DI479	Paroksysmatisk takykardi UNS	76
DI48	Atrieflagren og atrieflimren	319
DI489	Atrieflagren eller atrieflimren UNS	15,395
DI490	Ventrikelflagren eller ventrikelflimren	619
DI491	Supraventrikulære ekstrasystoler	*
DI492	AV junktionale ekstrasystoler	*
DI493	Ventrikulære ekstrasystoler	6
DI494	Anden form for ekstrasystoli	18
DI495	Syg sinusknude-syndrom	480
DI498	Anden hjerterytmeforstyrrelse	111
DI499	Hjerterytmeforstyrrelse UNS	1,026
DI500	Kronisk hjerteinsufficiens	1,298
DI501	Venstresidig hjerteinsufficiens	5,748
DI509	Hjertesvigt UNS	25,100
DI510	Erhvervet defekt i hjerteskillevæg	4
DI511	Ruptur af chordae tendineae IKA	8
DI512	Papillærmuskelruptur i hjertet IKA	*
DI513	Intrakardiel trombose IKA	7
DI514	Myokarditis UNS	157
DI515	Myokardiedegeneration	51
DI516	Kardiovaskulær sygdom UNS	298
DI517	Kardiomegali	1,075
DI518	Anden dårligt defineret hjertesygdom	567
DI519	Hjertesygdom UNS	7,886
DI600	Subaraknoidalblødning fra karotissifonen eller bifurkaturen	120
DI601	Subaraknoidalblødning fra arteria cerebri media	223
DI602	Subaraknoidalblødning fra arteria communicans anterior	253
DI603	Subaraknoidalblødning fra arteria communicans posterior	50
DI604	Subaraknoidalblødning fra arteria basilaris	151
DI605	Subaraknoidalblødning fra arteria vertebralis	30
DI606	Subaraknoidalblødning fra anden intrakraniell arterie	288
DI607	Subaraknoidalblødning fra intrakraniell arterie UNS	277
DI608	Anden form for subaraknoidalblødning	200
DI609	Subaraknoidalblødning UNS	2,814
DI610	Subkortikal blødning i hjernehemisfære	352
DI611	Kortikal blødning i hjernehemisfære	158
DI612	Intracerebral blødning i hjernehemisfære UNS	1,406
DI613	Blødning i hjernestammen	611
DI614	Blødning i lillehjernen	453
DI615	Blødning i hjerneventrikel	374

DI616	Blødning flere steder i hjernen	252
DI618	Anden form for hjerneblødning	486
DI619	Hjerneblødning UNS	13,928
DI620	Akut ikke-traumatisk subdural blødning	1,115
DI621	Ikke-traumatisk epidural blødning	21
DI629	Ikke-traumatisk intrakraniell blødning UNS	104
DI630	Hjerneinfarkt forårsaget af trombose i præcerebral arterie	229
DI631	Hjerneinfarkt forårsaget af emboli i præcerebral arterie	68
DI632	Hjerneinfarkt f.a. tilluk./stenose i præcerebral arterie UNS	107
DI633	Hjerneinfarkt forårsaget af trombose i cerebral arterie	1,398
DI634	Hjerneinfarkt forårsaget af emboli i cerebral arterie	432
DI635	Hjerneinfarkt f.a. tillukning/stenose i cerebral arterie UNS	132
DI636	Hjerneinfarkt f.a. ikke-pyogen cerebral venøs trombose	20
DI638	Anden form for hjerneinfarkt	672
DI639	Hjerneinfarkt UNS	9,904
DI64	Slagtilfælde uden oplysning om blødning eller infarkt	2,972
DI640		*
DI649	Apoplexia cerebri UNS	51,188
DI650	Okklusion/stenose af arteria vertebralis uden hjerneinfarkt	*
DI651	Okklusion el. stenose af arteria basilaris u. hjerneinfarkt	*
DI652	Okklusion el. stenose af arteria carotis uden hjerneinfarkt	*
DI659	Okklusion/stenose af præcerebral arterie u. hjerneinfa. UNS	*
DI663	Okklusion el. stenose af cerebellar arterie u. hjerneinfarkt	*
DI664	Okklusion/stenose af fl/bilaterale cerebrale aa. u/infarkt	*
DI669	Okklusion/stenose af cerebrale arterie UNS u. hjerneinfarkt	*
DI670	Dissektion af cerebral arterie uden ruptur	5
DI671	Cerebralt aneurisme uden ruptur	111
DI672	Cerebral aterosklerose	1,600
DI673	Progressiv vaskulær leukoencefalopati	62
DI674	Hypertensiv encefalopati	20
DI675	Moyamoya-sygdom	7
DI676	Ikke-pyogen intrakraniell venøs trombose	13
DI677	Cerebral arteritis IKA	14
DI678	Anden cerebrovaskulær sygdom	147
DI679	Cerebrovaskulær sygdom UNS	197
DI688	Anden karforandring i hjernen ved sygdom klas. andetsteds	*
DI690	Senfølge efter tidligere subaraknoidalblødning	78
DI691	Senfølge efter tidligere hjerneblødning	569
DI692	Senfølge eft. tidl. an. art ikke-traum. intrakran. blødning	41
DI693	Senfølge efter tidligere hjerneinfarkt	1,148
DI694	Senfølge efter tidligere apoplexia cerebri	8,549
DI698	Senfølge efter tidligere an/ikke spec. cerebrovaskulær sygd	34
DI700	Aterosklerose i aorta	249
DI701	Aterosklerose i nyrearterie	44
DI702	Aterosklerose i arterie i underekstremitet	4,403
DI703		*
DI708	Aterosklerose i anden arterie	108
DI709	Aterosklerose UNS	11,347
DI710	Aortadissektion UNS	2,172
DI711	Rumperet torakalt aorta-aneurisme	736
DI712	Torakalt aorta-aneurisme uden ruptur	235
DI713	Rumperet abdominalt aorta-aneurisme	4,406
DI714	Abdominalt aorta-aneurisme uden ruptur	1,085
DI715	Rumperet torakoabdominalt aorta-aneurisme	1,166
DI716	Torakoabdominalt aorta-aneurisme uden ruptur	251
DI718	Rumperet aorta-aneurisme UNS	1,719
DI719	Aorta-aneurisme UNS uden ruptur	870
DI720	Aneurisme på arteria carotis	33
DI722	Aneurisme på nyrearterie	8
DI723	Aneurisme på arteria iliaca	125
DI724	Aneurisme på arterie i underekstremitet	41
DI728	Aneurisme med anden lokalisering	131
DI729	Aneurisme UNS	110
DI730	Raynauds syndrom	4
DI731	Thromboangiitis obliterans	21
DI738	Anden sygdom i perifere kar	15
DI739	Sygdom i perifere kar UNS	215
DI740	Emboli eller trombose i aorta abdominalis	107
DI741	Emboli eller trombose i aorta med anden/ikke spec. lokal.	90
DI742	Emboli eller trombose i arterie i overekstremitet	61

DI743	Emboli eller trombose i arterie i underekstremitet	463
DI744	Emboli eller trombose i arterie i ekstremitet UNS	47
DI745	Emboli eller trombose i arteria iliaca	86
DI748	Emboli eller trombose i anden arterie	219
DI749	Emboli eller trombose i arterie UNS	238
DI770	Erhvervet arteriovenøs fistel	7
DI771	Arteriestriktur	19
DI772	Arterieruptur	88
DI773	Fibromuskulær hyperplasi	*
DI774	Arteria coeliaca-kompressionssyndrom	*
DI775	Arterienekrose	11
DI776	Arteritis UNS	44
DI778	Anden sygdom i arterier og arterioler	58
DI779	Sygdom i arterier og arterioler UNS	21
DI780	Arvelig hæmoragisk telangiektasi	23
DI781	Ikke-neoplastisk nævus	*
DI788	Anden sygdom i kapillærer	*
DI789	Kapillærsygdom UNS	*
DI792	Perifer angiopati ved sygdom klassificeret andetsteds	4
DI800	Superficiel flebitis eller tromboflebitis i underekstremitet	11
DI801	Flebitis eller tromboflebitis i vena femoralis	86
DI802	Dyb flebitis eller tromboflebitis i anden vene i ben	143
DI803	Flebitis eller tromboflebitis i underekstremitet UNS	712
DI808	Flebitis eller tromboflebitis med anden lokalisering	24
DI809	Flebitis eller tromboflebitis UNS	86
DI81	Trombose i portåren	5
DI819	Trombose i vena porta	79
DI820	Budd-Chiaris syndrom	18
DI822	Emboli eller trombose i vena cava	25
DI823	Emboli eller trombose i vena renalis	*
DI828	Emboli eller trombose i anden vene	109
DI829	Emboli eller trombose i vene UNS	224
DI830	Varicer i underekstremitet med ulcus	61
DI831	Varicer i underekstremitet med eksem	*
DI832	Varicer i underekstremitet med både ulcus og eksem	9
DI839	Varicer i underekstremitet uden ulcus og eksem	23
DI841	Interne hæmorroider m anden komplikation	*
DI844	Eksterne hæmorroider m anden komplikation	*
DI847	Tromboserede hæmorroider UNS	*
DI848	Hæmorroider UNS m anden komplikation	4
DI849	Hæmorroider UNS uden komplikation	8
DI850	Øsofagusvaricer med blødning	162
DI859	Øsofagusvaricer uden blødning	28
DI861	Varicer i scrotum	*
DI864	Varicer i mavesækken	17
DI868	Varicer med anden lokalisering	10
DI871	Compressio venae	8
DI872	Venøs insufficiens	38
DI878	Anden sygdom i vener	*
DI879	Sygdom i vene UNS	*
DI880	Lymfadenitis i mesenteriet UNS	*
DI888	Anden lymfadenitis UNS	*
DI889	Lymfadenitis UNS	*
DI890	Lymfødem IKA	8
DI898	Anden ikke-infektiøs sygdom i lymfesystemet	*
DI950	Idiopatisk hypotension	72
DI951	Ortostatisk hypotension	14
DI952	Hypotension forårsaget af lægemiddel	8
DI958	Anden form for hypotension	19
DI959	Hypotension UNS	80
DI99	Andre og ikke specificerede kardiovaskulære sygdomme	8
DI999	Kredsløbssygdom UNS	296
Can		
Cancer		
DC001	Kræft i underlæbens yderside	11
DC002	Kræft i læbens yderside UNS	6
DC003	Kræft i overlæbens slimhinde	*
DC004	Kræft i underlæbens slimhinde	8
DC005	Kræft i læbens slimhinde UNS	5
DC008	Kræft i læbe overgribende flere lokaliseringer	39

DC009	Læbekræft UNS	60
DC01	Kræft i basis af tunge	5
DC019	Kræft i tungebasis	202
DC020	Kræft i tungens overside	6
DC021	Kræft i tungeranden	*
DC023	Kræft i tungens forreste to tredjedele UNS	8
DC024	Kræft i tonsilla lingualis	10
DC028	Kræft i tungen overgribende flere lokalisationer	158
DC029	Tungekræft UNS	752
DC030	Kræft i tandkødet i overmund	39
DC031	Kræft i tandkødet i undermund	53
DC039	Kræft i tandkødet UNS	63
DC040	Kræft i mundgulvets forreste del	4
DC041	Kræft i mundgulvets laterale del	6
DC048	Kræft i mundgulvet overgribende flere lokalisationer	62
DC049	Kræft i mundgulvet UNS	250
DC050	Kræft i den hårde gane	20
DC051	Kræft i den bløde gane	21
DC052	Kræft i drøbelen	10
DC058	Kræft i ganen overgribende flere lokalisationer	20
DC059	Ganekræft UNS	46
DC060	Kræft i kindens slimhinde	213
DC061	Kræft i vestibulum oris	4
DC062	Kræft i slimhinden bag kindtænderne	*
DC068	Kræft i mundhulen overgribende flere lokalisationer	190
DC069	Kræft i mundhulen UNS	1,119
DC07	Kræft i ørespytkirtel	21
DC079	Kræft i ørespytkirtel	382
DC080	Kræft i glandula submandibularis	76
DC081	Kræft i glandula sublingualis	10
DC088	Kræft i stor spytkirtel overgribende flere lokalisationer	10
DC089	Kræft i stor spytkirtel UNS	28
DC090	Kræft i tonsilleje	17
DC092	Kræft i tonsilla palatina	*
DC098	Kræft i tonsil overgribende flere lokalisationer	230
DC099	Kræft i tonsil UNS	816
DC100	Kræft i valleculla epiglottica	8
DC101	Kræft i strubelågets forflade	5
DC102	Kræft i oropharynx later Alvæg	8
DC103	Kræft i oropharynx bagvæg	*
DC104	Kræft i brankialcyste eller brankialfure	6
DC108	Kræft i mundsvælget overgribende flere lokalisationer	138
DC109	Kræft i mundsvælget UNS	622
DC110	Kræft i næsesvælgets loft	4
DC111	Kræft i næsesvælgets bagvæg	4
DC118	Kræft i næsesvælget overgribende flere lokalisationer	45
DC119	Kræft i næsesvælget UNS	196
DC129	Kræft i recessus piriformis	19
DC130	Kræft i regio postcricoidae	4
DC131	Kræft i plica aryepiglottica	*
DC132	Kræft i hypopharynx bagvæg	43
DC138	Kræft i hypopharynx overgribende flere lokalisationer	156
DC139	Kræft i hypopharynx UNS	861
DC140	Kræft i svælget UNS	366
DC141	Kræft i laryngopharynx	*
DC142	Kræft i Waldeyers ring	*
DC148	Kræft i læbe, mundhule og svælg overgrib.fl.lokal.	62
DC150	Neopl mal oesophagi pars cervicalis	7
DC151	Neopl mal oesophagi pars thoracalis	14
DC152	Neopl mal oesophagi pars abdominalis	12
DC153	Kræft i spiserørets øverste tredjedel	7
DC154	Kræft i spiserørets midterste tredjedel	*
DC155	Kræft i spiserørets nederste tredjedel	46
DC156		*
DC158	Kræft i spiserøret overgribende flere lokalisationer	1,847
DC159	Kræft i spiserøret UNS	7,721
DC160	Kræft i cardia	2,799
DC161	Kræft i fundus ventriculi	30
DC162	Kræft i corpus ventriculi	106
DC163	Kræft i antrum pyloricum	57

DC164	Kræft i pylorus	60
DC165	Kræft i curvatura gastrica minor	14
DC166	Kræft i curvatura gastrica major	5
DC168	Kræft i mavesækken overgribende flere lokalisationer	1,099
DC169	Kræft i mavesækken UNS	5,538
DC170	Kræft i tolvfingertarmen	534
DC171	Kræft i jejunum	63
DC172	Kræft i ileum	117
DC173	Kræft i Meckels divertikel	*
DC178	Kræft i tyndtarmen overgribende flere lokalisationer	132
DC179	Kræft i tyndtarmen UNS	347
DC180	Kræft i caecum	2,224
DC181	Kræft i blindtarmen	182
DC182	Kræft i colon ascendens	1,878
DC183	Kræft i flexura coli dextra	135
DC184	Kræft i colon transversum	1,152
DC185	Kræft i flexura coli sinistra	114
DC186	Kræft i colon descendens	774
DC187	Kræft i colon sigmoideum	5,728
DC188	Kræft i tyktarmen overgribende flere lokalisationer	3,040
DC189	Kræft i tyktarmen UNS	17,950
DC19	Kræft på overgangen mellem tyktarm og endetarm	37
DC199	Neopl mal rectosigmoidei	422
DC20	Kræft i endetarmen	659
DC209	Kræft i endetarmen	11,930
DC210	Kræft i endetarmsåbningen UNS	416
DC211	Kræft i analkanalen	136
DC212	Neoplasma malignum cloacogenica ani	8
DC218	Kræft i endetarm, åbning og analkanal, overgrib. lokal.	154
DC220	Hepatocellulært karcinom	3,197
DC221	Kræft i intrahepatiske galdegange	1,830
DC222	Hepatoblastom	27
DC223	Angiosarkom i leveren	76
DC224	Anden form for sarkom i leveren	56
DC227	Anden kræft i leveren	113
DC229	Kræft i leveren UNS	2,810
DC23	Kræft i galdeblæren	58
DC239	Kræft i galdeblæren	755
DC240	Kræft i ekstrahepatiske galdeveje	581
DC241	Kræft i papilla Vateri	329
DC248	Kræft i galdeveje overgribende flere lokalisationer	146
DC249	Kræft i galdeveje UNS	1,075
DC250	Kræft i caput pancreatis	1,829
DC251	Kræft i corpus pancreatis	441
DC252	Kræft i cauda pancreatis	261
DC253	Kræft i ductus pancreaticus	40
DC254	Kræft i Langerhanske øer	20
DC257	Kræft i andre dele af pancreas	244
DC258	Kræft i pancreas overgribende flere lokalisationer	3,311
DC259	Kræft i pancreas UNS	14,880
DC260	Kræft i tarmkanalen UNS	484
DC261	Kræft i milten	7
DC268	Kræft i fordøj-org. overgrib.fl.lokal.	76
DC269	Kræft i fordøjelseorganerne UNS	653
DC300	Kræft i næsehulen	220
DC301	Kræft i mellemøre	37
DC310	Kræft i kæbehulen	125
DC311	Kræft i sinus ethmoidalis	7
DC312	Kræft i pandehulen	*
DC313	Kræft i sinus sphenoidalis	5
DC318	Kræft i bihuler overgribende flere lokalisationer	24
DC319	Kræft i bihule UNS	53
DC320	Kræft i glottis	151
DC321	Kræft i strubehovedet lokaliseret oven for glottis	181
DC322	Kræft i strubehovedet lokaliseret neden for glottis	40
DC323	Kræft i brusk i strubehovedet	21
DC328	Kræft i strubehovedet overgribende flere lokalisationer	213
DC329	Kræft i strubehovedet UNS	1,842
DC33	Kræft i luftrøret	6
DC334		*

DC339	Kræft i luftrøret	58
DC340	Kræft i hovedbronkie	621
DC341	Kræft i lungens øverste lap	2,183
DC342	Kræft i lungens mellemste lap	432
DC343	Kræft i lungens nederste lap	1,189
DC348	Kræft i bronkier og lunge overgribende flere lokalisationer	9,636
DC349	Kræft i lunge UNS	71,377
DC37	Kræft i thymus	8
DC379	Kræft i thymus	91
DC380	Kræft i hjertet	35
DC381	Kræft i mediastinum anterius	18
DC382	Kræft i mediastinum posterius	*
DC383	Kræft i mediastinum UNS	251
DC384	Kræft i lungehinde	300
DC388	Kræft i hjerte, mediastinum og lungehinde overgrib.fl.lokal.	23
DC390	Kræft i øvre luftveje UNS	27
DC398	Kræft i brysthule og luftveje overgrib.fl.lokal.	132
DC399	Kræft i åndedrætsorg./brysthuleorg. med dårligt spec. lokal.	253
DC400	Kræft i skulderblad, lange knogler eller ledbrusk i arm	28
DC401	Kræft i kort knogle eller ledbrusk i overekstremitet	4
DC402	Kræft i lang knogle eller ledbrusk i underekstremitet	87
DC403	Kræft i kort knogle eller ledbrusk i underekstremitet	12
DC408	Kræft i knogle og ledbrusk i ekstremitet overgrib.fl.lokal.	19
DC409	Kræft i knogle eller ledbrusk i ekstremitet UNS	84
DC410	Kræft i kranie eller ansigtsknogle	35
DC411	Kræft i underkæben	58
DC412	Kræft i rygsøjlen	66
DC413	Kræft i ribben, brystben eller kraveben	16
DC414	Kræft i bækken, korsben eller haleben	65
DC418	Kræft i knogle/ledbrusk overgribende flere lokalisationer	26
DC419	Kræft i knogle eller ledbrusk UNS	183
DC430	Malignt melanom i hud på læbe	7
DC431	Malignt melanom i hud på øjenlåg	19
DC432	Malignt melanom i hud på øre eller i ydre øregang	11
DC433	Malignt melanom med anden/ikke spec. lokalisation i ansigtet	178
DC434	Malignt melanom i hud på skalpen eller halsen	70
DC435	Malignt melanom i hud på kroppen	558
DC436	Malignt melanom i hud på overekstremitet	97
DC437	Malignt melanom i hud på underekstremitet	268
DC438	Malignt melanom overgribende flere lokalisationer	1,207
DC439	Malignt melanom i huden UNS	3,483
DC440	Anden hudkræft på læbe	17
DC441	Anden hudkræft på øjenlåg	15
DC442	Anden hudkræft på øre eller i ydre øregang	97
DC443	Anden hudkræft i ansigtet med anden/ikke spec. lokalisation	314
DC444	Anden hudkræft på skalpen eller halsen	119
DC445	Anden hudkræft på kroppen	73
DC446	Anden hudkræft på overekstremitet	50
DC447	Anden hudkræft på underekstremitet	61
DC448	Anden hudkræft overgribende flere lokalisationer	91
DC449	Anden hudkræft UNS	470
DC450	Malignt mesoteliom i lungehinde	1,348
DC451	Malignt mesoteliom i bughinden	128
DC452	Malignt mesoteliom i perikardiet	6
DC457	Malignt mesoteliom med anden lokalisation	82
DC459	Malignt mesoteliom UNS	498
DC460	Kaposi sarkom i huden	9
DC461	Kaposi sarkom i bindevæv	*
DC467	Kaposi sarkom med anden lokalisation	10
DC468	Kaposi sarkom i multiple lokalisationer	18
DC469	Kaposi sarkom UNS	29
DC470	Kræft i perifer nerve el. auton.NS i hoved, ansigt el. hals	*
DC471	Kræft i perifer nerve eller autonome nervesystem i arm	6
DC472	Kræft i perifer nerve eller autonome nervesystem i ben	4
DC473	Kræft i perifer nerve eller autonome nervesystem i thorax	5
DC474	Kræft i perifer nerve eller autonome nervesystem i abdomen	9
DC475	Kræft i perifer nerve eller autonome nervesystem i bækkenet	5
DC476	Kræft i perifer nerve el. autonome nervesystem i truncus UNS	*
DC478	Kræft i perifere nerver el. auton.NS overgribende fl. lokal.	5
DC479	Kræft i perifer nerve eller autonome nervesystem UNS	23

DC480	Kræft i retroperitoneum	234
DC481	Kræft i spec. del af peritoneum	42
DC482	Kræft i peritoneum UNS	102
DC488	Kræft i bughinden og bughulens bagvæg overgrib.fl.lokal.	30
DC490	Kræft i bindevæv og bløddelsvæv i hoved, ansigt eller hals	67
DC491	Kræft i bindevæv og bløddelsvæv i overekstremitet	51
DC492	Kræft i bindevæv og bløddelsvæv i underekstremitet	226
DC493	Kræft i bindevæv og bløddelsvæv i thorax	75
DC494	Kræft i bindevæv og bløddelsvæv i abdomen	153
DC495	Kræft i bindevæv og bløddelsvæv i bækkenet	58
DC496	Kræft i bindevæv og bløddelsvæv i truncus UNS	60
DC498	Kræft i bindevæv og bløddelsvæv overgrib.fl.lokal.	70
DC499	Kræft i bindevæv og bløddelsvæv UNS	596
DC500	Kræft i brystvorte eller areola mammae	12
DC501	Brystkræft i den centrale del af mamma	12
DC502	Brystkræft i den øvre mediale kvadrant af mamma	*
DC503	Brystkræft i den nedre mediale kvadrant af mamma	4
DC504	Brystkræft i den øvre laterale kvadrant af mamma	11
DC505	Brystkræft i den nedre laterale kvadrant af mamma	*
DC506	Brystkræft i processus axillaris mammae	*
DC508	Brystkræft overgribende flere lokalisationer	5,849
DC509	Brystkræft UNS	23,836
DC510	Kræft i stor kønslåbe	11
DC511	Kræft i lille kønslåbe	*
DC512	Kræft i klitoris	*
DC518	Kræft i ydre kvind. kønsorganer overgrib.fl.lokal.	167
DC519	Kræft i ydre kvindelige kønsorganer UNS	584
DC52	Kræft i vagina	17
DC529	Vaginakræft	209
DC530	Neopl mal endocervicis uteri	9
DC531	Neopl mal cervicis uteri, planocellulært carcinom st. I	11
DC532	Neopl mal cervicis uteri, planocellulært carcinom st. II	23
DC533	Neopl mal cervicis uteri, planocellulært carcinom st. III	66
DC534	Neopl mal cervicis uteri, planocellulært carcinom st. IV	47
DC538	Neopl mal cervicis uteri overgribende flere regioner	456
DC539	Livmoderhalskræft	2,350
DC541	Neopl mal fundi uteri, st. I	57
DC542	Neopl mal myometrii, alle stadier	5
DC543	Neopl mal endometrii, st. I	43
DC544	Neopl mal endometrii, st. II	7
DC545	Neopl mal endometrii, st. III	29
DC546	Neopl mal endometrii, st. IV	16
DC548	Neopl mal corporis uteri overgribende flere regioner	307
DC549	Livmoderkræft	2,119
DC55	Kræft i livmoderen uden nærmere spec. lokalisation	92
DC559	Kræft i livmoderen uden nærmere spec. lokalisation	1,481
DC56	Kræft i æggestok	443
DC560	Neopl mal ovarii, st. I	*
DC561	Neopl mal ovarii, st. II	15
DC562	Neopl mal ovarii, st. III	194
DC563	Neopl mal ovarii, st. IV	137
DC569	Æggestokkræft	8,708
DC570	Kræft i æggeleder	153
DC571	Kræft i ligamentum latum uteri	*
DC574	Kræft i adnexa uteri	38
DC577	Kræft i anden spec. struktur i kvindeligt kønsorgan	19
DC578	Kræft i kvind. kønsorganer overgrib.fl.lokal.	64
DC579	Kræft i kvindeligt kønsorgan UNS	336
DC589	Kræft i moderkagen UNS	*
DC600	Kræft i forhuden	4
DC601	Kræft i glans penis	10
DC602	Kræft i corpus penis	10
DC608	Kræft i penis overgribende flere lokalisationer	59
DC609	Kræft i penis UNS	214
DC61	Kræft i blærehalskirtlen	8,418
DC619	Prostatakræft	18,939
DC620	Kræft i ikke-nedstegen testikel	*
DC621	Kræft i testikel i scrotum	27
DC629	Testikelkræft UNS	274
DC631	Kræft i sædstreng	*

DC632	Kræft i scrotum	6
DC638	Kræft i mand. kønsorganer overgrib.fl.lokal.	*
DC639	Kræft i mandligt kønsorgan UNS	16
DC64	Nyrekræft	372
DC649	Nyrekræft	6,909
DC65	Kræft i nyrebækken	38
DC659	Kræft i nyrebækken	741
DC66	Kræft i urinleder	26
DC669	Kræft i urinleder	273
DC670	Neopl mal trigoni vesicae urinariae	8
DC671	Neopl mal vesicae urinariae loft	*
DC672	Neopl mal vesicae urinariae sidevæg	*
DC673	Neopl mal vesicae urinariae forvæg	*
DC674	Neopl mal vesicae urinariae bagvæg	*
DC675	Neopl mal cervicis vesicae urinariae	*
DC676	Kræft i ostium ureteris	*
DC677	Kræft i urachus	6
DC678	Neopl mal vesicae urinariae overgribende flere regioner	1,681
DC679	Kræft i urinblæren UNS	11,015
DC680	Kræft i urinrøret	69
DC681	Kræft i glandula paraurethralis s. bulbourethralis	*
DC688	Kræft i urinorganer overgribende flere lokalisationer	69
DC689	Kræft i urinorgan UNS	181
DC690	Kræft i konjunktiva	*
DC691	Kræft i cornea	*
DC692	Kræft i retina	9
DC693	Kræft i choroidea	51
DC694	Kræft i corpus ciliare	4
DC695	Kræft i tårekirtel eller tårekanal	9
DC696	Kræft i øjenhule	22
DC697	Malignt melanom i øjet	13
DC698	Kræft i øje overgribende flere lokalisationer	10
DC699	Kræft i øje UNS	223
DC700	Kræft i hjernehinde	112
DC701	Kræft i rygmarvshinde	5
DC709	Kræft i hjernehinde eller rygmarvshinde UNS	37
DC710	Kræft i storhjernen	463
DC711	Kræft i hjernens pandelap	553
DC712	Kræft i hjernens tindingelap	327
DC713	Kræft i hjernens isselap	246
DC714	Kræft i hjernens nakkelap	85
DC715	Intraventrikulær kræft i hjernen	36
DC716	Kræft i lillehjernen	133
DC717	Kræft i hjernestammen eller 4. ventrikel	213
DC718	Kræft i hjernen overgribende flere lokalisationer	607
DC719	Kræft i hjernen UNS	6,795
DC720	Kræft i rygmarven	47
DC721	Kræft i cauda equina	*
DC722	Kræft i lugtnerve	5
DC724	Kræft i hørenerve	6
DC725	Kræft i anden hjernenerve eller hjernenerve UNS	*
DC728	Kræft i CNS overgrib.fl.lokal.	59
DC729	Kræft i centralnervesystemet UNS	98
DC73	Kræft i skjoldbruskkirtlen	53
DC739	Kræft i skjoldbruskkirtlen	843
DC740	Kræft i binyrebark	59
DC741	Kræft i binyremarv	31
DC749	Kræft i binyre UNS	206
DC750	Kræft i biskjoldbruskkirtel	12
DC751	Kræft i hypofysen	20
DC753	Kræft i corpus pineale	10
DC754	Kræft i glomus caroticum	*
DC755	Kræft i corpus para-aorticus eller andet paraganglion	8
DC758	Pluriglandulær kræft UNS	4
DC759	Kræft i endokrin kirtel UNS	63
DC760	Kræft i hoved/ansigt/hals uden nærmere spec. lokalisation	231
DC761	Kræft i thorax uden spec. lokalisation	104
DC762	Kræft i abdomen uden spec. lokalisation	3,869
DC763	Kræft i bækkenet uden spec. lokalisation	129
DC764	Kræft i arm u spec. lokal.	15

DC765	Kræft i ben u spec. lokal.	58
DC767	Kræft med anden dårligt specificeret lokalisering	114
DC768	Kræft med anden/dårligt spec. lokal. overgribende fl. lokal.	239
DC770	Metastase eller kræft UNS i lymfeknude i hoved/ansigt/hals	69
DC771	Metastase eller kræft UNS i intratorakal lymfeknude	21
DC772	Metastase eller kræft UNS i intraabdominal lymfeknude	21
DC773	Metastase eller kræft UNS i lymfeknude i axil eller arm	10
DC774	Metastase eller kræft UNS i lymfeknude i lyske el. ben	7
DC775	Metastase eller kræft UNS i intrapelvin lymfeknude	*
DC778	Metastase el. kræft UNS i lymfeknuder i mult. lokaliseringer	33
DC779	Metastase eller kræft UNS i lymfeknude UNS	54
DC780	Fjernmetastase i lunge	589
DC781	Fjernmetastase i mediastinum	*
DC782	Fjernmetastase i lungehinde	11
DC783	Fjernmetastase med anden/ikke spec. lokal. i åndedrætsorgan	4
DC784	Fjernmetastase i tyndtarmen	*
DC785	Fjernmetastase i tyktarmen eller endetarmen	126
DC786	Metastase i retroperitoneale rum eller i peritoneum	20
DC787	Fjernmetastase i leveren	104
DC788	Fjernmetastase m. anden/ikke spec. lokal. i fordøjelsesorgan	4
DC790	Fjernmetastase i nyre eller nyrebækken	83
DC791	Fjernmetastase i andet urinorgan eller mandligt kønsorgan	30
DC792	Fjernmetastase i huden	11
DC793	Fjernmetastase i hjernen eller hjernebinder	38
DC794	Fjernmetastase med anden/ikke spec. lokal. i nervesystemet	*
DC795	Fjernmetastase i knogle eller knoglemarven	10
DC796	Fjernmetastase i æggestok	148
DC798	Metastase UNS	17
DC80	Ikke nærmere spec. kræft (ukendt primærtumor)	534
DC800	Primær kræftsygdom uden kendt lokalisering	231
DC809	Kræftsygdom UNS	16,969
DC810	Nodulært lymfocyttdomineret Hodgkin lymfom	6
DC811	Klassisk Hodgkin lymfom med nodulær sklerose	40
DC812	Klassisk Hodgkin lymfom med blandet cellularitet	28
DC813	Klassisk lymfocytfattigt Hodgkin lymfom	6
DC814	Klassisk lymfocyttrigt Hodgkin lymfom	10
DC817	Andet klassisk Hodgkin lymfom	7
DC819	Hodgkin lymfom UNS	579
DC820	Follikulært lymfom, grad I	26
DC821	Follikulært lymfom, grad II	49
DC822	Follikulært lymfom, grad III	113
DC827	Andet follikulært lymfom	34
DC829	Follikulært lymfom UNS	156
DC830	Småcellet B-celle lymfom	107
DC831	Mantle celle lymfom (MCL)	121
DC832	Lymph mal non-Hodg af diff type mixed small and large cell	17
DC833	Diffust storcellet B-celle lymfom	1,037
DC834	Lymphoma mal non-Hodgkin af diffus immunoblastær type	11
DC835	Lymfoblastært lymfom	105
DC836	Lymphoma mal non-Hodgkin af diffus udifferentieret type	11
DC837	Burkitt lymfom	83
DC838	Andet ikke-follikulært lymfom	120
DC839	Ikke-follikulært (diffust) lymfom UNS	53
DC840	Mycosis fungoides	69
DC841	Sézarys sygdom	8
DC842	Lymphoma mal T-zone	*
DC843	Lymphoma mal lymfoepiteloidt	25
DC844	Perifert T-celle lymfom UNS	117
DC845	Andet modent NK/T-celle lymfom	496
DC850	Lymphosarcoma	13
DC851	B-celle lymfom UNS	1,985
DC857	Andet non-Hodgkin lymfom	115
DC859	Lymfom (neoplasi) UNS	3,162
DC860	Ekstranodalt NK/T-celle lymfom, nasal type	6
DC861	Hepatosplenisk T-celle lymfom	33
DC864	Blastisk NK-celle lymfom	12
DC865	Angioimmunoblastært T-celle lymfom	11
DC880	Waldenströms makroglobulinæmi	538
DC882	Anden heavy chain disease	*
DC883	Immunoproliferativ tyndtarmssygdom	5

DC884	Ekstranodalt marginalzone B-celle lymfom	47
DC887	Anden malign immunoproliferativ sygdom	7
DC889	Malign immunoproliferativ sygdom UNS	12
DC900	Myelomatose	5,201
DC901	Plasmacelle leukæmi	53
DC902	Solitært ikke-ossøst plasmacytom	16
DC903	Solitært ossøst plasmacytom	*
DC910	Akut lymfoblastær leukæmi (ALL)	487
DC911	Kronisk lymfatisk leukæmi af B-celle type (B-CLL)	3,271
DC912	Leukaemia lymphatica subacuta	13
DC913	Prolymfocyt leukæmi af B-celle type	37
DC914	Håracelle leukæmi	61
DC915	Adult T-celle lymfom/leukæmi (HTLV-1-associeret)	32
DC916	Prolymfocyt leukæmi af T-celle type	20
DC917	Anden lymfatisk leukæmi	22
DC918	Moden B-celle leukæmi af Burkitt-type	*
DC919	Lymfatisk leukæmi UNS	91
DC920	Akut myeloblastær leukæmi (AML)	3,976
DC921	Kronisk myeloid leukæmi (CML), BCR/ABL-positiv	781
DC922	Atypisk kronisk myeloid leukæmi, BCR/ABL-negativ	89
DC923	Myeloidt sarkom	68
DC924	Akut myeloblastær leukæmi, AML M3	19
DC925	Akut myeloblastær leukæmi, AML M4	72
DC926	Akut myeloblastær leukæmi med 11q23-abnormalitet	5
DC927	Anden myeloid leukæmi	103
DC928	Akut myeloid leukæmi med multilinje dysplasi	220
DC929	Myeloid leukæmi UNS	208
DC930	Akut monoblastær leukæmi, AML M5	29
DC931	Kronisk myelomonocytær leukæmi, CMML	113
DC933	Juvenil myelomonocytær leukæmi	*
DC937	Anden monocytær leukæmi	6
DC939	Monocytær leukæmi UNS	8
DC940	Akut erytroid leukæmi, M6 (a)(b)	24
DC942	Akut megakaryoblastær leukæmi, M7	5
DC943	Mastcelle leukæmi	*
DC944	Akut myelofibrose	4
DC945	Myelofibrosis acuta	83
DC946	Uklassificerbar myelodysplasi/myeloproliferativ sygdom	26
DC947	Anden leukæmi	22
DC950	Akut leukæmi af ikke spec. celletype	488
DC951	Kronisk leukæmi af ikke spec. celletype	221
DC952	Leukaemia subacuta uden specifikation	*
DC957	Anden leukæmi af ikke spec. celletype	12
DC959	Leukæmi UNS	449
DC960	Multifokal og multisyst. Langerhans-celle histiocytosis	*
DC961	Histiocytosis maligna	15
DC962	Malign mastcelle tumor	8
DC963	Lymphoma mal histiocyticum verum	*
DC964	Dendritcelle sarkom (accessoriske celler)	6
DC967	Anden malign neoplasi fra lymfoidt eller hæmatopoietisk væv	9
DC968	Malign histiocytose UNS	*
DC969	Malign neoplasi fra lymfoidt eller hæmatopoietisk væv UNS	93
DC97	Kræft opstået uafhængigt i flere lokalisationer	1,363
DC979	Neopl mal primarium flere lokalisationer	52
DD001	Carcinoma in situ i spiserøret	*
DD010	Carcinoma in situ i tyktarmen	*
DD012	Carcinoma in situ i endetarmen	4
DD014	Carcinoma in situ i anden eller ikke spec. del af tarmen	*
DD015	Carcinoma in situ i leveren, galdeblæren eller galdeveje	14
DD019	Carcinoma in situ i fordøjelseskanalen UNS	5
DD020	Carcinoma in situ i strubehovedet	*
DD022	Carcinoma in situ i bronkie eller lunge	23
DD023	Carcinoma in situ med anden lokalisation i åndedrætsorganer	*
DD033	Melanoma in situ i ansigtet m. anden/ikke spec. lokalisation	*
DD037	Melanoma in situ på underekstremitet	*
DD038	Melanoma in situ med anden lokalisation	*
DD039	Melanoma in situ UNS	*
DD043	Carcinoma in situ i hud i ansigtet med an./ikke spec. lokal.	*
DD044	Carcinoma in situ i hud på skalpen eller halsen	*
DD046	Carcinoma in situ i hud på overekstremitet	*

DD048	Carcinoma in situ i huden med anden lokalisation	*
DD049	Carcinoma in situ i huden UNS	*
DD051	Intraduktalt carcinoma in situ i mamma	*
DD057	Carcinoma in situ med anden lokalisation i mamma	*
DD059	Carcinoma in situ i mamma UNS	4
DD061	Carc in situ exocervicis uteri	*
DD067	Carc in situ cervicis uteri m anden lokalisation	*
DD069	Carcinoma in situ i livmoderhalsen UNS	*
DD070	Endometriehyperplasi med atypi	4
DD071	Carcinoma in situ i vulva	*
DD074	Carcinoma in situ på penis	*
DD075	Carcinoma in situ i prostata	6
DD090	Carcinoma in situ (Tis) i urinblæren	27
DD091	Carcinoma in situ (Tis) med anden/ikke spec. lok. i urinveje	*
DD092	Carcinoma in situ i øje	*
DD097	Carcinoma in situ med anden lokalisation	*
DD099	Carcinoma in situ UNS	*
Oth		
Diab		
D		204
D0000		*
DA410	Sepsis forårsaget af Staphylococcus aureus	*
DA419	Sepsis UNS	42
DA469	Rosen UNS	*
DA498	Anden bakteriel infektion uden angivelse af lokalisation	*
DA499	Bakteriel infektion UNS	*
DB999	Anden eller ikke specificeret infektionssygdom	*
DC138	Kræft i hypopharynx overgribende flere lokalisationer	*
DC159	Kræft i spiserøret UNS	*
DC189	Kræft i tyktarmen UNS	*
DC220	Hepatocellulært karcinom	*
DC221	Kræft i intrahepatiske galdegange	*
DC250	Kræft i caput pancreatis	*
DC252	Kræft i cauda pancreatis	*
DC258	Kræft i pancreas overgribende flere lokalisationer	*
DC259	Kræft i pancreas UNS	5
DC383	Kræft i mediastinum UNS	*
DC444	Anden hudkræft på skalpen eller halsen	*
DC509	Brystkræft UNS	5
DC619	Prostatakræft	4
DC649	Nyrekræft	*
DC659	Kræft i nyrebækken	*
DC728	Kræft i CNS overgrib.fl.lokal.	*
DC809	Kræftsygdom UNS	*
DC851	B-celle lymfom UNS	*
DC900	Myelomatose	*
DC97	Kræft opstået uafhængigt i flere lokalisationer	*
DD449	Ikke spec. tumor i endokrin kirtel UNS	*
DD629	Akut blødningsanæmi UNS	*
DD809	Immundefekt med overvejende antistofmangel UNS	*
DE107	Type 1-diabetes med multiple komplikationer	*
DE110	Type 2-diabetes med koma	*
DE131	Anden diabetes med ketoacidose	*
DE139	Anden diabetes uden komplikationer	*
DE159	Hypoglykæmisk koma UNS	47
DE160	Hypoglykæmi uden koma forårsaget af lægemiddel	*
DE161	Anden form for hypoglykæmi	17
DE162	Hypoglykæmi UNS	123
DE271	Primær binyrebarkinsufficiens	*
DE419	Svækkelse forårsaget af underernæring UNS	*
DE512	Wernickes encefalopati	*
DE725	Forstyrrelser i glycinomsætningen	*
DE729	Forstyrrelse i aminosyreomsætningen UNS	*
DE869	Volumenindsættelse af plasma eller ekstracellulær væske	5
DE871	Hypoosmolalitet eller hyponatriæmi	*
DE872	Acidose	35
DE875	Hyperkaliæmi	4
DE878	Forstyrrelse i vand- eller elektrolytbalancen IKA	*
DF009	Demens ved Alzheimers sygdom UNS	*
DF011	Multi-infarkt demens	*

DF039	Demens UNS	*
DF101	Skadelig brug af alkohol	*
DF102	Alkoholafhængighedssyndrom	12
DF107	Sen psykotisk eller residual tilstand f.a. alkoholbrug	*
DF192	Afhængighedssyndrom v. brug af fl./andre psykoaktive stoffer	*
DF500	Nervøs spisevægning	*
DF708	Lettere mental retardering med anden påvirkning af adfærd	*
DG009	Bakteriel meningitis UNS	*
DG359	Dissemineret sklerose UNS	*
DG419	Status epilepticus UNS	*
DG710	Muskeldystrofi	*
DG838	Andet paralytisk syndrom	*
DG931	Anoksisk hjerneskade IKA	*
DG934	Encefalopati UNS	*
DG935	Compressio cerebri	*
DG936	Hjerneødem	*
DG939	Hjernesygdom UNS	*
DI129	Hypertensiv nyresygdom uden nyresvigt	*
DI209	Angina pectoris UNS	*
DI210	Anteriort akut myokardieinfarkt med Q-taksudvikling	*
DI219	Akut myokardieinfarkt UNS	16
DI229	Infarctus myocardii acutus recidivans uden specifikation	*
DI249	Akut iskæmisk hjertesygdom UNS	*
DI251	Arteriosklerotisk hjertesygdom	6
DI252	Gammelt myokardieinfarkt	*
DI420	Dilateret kardiomyopati	*
DI426	Alkoholisk kardiomyopati	*
DI429	Kardiomyopati UNS	*
DI442	3° Ophævet AV-overledning (AV-blok)	*
DI443	Atrioventrikulært hjerteblok UNS	*
DI460	Hjertestop med vellykket genoplivning	*
DI461	Pludselig hjertedød	7
DI469	Hjertestop UNS	6
DI489	Atrieflagren eller atrieflimren UNS	*
DI495	Syg sinusknude-syndrom	*
DI498	Anden hjerterytmeforstyrrelse	*
DI499	Hjerterytmeforstyrrelse UNS	*
DI500	Kronisk hjerteinsufficiens	*
DI509	Hjertesvigt UNS	6
DI517	Kardiomegali	*
DI619	Hjerneblødning UNS	*
DI620	Akut ikke-traumatisk subdural blødning	*
DI638	Anden form for hjerneinfarkt	*
DI639	Hjerneinfarkt UNS	*
DI649	Apoplexia cerebri UNS	13
DI678	Anden cerebrovaskulær sygdom	*
DI694	Senfølge efter tidligere apoplexia cerebri	*
DI702	Aterosklerose i arterie i underekstremitet	*
DI709	Aterosklerose UNS	*
DI713	Rumperet abdominalt aorta-aneurisme	*
DI719	Aorta-aneurisme UNS uden ruptur	*
DI742	Emboli eller trombose i arterie i overekstremitet	*
DI958	Anden form for hypotension	*
DI959	Hypotension UNS	*
DJ139	Pneumoni forårsaget af Streptococcus pneumoniae	*
DJ151	Pneumoni forårsaget af Pseudomonas	*
DJ152	Pneumoni forårsaget af stafylokokker	*
DJ158	Anden bakteriel pneumoni	*
DJ159	Bakteriel pneumoni UNS	7
DJ180	Bronkopneumoni UNS	*
DJ189	Pneumoni UNS	21
DJ441	Kronisk obstruktiv lungesygdom med akut eksacerbation UNS	*
DJ449	Kronisk obstruktiv lungesygdom UNS	*
DJ690	Aspirationspneumoni forårsaget af fødeemner el. maveindhold	6
DJ819	Lungeødem UNS	*
DJ960	Akut respirationsinsufficiens	26
DJ969	Respirationsinsufficiens UNS	11
DK264	Kronisk eller ikke specificeret duodenalulcus med blødning	*
DK290	Akut blødende gastritis	*
DK297	Mavekatar UNS	*

DK550	Akut karsygdsm i tarm	*
DK631	Ikke-traumatisk perforation af tarmen	*
DK700	Alkoholisk fedtlever	*
DK702	Alkoholisk leverfibrose	*
DK703	Alkoholisk levercirrose	6
DK709	Alkoholisk leversygdom UNS	*
DK720	Akut eller subakut leverinsufficiens	*
DK729	Leversvigt UNS	*
DK732	Kronisk aktiv hepatitis IKA	*
DK746	Anden eller ikke specificeret levercirrose	*
DK808	Anden form for galdesten	*
DK859	Akut pankreatitis UNS	*
DK860	Kronisk alkoholisk pankreatitis	9
DK861	Anden form for kronisk pankreatitis	*
DK922	Gastrointestinal blødning UNS	*
DL899	Decubitus UNS	*
DM179	Knæledsartrose UNS	*
DM353	Reumatisk polymyalgi	*
DN059	Glomerulonefrit UNS	*
DN109	Akut tubulointerstitiel nefritis UNS	*
DN159	Tubulointerstitiel nyresygdom UNS	*
DN179	Akut nyreinsufficiens UNS	*
DN180	Terminal nyreinsufficiens	*
DN184	Kronisk nyreinsufficiens, stadie 4	*
DN189	Kronisk nyreinsufficiens UNS	5
DN199	Nyreinsufficiens UNS	*
DN289	Sygdom i nyre eller urinleder UNS	*
DN300	Akut blærebetændelse	*
DQ451	Pancreas annulare	*
DR092	Respirationsstop	29
DR549	Senilitet	*
DR570	Kardiogent shock	*
DR571	Hypovolæmisk shock	*
DR572	Septisk shock	4
DR578	Anden form for shock	*
DR579	Shock UNS	*
DR649	Kakeksi UNS	*
DR989	Mors causa ignota (fundet død)	4
DR999	Mors uden specificifikation	4
DT719	Asfyksi	*
DT814	Infektion efter indgreb IKA	*
DW190		*
DX59		*
DX590		*
DX64	Forsætlig selvskade m. uspec. lægemidler og biologiske stof.	7
Digest		
DK028	Anden form for karies	*
DK040	Pulpitis	*
DK045	Kronisk apikal parodontitis	*
DK047	Periapikal tandabsces uden fistel	15
DK050	Akut gingivitis	*
DK052	Akut parodontitis	5
DK053	Kronisk parodontitis	*
DK068	An. sygd. i gingiva/processus alveolaris eft tab af tænder	*
DK071	Abnormt forhold mellem kæber og basis cranii	*
DK089	Sygdom i tænder eller støttevæv UNS	8
DK102	Betændelsestilstand i kæbe	7
DK103	Ostitis alveolaris	*
DK108	Anden sygdom i kæbe	*
DK109	Sygdom i kæbe UNS	*
DK110	Atrofi af spytkirtel	*
DK112	Betændelse i spytkirtel	46
DK113	Absces i spytkirtel	8
DK115	Spytsten	*
DK117	Sekretionsforstyrrelse i spytkirtel	*
DK118	Anden sygdom i spytkirtel	*
DK119	Sygdom i spytkirtel UNS	*
DK121	Anden form for stomatitis	6
DK122	Flegmone eller absces i munden	8
DK132	Leukoplakia eller anden forstyrrelse i mundslimhinden	*

DK137	Anden eller ikke nærmere specificeret sygdom i mundslimhinde	*
DK140	Glossitis	*
DK149	Sygdom i tunge UNS	*
DK20	Betændelse i spiserøret	7
DK209	Øsofagitis UNS	112
DK210	Gastro-øsofageal reflux med øsofagitis	42
DK219	Gastro-øsofageal reflux uden øsofagitis	8
DK220	Kardia-akalasi	27
DK221	Ulcus i spiserøret	172
DK222	Obstruktion af spiserøret	259
DK223	Perforation af spiserøret	132
DK224	Spiserørskinesesi	10
DK225	Erhvervet øsofagusdivertikel	42
DK226	Mallory-Weiss' syndrom	21
DK227	Barretts øsofagus	11
DK228	Anden sygdom i spiserøret	36
DK229	Sygdom i øsofagus UNS	44
DK250	Akut mavesår med blødning	1,043
DK251	Akut mavesår med perforation	635
DK252	Akut mavesår med blødning og perforation	122
DK253	Akut mavesår uden blødning eller perforation	55
DK254	Kronisk eller ikke specificeret mavesår med blødning	1,232
DK255	Kronisk eller ikke specificeret mavesår med perforation	804
DK256	Kronisk eller ikke spec. mavesår med blødning og perforation	77
DK257	Kronisk mavesår uden blødning eller perforation	61
DK259	Mavesår UNS uden blødning eller perforation	729
DK260	Akut duodenalulcus med blødning	885
DK261	Akut duodenalulcus med perforation	485
DK262	Akut duodenalulcus med blødning og perforation	112
DK263	Akut duodenalulcus uden blødning eller perforation	48
DK264	Kronisk eller ikke specificeret duodenalulcus med blødning	812
DK265	Kronisk el. ikke specificeret duodenalulcus med perforation	597
DK266	Kronisk/uspec. duodenalulcus med blødning og perforation	87
DK267	Kronisk duodenalulcus uden blødning eller perforation	17
DK269	Duodenalulcus UNS uden blødning eller perforation	360
DK270	Akut gastroduodenalt ulcus med blødning	349
DK271	Akut gastroduodenalt ulcus med perforation	124
DK272	Akut gastroduodenalt ulcus med blødning og perforation	45
DK273	Akut gastroduodenalt ulcus uden blødning eller perforation	17
DK274	Kronisk eller ikke spec. gastroduodenalt ulcus med blødning	510
DK275	Kronisk el. ikke spec. gastroduodenalt ulcus med perforation	295
DK276	Kronisk/uspec. gastroduodenalt ulcus med blødning og perfor.	33
DK277	Kronisk gastroduodenalt ulcus uden blødning el. perforation	16
DK279	Gastroduodenalt ulcus UNS uden blødning eller perforation	179
DK280	Akut gastrointestinalt sår med blødning	46
DK281	Akut gastrointestinalt sår med perforation	32
DK282	Akut gastrointestinalt sår med blødning og perforation	7
DK283	Akut gastrointestinalt sår uden blødning og perforation	*
DK284	Kronisk eller ikke spec. gastrointestinalt sår med blødning	46
DK285	Kronisk el. ikke spec. gastrointestinalt sår med perforation	31
DK286	Kronisk/uspec. gastrointestinalt sår med blødning og perfor.	*
DK287	Kronisk gastrointestinalt sår uden blødning og perforation	*
DK289	Gastrointestinalt sår UNS uden blødning eller perforation	16
DK290	Akut blødende gastritis	161
DK291	Anden form for akut mavekatar	13
DK292	Alkoholisk gastritis	67
DK293	Kronisk superficiel gastritis	7
DK294	Kronisk atrofisk gastritis	13
DK295	Kronisk gastritis UNS	62
DK296	Anden form for mavekatar	16
DK297	Mavekatar UNS	73
DK298	Duodenitis	*
DK299	Gastroduodenitis UNS	41
DK30	Funktionelt fordøjelsesbesvær	*
DK309	Funktionel dyspepsi UNS	37
DK310	Akut dilatation af mavesækken	*
DK311	Hypertrofisk pylorostenose	28
DK312	Timeglasformet striktur eller stenose i mavesækken	6
DK315	Obstruktion af duodenum	42
DK316	Fistel fra mavesækken eller duodenum	7

DK317	Polyp i mavesækken eller duodenum	*
DK318	Anden sygdom i ventrikel eller duodenum	38
DK319	Sygdom i mavesækken eller duodenum UNS	36
DK350	Appendicitis acuta m diffus peritonitit	234
DK351	Appendicitis acuta m peritoneal absces	45
DK352	Akut appendicitis med generaliseret peritonitis	31
DK353	Akut appendicitis med lokaliseret peritonitis	30
DK358	Anden og ikke spec. akut appendicitis	22
DK359	Akut blindtarmsbetændelse uden specifikation	152
DK369	Kronisk eller recidiverende appendicitis	*
DK37	Blindtarmsbetændelse UNS	*
DK379	Appendicitis UNS	40
DK389	Sygdom i blindtarmen UNS	13
DK400	Bilateralt ingvinalhernie med ileus uden gangræn	22
DK401	Bilateralt ingvinalhernie med gangræn	9
DK402	Bilateralt ingvinalhernie uden ileus eller gangræn	10
DK403	Unilateralt ingvinalhernie med ileus uden gangræn	240
DK404	Unilateralt ingvinalhernie med gangræn	72
DK409	Ingvinalhernie UNS uden ileus eller gangræn	109
DK410	Bilateralt femoralhernie med ileus uden gangræn	9
DK411	Bilateralt femoralhernie med gangræn	5
DK412	Bilateralt femoralhernie uden ileus eller gangræn	*
DK413	Unilateralt femoralhernie med ileus uden gangræn	100
DK414	Unilateralt femoralhernie med gangræn	54
DK419	Femoralhernie UNS uden ileus eller gangræn	22
DK420	Umbilikalhernie med ileus uden gangræn	54
DK421	Umbilikalhernie med gangræn	26
DK429	Umbilikalhernie uden ileus eller gangræn	20
DK430	Incisionalhernie med ileus uden gangræn	116
DK431	Incisionalhernie med gangræn	39
DK432	Incisionalhernie uden ileus eller gangræn	4
DK433	Parastomalt hernie med ileus uden gangræn	15
DK434	Parastomalt hernie med gangræn	8
DK435	Parastomalt hernie uden ileus eller gangræn	5
DK436	Andet ventralhernie med ileus uden gangræn	13
DK437	Andet ventralhernie med gangræn	10
DK439	Ventralhernie UNS uden ileus eller gangræn	69
DK440	Diafragmahernie med ileus uden gangræn	46
DK441	Diafragmahernie med gangræn	20
DK449	Diafragmahernie uden ileus eller gangræn	198
DK450	Andet abdominalhernie med ileus uden gangræn	72
DK451	Andet abdominalhernie med gangræn	41
DK458	Andet abdominalhernie uden ileus eller gangræn	19
DK460	Abdominalhernie UNS med ileus uden gangræn	114
DK461	Abdominalhernie UNS med gangræn	48
DK469	Abdominalhernie UNS uden ileus eller gangræn	41
DK500	Crohns sygdom i tyndtarmen	34
DK501	Crohns sygdom i tyktarmen	37
DK508	Anden form for Crohns sygdom	10
DK509	Crohns sygdom UNS	364
DK510	Ulcerøs pancolitis	153
DK511	Ileocolitis (chronica) ulcerosa	18
DK512	Ulcerøs proktitis	11
DK513	Ulcerøs proktosigmoiditis	5
DK514	Inflammatoriske polypper	4
DK515	Venstresidig ulcerøs colitis	5
DK518	Anden form for ulcerøs colitis	37
DK519	Ulcerøs colitis UNS	292
DK520	Gastroenteritis eller colitis forårsaget af stråling	*
DK521	Toksisk gastroenteritis eller colitis	20
DK522	Gastroenteritis eller colitis f.a. allergi eller fødemiddel	4
DK523	Ikke spec. colitis	52
DK528	Anden form for ikke-infektios gastroenteritis eller colitis	54
DK529	Anden ikke-infektios gastroenteritis eller colitis UNS	183
DK550	Akut karsygdom i tarm	2,737
DK551	Kronisk karsygdom i tarm	174
DK552	Angiodysplasi i tyktarmen	30
DK558	Anden karsygdom i tarmen	50
DK559	Karsygdom i tarm UNS	545
DK560	Paralytisk ileus	210

DK561	Invagination	11
DK562	Volvulus	543
DK563	Galdestensileus	99
DK564	Anden form for tarmobstruktion	98
DK565	Tarmadhærencer med tarmobstruktion	772
DK566	Anden eller ikke specificeret tarmobstruktion	756
DK567	Ileus UNS	2,582
DK570	Divertikulose el divertikulitis i tyndtarm. m perf el absces	130
DK571	Divertikulose el divertikulit i tyndtarmen u perf. el absces	50
DK572	Divertikulose/divertikulitis i tyktarmen m. perfor./absces	1,117
DK573	Divertikulose eller divertikulit i tyktarm u perf. el absces	620
DK574	Divertikler i både tynd- og tyktarm m perforation el absces	131
DK575	Divertikler i både tynd- og tyktarm u perforation el absces	16
DK578	Divertikler u. ang. af lokal. m. perforation el. absces	114
DK579	Divertikler uden lokalisatation uden perforation eller absces	275
DK580	Irritabel tyktarm med diaré	15
DK589	Irritabel tyktarm uden diaré	6
DK590	Forstoppelse	324
DK591	Funktionel diaré	131
DK592	Neurogen tarmfunktionsforstyrrelse IKA	*
DK593	Megacolon IKA	50
DK598	Anden forstyrrelse i tarmfunktionen	9
DK599	Forstyrrelse i tarmfunktionen UNS	22
DK602	Analfissur UNS	*
DK603	Analfistel	*
DK604	Rektalfistel	7
DK605	Anorektal fistel	*
DK610	Analabsces	65
DK611	Rektalabsces	18
DK612	Anorektal absces	9
DK613	Iskiorektal absces	14
DK621	Rektal polyp	19
DK622	Analprolaps	6
DK623	Rektalprolaps	46
DK624	Stenose i anus eller rectum	9
DK625	Blødning fra anus eller rectum	333
DK626	Ulcus i anus eller rectum	5
DK627	Proktitis forårsaget af stråling	4
DK628	Anden sygdom i anus eller rectum	16
DK629	Sygdom i anus eller rectum UNS	6
DK630	Tarmabsces	60
DK631	Ikke-traumatisk perforation af tarmen	888
DK632	Tarmfistel	34
DK633	Tarmsår	30
DK635	Colonpolyp UNS	5
DK638	Anden tarmsygdom	91
DK639	Tarmsygdom UNS	147
DK649	Hæmorider UNS	6
DK650	Akut peritonitis	477
DK658	Anden form for peritonitis	98
DK659	Peritonitis UNS	227
DK660	Sammenvoksninger i bughinden	38
DK661	Blødning i peritoneum	28
DK668	Anden sygdom i bughinden	30
DK669	Sygdom i bughinde UNS	9
DK700	Alkoholisk fedtlever	627
DK701	Alkoholisk leverbetændelse	733
DK702	Alkoholisk leverfibrose	72
DK703	Alkoholisk levercirrose	12,704
DK704	Alkoholisk leverinsufficiens	1,596
DK709	Alkoholisk leversygdom UNS	979
DK710	Toksisk leversygdom med kolestase	7
DK711	Toksisk leversygdom med nekrose	48
DK712	Toksisk leversygdom med akut hepatitis	17
DK713	Toksisk leversygdom med kronisk persisterende hepatitis	4
DK715	Toksisk leversygdom med kronisk aktiv hepatitis	5
DK716	Toksisk leversygdom med hepatitis IKA	15
DK717	Toksisk leversygdom med fibrose eller cirrose	42
DK718	Toksisk leversygdom med anden manifestation i leveren	5
DK719	Toksisk leversygdom UNS	20

DK720	Akut eller subakut leverinsufficiens	308
DK721	Kronisk leverinsufficiens	214
DK729	Leversvigt UNS	595
DK730	Kronisk persisterende hepatitis IKA	23
DK732	Kronisk aktiv hepatitis IKA	52
DK738	Anden form for kronisk hepatitis IKA	16
DK739	Kronisk hepatitis UNS	43
DK740	Leverfibrose	26
DK741	Leverisklerose	7
DK742	Leverfibrose med sklerose	5
DK743	Primær biliær levercirrose	234
DK744	Sekundær biliær levercirrose	13
DK745	Biliær levercirrose UNS	117
DK746	Anden eller ikke specificeret levercirrose	1,636
DK750	Leverabsces	98
DK751	Pyleflebitis	*
DK752	Reaktiv hepatitis UNS	11
DK753	Granulomatøs hepatitis IKA	*
DK754	Autoimmun hepatitis	29
DK758	Anden inflammatorisk leversygdom	67
DK759	Inflammatorisk leversygdom UNS	13
DK760	Fedtdegeneration i leveren IKA	51
DK761	Leverstase	16
DK762	Central hæmoragisk levernekrose	*
DK763	Leverinfarkt	12
DK765	Tillukning af levervener	*
DK766	Portal hypertension	28
DK767	Hepatorenalt syndrom	86
DK768	Anden leversygdom	80
DK769	Lever sygdom UNS	200
DK800	Sten i galdeblæren med akut kolecystitis	261
DK801	Sten i galdeblæren med kronisk kolecystitis	88
DK802	Sten i galdeblæren uden kolecystitis	383
DK803	Sten i galdegang med kolangitis	218
DK804	Sten i galdegang med kolecystitis	92
DK805	Galdesten uden kolangitis eller kolecystitis	156
DK808	Anden form for galdesten	170
DK810	Akut kolecystitis	674
DK811	Kronisk kolecystitis	44
DK818	Anden form for kolecystitis	22
DK819	Kolecystitis UNS	362
DK820	Aflukning af ductus cysticus	19
DK821	Hydrops vesicae felleae	*
DK822	Perforation af galdeblæren	47
DK823	Fistel fra galdeblæren	4
DK828	Anden sygdom i galdeblæren	6
DK829	Sygdom i galdeblæren UNS	44
DK830	Kolangitis	475
DK831	Galdegangsobstruktion	144
DK832	Perforation af galdegang	14
DK833	Fistel fra galdegang	*
DK835	Galdegangscyste	*
DK838	Anden sygdom i galdevejene	29
DK839	Galdevejssygdom UNS	144
DK85	Akut betændelse i bugspytkirtel	28
DK850	Idiopatisk akut pankreatitis	13
DK851	Akut pankreatitis forårsaget af galdevejslidelse	122
DK852	Akut alkoholisk pankreatitis	118
DK853	Akut pankreatitis forårsaget af lægemiddel	*
DK858	Anden form for akut pankreatitis	32
DK859	Akut pankreatitis UNS	1,250
DK860	Kronisk alkoholisk pankreatitis	1,092
DK861	Anden form for kronisk pankreatitis	478
DK862	Pancreascyste	30
DK863	Pseudocyste i pancreas	6
DK868	Anden sygdom i pancreas	95
DK869	Pancreassygdom UNS	73
DK900	Cøliaki	32
DK901	Tropisk sprue	*
DK903	Pankreatisk steatoré	*

DK904	Malabsorption ved intolerans IKS	9
DK908	Anden form for malabsorption	10
DK909	Malabsorption UNS	15
DK910	Opkastning efter gastrointestinal kirurgi	*
DK911	Postgastrektomisyndrom	*
DK912	Malabsorption efter gastrointestinal kirurgi IKA	22
DK913	Postoperativ tarmobstruktion	*
DK914	Dårligt fungerende colostomi eller enterostomi	*
DK918	An. forstyrrelse i fordøjelsessyst. efter kir/med-beh IKA	*
DK920	Hæmatemese	1,267
DK921	Melæna	502
DK922	Gastrointestinal blødning UNS	2,790
DK928	Anden sygdom i fordøjelsessystemet	*
DK929	Sygdom i fordøjelsessystemet UNS	89
Extern		
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DV439	124
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DV486	74
DV489	33

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DV990	6
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DW020	*
DW03	13
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DW04	12
DW040	*
DW05	88
DW050	20
DW06	231
DW060	46
DW07	78
DW070	13

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DW080	*
DW09	*
DW10	623
DW100	293
DW11	79
DW110	40
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DW120	13
DW13	211
DW130	84
DW14	12
DW140	7
DW15	7
DW150	*
DW16	5
DW17	306
DW170	24
DW18	1,938
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DW19	2,875
DW190	5,862
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DW200	53
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DW220	6
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DW230	57
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DW650	10
DW66	5
DW67	14
DW670	10
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DW680	5
DW69	292
DW690	147
DW70	104
DW700	26
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DW730	19
DW74	157
DW740	39
DW75	20
DW750	11
DW76	45
DW760	26
DW77	25
DW770	10
DW78	130
DW780	92
DW79	391
DW790	252
DW80	46
DW800	17
DW81	4
DW83	72
DW830	14
DW84	91
DW840	5
DW85	13
DW850	11
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DW860	*
DW87	*
DW870	*
DW890	*
DW900	*
DW92	5
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DW94	*
DW940	*
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DX000	96
DX01	30
DX010	*
DX02	32
DX020	23
DX03	5
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DX04	57
DX040	13
DX05	19
DX050	17
DX06	33
DX060	38
DX08	401
DX080	165
DX09	191
DX090	57

DX10	*
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DX110	*
DX12	*
DX120	*
DX15	*
DX16	*
DX160	*
DX19	4
DX200	*
DX23	23
DX230	7
DX29	*
DX30	*
DX300	*
DX31	209
DX310	72
DX33	*
DX330	*
DX37	*
DX39	*
DX390	5
DX40	87
DX400	48
DX41	249
DX410	68
DX42	1,602
DX420	635
DX43	8
DX430	*
DX44	1,058
DX440	137
DX45	250
DX450	131
DX46	20
DX460	7
DX47	65
DX470	34
DX479	*
DX49	17
DX490	*
DX50	*
DX57	*
DX58	57
DX580	9
DX59	5,910
DX590	2,767
DX599	77
DX60 Forsætlig selvbeskadigelse med ikke-opioide analgetika o.l.	260
DX600	104
DX61 Forsætlig selvskade m psykofarmaka/antiepilep/antiparkin-mid	503
DX610	230
DX62 Forsætlig selvbeskadigelse med narkotika og psykodysleptika	493
DX620	183
DX63 Forsætlig selvskade m. midler m. virkning på det autonome NS	33
DX630	14
DX64 Forsætlig selvskade m. uspec. lægemidler og biologiske stof.	970
DX640	401
DX65 Forsætlig selvbeskadigelse med alkohol	49
DX650	11
DX66 Forsætlig selvskade m organisk opløsn-mid/halogen-kulbrinter	32
DX660	5
DX67 Forsætlig selvbesk. med kulilte og andre gasarter og dampe	642
DX670	436
DX68 Forsætlig selvbeskadigelse med bekæmpelsesmidler	9
DX680	10
DX69 Forsætlig selvskade med andre kemiske og toksiske stoffer	30
DX690	18
DX70 Forsætlig selvskade ved hængning, strangulation og kvælning	4,456
DX700	1,850

DX71	Forsætlig selvbeskadigelse ved drukning og nedsænken i vand	620
DX710		346
DX72	Forsætlig selvbeskadigelse ved skud fra håndvåben	275
DX720		98
DX73	Forsætlig selvskade v skud f. gevær og an. større skydevåben	732
DX730		363
DX74	Forsætlig selvskade v. skud fra an. og uspec. skydevåben	89
DX740		39
DX75	Forsætlig selvbeskadigelse ved eksplosive materialer	6
DX750		18
DX76	Forsætlig selvbeskadigelse ved røg, ild og flammer	129
DX760		23
DX78	Forsætlig selvbeskadigelse med skarpe genstande	473
DX780		152
DX79	Forsætlig selvbeskadigelse med stumpe genstande	5
DX790		*
DX80	Forsætlig selvbeskadigelse ved spring fra højde	566
DX800		285
DX809		*
DX81	Forsætlig selvskade un køretøjer og genstande i bevægelse	422
DX810		156
DX82	Forsætlig selvbeskadigelse ved kollision med motorkøretøj	74
DX820		38
DX83	Forsætlig selvbeskadigelse med andre specificerede metoder	64
DX830		23
DX84	Forsætlig selvbeskadigelse med ikke specificerede metoder	14
DX840		4
DX85	Overgreb ved brug af lægemidler og biologiske stoffer	7
DX850		*
DX880		*
DX91	Overgreb ved hængning, strangulation og kvælning	113
DX910		59
DX92	Overgreb ved drukning	4
DX920		5
DX93	Overgreb ved skud fra håndskydevåben	71
DX930		15
DX94	Overgreb ved skud fra geværer og andre større skydevåben	48
DX940		38
DX95	Overgreb ved skud fra andre og ikke specificerede skydevåben	36
DX950		37
DX96	Overgreb ved brug af eksplosive materialer	6
DX960		*
DX97	Overgreb ved brug af røg, ild og flammer	8
DX970		*
DX99	Overgreb ved brug af skarpe genstande	256
DX990		119
DY00	Overgreb ved brug af stumpe genstande	71
DY000		27
DY01	Overgreb ved skub fra højde	*
DY010		*
DY02	Overgreb ved skub foran genstand i bevægelse	*
DY03	Overgreb ved påkørsel med motorkøretøj	7
DY04	Overgreb ved korporlig vold	63
DY040		39
DY071	Mishandling fra forælder (forældre)	*
DY08	Overgreb ved andre specificerede metoder	5
DY080		*
DY09	Overgreb ved ikke specificerede metoder	22
DY090		*
DY10		57
DY100		56
DY11		119
DY110		115
DY12		365
DY120		477
DY13		8
DY130		7
DY14		282
DY140		167
DY15		89

DY150	89
DY16	4
DY160	*
DY17	10
DY170	7
DY18	*
DY19	*
DY190	*
DY20	27
DY200	13
DY21	127
DY210	88
DY22	6
DY220	7
DY23	8
DY230	4
DY24	5
DY240	*
DY250	*
DY26	85
DY260	49
DY270	*
DY28	14
DY280	15
DY29	4
DY290	*
DY30	44
DY300	23
DY31	25
DY310	8
DY32	15
DY320	8
DY33	31
DY330	14
DY34	128
DY340	48
DY350	7
DY351	*
DY356	*
DY362	6
DY364	*
DY400	*
DY420	*
DY43	*
DY442	*
DY478	*
DY482	*
DY495	*
DY497	*
DY50	*
DY525	*
DY57	*
DY578	*
DY579	15
DY60	196
DY600	28
DY601	*
DY602	*
DY604	21
DY605	4
DY606	15
DY607	*
DY608	17
DY609	47
DY61	*
DY63	9
DY638	6
DY639	*
DY650	*
DY652	5

DY653		*
DY654		21
DY658		62
DY69		10
DY700		*
DY712		*
DY792		*
DY830		*
DY831		4
DY832		9
DY833		*
DY834		*
DY835		*
DY838		10
DY839		26
DY840		*
DY841		*
DY844		5
DY848		5
DY849		4
DY850		36
DY859		17
DY86		65
DY860		129
DY870		12
DY871		6
DY872		57
DY881		*
DY883		45
DY899		*
Infect		
DA000	Kolera forårsaget af <i>Vibrio cholerae</i>	15
DA009	Kolera UNS	4
DA010	Tyfus	6
DA011	Paratyfus A	5
DA012	Paratyfus B	6
DA013	Paratyfus C	5
DA014	Paratyfus UNS	*
DA020	Salmonellaenterit	29
DA021	Salmonellasepsis	45
DA022	Lokaliseret salmonellainfektion	*
DA028	Anden salmonellainfektion	*
DA029	Salmonellainfektion UNS	17
DA038	Anden bacillær dysenteri	*
DA040	Enteritis f.a. enteropatogen <i>Escherichia coli</i> -infektion	*
DA041	Enteritis f.a. enterotoksisk <i>Escherichia coli</i> -infektion	4
DA042	Enteritis f.a. enteroinvasiv <i>Escherichia coli</i> -infektion	*
DA043	Enteritis f.a. enterohæmoragisk <i>Escherichia coli</i> -infektion	*
DA044	Anden tarminfektion med <i>Escherichia coli</i>	7
DA045	Enteritis forårsaget af <i>Campylobacter</i>	7
DA046	Enteritis forårsaget af <i>Yersinia enterocolitica</i>	*
DA047	Enterokolitis forårsaget af <i>Clostridium difficile</i>	1,239
DA048	Anden bakteriel enteritis	15
DA049	Enteritis forårsaget af bakterier UNS	55
DA050	Fødevareforgiftning forårsaget af stafylokokker	7
DA052	Fødevareforgiftning forårsaget af <i>Clostridium perfringens</i>	19
DA054	Fødevareforgiftning forårsaget af <i>Bacillus cereus</i>	*
DA058	Anden bakteriel fødevareforgiftning	6
DA059	Bakteriel fødevareforgiftning UNS	*
DA062	Colitis forårsaget af amøbeinfektion	*
DA064	Leverabsces forårsaget af amøbeinfektion	*
DA068	Amøbeinfektion med anden lokalisation	*
DA069	Amøbeinfektion UNS	*
DA078	Anden tarminfektion forårsaget af protozoer	*
DA079	Tarmsygdom forårsaget af protozoer UNS	*
DA080	Enteritis forårsaget af rotavirus	7
DA081	Akut gastroenteritis forårsaget af Norwalk-virus	62
DA082	Enteritis forårsaget af adenovirus	4
DA083	Enteritis forårsaget af anden virus	6
DA084	Tarminfektion forårsaget af virus UNS	143

DA085	Tarminfektion forårsaget af anden (mikro)organisme UNS	60
DA09	An. gastroenteritis og colitis af infekt./ikke spec. årsag	51
DA090	An. og uspec gastroenteritis og colitis af infektiøs oprind.	*
DA099	Gastroenteritis eller colitis af ikke specificeret årsag	1,586
DA150	Lunge-TB verif. v. mikroskopi af ekspektorat m./u. dyrkning	9
DA151	Lungetuberkulose verificeret alene ved dyrkning	*
DA152	Lungetuberkulose verificeret histologisk	*
DA153	Lungetuberkulose verificeret ved ikke angivet metode	8
DA158	An. TB i åndedrætsorganerne verif. bakt. og hist.	*
DA159	TB i åndedrætsorganerne UNS, verificeret bakt. eller hist.	*
DA162	Lunge-TB uden bakteriologisk eller histologisk verifikation	313
DA164	TB i strube, luftrør el. bronkier u. bakt. el. hist. verif.	4
DA165	Tuberkuløs lungehindebetæn. u. ang. af bakt. el. hist. veri.	4
DA167	Primær TB i åndedrætsorganerne uden bakt. el. hist. verif.	11
DA169	TB i åndedrætsorganerne UNS, uden bakt. el. hist. verif.	62
DA170	Tuberkuløs meningitis	9
DA171	Tuberkulom i hjernebinder	*
DA178	Anden form for tuberkulose i nervesystemet	*
DA179	Tuberkulose i nervesystemet UNS	*
DA180	Tuberkulose i knogler og led	7
DA181	Tuberkulose i urinveje og kønsorganer	5
DA182	Tuberkulose i perifere lymfeknuder	*
DA183	Tuberkulose i tarm, bughinde og mesenteriale lymfeknuder	5
DA188	Tuberkulose i andet organ	7
DA190	Akut miliær tuberkulose med enkelt specificeret lokalisation	4
DA191	Akut miliær tuberkulose med flere lokalisationer	8
DA192	Akut miliær tuberkulose UNS	11
DA198	Anden miliær tuberkulose	*
DA199	Miliær tuberkulose UNS	20
DA240	Glanders	*
DA244	Melioidose UNS	*
DA259	Rottebidfeber UNS	4
DA267	Sepsis forårsaget af Erysipelothrix rhusiopathiae	8
DA269	Erysipeloid UNS	16
DA270	Weils sygdom	*
DA279	Leptospirose UNS	*
DA288	Anden dyreoverført bakteriel infektion	*
DA289	Dyreoverført bakteriel infektion UNS	*
DA310	Mykobakteriel lungeaffektion	18
DA318	Anden mykobakteriel infektion	*
DA319	Mykobakteriel infektion UNS	24
DA321	Listeriose i centralnervesystemet	28
DA327	Listeriose	29
DA328	Anden form for listeriose	4
DA329	Listeriose UNS	*
DA359	Stivkrampe IKA	5
DA368	Anden form for difteri	*
DA390	Meningitis forårsaget af meningokokker	59
DA391	Waterhouse-Friderichsens syndrom	7
DA392	Akut meningokokbakteriæmi	21
DA394	Meningokokbakteriæmi UNS	35
DA395	Hjertesygdom forårsaget af meningokokker	*
DA398	Anden meningokokinfektion	5
DA399	Meningokokinfektion UNS	7
DA400	Sepsis forårsaget af Streptococcus A	33
DA401	Sepsis forårsaget af Streptococcus B	71
DA402	Sepsis forårsaget af Streptococcus D og Enterococcus	6
DA403	Sepsis forårsaget af Streptococcus pneumoniae	253
DA408	Anden streptokoksepsis	29
DA409	Streptokoksepsis UNS	65
DA410	Sepsis forårsaget af Staphylococcus aureus	408
DA411	Sepsis forårsaget af anden stafylokok	37
DA412	Sepsis forårsaget af stafylokokker UNS	122
DA413	Sepsis forårsaget af Haemophilus influenzae	4
DA414	Sepsis forårsaget af anaerob bakterie	41
DA415	Sepsis forårsaget af anden gramnegativ organisme	292
DA418	Anden sepsis IKA	141
DA419	Sepsis UNS	7,774
DA420	Pulmonal aktinomykose	*
DA421	Abdominal aktinomykose	7

DA427	Sepsis forårsaget af aktinomykose	*
DA428	Anden form for aktinomykose	*
DA429	Aktinomykose UNS	*
DA430	Pulmonal nocardiose	*
DA449	Bartonellose UNS	*
DA46	Rosen	84
DA469	Rosen UNS	735
DA480	Gasgangræn	40
DA481	Legionærsygdom	207
DA482	Pontiacfeber	8
DA483	Toksisk shock-syndrom	11
DA488	Anden bakteriel sygdom	45
DA490	Stafylokokinfektion UNS	68
DA491	Streptokok- og/eller enterokokinfektion, uspec lokalisation	23
DA492	Infektion med Haemophilus influenzae UNS	14
DA493	Mycoplasmainfektion UNS	*
DA498	Anden bakteriel infektion uden angivelse af lokalisation	996
DA499	Bakteriel infektion UNS	580
DA509	Medfødt syfilis UNS	*
DA514	Anden sekundær syfilis	*
DA520	Kardiovaskulær syfilis	*
DA521	Sen symptomatisk neurosyfilis	5
DA523	Neurosyfilis UNS	*
DA527	Anden form for sen symptomatisk syfilis	*
DA529	Syfilis i sent stadium UNS	*
DA544	Gonokokinfektion i led og muskler	*
DA545	Gonokokinfektion i svælget	*
DA549	Gonokokinfektion UNS	*
DA562	Klamydiainfektion i urin- og kønsorganer UNS	*
DA600	Herpes simplex-infektion i urin- og kønsorganer	*
DA649	Seksuelt overført sygdom UNS	*
DA689	Tilbagefaldsfeber UNS	7
DA690	Nekrotiserende ulcerøs mundbetændelse	*
DA692	Lymes sygdom	*
DA699	Spirokæteinfektion UNS	*
DA709	Chlamydophila psittaci-infektion	6
DA719	Trakom UNS	*
DA789	Q feber UNS	*
DA800	Akut polio med lammelser forårsaget af vaccine	*
DA802	Akut polio m. lammelser forårsaget af indenlandsk vild virus	21
DA803	Anden eller ikke specificeret akut polio med lammelser	15
DA809	Akut polio UNS	12
DA810	Creutzfeldt-Jakobs sygdom	182
DA811	Subakut skleroserende panencephalitis	*
DA812	Progressiv multifokal leukoencefalopati	18
DA818	Anden atypisk virusinfektion i centralnervesystemet	*
DA819	Atypisk virusinfektion i centralnervesystemet UNS	*
DA830	Japansk hjernebetændelse	*
DA839	Viral hjernebetændelse overført af myg UNS	*
DA849	Viral hjernebetændelse overført af flåt UNS	*
DA850	Hjernebetændelse forårsaget af enterovirus	*
DA851	Hjernebetændelse forårsaget af adenovirus	*
DA858	Anden viral hjernebetændelse	5
DA86	Viral hjernebetændelse UNS	*
DA869	Viral encephalitis UNS	39
DA871	Meningitis forårsaget af adenovirus	*
DA872	Lymfocytær koriomeningitis	*
DA878	Anden viral hjernehindebetændelse	*
DA879	Viral hjernehindebetændelse UNS	23
DA89	Virale infektioner i centralnervesystemet UNS	*
DA899	Viral infektion i centralnervesystemet UNS	*
DA972	Alvorlig Dengue	*
DA999	Viral febersygdom med blødninger UNS	*
DB004	Encephalitis forårsaget af Herpes simplex-virus	94
DB007	Herpes generalisata	*
DB008	Anden form for Herpes simplex-virus infektion	*
DB009	Infektion med Herpes simplex-virus UNS	5
DB011	Encephalitis forårsaget af Varicella zoster	8
DB012	Pneumoni forårsaget af Varicella zoster	*
DB018	Skoldkopper med anden komplikation	*

DB019	Skoldkopper UNS	*
DB020	Herpes zoster-encephalitis	23
DB021	Herpes zoster-meningitis	*
DB022	Herpes zoster med anden komplikation i nervesystemet	4
DB023	Herpes zoster i øje	10
DB027	Dissemineret herpes zoster	9
DB028	Herpes zoster-infektion med anden komplikation	10
DB029	Herpes zoster-infektion uden komplikation	55
DB051	Mæslinger kompliceret med meningitis	*
DB052	Mæslinger kompliceret med pneumoni	36
DB059	Mæslinger uden komplikationer	*
DB069	Røde hunde uden komplikationer	*
DB09	Virussygdomme UNS karak.v. hud- og slimhindeaffektioner	*
DB099	Virusinfektion karak.v hud- og slimhindeaffektion UNS	4
DB150	Hepatitis A med leverkoma	7
DB159	Hepatitis A uden leverkoma	*
DB160	Akut hepatitis B m. coinfektion m. Delta agens m. leverkoma	*
DB161	Akut hepatitis B m. coinfektion m. Delta agens u. leverkoma	*
DB162	Akut hepatitis B u. coinfektion m. Delta agens m. leverkoma	9
DB169	Akut hepatitis B u coinfektion m Delta agens og uden leverkoma	10
DB170	Akut Delta-superinfektion i kronisk hepatitis B	*
DB171	Akut hepatitis C	*
DB172	Akut hepatitis E	*
DB178	Anden akut viral hepatitis	6
DB179	Akut viral hepatitis UNS	*
DB180	Kronisk viral hepatitis B med Delta agens	4
DB181	Kronisk viral hepatitis B uden Delta agens	74
DB182	Kronisk viral hepatitis C	279
DB188	Anden kronisk viral hepatitis	21
DB189	Kronisk viral hepatitis UNS	15
DB190	Viral hepatitis UNS med leverkoma	18
DB199	Viral hepatitis UNS uden leverkoma	22
DB200	HIV-sygdom med mykobakteriel infektion	17
DB201	HIV-sygdom med andre bakterielle sygdomme	49
DB202	HIV-sygdom med cytomegalovirus sygdom	6
DB203	HIV-sygdom med andre virus infektioner	34
DB204	HIV-sygdom med candidiasis	6
DB205	HIV-sygdom med andre svampeinfektioner	*
DB206	HIV-sygdom med Pneumocystis jirovecii pneumoni	34
DB207	HIV-sygdom med multiple infektioner	62
DB208	HIV-sygdom med andre infektiøse og parasitære sygdomme	54
DB209	HIV-sygdom med infektiøs eller parasitær sygdom UNS	13
DB210	HIV-sygdom med Kaposi's sarkom	18
DB211	HIV-sygdom med Burkitt's lymfom	*
DB212	HIV-sygdom med andet non-Hodgkin's lymfom	37
DB213	HIV-sygdom med anden neoplasi i lymfoidt og bloddannende væv	10
DB217	HIV-sygdom med multiple neoplasier	*
DB218	HIV-sygdom med anden neoplasi	17
DB219	HIV sygdom med neoplasi UNS	*
DB220	HIV-encefalopati	16
DB221	HIV-lymfoid interstitiel pneumonitis	*
DB222	HIV-wasting syndrome	13
DB227	HIV-sygdom med multiple sygdomme klassificeret andetsteds	36
DB230	Akut HIV-sygdom	12
DB231	HIV-sygdom med (persisterende) generaliseret lymfadenopati	*
DB232	HIV-sygdom med hæmatologiske og immunologiske forandr. IKA	9
DB238	Anden eller ikke specificeret symptomatisk HIV-sygdom	92
DB24	HIV-sygdom og AIDS uden specificering	9
DB249	AIDS UNS	290
DB250	Cytomegalovirus-pneumoni	13
DB251	Cytomegalovirus-hepatitis	4
DB258	Anden sygdom forårsaget af cytomegalovirus	*
DB259	Cytomegaloviral sygdom UNS	11
DB268	Fåresyge med anden komplikation	14
DB269	Fåresyge uden komplikationer	11
DB270	Mononukleose forårsaget af Epstein-Barr virus	*
DB271	Mononukleose forårsaget af cytomegaloviruss	*
DB279	Mononukleose UNS	9
DB338	Anden virussygdom	7
DB340	Adenovirus-infektion uden angivelse af lokalisering	12

DB341	Enterovirus-infektion uden angivelse af lokalisation	4
DB342	Coronavirus-infektion uden angivelse af lokalisation	*
DB343	Parvovirus-infektion uden angivelse af lokalisation	7
DB348	Anden virusinfektion uden angivelse af lokalisation	27
DB349	Virusinfektion UNS	114
DB369	Overfladisk svampeinfektion UNS	*
DB370	Candidiasis i mundhule	19
DB371	Candidiasis i lunge	19
DB374	Urogenital candidiasis med anden lokalisation	*
DB375	Candidiasis-meningitis	*
DB376	Candidiasis-endokarditis	*
DB377	Candidiasis-sepsis	29
DB378	Candidiasis med anden lokalisation	12
DB379	Candidiasis UNS	11
DB389	Coccidioidomykose UNS	*
DB440	Invasiv pulmonal aspergillose	37
DB441	Anden pulmonal aspergillose	34
DB447	Dissemineret aspergillose	*
DB448	Anden form for aspergillose	*
DB449	Aspergillosis UNS	24
DB451	Cerebral kryptokokkose	*
DB459	Kryptokokkose UNS	*
DB471	Aktinomycetom	*
DB487	Opportunistisk mykose	*
DB488	Anden mykose	*
DB499	Mykose UNS	11
DB509	Plasmodium falciparum-malaria uden komplikationer	7
DB538	Anden parasitologisk verificeret malaria IKA	*
DB549	Klinisk malaria, ikke parasitologisk verificeret	*
DB582	Meningoencephalitis ved toksoplasmos	*
DB599	Pneumocystose UNS	82
DB668	Anden ikke-infektion	*
DB669	Ikke-infektion UNS	11
DB670	Infektion med Echinococcus granulosus i leveren	*
DB675	Infektion med Echinococcus multilocularis i leveren	*
DB677	Infektion med Echinococcus multilocularis UNS	*
DB679	Anden eller ikke specificeret ekinokokinfektion	*
DB761	Infestation med Necator americanus	*
DB789	Strongyloidiasis UNS	*
DB820	Intestinal ormesygdom UNS	*
DB869	Scabies UNS	*
DB880	Anden sygdom fremkaldt af mider	*
DB900	Følger efter tuberkulose i centralnervesystemet	*
DB901	Følger efter tuberkulose i urin- og kønsorganer	*
DB902	Følger efter tuberkulose i knogler og led	*
DB908	Følger efter tuberkulose i andet organ	*
DB909	Følger eft TB i ånde-org. og u lokal.	125
DB91	Følger efter polio	9
DB919	Følger efter poliomyelitis	72
DB941	Følger efter viral hjernebetændelse	*
DB942	Følger efter viral leverbetændelse	*
DB948	Følger efter anden infektiøs eller parasitær sygdom	12
DB949	Følger efter infektiøs eller parasitær sygdom UNS	*
DB978	Anden virus som årsag til sygdom	*
DB980	Helicobacter pylori som årsag til sygdom	*
DB99	Andre eller ikke nærmere specificerede infektiøse sygdomme	76
DB990		*
DB999	Anden eller ikke specificeret infektionssygdom	942
Other		
D		4,583
D0000		246
DD103	Godartet tumor i mundhulen m. anden/ikke spec. lokalisation	*
DD106	Godartet tumor i næsesvælget	*
DD110	Godartet tumor i ørespytkirtel	5
DD117	Godartet tumor i anden stor spytkirtel	*
DD120	Godartet tumor i caecum	10
DD121	Godartet tumor i blindtarmen	*
DD122	Godartet tumor i colon ascendens	16
DD123	Godartet tumor i colon transversum	4
DD124	Godartet tumor i colon descendens	*

DD125	Godartet tumor i colon sigmoideum	17
DD126	Godartet tumor i tyktarm u spec. lokal.	68
DD127	Neopl ben rectosigmoidei	5
DD128	Godartet tumor i endetarmen	21
DD129	Godartet tumor i endetarmsåbningen eller analkanalen	*
DD130	Godartet tumor i spiserøret	6
DD131	Godartet tumor i mavesækken	9
DD132	Godartet tumor i tolvfingertarmen	11
DD133	Godartet tumor i anden eller ikke spec. del af tyndtarmen	6
DD134	Godartet tumor i leveren	7
DD135	Godartet tumor i ekstrahepatiske galdeveje	5
DD136	Godartet tumor i pancreas	11
DD137	Godartet tumor i Langerhanske øer	9
DD139	Godartet tumor i fordøjelsessystemet UNS	7
DD141	Godartet tumor i strubehovedet	5
DD142	Godartet tumor i luftrøret	*
DD143	Godartet tumor i bronkie eller lunge	19
DD150	Godartet tumor i thymus	*
DD151	Godartet tumor i hjertet	20
DD152	Godartet tumor i mediastinum	*
DD157	Godartet tumor i andet organ i brysthulen	*
DD159	Godartet tumor i brysthulen UNS	*
DD160	Godartet tumor i knogle/ledbrusk i skulderblad/lang armknog.	*
DD164	Godartet tumor i knogle eller ledbrusk i kranie eller ansigt	*
DD166	Godartet tumor i knogle eller ledbrusk i rygsøjlen	*
DD171	Lipom i hud eller underhud på kroppen	*
DD172	Lipom i hud eller underhud på ekstremitet	*
DD173	Lipom i hud el. underhud m. an. el. ikke spec. lokalisat	*
DD175	Lipom i intraabdominalt organ	*
DD177	Lipom med anden lokalisat	4
DD179	Lipom UNS	*
DD180	Hæmangiom	47
DD181	Lymfangiom	9
DD190	Godartet mesoteliom i lungehinde	82
DD191	Godartet mesoteliom i peritoneum	*
DD197	Godartet tumor i mesotelialt væv med anden lokalisat	4
DD199	Godartet tumor i mesotelialt væv UNS	9
DD200	Godartet tumor i bindevæv i retroperitoneum	*
DD201	Godartet tumor i bindevæv i peritoneum	*
DD212	Godartet tumor i bindevæv i underekstremitet	*
DD214	Godartet tumor i bindevæv i abdomen	*
DD219	Godartet tumor i bindevæv UNS	4
DD222	Nævus på øre eller i ydre øregang	*
DD238	Neopl ben cutis m anden lokalisat	*
DD249	Godartet tumor i mamma UNS	*
DD251	Intramuralt fibromyom i livmoderen	*
DD259	Fibromyom i livmoderen UNS	10
DD261	Godartet tumor i corpus uteri	*
DD269	Godartet tumor i livmoderen UNS	*
DD270	Serøst cystadenom i æggestok	*
DD271	Mucinøst cystadenom i æggestok	*
DD272	Dermoidcyste i æggestok	*
DD279	Godartet tumor i æggestok UNS	20
DD289	Godartet tumor i kvindeligt kønsorgan UNS	*
DD291	Godartet tumor i prostata	10
DD297	Godartet tumor i mandlige kønsorganer med anden lokalisat	*
DD300	Godartet tumor i nyre	7
DD301	Godartet tumor i nyrebækken	12
DD302	Godartet tumor i urinleder	*
DD303	Godartet tumor i urinblæren	81
DD309	Godartet tumor i nyre eller urinveje UNS	4
DD319	Godartet tumor i øje UNS	*
DD320	Intrakranielt meningeom	201
DD321	Intraspinalt meningeom	*
DD329	Meningeom UNS	212
DD330	Supratentoriel godartet tumor i hjernen	58
DD331	Infratentoriel godartet tumor i hjernen	40
DD332	Godartet tumor i hjernen UNS	254
DD333	Godartet tumor i hjernenerve	26
DD334	Godartet tumor i rygmarven	7

DD337	Godartet tumor i anden del af centralnervesystemet	*
DD339	Godartet tumor i centralnervesystemet UNS	7
DD349	Godartet tumor i skjoldbruskkirtlen UNS	5
DD350	Godartet tumor i binyre	6
DD351	Godartet tumor i biskjoldbruskkirtel	6
DD352	Godartet tumor i hypofysen	90
DD353	Godartet tumor i ductus craniopharyngeus	5
DD355	Godartet tumor i glomus caroticum	*
DD367	Godartet tumor med anden lokalisation	6
DD369	Godartet tumor uden spec. lokalisation	*
DD370	Ikke specificeret tumor i læbe, mundhule eller svælg	14
DD371	Ikke spec. tumor i mavesækken	50
DD372	Ikke spec. tumor i tyndtarmen	26
DD373	Ikke spec. tumor i blindtarmen	*
DD374	Ikke spec. tumor i tyktarmen	251
DD375	Ikke spec. tumor i endetarmen	71
DD376	Ikke spec. tumor i leveren, galdeblæren eller galdeveje	189
DD377	Ikke spec. tumor i andet fordøjelsesorgan	157
DD379	Ikke spec. tumor i fordøjelsesorgan UNS	82
DD380	Ikke spec. tumor i strubehovedet	*
DD381	Ikke specificeret tumor i luftrør, bronkie eller lunge	937
DD382	Ikke spec. tumor i lungehinde	12
DD383	Ikke spec. tumor i mediastinum	74
DD384	Ikke spec. tumor i thymus	*
DD385	Ikke spec. tumor i andet åndedrætsorgan	9
DD386		6
DD389	Ikke specificeret tumor i åndedrætsorgan eller luftveje UNS	*
DD390	Ikke spec. tumor i livmoderen	5
DD391	Ikke spec. tumor i æggestok	52
DD397	Ikke spec. tumor med an. lokalisation i kvindeligt kønsorgan	*
DD399	Ikke spec. tumor i kvindeligt kønsorgan UNS	18
DD400	Ikke spec. tumor i prostata	28
DD401	Ikke spec. tumor i testikel	*
DD407	Ikke spec. tumor med anden lokalisation i mandligt kønsorgan	*
DD409	Ikke spec. tumor i mandligt kønsorgan UNS	*
DD410	Ikke spec. tumor i nyre	137
DD411	Ikke spec. tumor i nyrebækken	12
DD412	Ikke spec. tumor i urinleder	9
DD413	Ikke spec. tumor i urinrøret	*
DD414	Ikke spec. tumor i urinblæren	155
DD417	Ikke specificeret tumor med anden lokalisation i urinveje	4
DD419	Ikke spec. tumor med ikke spec. lokalisation i nyre/urinveje	12
DD420	Ikke spec. tumor i hjernehinde	26
DD421	Ikke spec. tumor i rygmarvshinde	*
DD429	Ikke spec. tumor m ikke spec. lokal. i hjerne-/rygmarvshinde	8
DD430	Supratentoriel ikke spec. tumor i hjernen	81
DD431	Infratentoriel ikke spec. tumor i hjernen	53
DD432	Ikke spec. tumor med an./ikke nærmere spec. lokal. i hjerne	762
DD433	Ikke spec. tumor i hjernenerve	*
DD434	Ikke spec. tumor i rygmarven	11
DD437	Ikke specificeret tumor med anden lokalisation i CNS	*
DD439	Ikke spec. tumor i ikke spec. lokal. i CNS	33
DD440	Ikke spec. tumor i skjoldbruskkirtlen	6
DD441	Ikke spec. tumor i binyre	12
DD442	Ikke spec. tumor i biskjoldbruskkirtel	*
DD443	Ikke spec. tumor i hypofysen	40
DD444	Ikke spec. tumor i ductus craniopharyngeus	16
DD445	Ikke spec. tumor i corpus pinealis	*
DD446	Ikke spec. tumor i glomus caroticum	*
DD447	Ikke spec. tumor i corpus para-aorticus el. an. paraganglion	4
DD448	Ikke spec. tumor i flere endokrine kirtler	*
DD449	Ikke spec. tumor i endokrin kirtel UNS	6
DD45	Polycythaemia vera	26
DD459	Polycythaemia vera	370
DD460	Refraktær cytopeni med unilineær dysplasi	20
DD461	Refraktær anæmi med ringsideroblaster	38
DD462	Refraktær anæmi med overskud af blastceller	111
DD463	Anaemia refractoria m blastceller i transformation	8
DD464	Refraktær anæmi UNS	91
DD465	Refraktær anæmi med multilinje dysplasi	14

DD466	Myelodysplastisk syndrom m isoleret del(5q) kromosomabnormit	*
DD467	Andet myelodysplastisk syndrom	26
DD469	Myelodysplastisk syndrom UNS	1,762
DD470	Histiocytær el mastcelle neoplasi af usikker/ukendt karakter	9
DD471	Kronisk myeloproliferativt syndrom	695
DD472	Monoklonal gammopati med ubestemt signifikans (MGUS)	63
DD473	Essentiel trombocytæmi	71
DD474	Primær og sekundær myelofibrose	147
DD475	Hypereosinofilt syndrom	*
DD477	An. ikke spec. neoplasi fra lymfoidt el. hæmatopoietisk væv	24
DD479	Anden neoplasi fra lymfoidt eller hæmatopoietisk væv	21
DD480	Ikke specificeret tumor i knogle eller ledbrusk	6
DD481	Ikke specificeret tumor i bindevæv eller andre bløddele	10
DD482	Ikke spec. tumor i perifer nerve eller autonome nervesystem	*
DD483	Ikke spec. tumor i retroperitoneum	30
DD484	Ikke spec. tumor i peritoneum	28
DD485	Ikke spec. tumor i huden	5
DD486	Ikke spec. tumor i mamma	32
DD487	Ikke specificeret tumor med anden lokalisation	273
DD489	Tumor af usikker el. ukendt karakter u. nærmere spec. lokal.	477
DD500	Kronisk blødningsanæmi	159
DD501	Jernmangelanæmi forårsaget af malabsorption af jern	4
DD508	Jernmangelanæmi af anden årsag	45
DD509	Jernmangelanæmi UNS	156
DD510	Anæmi sfa vitamin B12-mangel ved mangel på intrinsic factor	119
DD511	Anæmi f.a. malabsorption af vitamin B12 med proteinuri	5
DD513	Anden anæmi f.a. ernæringsbetinget mangel på vitamin B12	68
DD518	Anden anæmi forårsaget af vitamin B12-mangel	17
DD519	Anæmi forårsaget af vitamin B12-mangel UNS	18
DD520	Anæmi forårsaget af ernæringsbetinget folinsyremangel	*
DD521	Anæmi forårsaget af medikamentelt betinget folinsyremangel	*
DD528	Anden anæmi forårsaget af folinsyremangel	*
DD529	Anæmi forårsaget af folinsyremangel UNS	*
DD530	Proteinmangelanæmi	*
DD531	Anden megaloblastær anæmi IKA	17
DD538	Anden ernæringsbetinget anæmi	20
DD539	Ernæringsbetinget anæmi UNS	18
DD550	Anæmi forårsaget af glukose-6-fosfat-dehydrogenasemangel	*
DD551	Anæmi forårsaget af an. forstyrrelse i glutationomsætningen	9
DD552	Anæmi forårsaget af forstyrrelser i de glykolytiske enzymer	*
DD558	Anden anæmi forårsaget af enzymatisk forstyrrelse	9
DD559	Anæmi forårsaget af enzymatisk forstyrrelse UNS	*
DD560	Alfa-talassæmi	*
DD561	Beta-talassæmi	*
DD563	Thalassaemia minor	*
DD569	Talassæmi UNS	*
DD570	Seglcelleanæmi med krise	*
DD578	Anden form for seglcellesygdom	*
DD580	Arvelig hæmolytisk anæmi forårsaget af sfærocytose	4
DD582	Anden hæmoglobinopati	*
DD589	Arvelig hæmolytisk anæmi UNS	19
DD590	Autoimmun hæmolytisk anæmi forårsaget af lægemiddel	4
DD591	Anden autoimmun hæmolytisk anæmi	100
DD592	Hæmolytisk ikke-autoimmun anæmi forårsaget af lægemiddel	*
DD593	Hæmolytisk-uræmisk syndrom	19
DD594	Anden hæmolytisk ikke-autoimmun anæmi	13
DD595	Paroxysmal nokturn hæmoglobinuri	6
DD598	Anden erhvervet hæmolytisk anæmi	35
DD599	Erhvervet hæmolytisk anæmi UNS	43
DD608	Anden erhvervet pure red cell aplasi	7
DD609	Erhvervet pure red cell aplasi UNS	8
DD610	Konstitutionel aplastisk anæmi	4
DD611	Aplastisk anæmi forårsaget af lægemiddel	10
DD612	Aplastisk anæmi forårsaget af anden ydre påvirkning	*
DD613	Idiopatisk aplastisk anæmi	47
DD618	Anden aplastisk anæmi	21
DD619	Aplastisk anæmi UNS	242
DD62	Akut anæmi efter blødning	45
DD629	Akut blødningsanæmi UNS	429
DD630	Anæmi ved neoplastisk sygdom	*

DD638	Anæmi ved anden kronisk sygdom klassificeret andetsteds	7
DD640	Arvelig sideroblastær anæmi	*
DD641	Sekundær sideroblastær anæmi forårsaget af anden sygdom	5
DD642	Sekundær sideroblastær anæmi f.a. lægemiddel eller toksin	*
DD643	Anden sideroblastær anæmi	32
DD644	Medfødt dyserythropoietisk anæmi	*
DD648	Anden anæmi	116
DD649	Anæmi UNS	2,083
DD65	Dissemineret intravaskulær koagulation	*
DD659	Dissemineret intravaskulær koagulation	66
DD66	Arvelig faktor VIII-mangel	*
DD669	Hæmofili A	15
DD679	Hæmofili B	*
DD680	Von Willebrands sygdom	4
DD681	Arvelig faktor XI-mangel	*
DD682	Arvelig mangel på andre koagulationsfaktorer	*
DD683	Blødningsforstyrrelse f.a. cirkulerende antikoagulantia	106
DD684	Erhvervet koagulationsfaktormangel	14
DD685	Primær trombofili	*
DD686	Anden trombofili	12
DD688	Anden koagulationsdefekt	25
DD689	Koagulationsdefekt UNS	67
DD690	Allergisk purpura	9
DD691	Blodpladedefekter	5
DD692	Anden purpura uden trombocyt mangel eller defekt	4
DD693	Idiopatisk trombocytopenisk purpura	100
DD694	Anden primær trombocytopeni	10
DD695	Sekundær trombocytopeni	4
DD696	Trombocytopeni UNS	101
DD698	Anden tilstand med blødningstendens	19
DD699	Blødningstendens UNS	38
DD70	Neutropeni	5
DD709	Neutropeni UNS	42
DD71	Funktionelle forstyr. i polymorfkærnedede neutrofile celler	*
DD719	Funktionelle forstyr. i polymorfkærnedede neutrofile cel UNS	18
DD720	Genetisk betinget leukocytanomali	*
DD721	Eosinofili	5
DD728	Anden forstyrrelse i hvide blodlegemer	18
DD729	Sygdom i hvide blodlegemer UNS	*
DD730	Nedsat miltfunktion	5
DD731	Øget miltfunktion	*
DD732	Kronisk stasemilt	*
DD733	Miltabsces	7
DD734	Miltcyste	*
DD735	Miltinfarkt	29
DD738	Anden sygdom i milten	9
DD739	Sygdom i milten UNS	8
DD749	Methæmoglobinæmi UNS	*
DD750	Familiær polycytæmi	6
DD751	Sekundær polycytæmi	9
DD752	Thrombocytosis essentialis	50
DD758	Anden sygdom i blod eller bloddannende væv	20
DD759	Sygdom i blod eller bloddannende væv UNS	40
DD760	Histiocytose i de Langerhanske celler	11
DD761	Hæmfagocytær lymfhistiocytose	39
DD762	Hæmfagocytært syndrom, infektionsassocieret	23
DD763	Andet histiocytært syndrom	*
DD779	Sygdom i blod og bloddannende organer ved sygdom KA	*
DD800	Arvelig hypogammaglobulinæmi	5
DD801	Ikke-familiær hypogammaglobulinæmi	16
DD802	Selektiv IgA-mangel	*
DD806	Antistofmangel med hyperimmunglobulinæmi	*
DD808	Anden immundefekt med overvejende antistofmangel	5
DD809	Immundefekt med overvejende antistofmangel UNS	*
DD810	Svær kombineret immundefekt (SCID) med retikulær dysgenesi	*
DD811	Svær kombineret immundefekt (SCID), lavt antal T-/B-celler	*
DD814	Nezelofs syndrom	*
DD818	Anden kombineret immundefekt	6
DD819	Kombineret immundefekt UNS	8
DD821	DiGeorges syndrom	*

DD823	Immundefekt ved abnorm reaktion på Epstein-Barr virus	*
DD824	Hyperimmunoglobulin E (IgE) syndrom	*
DD828	Immundefekt ved andre større specificerede defekter	*
DD829	Immundefekt associeret med større defekt UNS	4
DD830	Immundefekt med overvejende abnormt B-celletal og -funktion	*
DD831	Immundefekt med overvejende forstyrrelse i T-celler	*
DD832	Immundefekt med autoantistoffer mod B- eller T-celler	*
DD838	Anden almindelig variabel immundefekt	72
DD839	Almindelig variabel immundefekt UNS	29
DD841	Defekt i komplementsystemet	*
DD848	Anden immundefekt	6
DD849	Immundefekt UNS	24
DD860	Sarkoidose i lunger	219
DD861	Sarkoidose i lymfeknuder	*
DD862	Sarkoidose i både lunger og lymfeknuder	19
DD863	Sarkoidose i hud	*
DD868	Sarkoidose med anden lokalisering eller flere lokalisationer	34
DD869	Sarkoidose UNS	168
DD890	Polyklonal hypergammaglobulinæmi	7
DD891	Kryoglobulinæmi	*
DD892	Hypergammaglobulinæmi UNS	10
DD898	Anden forstyrrelse i immunsystemet IKA	9
DD899	Sygdom i immunsystemet UNS	14
DE010	Endemisk diffus struma forårsaget af jodmangel	*
DE012	Endemisk jodmangel struma UNS	*
DE031	Medfødt myksødem uden struma	*
DE032	Hypothyroidisme f.a. lægemiddel eller andet fremmed agens	*
DE034	Erhvervet atrofi af skjoldbruskkirtlen	*
DE035	Myksødematøs koma	5
DE038	Anden form for hypothyroidisme	20
DE039	Hypothyroidisme UNS	569
DE040	Atoksisk diffus struma	12
DE041	Atoksisk struma med solitært adenom	*
DE042	Atoksisk multinodøs struma	18
DE048	Anden form for atoksisk struma	10
DE049	Atoksisk struma UNS	27
DE050	Thyrotoksikose med diffus struma	47
DE051	Thyrotoksikose med toksisk solitært adenom	*
DE052	Thyrotoksikose med toksisk multinodøs struma	28
DE054	Thyrotoksikose ved overdosering af thyroideahormon	39
DE055	Thyrotoksisk krise	6
DE058	Anden form for thyrotoksikose	6
DE059	Thyrotoksikose UNS	432
DE063	Autoimmun thyroiditis	8
DE065	Anden kronisk betændelse i skjoldbruskkirtlen	*
DE069	Betændelse i skjoldbruskkirtlen UNS	4
DE078	Anden forstyrrelse i skjoldbruskkirtlen	*
DE079	Forstyrrelse i skjoldbruskkirtlen UNS	7
DE15	Ikke-diabetisk hypoglykæmisk koma	*
DE168	Andre forstyrrelser i pancreas interne sekretion	9
DE169	Forstyrrelse i pancreas interne sekretion UNS	*
DE200	Idiopatisk hypoparathyroidisme	*
DE201	Pseudohypoparathyroidisme	*
DE208	Anden hypoparathyroidisme	4
DE209	Hypoparathyroidisme UNS	7
DE210	Primær hyperparathyroidisme	33
DE211	Sekundær hyperparathyroidisme	7
DE212	Anden form for hyperparathyroidisme	*
DE213	Hyperparathyroidisme UNS	39
DE214	Anden sygdom i biskjoldbruskkirtel	*
DE215	Sygdom i biskjoldbruskkirtel UNS	*
DE220	Hypofysær kæmpevækst eller akromegali	21
DE221	Hyperprolaktinæmi	*
DE222	Øget sekretion af antidiuretisk hormon (ADH)	*
DE229	Øget hypofyseaktivitet UNS	*
DE230	Nedsat hormonsekretion fra hypofysen	33
DE232	Diabetes insipidus	10
DE233	Hypotalamisk dysfunktion IKA	*
DE236	Anden sygdom i hypofysen	9
DE237	Sygdom i hypofysen UNS	10

DE240	Hypofysært betinget Cushings sygdom	4
DE242	Cushings syndrom forårsaget af lægemiddel	*
DE244	Alkoholinduceret pseudo-Cushings syndrom	*
DE249	Cushings syndrom UNS	4
DE259	Adrenogenitalt syndrom UNS	7
DE269	Hyperaldosteronisme UNS	*
DE271	Primær binyrebarkinsufficiens	106
DE272	Addisonkrise	5
DE273	Binyrebarkinsufficiens forårsaget af lægemiddel	5
DE274	Anden og ikke spec. binyrebarkinsufficiens	20
DE278	Anden binyresygdom	*
DE279	Binyresygdom UNS	*
DE282	Polycystisk ovariesyndrom (PCOS)	*
DE310	Autoimmun polyglandulær insufficiens	*
DE328	Anden sygdom i thymus	*
DE340	Karcinoidt syndrom	33
DE342	Ektopisk hormonsekretion IKA	*
DE343	Lille højde IKA	*
DE348	Anden sygdom i endokrine kirtler	*
DE349	Endokrin sygdom UNS	4
DE409	Proteinmangelsygdom hos børn UNS	*
DE41	Svækkelse forårsaget af underernæring	22
DE419	Svækkelse forårsaget af underernæring UNS	432
DE42	Svær afmagring som følge af protein- og energimangel	7
DE429	Svær afmagring som følge af proteinmangel UNS	67
DE439	Svær protein- og energimangelsygdom UNS	5
DE46	Ikke spec. protein- og energiunderernæring	8
DE469	Protein- og energiunderernæring UNS	67
DE509	A-vitaminmangel UNS	*
DE512	Wernickes encefalopati	28
DE538	Anden B-vitaminmangel	9
DE539	B-vitaminmangel UNS	*
DE549	C-vitaminmangel UNS	*
DE550	Aktiv rakitis	*
DE559	D-vitaminmangel UNS	5
DE561	K-vitaminmangel	*
DE568	Anden vitaminmangel	*
DE569	Vitaminmangel UNS	*
DE58	Ernæringsbetinget calciummangel	*
DE611	Jernmangel	*
DE630	Mangel på essentielle fedtsyrer (EFA)	*
DE631	Fejlernæring som følge af misforhold i fødens sammensætning	30
DE638	Anden kostmangel	*
DE639	Kostmangel UNS	33
DE640	Følger efter protein-energimangel	*
DE643	Følger efter rakitis	*
DE648	Følger efter anden ernæringsbetinget mangeltilstand	4
DE649	Følger efter ernæringsbetinget mangeltilstand UNS	274
DE659	Lokaliseret fedme UNS	*
DE660	Fedme som følge af for stort kalorieindtag	73
DE662	Ekstrem fedme med hypoventilation	112
DE668	Anden overvægt eller fedme	78
DE669	Overvægt UNS	1,612
DE670	A-hypervitaminose	*
DE700	Klassisk fenyلكetonuri	10
DE701	Hyperfenylalaninæmi	*
DE702	Forstyrrelser i tyrosinomsætningen	4
DE709	Forstyrrelser i omsætningen af aromatiske aminosyrer UNS	*
DE710	Ahornsirup-urin-sygdom (MSUD)	*
DE711	Anden forstyrrelse i omsætningen af forgrenede aminosyrer	4
DE713	Forstyrrelse i fedtomsætningen	13
DE720	Forstyrrelse i aminosyrettransporten	*
DE722	Forstyrrelse i urinstofcyklus	*
DE723	Forstyrrelse i lysin og hydroxylysinomsætningen	*
DE724	Forstyrrelse i ornitinomsætningen	*
DE725	Forstyrrelser i glycinomsætningen	6
DE728	Anden forstyrrelse i aminosyreomsætningen	4
DE729	Forstyrrelse i aminosyreomsætningen UNS	*
DE731	Erhvervet laktasemangel	*
DE739	Laktoseintolerans UNS	*

DE740	Forstyrrelse i glykogenaflejringen	8
DE741	Forstyrrelse i fruktoseomsætningen	*
DE744	Forstyrrelse i pyruvatomsætningen og glukoneogenesen	4
DE748	Anden forstyrrelse i kulhydratomsætningen	7
DE749	Forstyrrelse i kulhydratomsætningen UNS	*
DE750	GM2-gangliosidose	14
DE751	Anden gangliosidose	6
DE752	Anden sfingolipidose	29
DE753	Sfingolipidose UNS	*
DE754	Neuronal ceroid lipofuskinose	27
DE755	Anden lipidaflejringssygdom	4
DE756	Lipidaflejringssygdom UNS	7
DE760	Mukopolysakkaridose type I	*
DE761	Mukopolysakkaridose type II	9
DE762	Anden mukopolysakkaridose	5
DE763	Mukopolysakkaridose UNS	4
DE769	Forstyrrelse i glukosaminoglykanomsætningen UNS	*
DE770	Posttranslational defekt i lysosomale enzymer	4
DE771	Defekt i glykoproteinnedbrydningen	*
DE778	Anden forstyrrelse i glykoproteinomsætningen	4
DE780	Hyperkolesterolæmi	959
DE781	Hyperglyceridæmi	15
DE782	Blandet hyperlipidæmi	13
DE783	Hyperkylomikronæmi	*
DE784	Anden hyperlipidæmi	26
DE785	Hyperlipidæmi UNS	123
DE788	Anden forstyrrelse i lipoproteinomsætningen	6
DE789	Forstyrrelse i lipoproteinomsætningen UNS	9
DE790	Asymptomatisk hyperurikæmi	*
DE791	Lesch-Nyhans syndrom	*
DE798	Anden forstyrrelse i purin- eller pyrimidinomsætningen	*
DE801	Porphyria cutanea tarda	*
DE802	Anden form for porfyri	6
DE805	Crigler-Najjars sygdom	*
DE807	Forstyrrelse i bilirubinomsætningen UNS	*
DE830	Forstyrrelser i kobberomsætningen	13
DE831	Forstyrrelser i jernomsætningen	51
DE833	Forstyrrelser i fosforomsætningen og fosfataser	*
DE834	Forstyrrelse i magnesiumomsætningen	*
DE835	Forstyrrelser i kalciumomsætningen	52
DE840	Cystisk fibrose med lungemanifestationer	79
DE841	Cystisk fibrose med tarmanifestationer	4
DE848	Cystisk fibrose med anden manifestation	28
DE849	Cystisk fibrose UNS	39
DE850	Arvelig amyloidose uden neurologiske symptomer	*
DE851	Arvelig nerveamyloidose	*
DE852	Arvelig amyloidose UNS	6
DE853	Sekundær systemisk amyloidose	5
DE854	Lokaliseret amyloidose	146
DE858	Anden amyloidose	10
DE859	Amyloidose UNS	218
DE86	Udtørring og nedsat ekstracellulærvolumen	313
DE869	Volumennedsættelse af plasma eller ekstracellulær væske	3,487
DE870	Hyperosmolalitet eller hypernatriæmi	39
DE871	Hypoosmolalitet eller hyponatriæmi	57
DE872	Acidose	293
DE873	Alkalose	*
DE874	Blandet forstyrrelse i syre-basebalancen	4
DE875	Hyperkaliæmi	137
DE876	Hypokaliæmi	35
DE877	Væskeoverskud	4
DE878	Forstyrrelse i vand- eller elektrolytbalancen IKA	121
DE880	Forstyrrelse i plasmaproteinomsætningen IKA	231
DE881	Lipodystrofi IKA	*
DE883	Tumor lysis-syndrom	*
DE888	Anden metabolisk forstyrrelse	26
DE889	Omsætningsforstyrrelse UNS	74
DE893	Hypopituitarisme efter behandling	*
DE898	Anden endokrin forstyrrelse/omsætningsforstyrrelse eft. beh.	*
DF000	Demens ved Alzheimers sygdom med tidlig debut	15

DF001	Demens ved Alzheimers sygdom med sen debut	111
DF002	Demens ved Alzheimers sygdom af atypisk eller blandet type	*
DF009	Demens ved Alzheimers sygdom UNS	205
DF010	Vaskulær demens med akut indsætten	64
DF011	Multi-infarkt demens	1,009
DF012	Subkortikal vaskulær demens	122
DF013	Blandet kortikal og subkortikal vaskulær demens	262
DF018	Anden vaskulær demens	1,008
DF019	Vaskulær demens UNS	4,139
DF020	Demens ved Picks sygdom	5
DF023	Demens ved Parkinsons sygdom	*
DF028	Demens ved anden sygdom klassificeret andetsteds	4
DF03	Ikke specificeret demens	3,343
DF039	Demens UNS	34,471
DF049	Organisk amnestisk syndrom, ikke prov. af psykoak.stof	6
DF050	Delir uden demens	18
DF051	Delir ved demens	70
DF058	Andet delir	11
DF059	Delir UNS	58
DF060	Organisk hallucinose	4
DF062	Organisk paranoid eller skizofreniform sindslidelse	12
DF063	Organisk affektiv sindslidelse	8
DF067	Organisk kognitiv forstyrrelse af lettere grad	*
DF068	Anden organisk psykisk lidelse	16
DF069	Organisk psykisk lidelse UNS	31
DF070	Organisk personlighedsforstyrrelse	8
DF071	Postencefalitisk syndrom	*
DF072	Posttraumatisk hjernesyndrom	18
DF078	Anden organisk personligheds- eller adfærdsforstyrrelse	*
DF079	Organisk personligheds- eller adfærdsforstyrrelse UNS	10
DF099	Organisk/sympt. mental lidelse/personlighedsforstyrrelse UNS	35
DF100	Akut alkoholintoksikation	14
DF101	Skadelig brug af alkohol	5,385
DF102	Alkoholafhængighedssyndrom	8,528
DF103	Abstinensstilstand sfa alkoholbrug	68
DF104	Delirøs abstinensstilstand sfa alkoholbrug	31
DF105	Alkoholpsykose	12
DF106	Amnestisk syndrom sfa alkoholbrug	114
DF107	Sen psykotisk eller residual tilstand f.a. alkoholbrug	327
DF108	Anden psykisk lidelse/adfærdsforstyrrelse f.a. alkoholbrug	27
DF109	Psykisk lidelse el. adfærdsforstyrrelse f.a. alkoholbrug UNS	15
DF110	Akut opioidintoksikation	*
DF111	Skadelig brug af opioider	87
DF112	Opioidafhængighedssyndrom	71
DF113	Abstinensstilstand sfa opioidbrug	*
DF117	Sen psykotisk el. residual tilstand forårsaget af opioidbrug	*
DF118	Anden psykisk lidelse/adfærdsforstyrrelse f.a. opioidbrug	*
DF119	Psykisk lidelse el. adfærdsforstyrrelse f.a. opioidbrug UNS	7
DF120	Akut cannabisintoksikation	*
DF121	Skadelig brug af cannabis	7
DF122	Cannabisafhængighedssyndrom	9
DF125	Cannabispsykose	*
DF128	An. psykisk lidelse/adfærdsforstyrrelse f.a. cannabisbrug	*
DF129	Psykisk lidelse/adfærdsforstyrrelse f.a. cannabisbrug UNS	4
DF130	Akut intoksikation med sedativa eller hypnotika	*
DF131	Skadelig brug af sedativa/hypnotika	8
DF132	Afhængighedssyndrom ved brug af sedativa eller hypnotika	6
DF134	Delirøs abstinensstilstand sfa sedativa/hypnotika	*
DF139	Psykisk lidelse/adfærdsforstyrrelse sfa sedativa/hypnotika UNS	4
DF140	Akut kokainintoksikation	*
DF141	Skadelig brug af kokain	*
DF142	Afhængighedssyndrom ved brug af kokain	5
DF145	Kokainpsykose	*
DF149	Psykisk lidelse el. adfærdsforstyrrelse f.a. kokainbrug UNS	*
DF150	Akut intoksikation med andet centralstimulerende stof	*
DF151	Skadelig brug af andet centralstimulerende stof	10
DF152	Afhængighedssyndrom ved brug af andet centralstim. stof	4
DF157	Sen psykotisk/residual tilstand f.a. an. centralstim. stof	*
DF158	An. psykisk lidelse/adfærdsforstyrrelse f.a. an. centralstim. stof	*
DF160	Akut hallucinogenintoksikation	*

DF161	Skadelig brug af hallucinogen	*
DF162	Afhængighedssyndrom ved brug af hallucinogen	6
DF165	Hallucinogenpsykose	*
DF168	Anden psykisk lidelse/adfærdsforstyr. f.a. hallucinogenbrug	*
DF171	Skadelig brug af tobak	46
DF172	Afhængighedssyndrom ved brug af tobak	4
DF180	Akut intoksikation med flygtigt opløsningsmiddel	*
DF181	Skadelig brug af flygtigt opløsningsmiddel	*
DF182	Afhængighedssyndrom ved brug af flygtigt opløsningsmiddel	7
DF187	Sen psykotisk/residual tilst. f.a. flygtigt opløsningsmid.	*
DF190	Akut intoksikation m. multiple el. andre psykoaktive stoffer	15
DF191	Skadelig brug af flere eller andre psykoaktive stoffer	396
DF192	Afhængighedssyndrom v. brug af fl./andre psykoaktive stoffer	159
DF193	Abstinensstilstand sfa multiple/an. psykoaktivt stof	*
DF194	Delirøs abstinensstilstand sfa multiple/an. psykoaktivt stof	*
DF197	Sen psykotisk/residual tilst. f.a. mult/an. psykoakt. stof	*
DF198	An. psykisk lid/adfærdsforst. sfa mult/an. psykoaktivt stof	*
DF199	Psykisk lid/adfærdsforst. sfa mult/an. psykoaktivt stofUNS	9
DF200	Paranoid skizofreni	308
DF201	Hebefren skizofreni	9
DF202	Kataton skizofreni	8
DF203	Udifferenteret skizofreni	33
DF204	Post-skizofren depression	*
DF205	Skizofren residual-tilstand	5
DF206	Simpel skizofreni	39
DF208	Skizofreni af anden type	12
DF209	Skizofreni UNS	515
DF219	Skizotypisk sindslidelse UNS	4
DF220	Enkel paranoia	67
DF228	Anden paranoid psykose	21
DF229	Paranoid psykose UNS	136
DF231	Akut polymorf skizofreniform psykose	*
DF232	Akut skizofreniform psykose	5
DF233	Akut paranoid psykose	9
DF238	Anden akut eller forbigående psykose	*
DF239	Akut eller forbigående psykose UNS	10
DF249	Induceret paranoid psykose	*
DF250	Skizoaffektiv psykose af manisk type	*
DF251	Skizoaffektiv psykose af depressiv type	5
DF252	Skizoaffektiv blandet manisk-depressiv psykose	*
DF258	Skizoaffektiv psykose af anden type	*
DF259	Skizoaffektiv psykose UNS	13
DF289	Anden ikke-organisk psykose UNS	7
DF29	Ikke spec. ikke-organisk psykose	*
DF299	Ikke-organisk psykose UNS	34
DF301	Manisk enkeltepisode uden psykotiske symptomer	4
DF302	Manisk enkeltepisode med psykotiske symptomer	*
DF309	Manisk enkeltepisode UNS	10
DF310	Bipolar affektiv sindslidelse i hypoman episode	*
DF311	Bip. aff. sindslid i manisk episode u psykot. sympt.	6
DF313	Bipolar affektiv sindslid. i lettere/moderat depressiv epi.	13
DF314	Bip. aff. sindslid i svær depress. episode u psykot. sympt.	13
DF315	Bip. aff. sindslid i svær depress. episode m. psykot. sympt.	10
DF316	Bipolar affektiv sindslidelse i episode m. blandingstilstand	11
DF317	Bipolar affektiv sindslidelse i remission	*
DF318	Anden form for bipolar affektiv sindslidelse	*
DF319	Bipolar affektiv sindslidelse UNS	277
DF320	Depressiv enkeltepisode af lettere grad	14
DF321	Depressiv enkeltepisode af moderat grad	20
DF322	Depress. enkeltepisode af svær grad u psykot. sympt.	17
DF323	Depressiv enkeltepisode af svær grad m. psykotiske symptomer	14
DF328	Depressiv enkeltepisode af anden type	4
DF329	Depressiv enkeltepisode UNS	960
DF330	Periodisk depression i episode af lettere grad	*
DF331	Periodisk depression i episode af moderat grad	8
DF332	Periodisk depression i episode af svær grad u psykot. sympt.	26
DF333	Periodisk depression i episode af svær grad m psykot. sympt.	17
DF338	Periodisk depression af anden type	4
DF339	Periodisk depression UNS	39
DF341	Dystymi	7

DF349	Kronisk forstemningstilstand UNS	11
DF381	Anden periodisk affektiv sindslidelse	*
DF388	Anden affektiv sindslidelse eller tilstand	*
DF399	Affektiv sindslidelse UNS	10
DF401	Socialfobi	*
DF410	Panikangst	*
DF411	Generaliseret angst	11
DF412	Lettere angst-depressionstilstand	5
DF419	Angsttilstand UNS	17
DF422	Blandet obsessiv-kompulsiv tilstand	*
DF430	Akut belastningsreaktion	6
DF431	Posttraumatisk belastningsreaktion	4
DF432	Tilpasningsreaktion	*
DF439	Belastningsreaktion UNS	*
DF441	Dissociativ fugue	*
DF448	Anden dissociativ tilstand eller forstyrrelse	*
DF449	Dissociativ tilstand eller forstyrrelse UNS	5
DF451	Udifferenteret somatoform tilstand	*
DF480	Neurasteni	6
DF489	Nervøs tilstand UNS	5
DF500	Nervøs spisevægning	66
DF501	Atypisk nervøs spisevægning	*
DF502	Nervøs spiseanfaldstilbøjelighed	*
DF505	Opkastning forbundet med anden psykisk forstyrrelse	*
DF508	Anden spiseforstyrrelse	5
DF509	Spiseforstyrrelse UNS	9
DF54	Psyriske faktorer forbundet med sygdomme klas. andetsteds	*
DF549	Psyriske faktorer forbundet med sygdom klas. andetsteds	12
DF55	Misbrug af ikke-afhængighedsskabende stoffer	*
DF559	Misbrug af ikke-afhængighedsskabende stoffer UNS	25
DF599	Adfærdsændring UNS forbundet m fysiologisk el fysisk faktor	*
DF600	Paranoid personlighedsstruktur	7
DF601	Skizoid personlighedsstruktur	*
DF603	Emotionelt ustabil personlighedsstruktur	*
DF606	Ængstelig personlighedsstruktur	*
DF608	Anden forstyrrelse af personlighedsstrukturen	*
DF609	Forstyrrelse i personlighedsstrukturen UNS	8
DF619	Forstyrret personlighedsstruktur af blandet og anden type	*
DF621	Personlighedsændring efter psykisk sygdom	*
DF628	Anden personlighedsændring	*
DF649	Kønsidentitetsforstyrrelse UNS	*
DF688	An. forstyr. i personlighed, struktur og adfærd hos voksen	*
DF699	Forstyrrelse i personlighedsstruktur og adfærd UNS	7
DF70	Mental retardering af lettere grad	*
DF709	Lettere mental retardering med påvirkning af adfærd UNS	15
DF71	Mental retardering af middelsvår grad	*
DF719	Middelsvår mental retardering med påvirkning af adfærd UNS	19
DF72	Mental retardering af sværere grad	*
DF720	Sværere mental retardering med ringe påvirkning af adfærd	*
DF729	Sværere mental retardering med påvirkning af adfærd UNS	49
DF73	Mental retardering i sværeste grad	*
DF739	Mental retardering i sværeste grad med adfærdspåvirkning UNS	57
DF78	Anden mental retardering	*
DF789	Anden mental retardering med påvirkning af adfærd UNS	29
DF79	Mental retardering uden specificering	8
DF798	Mental retardering UNS med anden påvirkning af adfærd	*
DF799	Mental retardering UNS	205
DF829	Specifik udviklingsforstyrrelse af motoriske færdigheder	*
DF839	Blandet udviklingsforstyrrelse af specifikke færdigheder	*
DF840	Infantil autisme	10
DF842	Retts syndrom	22
DF845	Aspergers syndrom	*
DF848	Anden gennemgribende mental udviklingsforstyrrelse	5
DF849	Gennemgribende mental udviklingsforstyrrelse UNS	6
DF89	Psyriske udviklingsforstyrrelser uden specificering	*
DF899	Psykisk udviklingsforstyrrelse UNS	5
DF909	Hyperkinetisk forstyrrelse UNS	*
DF919	Adfærdsforstyrrelse UNS	*
DF920	Depressiv adfærdsforstyrrelse	8
DF948	Anden social funktionsforstyrrelse	*

DF949	Social funktionsforstyrrelse UNS	*
DF989	Adfærdsmæssig/emotionel forstyrr. i barndom/adolescens UNS	*
DF99	Psykkiske lidelser eller forstyrrelser ikke nærmere spec.	5
DF999	Psykkisk lidelse eller forstyrrelse UNS	87
DG000	Meningitis forårsaget af Haemophilus influenzae	*
DG001	Meningitis forårsaget af pneumokokker	264
DG002	Meningitis forårsaget af andre streptokokker	23
DG003	Meningitis forårsaget af stafylokokker	14
DG008	Anden bakteriel meningitis	25
DG009	Bakteriel meningitis UNS	211
DG019	Meningitis ved bakteriesygdom klassificeret andetsteds	*
DG030	Ikke-infektøs meningitis	5
DG031	Kronisk meningitis	*
DG038	Meningitis af anden årsag	9
DG039	Meningitis UNS	131
DG040	Akut dissemineret encephalitis	4
DG042	Bakteriel meningoencephalitis eller meningomyelitis IKA	6
DG048	Anden encephalitis, myelitis eller encephalomyelitis	17
DG049	Encephalitis, myelitis eller encephalomyelitis UNS	108
DG060	Intrakraniel absces eller granulom	62
DG061	Intraspinal absces eller granulom	15
DG062	Epidural eller subdural absces UNS	51
DG089	Intrakraniel eller intraspinal flebitis eller tromboflebitis	7
DG09	Følger efter betændelsessygdomme i centralnervesystemet	*
DG099	Følge efter inflammatorisk sygdom i centralnervesystemet	40
DG10	Huntingtons sygdom	21
DG109	Huntingtons sygdom	407
DG110	Ataxia nonprogressiva congenita	*
DG111	Ataxia cerebellaris med tidlig debut	37
DG112	Ataxia cerebellaris med sen debut	55
DG113	Ataxia cerebellaris med defekt DNA-reparation	4
DG114	Arvelig spastisk paraplegi	10
DG118	Anden arvelig ataksi	34
DG119	Arvelig ataksi UNS	30
DG120	Atrophia musculorum spinalis, type I	29
DG121	Anden arvelig spinal muskelatrofi	14
DG122	Sygdom i motorneuroner	3,192
DG128	Anden spinal muskelatrofi eller beslægtet syndrom	11
DG129	Spinal muskelatrofi UNS	22
DG138	Generel atrofi, som primært afficerer CNS, ved anden sygdom	*
DG20	Parkinsons sygdom	668
DG209	Parkinsons sygdom	7,493
DG210	Malignt neuroleptikasyndrom	15
DG211	Anden medikamentel parkinsonisme	40
DG212	Sekundær parkinsonisme forårsaget af andet eksternt agens	4
DG213	Postencephalitisk parkinsonisme	*
DG214	Vaskulær parkinsonisme	7
DG218	Anden sekundær parkinsonisme	118
DG219	Sekundær parkinsonisme UNS	26
DG230	Hallervorden-Spatz sygdom	7
DG231	Progressiv supranukleær oftalmoplegi	51
DG232	Multipel system atrofi, parkinson type (MSA-P)	21
DG233	Multipel system atrofi, cerebellar type (MSA-C)	15
DG238	Anden degenerativ sygdom i basalganglier	27
DG239	Degenerativ sygdom i basalganglier UNS	39
DG240	Dystoni forårsaget af lægemiddel	*
DG241	Idiopatisk familiær dystoni	*
DG242	Idiopatisk ikke-familiær dystoni	*
DG244	Idiopatisk orofacial dystoni	*
DG248	Anden dystoni	6
DG249	Dystoni UNS	17
DG250	Essentiel tremor	9
DG251	Tremor forårsaget af lægemiddel	*
DG252	Anden form for tremor	*
DG253	Myoclonus	*
DG255	Anden form for chorea	5
DG258	Anden ekstrapyramidal sygdom eller bevægeforstyrrelse	*
DG259	Ekstrapyramidal sygdom eller bevægeforstyrrelse UNS	7
DG300	Alzheimers sygdom med tidlig debut	818
DG301	Alzheimers sygdom med sen debut	7,092

DG308	Anden form for Alzheimers sygdom	182
DG309	Alzheimers sygdom UNS	8,710
DG310	Lokaliseret hjerneatrofi	169
DG311	Senil degeneration af hjernen IKA	43
DG312	Degenerative forandringer i nervesystemet f.a. alkohol	167
DG318	Anden degenerativ sygdom i nervesystemet	91
DG319	Degenerativ sygdom i nervesystemet UNS	297
DG320	Subakut degeneration af rygmærven v. sygdom klas. andetsteds	*
DG328	Anden degenerativ tilstand i nervesystemet ved sygdom KA	*
DG35	Dissemineret sklerose	116
DG359	Dissemineret sklerose UNS	2,753
DG360	Neuromyelitis optica	*
DG361	Akut eller subakut hæmoragisk leukoencephalitis	5
DG368	Anden akut dissemineret demyelinisering	5
DG369	Akut dissemineret demyelinisering UNS	26
DG370	Diffus cerebral sklerose	13
DG371	Demyelinisatio centralis corporis callosi	*
DG372	Myelinolysis pontis centralis	24
DG373	Akut transversel myelitis ved demyeliniserende sygdom i CNS	17
DG375	Encephalitis periaxialis concentrica	*
DG378	Anden demyeliniserende sygdom i centralnervesystemet	14
DG379	Demyeliniserende sygdom i centralnervesystemet UNS	41
DG400	Fokal idiopatisk epilepsi	6
DG401	Fokal epilepsi kun med simple anfald	*
DG402	Fokal epilepsi m komplekse/gen. tonisk-klonisk anfald (GTCS)	24
DG403	Generaliseret idiopatisk epilepsi	28
DG404	Epileptisk encefalopati	51
DG405	Specielt epileptisk syndrom	119
DG406	Generaliseret tonisk-klonisk anfald UNS	87
DG407	Abcenser uden grand mal anfald	*
DG408	Anden epilepsi	56
DG409	Epilepsi UNS	1,577
DG410	Generaliseret tonisk-klonisk status epilepticus	34
DG411	Non-konvulsivt status epilepticus af absencetype	*
DG412	Non-konvulsivt komplekst partielt status epilepticus	8
DG418	Anden form for status epilepticus	11
DG419	Status epilepticus UNS	236
DG430	Migræne uden aura	*
DG431	Migræne med aura	*
DG432	Status migrainosus	*
DG433	Migræne med komplikation	*
DG438	Anden form for migræne	*
DG439	Migræne UNS	*
DG441	Vaskulær hovedpine IKA	*
DG450	Vertebrobasilært syndrom	13
DG451	Arteria carotis-syndrom	4
DG453	Amaurosis fugax	*
DG454	Global forbigående amnesi	*
DG458	Anden transitorisk cerebral iskæmi eller beslægtet syndrom	7
DG459	Transitorisk anfald af cerebral iskæmi UNS	306
DG460	Arteria cerebri media-syndrom	*
DG468	Andet vaskulært syndrom ved cerebrovaskulær sygdom	*
DG470	Insomni	*
DG471	Hypersomni	*
DG473	Søvnnapnø	44
DG474	Narkolepsi og katapleksi	6
DG479	Søvnforstyrrelse UNS	*
DG500	Trigeminusneuralgi	7
DG509	Sygdom i ansigtets følenerve UNS	*
DG522	Sygdom i nervus vagus (X)	*
DG523	Sygdom i nervus hypoglossus (XII)	*
DG527	Sygdom samtidigt i flere kranienerver	*
DG529	Sygdom i kranienerve UNS	*
DG545	Amyotrophia neuralgica	13
DG546	Fantomsyndrom med smerter	*
DG553	Kompression af nerverod el. nerveplexus ved anden ryglidelse	*
DG564	Kausalgi i arm	91
DG587	Neuropati samtidigt i flere enkelte nerver	*
DG588	Anden mononeuropati	*
DG589	Mononeuropati UNS	*

DG600	Arvelig motorisk-sensorisk neuropati	26
DG601	Refsums sygdom	*
DG602	Neuropati ved ataxia hereditaria	*
DG603	Idiopatisk progressiv neuropati	5
DG608	Anden form for arvelig motorisk-sensorisk neuropati	11
DG609	Arvelig eller idiopatisk neuropati UNS	8
DG610	Guillain-Barrés syndrom	55
DG618	Anden inflammatorisk polyneuropati	5
DG619	Inflammatorisk polyneuropati UNS	13
DG621	Alkoholisk polyneuropati	112
DG628	Anden polyneuropati	22
DG629	Polyneuropati UNS	154
DG632	Diabetisk polyneuropati	*
DG64	Andre sygdomme i det perifere nervesystem	*
DG649	Anden sygdom i perifere nervesystem	8
DG700	Myasthenia gravis	155
DG702	Medfødt og udviklingsrelateret myasteni	*
DG708	Anden neuromuskulær sygdom	5
DG709	Neuromuskulær sygdom UNS	23
DG710	Muskeldystrofi	273
DG711	Myoton sygdom	94
DG712	Medfødt myopati	23
DG713	Mitokondriel myopati IKA	36
DG718	Anden primær muskelsygdom	11
DG719	Primær muskelsygdom UNS	11
DG720	Myopati forårsaget af lægemiddel	*
DG721	Alkoholisk myopati	15
DG723	Paralysis periodica	*
DG724	Inflammatorisk myopati IKA	*
DG728	Anden myopati	15
DG729	Myopati UNS	32
DG800	Spastisk tetraplegisk cerebral parese	138
DG801	Spastisk diplegisk cerebral parese	5
DG802	Spastisk hemiplegisk cerebral parese	*
DG803	Dyskinetisk cerebral parese	9
DG804	Ataktisk cerebral parese	4
DG808	Anden form for cerebral parese	9
DG809	Cerebral parese UNS	154
DG810	Slap hemiplegi	*
DG811	Spastisk hemiplegi	19
DG819	Hemiplegi UNS	102
DG820	Slap paraplegi	*
DG821	Spastisk paraplegi	42
DG822	Paraplegi UNS	132
DG823	Slap tetraplegi	4
DG824	Spastisk tetraplegi	117
DG825	Tetraplegi UNS	205
DG832	Monoplegi af overekstremitet	*
DG833	Monoplegi UNS	*
DG834	Cauda equina-syndrom	4
DG835	Locked-in-syndrom	*
DG838	Andet paralytisk syndrom	103
DG839	Paralytisk syndrom UNS	58
DG900	Idiopatisk perifer autonom neuropati	4
DG901	Familiær dysautonomi	*
DG902	Horners syndrom	*
DG903	Multipel systemdegeneration i autonome nervesystem	15
DG909	Sygdom i autonome nervesystem UNS	*
DG910	Kommunikerende hydrocefalus	8
DG911	Obstruktiv hydrocefalus	14
DG912	Normaltrykshydrocefalus	66
DG913	Posttraumatisk hydrocefalus UNS	7
DG918	Anden form for hydrocefalus	47
DG919	Hydrocefalus UNS	118
DG92	Toksiske sygdomme i hjernen	*
DG929	Toksisk encefalopati	78
DG930	Hjernecyste	23
DG931	Anoksisk hjerneskode IKA	284
DG932	Benign intrakraniell trykforøgelse	7
DG933	Postviralt træthedssyndrom	*

DG934	Encefalopati UNS	144
DG935	Compressio cerebri	74
DG936	Hjerneødem	65
DG937	Reyes syndrom	*
DG938	Anden hjernesygdom	41
DG939	Hjernesygdom UNS	109
DG948	Anden hjernesygdom ved sygdom klassificeret andetsteds	*
DG950	Syringomyeli eller syringobulbi	35
DG951	Vaskulær myelopati	20
DG952	Rygmarvskompression UNS	23
DG958	Anden sygdom i rygmarv	9
DG959	Sygdom i rygmarven UNS	22
DG960	Liquorrhoea cerebrospinalis	*
DG961	Sygdom i meninges IKA	38
DG968	Anden sygdom i centralnervesystemet	6
DG969	Sygdom i centralnervesystemet UNS	40
DG972	Nedsat intrakranielt tryk ved ventrikulær shunt	*
DG98	Andre sygdomme i nervesystemet IKA	*
DG989	Anden sygdom i nervesystemet IKA	31
DH043	Akut eller ikke specificeret betændelse i tåreveje	*
DH160	Sår i hornhinde	*
DH188	Anden sygdom i hornhinde	*
DH259	Aldersbetinget grå stær (>=50 år) UNS	4
DH269	Grå stær UNS	*
DH309	Posterior uveitis UNS	*
DH348	Anden vaskulær okklusion i retina	*
DH349	Okklusion af retinalt blodkar UNS	*
DH353	Degeneratio maculae luteae et polus posterior retinae	*
DH355	Familiær retinadystrofi	*
DH409	Glaukom UNS	*
DH440	Purulent endoftalmitis	*
DH441	Anden form for endoftalmitis	5
DH469	Inflammation i synsnerve UNS	*
DH476	Forandring i synsbarken	*
DH494	Progressiv ekstern oftalmoplegi	*
DH540	Dobbeltsidig blindhed	*
DH579	Abnorm tilstand i øje eller øjenomgivelser UNS	*
DH604	Kolesteatom i ydre øre	*
DH609	Ekstern otitis UNS	*
DH618	Anden sygdom i ydre øre	*
DH651	Anden form for akut mellemørebetændelse uden pusdannelse	*
DH654	Anden form for kronisk mellemørebetændelse uden pusdannelse	*
DH660	Akut purulent mellemørebetændelse	13
DH663	Anden form for kronisk purulent mellemørebetændelse	*
DH664	Purulent mellemørebetændelse UNS	*
DH669	Mellemørebetændelse UNS	14
DH700	Akut mastoiditis	*
DH709	Mastoiditis UNS	*
DH719	Kolesteatom i mellemøre UNS	*
DH748	Anden sygdom i mellemøre eller processus mastoideus	*
DH810	Ménières sygdom	*
DH839	Sygdom i indre øre UNS	*
DH931	Tinnitus	*
DL00	Eksfoliativ dermatitis forårsaget af stafylokokker	*
DL009	Dermatitis exfoliativa staphylococcica	5
DL010	Impetigo UNS	*
DL020	Absces, furunkel eller karbunkel i huden i ansigtet	*
DL021	Absces, furunkel eller karbunkel i huden på halsen	14
DL022	Absces, furunkel eller karbunkel i huden på kroppen	29
DL023	Absces, furunkel eller karbunkel i huden i sædereionen	19
DL024	Absces, furunkel eller karbunkel i huden på ekstremitet	81
DL028	Absces, furunkel eller karbunkel i huden m. an. lokalisatión	5
DL029	Absces, furunkel eller karbunkel i huden UNS	33
DL031	Flegmone med anden lokalisatión på ekstremitet	10
DL032	Flegmone i ansigtet	*
DL038	Flegmone med anden lokalisatión	*
DL039	Flegmone UNS	10
DL040	Akut lymfadenitis i ansigtet, på hovedet og halsen	*
DL050	Pilonidalcyste med absces	*
DL059	Pilonidalcyste uden absces	*

DL088	Anden lokal infektion i hud eller underhud	22
DL089	Lokal infektion i hud eller underhud UNS	101
DL100	Pemphigus vulgaris	*
DL104	Pemphigus erythematosus	*
DL108	Anden form for pemfigus	*
DL109	Pemfigus UNS	6
DL120	Bulløs pemfigoid	47
DL121	Pemphigoides cicatricialis	*
DL128	Anden form for pemfigoid	*
DL129	Pemfigoid UNS	10
DL139	Blæreudslæt UNS	17
DL200	Prurigo Besnier	*
DL208	Anden form for atopisk dermatitis	*
DL235	Allergisk kontaktdermatitis forårsaget af andet kemikalie	*
DL239	Allergisk kontaktdermatitis UNS	*
DL269	Dermatitis exfoliativa	6
DL301	Dyshidrose	*
DL303	Infektiøs dermatitis	*
DL308	Anden form for dermatitis	*
DL309	Dermatitis UNS	5
DL400	Psoriasis vulgaris	*
DL401	Psoriasis pustulosa generalisata	5
DL405	Psoriasis artropati	12
DL409	Psoriasis UNS	32
DL411	Pityriasis lichenoides chronica	*
DL419	Parapsoriasis UNS	*
DL429	Pityriasis rosea UNS	*
DL440	Pityriasis rubra pilaris	*
DL449	Papuloskopvams sygdom UNS	*
DL509	Nældefeber UNS	*
DL511	Erythema multiforme bullosum	8
DL512	Necrolysis epidermalis toxica	12
DL518	Anden form for erythema multiforme	*
DL519	Erythema multiforme UNS	*
DL538	Anden erytematøs tilstand	*
DL539	Erytem eller erythrodermi UNS	*
DL558	Anden form for solskoldning	*
DL568	Anden akut hudforandring forårsaget af ultraviolet lys	*
DL570	Aktinisk keratose	*
DL578	Anden hudforandring ved langvarig ikke-joniserende stråling	*
DL580	Akut stråledermatitis	*
DL581	Kronisk stråledermatitis	*
DL598	Anden strålebetinget sygdom i hud og underhud	9
DL599	Strålebetinget sygdom i hud og underhud UNS	5
DL600	Nedgroet negl	*
DL649	Androgen alopeci UNS	*
DL659	Alopeci uden ardannelse UNS	*
DL679	Abnorm hårfarve eller hårform UNS	*
DL702	Acne varioliformis	*
DL709	Akne UNS	*
DL758	Anden forstyrrelse i apokrine svedkirtler	*
DL839	Acanthosis nigricans UNS	*
DL858	Anden form for epidermal fortykkelse	*
DL88	Pusdannelse i huden	*
DL889	Pyoderma gangraenosum	67
DL89	Tryksår	24
DL892	Decubitus grad III	*
DL893	Decubitus grad IV	7
DL899	Decubitus UNS	507
DL900	Sklerotisk eller atrofisk lichen	*
DL905	Ardannelse eller fibrose i hud	*
DL908	Anden atrofisk forstyrrelse i hud	*
DL909	Atrofisk forstyrrelse i hud UNS	*
DL930	Diskoid lupus erythematosus	6
DL931	Lupus erythematosus cutaneus subacutus	*
DL932	Anden form for lokaliseret lupus erythematosus	*
DL940	Lokaliseret sklerodermi	*
DL942	Calcinosis cutis	*
DL948	Anden form for lokaliseret bindevævssygdom	*
DL949	Lokaliseret bindevævssygdom UNS	*

DL950	Vasculitis livedoides	*
DL958	Anden vaskulitis begrænset til huden	*
DL959	Vaskulitis begrænset til huden UNS	5
DL97	Sår på ben IKA	24
DL977		*
DL979	Ulcus på ben IKA	327
DL984	Kronisk ulcus i huden IKA	139
DL985	Mucinosi cutis	*
DL988	Anden sygdom i hud og underhud	*
DL989	Sygdom i hud eller underhud UNS	4
DM000	Arthritis eller polyarthritis forårsaget af stafylokokker	24
DM001	Arthritis eller polyarthritis forårsaget af pneumokokker	4
DM002	Arthritis eller polyarthritis forårsaget af streptokokker	*
DM008	Purulent arthritis eller polyarthritis f.a. anden bakterie	11
DM009	Purulent arthritis UNS	102
DM023	Reiters sygdom	*
DM028	Anden reaktiv arthritis	*
DM029	Reaktiv arthritis UNS	4
DM050	Feltys syndrom	12
DM051	Reumatoid arthritis med lungemanifestationer	20
DM052	Reumatoid vaskulitis	25
DM053	Reumatoid arthritis med involvering af andre organsystemer	193
DM058	Anden form for seropositiv reumatoid arthritis	30
DM059	Seropositiv reumatoid arthritis UNS	150
DM060	Seronegativ reumatoid arthritis	78
DM061	Stills sygdom med debut efter det fyldte 16. år	*
DM064	Polyarthriti inflammatorica	4
DM068	Anden form for reumatoid arthritis	18
DM069	Reumatoid arthritis UNS	1,391
DM073	Anden form for psoriatisk artropati	*
DM080	Juvenil reumatoid arthritis	*
DM082	Juvenil arthritis med ekstra-artikulære manifestationer	*
DM089	Juvenil arthritis UNS	6
DM100	Idiopatisk urinsur gigt	26
DM103	Urinsur gigt ved nefropati	7
DM109	Urinsur gigt UNS	76
DM111	Familiær kondrokalcinose	*
DM123	Palindromisk reumatisme	*
DM130	Polyarthritis UNS	36
DM131	Monoarthritis IKA	8
DM138	Anden arthritis	10
DM139	Arthritis UNS	44
DM144	Artropati ved amyloidose	*
DM150	Primær generaliseret artrose	20
DM153	Sekundær multipel artrose	*
DM154	Erosiv artrose	*
DM158	Anden polyartrose	7
DM159	Polyartrose UNS	49
DM160	Primær dobbeltsidig hofteledsartrose	28
DM161	Primær enkeltsidig hofteledsartrose	42
DM162	Dysplastisk dobbeltsidig hofteledsartrose	*
DM163	Dysplastisk enkeltsidig hofteledsartrose	*
DM165	Posttraumatisk enkeltsidig hofteledsartrose	*
DM166	Anden form for sekundær dobbeltsidig hofteledsartrose	*
DM167	Anden form for sekundær enkeltsidig hofteledsartrose	7
DM169	Hofteledsartrose UNS	258
DM170	Primær dobbeltsidig knæledsartrose	29
DM171	Primær enkeltsidig knæledsartrose	18
DM173	Posttraumatisk enkeltsidig knæledsartrose	*
DM174	Anden form for sekundær bilateral knæledsartrose	*
DM179	Knæledsartrose UNS	91
DM190	Primær artrose i andet (andre) led	*
DM191	Posttraumatisk artrose i andet (andre) led	*
DM198	Anden artrose	5
DM199	Artrose UNS	93
DM201	Erhvervet hallux valgus	*
DM206	Erhvervet tådeformitet UNS	*
DM229	Sygdom i patella UNS	*
DM233	Anden menisklidelse	*
DM238	Anden lidelse i knæled	*

DM239	Knæledslidelse UNS	32
DM243	Luksation eller subluksation i led IKA	*
DM244	Habituelle luksationer eller subluksationer	8
DM245	Ledkontraktur	*
DM246	Ankylose	*
DM247	Protrusio acetabuli	*
DM248	Anden ledlidelse IKA	*
DM249	Ledsygdom UNS	4
DM255	Ledsmerter	*
DM259	Ledlidelse UNS	*
DM300	Polyarthritis nodosa	49
DM301	Polyarthritis med asthma bronchiale	26
DM302	Polyarthritis juvenilis	*
DM303	Mukokutant lymfeknudesyndrom (Kawasaki)	*
DM308	Anden sygdom beslægtet med polyarthritis nodosa	5
DM310	Angiitis hypersensitiva	10
DM311	Microangiopathia thrombotica	34
DM312	Letalt midtlinjegrnulom	*
DM313	Wegeners granulomatose	388
DM314	Arcus aortae-syndrom	4
DM315	Kæmpecellearteritis med reumatisk polymyalgi	35
DM316	Anden kæmpecellearteritis	77
DM317	Mikroskopisk polyangiitis	4
DM318	Anden nekrotiserende vaskulitis	26
DM319	Nekrotiserende vaskulitis UNS	39
DM321	Systemisk lupus erythematosus med organinvolvering	118
DM328	Anden form for systemisk lupus erythematosus	8
DM329	Systemisk lupus erythematosus UNS	117
DM330	Dermatomyositis juvenilis	*
DM331	Anden dermatomyositis	27
DM332	Polymyositis	45
DM339	Dermatopolymyositis UNS	14
DM340	Progressiv systemisk sklerodermi	74
DM341	CREST-syndrom	5
DM348	Anden form for systemisk sklerodermi	103
DM349	Systemisk sklerodermi UNS	132
DM350	Sjögrens syndrom	41
DM351	Andet blandingssyndrom ved generaliseret bindevævssygdom	18
DM352	Behçets sygdom	4
DM353	Reumatisk polymyalgi	361
DM354	Eosinofil fasciitis	*
DM355	Fibrosclerosis multifocalis	*
DM357	Hypermobilitetssyndrom	*
DM358	Anden generaliseret bindevævssygdom	22
DM359	Generaliseret bindevævssygdom UNS	76
DM400	Postural kyfose	*
DM401	Anden form for sekundær kyfose	*
DM402	Anden eller ikke specificeret kyfose	18
DM404	Anden form for lordose	*
DM410	Idiopatisk skoliose hos barn	*
DM411	Idiopatisk skoliose hos ung	*
DM412	Anden form for idiopatisk skoliose	6
DM413	Torakogen skoliose	7
DM414	Neuromuskulær skoliose	9
DM415	Anden form for sekundær skoliose	*
DM418	Anden form for skoliose	*
DM419	Skoliose UNS	55
DM420	Juvenil osteokondrose i rygsøjlen	*
DM429	Osteokondrose i rygsøjlen UNS	*
DM430	Spondylolyse	*
DM431	Spondylolistese	5
DM432	Blokhvirveldannelse i rygsøjlen	*
DM434	Anden habituel atlantoaksial sublaksation	*
DM435	Anden form for habituel sublaksation i rygsøjlen	*
DM436	Torticollis	*
DM438	Anden deformerende ryglidelse	*
DM439	Deformerende ryglidelse UNS	*
DM45	Spondylitis ankylopoietica	5
DM459	Ankyloserende spondylitis	52
DM461	Sakroiliitis IKA	*

DM462	Osteomyelitis i ryghvirvel	19
DM463	Infektiøs diskitis i rygsøjlen	34
DM464	Diskitis UNS	17
DM465	Anden form for infektiøs spondylopati	62
DM468	Anden form for inflammatorisk spondylopati	5
DM469	Inflammatorisk spondylopati UNS	66
DM470	Kompressionssyndrom v forsnæv, a.spinalis ant./a.vertebralis	*
DM471	Anden spondylose med myelopati	7
DM472	Anden spondylose med radikulopati	*
DM478	Anden spondylose	17
DM479	Spondylose UNS	14
DM480	Spinalstenose	117
DM481	Hyperostosis ankylotica	*
DM482	Arthrosis processus spinosi vertebrarum lumbalium	*
DM485	Sammenfald af ryghvirvel IKA	54
DM488	Anden form for spondylopati	4
DM489	Spondylopati UNS	4
DM500	Cervikal diskusprolaps med myelopati	4
DM501	Cervikal diskusprolaps med radikulopati	*
DM502	Anden form for cervikal diskusprolaps	6
DM503	Anden form for cervikal diskusdegeneration	5
DM509	Sygdom i cervikal båndskive UNS	7
DM510	Lumbal eller torakal diskusprolaps med myelopati	4
DM511	Lumbal eller torakal diskusprolaps med radikulopati	8
DM512	Anden form for torakolumbal diskusprolaps	15
DM513	Anden torakal eller lumbal diskusdegeneration	*
DM519	Sygdom i lumbal eller torakal båndskive UNS	5
DM530	Cervikokranialt syndrom	*
DM538	Anden ryglidelse	*
DM539	Ryglidelse UNS	21
DM541	Radikulopati UNS	*
DM543	Ischias	*
DM544	Lændesmerter med ischias	*
DM545	Lændesmerter UNS	6
DM546	Torakale rygsmerter	7
DM548	Andre rygsmerter	7
DM549	Rygsmerter UNS	43
DM600	Infektiøs myositis	18
DM608	Anden form for myositis	10
DM609	Myositis UNS	19
DM614	Anden form for forkalkning af muskelvæv	*
DM619	Forkalkning eller forbening af muskel UNS	*
DM621	Anden ikke-traumatisk muskelruptur	*
DM622	Iskæmisk muskelinfarkt	31
DM623	Immobilitetssyndrom	53
DM625	Muskelatrofi IKA	*
DM626	Muskelspændinger	*
DM628	Anden muskelsygdom	41
DM629	Muskelsygdom UNS	44
DM659	Synovitis eller tenosynovitis UNS	*
DM679	Sygdom i ledkapselhinde eller sene UNS	*
DM702	Bursitis olecrani	19
DM703	Anden bursitis i albue	6
DM704	Bursitis i slimsækken over knæskallen	*
DM705	Anden bursitis i knæ	*
DM707	Anden bursitis i hofte	*
DM710	Purulent bursitis	4
DM711	Anden infektiøs bursitis	4
DM718	Anden sygdom i slimsæk	*
DM719	Sygdom i slimsæk UNS	*
DM720	Dupuytren's kontraktur	4
DM724	Pseudosarkomatøs fibromatose	*
DM725	Fasciitis ikke klassificeret andetsteds	58
DM726	Nekrotiserende fasciitis	85
DM728	Anden fibroblastsygdom	43
DM729	Fibroblastsygdom UNS	8
DM754	Afklemningssyndrom i skulder	*
DM755	Bursitis i skulder	*
DM758	Anden skulderlidelse	*
DM759	Skulderlidelse UNS	*

DM779	Entesopati UNS	*
DM790	Reumatisme UNS	19
DM792	Neuralgi eller neuritis UNS	*
DM795	Retineret fremmedlegeme i bløddel	*
DM796	Ekstremitetssmerter	4
DM797	Fibromyalgi	*
DM798	Anden bløddelsreumatisme	*
DM799	Bløddelsreumatisme UNS	*
DM800	Postmenopausal osteoporose med patologisk fraktur	32
DM802	Immobilisationsosteoporose med patologisk fraktur	48
DM804	Osteoporose med patologisk fraktur forårsaget af lægemiddel	7
DM805	Idiopatisk osteoporose med patologisk fraktur	94
DM808	Anden form for osteoporose med patologisk fraktur	62
DM809	Osteoporose UNS med patologisk fraktur	520
DM810	Postmenopausal osteoporose	11
DM812	Immobilisationsosteoporose	23
DM813	Osteoporose forårsaget af malabsorption efter operation	*
DM814	Osteoporose forårsaget af lægemiddel	*
DM815	Idiopatisk osteoporose	48
DM816	Lokaliseret osteoporose	13
DM818	Anden osteoporose	54
DM819	Osteoporose UNS	1,154
DM831	Senil osteomalaci	*
DM832	Osteomalaci hos voksen forårsaget af malabsorption	*
DM833	Osteomalaci hos voksen forårsaget af fejlnæring	10
DM834	Aluminium-knoglesygdom	*
DM838	Anden form for osteomalaci hos voksen	*
DM839	Osteomalaci hos voksen UNS	*
DM840	Fraktur med ufuldstændig heling	12
DM841	Pseudartrose	*
DM842	Fraktur med forsinket heling	4
DM844	Patologisk fraktur IKA	29
DM853	Osteitis condensans	*
DM858	Anden forstyrrelse i knogletæthed eller knoglestruktur	*
DM859	Forstyrrelse i knogletæthed eller knoglestruktur UNS	*
DM860	Akut hæmatogen osteomyelitis	4
DM861	Anden akut osteomyelitis	13
DM862	Subakut osteomyelitis	4
DM863	Kronisk multifokal osteomyelitis	*
DM864	Kronisk osteomyelitis med fistel	7
DM865	Anden kronisk hæmatogen osteomyelitis	5
DM866	Anden kronisk osteomyelitis	35
DM868	Anden osteomyelitis	9
DM869	Osteomyelitis UNS	103
DM872	Posttraumatisk knoglenekrose	*
DM873	Anden form for sekundær knoglenekrose	*
DM878	Anden form for knoglenekrose	12
DM879	Knoglenekrose UNS	24
DM888	Pagets sygdom i anden knogle	*
DM889	Pagets knoglesygdom UNS	7
DM890	Refleksdystrofi	*
DM894	Anden hypertrofisk osteoartropati	*
DM896	Osteopati efter poliomyelitis	7
DM898	Anden knoglesygdom	*
DM899	Knoglesygdom UNS	8
DM918	Anden form for juvenil brusklidelse i hofte eller bækken	*
DM919	Juvenil brusklidelse i hofte eller bækken UNS	*
DM938	Anden osteokondropati	*
DM940	Tietzes syndrom	*
DM941	Recidiverende polykondritis	*
DM948	Anden brusksygdom	*
DM949	Brusksygdom UNS	*
DM954	Erhvervet deformitet af thorax eller ribben	*
DM959	Erhvervet deformitet af muskler eller knogler UNS	*
DM990	Segmentær eller somatisk dysfunktion	*
DM992	Subluksationsstenose af rygmarskanalen	*
DM993	Ossøs stenose af rygmarskanalen	*
DM995	Diskusstenose af rygmarskanalen	*
DM996	Stenose af foramen intervertebralis f.a. knoglevæv/subluksat	*
DM999	Biomekanisk dysfunktion UNS	8

D0001	Ektopisk graviditet i æggeleder	*
D0009	Ektopisk graviditet UNS	*
D0039	Komplet/ikke spec. spontan abort u komplikation	*
D0068	Provokeret abort på legal indikation uden specifikation	*
D0069	Prov. abort før 12. graviditetsuger med samrådstilladelse	*
D0102	Gravid., fødsel el. barsel med kompl. hypertensiv nyresygdom	*
D0141	Svær præeklamsi	*
D0142	HELLP-syndrom	*
D0149	Præeklamsi UNS	7
D0150	Eklamsi	*
D0223	Dyb tromboflebitis i graviditeten	*
D0240	Graviditet, fødsel el. barsel m. forud best. type 1-diabetes	*
D0411	Infektion i amnionhule og fosterhinder	*
D0419	Sygdom i amnionvæske eller fosterhinder UNS	*
D0449	Forliggende moderkage UNS	*
D0600	Veer før termin uden fødsel	*
D0623	Styrtfødsel	*
D0670	Fødsel kompliceret af blødning med koagulationsdefekt	*
D0679	Fødsel kompliceret af blødning UNS	*
D0689	Fødsel kompliceret af mistanke om asfyksi UNS	*
D0711	Uterusruptur under eller efter fødslen	*
D0721	Haemorrhagia post partum efter partus placentae	*
D0730	Fastsiddende placenta	*
D0751	Shock under eller efter fødslen	*
D0754	Anden komplikation til obstetrisk indgreb	*
D0758	Anden fødselskomplikation	*
D0859	Sepsis i barselsperioden	*
D0860	Sårinfektion efter obstetrisk indgreb	*
D0882	Obstetrisk emboli forårsaget af blodprop	*
D0888	Anden obstetrisk emboli	*
D0903	Kardiomyopati i barselsperioden	*
D0959	Mors obstetrica (mater) causa ignota	*
D0994	Kredsløbssygdom som kompl. gravid., fødsel eller barselsp.	*
D0998	Anden sygdom som kompl. graviditet/fødsel/barselsperiode	*
DP003	An. sygd. i luftveje/kredsløb hos moder m følger for nyfødt	*
DP011	For tidlig vandafgang med følger for nyfødt	*
DP021	Anden blødning med følger for nyfødt	*
DP022	Anden/ikke spec. abnormitet v. placenta m. følger for nyfødt	*
DP025	Anden afklemning af navlestreng med følger for nyfødt	*
DP033	Forløsning med vakuumeustraktor med følger for nyfødt	*
DP035	Styrtfødsel med følger for nyfødt	*
DP038	Anden fødselskomplikation med følger for nyfødt	*
DP039	Fødselskomplikation UNS med følger for nyfødt	*
DP052	Dysmaturitet	*
DP059	Langsom fostervækst UNS	*
DP072	Immaturitet	46
DP073	Præmaturitet	23
DP109	Intrakraniel læsion eller blødning UNS f.a. fødselstraume	*
DP140	Erb-Duchennes paralyse	*
DP210	Svær neonatal asfyksi	8
DP219	Neonatal asfyksi UNS	34
DP220	Idiopatisk respiratory distress-syndrom hos nyfødt	*
DP228	Anden respiratorisk distress hos nyfødt	*
DP229	Respiratory distress hos nyfødt UNS	*
DP236	Anden bakteriel medfødt pneumoni	11
DP240	Aspiration af mekonium hos nyfødt	*
DP271	Bronkopulmonal dysplasi opstået i perinatalperioden	5
DP278	Anden kronisk luftvejssygdom opstået i perinatalperioden	*
DP279	Kronisk luftvejssygdom opstået i perinatalperioden UNS	*
DP291	Hjertearytmi hos nyfødt	*
DP293	Persisterende føtalt kredsløb	*
DP350	Medfødt rubellasyndrom	*
DP351	Medfødt cytomegalovirusinfektion	*
DP362	Sepsis hos nyfødt forårsaget af Staphylococcus aureus	*
DP364	Sepsis hos nyfødt forårsaget af Escherichia coli	*
DP371	Medfødt toksoplasmose	*
DP379	Medfødt infektiøs eller parasitær sygdom UNS	*
DP524	Ikke-traumatisk intracerebral hjerneblødning hos nyfødt	*
DP525	Ikke-traumatisk subaraknoidal blødning hos nyfødt	5
DP526	Ikke-traum. blødning i lillehjernen/fossa post hos nyfødt	4

DP528	An. ikke-traum. intrakraniel blødning hos nyfødt	*
DP529	Ikke-traumatisk intrakraniel blødning hos nyfødt UNS	*
DP543	Anden blødning i mavetarmkanalen hos nyfødt	*
DP578	Anden form for kernikterus	*
DP579	Kernikterus UNS	*
DP592	Ikterus hos nyfødt ved anden el. ikke spec. levercelleskade	*
DP613	Medfødt anæmi ved blodtab i fostertilstanden	*
DP744	Anden forbigående elektrolytforstyrrelse hos nyfødt	*
DP779	Nekrotiserende enterocolitis hos nyfødt	*
DP800	Cold injury-syndrom	*
DP832	Hydrops foetalis hos foster UNS	*
DP918	Anden neonatal cerebral forstyrrelse	*
DP919	Cerebral forstyrrelse hos nyfødt UNS	*
DP929	Problem med fødeindtagelsen hos nyfødt UNS	*
DP939	Reaktioner og forgiftninger hos nyfødt f.a. lægemiddel	*
DP942	Medfødt muskulær hypotoni	*
DP948	Anden forstyrrelse i muskeltonus hos nyfødt	*
DP959	Foetus mortuus ante partum	*
DQ012	Encephalocoele occipitalis	*
DQ019	Encefalocoele UNS	*
DQ02	Mikrocefali	*
DQ029	Mikrocefali UNS	62
DQ030	Misdannelse af aquaeductus cerebri	4
DQ031	Atresia aperturae medianae et lateralis ventriculi quarti	*
DQ038	Anden form for medfødt hydrocephalus	9
DQ039	Medfødt hydrocephalus UNS	35
DQ040	Medfødt misdannelse af corpus callosum	5
DQ042	Holoprosencefali	6
DQ043	Anden cerebral hypoplasi	18
DQ045	Megalencephalus	*
DQ046	Medfødte cerebrale cyster	*
DQ048	Anden medfødt misdannelse i hjernen	12
DQ049	Medfødt misdannelse i hjernen UNS	24
DQ051	Torakal spina bifida med hydrocephalus	*
DQ052	Lumbal spina bifida med hydrocephalus	4
DQ054	Spina bifida UNS med hydrocephalus	7
DQ055	Cervical spina bifida uden hydrocephalus	*
DQ057	Lumbal spina bifida uden hydrocephalus	*
DQ059	Spina bifida UNS	15
DQ061	Hypoplasi eller dysplasi af rygmarven	*
DQ068	Anden medfødt misdannelse i rygmarv	*
DQ069	Medfødt misdannelse i rygmarven UNS	4
DQ070	Arnold-Chiari syndrom	4
DQ078	Anden medfødt misdannelse i nervesystemet	9
DQ079	Medfødt misdannelse i nervesystemet UNS	*
DQ122	Kolobom i linse	*
DQ149	Medfødt misdannelse i bageste del af øje UNS	*
DQ200	Truncus arteriosus communis	7
DQ201	Transpositio vasorum incompleta i højre ventrikel	7
DQ202	Transpositio vasorum incompleta i venstre ventrikel	*
DQ203	Transpositio vasorum completa	19
DQ204	Ventriculus cordis communis	13
DQ205	Inversio ventriculorum cordis	5
DQ208	Anden medfødt misdannelse af hjertekamre	15
DQ209	Medfødt misdannelse af hjertekamre UNS	7
DQ210	Ventrikelseptumdefekt	51
DQ211	Atrioseptumdefekt	52
DQ212	Atrioventrikulær septumdefekt	31
DQ213	Steno-Fallots tetralogi	84
DQ214	Aortopulomnal septumdefekt	*
DQ218	Anden medfødt misdannelse af hjerteskillevæg	41
DQ219	Medfødt misdannelse af hjerteskillevæg UNS	6
DQ220	Pulmonalklapsatresi	*
DQ221	Medfødt pulmonalklapstenose	*
DQ223	Anden medfødt misdannelse af pulmonalklap	*
DQ224	Medfødt trikuspidalklapstenose	*
DQ225	Ebsteins anomali	16
DQ226	Hypoplastisk højre hjerte-syndrom	4
DQ230	Medfødt aortaklapstenose	20
DQ231	Medfødt aortaklapinsufficiens	11

DQ232	Medfødt mitralklapstenose	6
DQ233	Medfødt mitralklapinsufficiens	6
DQ234	Hypoplastisk venstre hjerte-syndrom	14
DQ238	Anden medfødt misdannelse af aorta- eller mitralklap	*
DQ239	Medfødt misdannelse af aorta- eller mitralklap UNS	5
DQ240	Dekstrokardi	8
DQ242	Cor triatriatum	*
DQ244	Medfødt subaortastenose	*
DQ245	Medfødt misdannelse af koronararterie	10
DQ246	Medfødt hjerteblok	*
DQ248	Anden medfødt hjertemisdannelse	41
DQ249	Medfødt hjertemisdannelse UNS	82
DQ250	Persisterende ductus arteriosus	9
DQ251	Coarctatio aortae	35
DQ252	Aortaatresi	*
DQ253	Medfødt aortastenose	62
DQ254	Anden medfødt misdannelse i aorta	*
DQ255	Pulmonalarterieatresi	*
DQ256	Medfødt pulmonalarteriestenose	*
DQ259	Medfødt misdannelse i de store arterier UNS	*
DQ261	Vena cava superior sinistra persistens	*
DQ262	Total anomali af lungevenerne	*
DQ263	Partiel anomali af lungevenerne	*
DQ265	Anomalia venae portae	*
DQ268	Anden medfødt misdannelse i de store vener	*
DQ271	Medfødt stenose af nyrearterie	*
DQ273	Medfødt perifer arteriovenøs malformation	8
DQ278	Anden medfødt misdannelse i det perifere kredsløb	*
DQ280	Arteriovenøs misdannelse i præcerebralt kar	*
DQ282	Arteriovenøs misdannelse i cerebralt kar	43
DQ283	Anden misdannelse i cerebralt kar	20
DQ288	Anden medfødt misdannelse i kredsløbsorganerne	4
DQ289	Medfødt misdannelse i kredsløbsorganerne UNS	*
DQ314	Stridor laryngis congenitus	*
DQ320	Tracheomalacia congenita	*
DQ321	Anden medfødt misdannelse i trakea	*
DQ322	Bronchomalacia congenita	*
DQ324	Anden medfødt bronkiemisdannelse	*
DQ332	Sequestrum pulmonum	*
DQ334	Medfødt bronkiektasi	*
DQ335	Ektopisk væv i lunge	*
DQ338	Anden medfødt lungemisdannelse	4
DQ340	Medfødt misdannelse af lungehinde	8
DQ341	Medfødt mediastinal cyste	*
DQ375	Enkeltsidig løbe-gumme-ganespalte	*
DQ390	Øsofagusatresi uden fistel	4
DQ391	Øsofagusatresi med medfødt trakeoøsofageal fistel	*
DQ392	Medfødt trakeoøsofageal fistel uden øsofagusatresi	*
DQ393	Medfødt stenose eller striktur i øsofagus	*
DQ396	Øsofagusdivertikel	4
DQ398	Anden medfødt misdannelse i øsofagus	*
DQ401	Medfødt hiatushernie	*
DQ408	Anden medfødt misdannelse i øvre fordøjelsesorganer	*
DQ410	Agenesi, atresi eller medfødt stenose af duodenum	*
DQ412	Agenesi, atresi eller medfødt stenose af ileum	*
DQ418	Agenesi, atresi el. medfødt stenose af anden del af tyndtarm	*
DQ419	Agenesi, atresi eller medfødt stenose af tyndtarm UNS	*
DQ422	Agenesi, atresi eller medfødt stenose af anus med fistel	*
DQ429	Agenesi, atresi eller medfødt stenose af tyktarm UNS	*
DQ430	Meckels divertikel	12
DQ431	Medfødt megacolon	5
DQ432	Anden medfødt forstyrrelse i tyktarmens funktion	*
DQ433	Medfødt misdannelse i mesenterie, oment eller peritoneum	*
DQ438	Anden medfødt misdannelse i tarmkanalen	4
DQ442	Atresi af galdegang	25
DQ445	Anden medfødt misdannelse i galdegang	*
DQ446	Medfødt cystelever	9
DQ447	Anden medfødt misdannelse i lever	*
DQ450	Agenesi, aplasi og hypoplasi af pancreas	*
DQ451	Pancreas annulare	*

DQ452	Medfødt pancreascyste	*
DQ453	Anden medfødt misdannelse af pancreas el. ductus pancreatis	*
DQ459	Medfødt misdannelse i fordøjelsessystem UNS	*
DQ600	Enkeltsidig nyreagenesi	7
DQ601	Dobbeltsidig nyreagenesi	*
DQ602	Nyreagenesi UNS	*
DQ604	Dobbeltsidig nyrehypoplasi	*
DQ610	Medfødt nyrecyste	8
DQ611	Polycystisk nyresygdom med autosomal recessiv arvegang	*
DQ612	Polycystisk nyresygdom med autosomal dominant arvegang	92
DQ613	Polycystisk nyresygdom UNS	211
DQ614	Cystisk renal dysplasi	*
DQ615	Medullær svampenyre	12
DQ618	Anden form for cystenyre	5
DQ619	Cystenyre UNS	24
DQ620	Medfødt hydronefrose	*
DQ621	Medfødt atresi eller stenose af urinleder	*
DQ622	Medfødt dilatation af urinleder	*
DQ628	Anden medfødt misdannelse i urinleder	*
DQ631	Lobuleret nyre, kagenyre eller hesteskonyre	*
DQ638	Anden medfødt nyremisdannelse	7
DQ639	Medfødt misdannelse i nyre UNS	4
DQ647	Anden medfødt misdannelse af urinblære og urinrør	*
DQ648	Anden medfødt misdannelse i urinveje	*
DQ649	Medfødt misdannelse i urinveje UNS	4
DQ652	Medfødt hofteleksation UNS	*
DQ675	Medfødt deformitet af rygsøjle	9
DQ688	Anden medfødt misdannelse i muskel eller knogle	*
DQ743	Arthrogryposis multiplex congenita	*
DQ751	Kraniofacial dysostose	*
DQ752	Hypertelorisme	*
DQ753	Makrocefali	*
DQ754	Mandibulofacial dysostose	*
DQ763	Medfødt skoliose forårsaget af knoglemisdannelse	7
DQ764	Anden medfødt misdannelse af rygsøjle uden samtidig skoliose	*
DQ769	Medfødt misdannelse i brystkassens knogler UNS	*
DQ773	Chondrodysplasia punctata	*
DQ774	Akondroplasi	*
DQ780	Osteogenesis imperfecta	12
DQ782	Osteopetrose	6
DQ788	Anden form for osteokondrodysplasi	*
DQ789	Osteokondrodysplasi UNS	4
DQ790	Medfødt diafragmahernie	4
DQ791	Anden medfødt misdannelse af diafragma	*
DQ792	Omfalocoele	*
DQ793	Gastrokise	*
DQ795	Anden medfødt misdannelse af bugvæg	*
DQ796	Ehlers-Danlos´ syndrom	12
DQ799	Medfødt misdannelse i muskel eller knogle UNS	*
DQ809	Medfødt iktyosis UNS	*
DQ819	Epidermolysis bullosa UNS	*
DQ820	Arveligt lymfødem	*
DQ822	Mastocytose	*
DQ828	Anden medfødt misdannelse af huden	*
DQ829	Medfødt misdannelse af huden UNS	*
DQ850	Ikke-malign neurofibromatose	51
DQ851	Tuberøs sklerose	10
DQ858	Anden fakomatose IKA	16
DQ860	Føtalt alkoholsyndrom	*
DQ870	Syndromer med medfødte misdannelser overvejende i ansigtet	6
DQ871	Medfødt misdannelsessyndrom med dværgvækst	20
DQ872	Syndrom m. medfødte misdannelser overvejende i ekstremiteter	4
DQ873	Syndromer med medfødte misdannelser med tidlig højdevækst	*
DQ874	Marfans syndrom	54
DQ875	Andet medfødt misdannelsessyndrom med an. skeletforandringer	*
DQ878	Andet medfødt misdannelsessyndrom IKA	41
DQ890	Medfødt misdannelse i milten	*
DQ893	Situs inversus	4
DQ897	Multiple medfødte misdannelser IKA	6
DQ898	Anden medfødt misdannelse	8

DQ899	Medfødt misdannelse UNS	54
DQ900	Trisomi 21, meiotisk nondisjunktion	14
DQ902	Trisomi 21, translokation	4
DQ909	Downs syndrom UNS	665
DQ910	Trisomi 18, meiotisk nondisjunktion	*
DQ912	Trisomi 18, translokation	*
DQ913	Edwards' syndrom UNS	12
DQ914	Trisomi 13, meiotisk nondisjunktion	*
DQ917	Pataus syndrom UNS	4
DQ920	Autosomal trisomi, meiotisk nondisjunktion	*
DQ921	Autosomal trisomi, mosaik mitotisk nondisjunktion	*
DQ928	Anden hel eller partiel autosomal trisomi	4
DQ929	Hel eller partiel autosomal trisomi UNS	*
DQ930	Autosomal monosomi, meiotisk nondisjunktion	*
DQ933	Deletion af kromosom 4, kort arm	*
DQ934	Deletion af kromosom 5, kort arm	*
DQ935	Anden partiel deletion af et kromosom	4
DQ958	Anden balanceret ombytning i kromosom eller kromosommarkør	*
DQ960	Turners syndrom karyotype 45,X	*
DQ969	Turners syndrom UNS	11
DQ984	Klinefelters syndrom UNS	6
DQ988	Anden kønskromosomanomali med mandlig fænotype	*
DQ992	Fragilt X-kromosom	*
DQ998	Anden kromosomanomali	21
DQ999	Kromosomanomali UNS	18
DR000	Takykardi UNS	15
DR001	Bradykardi UNS	82
DR008	Anden eller ikke specificeret abnorm hjerterytme	33
DR02	Koldbrand IKA	5
DR029	Gangræn IKA	434
DR030	Forhøjet blodtryk uden verificeret hypertension	*
DR031	Lavt blodtryk UNS	*
DR040	Næseblod	8
DR041	Blødning fra svælg	*
DR042	Hæmoptyse	23
DR048	Blødning fra anden lokalisation i luftveje	4
DR049	Blødning fra luftvejene UNS	7
DR059	Hoste UNS	*
DR060	Dyspnø	48
DR062	Piben på lungerne	*
DR063	Cheyne-Stokes respiration	*
DR068	Anden eller ikke specificeret abnorm vejrtrækning	19
DR073	Andre brystmerter	15
DR079	Brystmerter uden specifikation	6
DR090	Asfyksi	135
DR091	Lungehindebetændelse IKA	8
DR092	Respirationsstop	862
DR098	An. spec. symptom el fund i kredsløbs- og åndedrætsorganerne	9
DR100	Akutte mavesmerter	331
DR101	Mavesmerter lokaliseret til øvre abdomen	19
DR102	Mavesmerter lokaliseret til bækken og bækkenbund	*
DR103	Mavesmerter lokaliseret til anden del af nedre abdomen	30
DR108	Abdominalia, anden og ikke specificeret	67
DR11	Kvalme og opkastning	*
DR119	Kvalme og opkastning	21
DR13	Synkebesvær	*
DR139	Synkebesvær UNS	100
DR159	Afføringsinkontinens	9
DR160	Forstørret lever IKA	5
DR161	Forstørret milt IKA	*
DR162	Hepatomegali med splenomegali IKA	*
DR179	Ikterus UNS	60
DR18	Ascites	*
DR189	Ascites UNS	20
DR190	Udfyldning i abdomen eller bækken UNS	*
DR194	Ændret afføringsmønster	*
DR198	Andet symptom eller abnormt fund i fordøjelsessystem/abdomen	4
DR230	Cyanose	*
DR252	Kramper eller spasmer	8
DR263		*

DR268	Andet eller ikke spec. Gangbesvær/mobilitetsforstyrrelse	*
DR270	Ataksi UNS	*
DR298	An./uspec. symptom/abnormt fund i nerve- og bevægelsessyst.	*
DR31	Blod i urinen uden specificering	*
DR319	Hæmaturi UNS	26
DR329	Urininkontinens UNS	4
DR339	Urinretention UNS	21
DR34	Sparsom og ophævet diurese	*
DR349	Anuri eller oliguri	41
DR391	Vandladningsbesvær UNS	*
DR392	Ekstrarenal uræmi	14
DR400	Somnolens	9
DR401	Stupor	*
DR402	Koma UNS	21
DR410	Konfusion UNS	7
DR413	Anden amnesi	*
DR418	An. el ikke spec. symptom/abnormt fund vedr. erkendelsesevne	*
DR429	Vertigo UNS	5
DR470	Dysfasi eller afasi	*
DR482	Apraksi	*
DR509	Feber UNS	193
DR519	Hovedpine UNS	*
DR520	Akutte smerter	*
DR522	Andre kroniske smerter	*
DR529	Smerter UNS	*
DR53	Utilpashed og træthed	70
DR539	Utilpashed eller udmattelse UNS	1,363
DR54	Alderdomssvækkelse	1,087
DR549	Senilitet	17,774
DR55	Besvimelse og kollaps	*
DR559	Besvimelse eller kollaps	23
DR560	Feberkramper	*
DR568	Andre eller ikke specificerede kramper	24
DR570	Kardiogent shock	247
DR571	Hypovolæmisk shock	52
DR572	Septisk shock	66
DR578	Anden form for shock	17
DR579	Shock UNS	76
DR58	Blødning IKA	7
DR589	Blødning UNS	135
DR591	Universel lymfeknudeforstørrelse	*
DR600	Lokaliseret ødem	4
DR601	Universelt ødem	6
DR609	Ødem UNS	6
DR620	Retarderet psykomotorisk udvikling	18
DR630	Appetitløshed	129
DR633	Anden form for spisevanskelighed	5
DR634	Abnormt vægttab	36
DR636		*
DR638	Symptomer/abnorme fund vedr. føde- og væskeindtagelse UNS	5
DR64	Kakeksi	50
DR649	Kakeksi UNS	1,024
DR659		*
DR680	Hypotermi, som ikke skyldes kolde omgivelser	22
DR700	Forhøjet sænkning	4
DR739	Hyperglykæmi UNS	*
DR770	Abnormt plasma-albumin	*
DR781	Morfika i blodet	*
DR788	Påvisning af andet fremm stof i blodet	4
DR789	Påvisning af ikke spec. stof, normalt ikke i blodet	*
DR798	Anden abnorm blodprøve	5
DR799	Abnormt kemisk fund i blodprøve UNS	4
DR809	Proteinuri UNS	*
DR821	Myoglobinuri	20
DR900	Intrakraniel rumopfyldende proces	*
DR919	Abnorm billeddiagnostisk unds. af lunger	*
DR930	Abnorm billeddiagnostisk undersøgelse af kranie IKA	*
DR945	Abnorm leverfunktionsundersøgelse	*
DR95	Pludselig uventet spædbarnsdød	4
DR950		*

DR959	Mors subita infantum	66	
DR960	Mors subita causa ignota	4,373	
DR961	Mors <24 timer efter sympt u kendt årsag og u tegn til vold	28	
DR969		*	
DR98	Fundet død uden årsagen kan konstateres	538	
DR989	Mors causa ignota (fundet død)	16,283	
DR99	Særlige forhold vedrørende død	1,362	
DR990		23,278	
DR991	Hjernerød i henhold til sundhedsloven section 176		*
DR999	Mors uden specifikation	14,991	
DS328	Fraktur af an/ikke spec. del af lumbale rygsøjle/bækken	*	
DS720	Fraktur af lårbenshals	7	
DS721	Pertrokantær femurfraktur	*	
DT055	Traumatisk amputation af begge ben	*	
DT179	Fremmedlegeme i luftvejene UNS	*	
DT809	Komplikation efter infusion, transfusion eller injektion UNS	*	
DT813	Postoperativ sårruptur IKA	*	
DT814	Infektion efter indgreb IKA	10	
DT819	Komplikation til indgreb UNS	*	
DT821	Mekanisk komplikation til pacemaker	*	
DT827	Infektion/inflam. v. an. implant/transplantat i hjerte/kar	*	
DT857	Infektion/inflamm. v an. intern protese/implant/transplantat	*	
DT858	Anden kompl. til intern protese, implantat el. transplantat	*	
DT861	Svigt eller afstødning af transplanteret nyre	4	
DT874	Infektion i amputationsstump	9	
DT875	Nekrose i amputationsstump	*	
DT876	Anden eller ikke specificeret komplikation i amputationstump	*	
DT905	Følgetilstand efter intrakraniell læsion	*	
DT931	Følgetilstand efter fraktur af lårben	*	
DT936	Følgetilst. eft. Knusningslæs./traumatisk amputation på ben	*	
DZ491	Ekstracorporal dialyse	*	
DZ492	Dialyse, anden	46	
DZ895	Erhvervet mangel af ben i højde med eller under knæet	*	
DZ896	Erhvervet mangel af underkølemitet oven for knæet	*	
DZ897	Erhvervet mangel af begge underkølemiteter	*	
DZ905	Erhvervet mangel af nyre	*	
DZ933	Tilstand med kolostomi	*	
DZ940	Nyretransplanteret	12	
DZ951	Tilstand med aortokoronar-bypass transplantat	*	
DZ992	Afhængig af renal dialyse	16	
Renal			
DN170	Akut nyreinsufficiens med tubulær nekrose	29	
DN171	Akut nyreinsufficiens med akut kortikal nekrose	9	
DN172	Akut nyreinsufficiens med medullær nekrose	*	
DN178	Anden form for akut nyreinsufficiens	111	
DN179	Akut nyreinsufficiens UNS	585	
DN180	Terminal nyreinsufficiens	834	
DN181	Kronisk nyreinsufficiens uden funktionsnedsættelse, stadie *	36	
DN182	Kronisk nyreinsufficiens, stadie *	6	
DN183	Kronisk nyreinsufficiens, stadie *	35	
DN184	Kronisk nyreinsufficiens, stadie 4	138	
DN185	Kronisk nyreinsufficiens, terminal stadie 5	990	
DN188	Kronisk nyreinsufficiens, andre former	126	
DN189	Kronisk nyreinsufficiens UNS	3,803	
DN19	Nyreinsufficiens UNS	151	
DN199	Nyreinsufficiens UNS	3,081	
Urinal			
DN000	Akut glomerulonefritis med minimale glomerulære forandringer	*	
DN001	Akut glom.nefrit m fokale el segmentære glomerulære forandr.	*	
DN002	Akut glomerulonefritis med diffus membranøs morfologi	4	
DN003	Akut glomerulonefritis med diffus mesangial proliferation	*	
DN006	Akut glomerulonefritis med membr-prolif. morfologi type *	*	
DN007	Akut glomerulonefritis med ekstrakapillær morfologi	*	
DN008	Akut glomerulonefritis med anden morfologi	*	
DN009	Akut glomerulonefrit UNS	43	
DN010	Akut progred. glomerulonefritis m. min. glomerulære forandr.	*	
DN013	Akut progred. glom.nefrit m. diffus mesangial proliferation	*	
DN015	Akut progred. glom.nefrit m. membr.-prolif.morfo. * og 3/UNS	*	
DN017	Akut progredierende glom-nefritis m. ekstrakapil. morfologi	*	
DN018	Akut progredierende glomerulonefritis med anden morfologi	4	

DN019	Akut progredierende glomerulonefrit UNS	6
DN020	Recidiv. el. vedv. hæmaturi m. minimale glomerulære forandr.	*
DN022	Recidiv./vedvarende hæmaturi med diffus membranøs morfologi	*
DN027	Recidiverende/vedvar. hæmaturi med ekstrakapillær morfologi	*
DN028	Recidiverende eller vedvarende hæmaturi med anden morfologi	7
DN029	Recidiverende eller vedvarende hæmaturi UNS	*
DN030	Kronisk glomerulonefritis m. minimale glomerulære forandr.	5
DN031	Kron. glom.nefrit m. fokal/segment. glomerulære forandringer	4
DN032	Kronisk glomerulonefritis med diffus membranøs morfologi	4
DN033	Kronisk glomerulonefritis med diffus mesangial proliferation	5
DN034	Kronisk glomerulonefritis m diffus endokapil. proliferation	*
DN035	Kron. glom.nefrit m membranoprolif. morfologi tp. * og 3/UNS	*
DN037	Kronisk glomerulonefritis med ekstrakapillær morfologi	*
DN038	Kronisk glomerulonefritis med anden morfologi	8
DN039	Kronisk glomerulonefrit UNS	433
DN040	Nefrose med minimale glomerulære forandringer	*
DN041	Nefrose med fokale eller segmentære glomerulære forandringer	*
DN042	Nefrose med diffus membranøs morfologi	6
DN043	Nefrose med diffus mesangial proliferation	*
DN045	Nefrose m membranoproliferativ morfologi type * og * el. UNS	*
DN048	Nefrose med anden morfologi	12
DN049	Nefrose UNS	122
DN050	Glomerulonefritis UNS med minimale glomerulære forandringer	4
DN051	Glom.nefrit UNS m fokale el segmentære glomerulære forandr.	*
DN052	Glomerulonefritis UNS med diffus membranøs morfologi	7
DN053	Glomerulonefritis UNS med diffus mesangial proliferation	6
DN054	Glomerulonefritis UNS med diffus endokapillær proliferation	*
DN055	Glom.nefrit UNS m membr-prolif. morfologi type * og * el UNS	*
DN056	Glomerulonefritis UNS m. membranoproliferativ morfol. type *	*
DN057	Glomerulonefritis UNS med ekstrakapillær morfologi	10
DN058	Glomerulonefritis UNS med anden morfologi	8
DN059	Glomerulonefrit UNS	424
DN061	Monosymptomat. proteinuri m fokal/segmentær glomerul-forandr	*
DN070	Arvelig nefropati med minimale glomerulære forandringer	*
DN071	Arvelig nefropati m fokale el segmentære glomerulære forandr	*
DN072	Arvelig nefropati med diffus membranøs morfologi	*
DN075	Arvelig nefropati m membr-prolif. morfologi type * og 3/UNS	*
DN078	Arvelig nefropati med anden morfologi	8
DN079	Arvelig nefropati UNS	6
DN083	Glomerulonefropati ved diabetes mellitus	*
DN10	Akut tubulointerstitiel nefritis	13
DN109	Akte tubulointerstitiel nefritis UNS	286
DN110	Ikke-obstruktiv kron. pyelonefritis v vesikoureteral reflux	5
DN111	Kronisk obstruktiv pyelonefritis	12
DN118	Anden form for kronisk tubulointerstitiel nyresygdom	19
DN119	Kronisk pyelonefritis UNS	222
DN12	Tubulo-interstitiel nefritis UNS	26
DN129	Pyelonefritis UNS	421
DN130	Hydronefrose ved ureteropelvin obstruktion	29
DN131	Hydronefrose ved ureterstriktur IKA	39
DN132	Hydronefrose m. obstrukt. f.a. sten i nyrebækken el. ureter	32
DN133	Anden eller ikke nærmere specificeret hydronefrose	265
DN134	Hydroureter	*
DN135	Striktur eller stenose i ureter uden hydronefrose	25
DN136	Pyonefrose	50
DN137	Uropati ved vesikoureteral reflux	*
DN138	Anden uropati ved obstruktion eller reflux	6
DN139	Nyrelidelse UNS ved obstruktion eller reflux	9
DN140	Nefropati forårsaget af analgetika	16
DN141	Nefropati forårsaget af anden biologisk substans/lægemiddel	43
DN142	Nefropati f.a. ikke spec. biologisk substans el. lægemiddel	127
DN143	Nefropati forårsaget af tungmetal	*
DN144	Toksisk nefropati IKA	15
DN150	Balkan-nefropati	*
DN151	Renal eller perirenal absces	51
DN158	Anden tubulointerstitiel nyresygdom	22
DN159	Tubulointerstitiel nyresygdom UNS	70
DN200	Nyresten UNS	123
DN201	Uretersten UNS	51
DN202	Nyresten med uretersten UNS	18

DN209	Urinvejssten UNS	189
DN210	Urinblæresten	18
DN211	Uretrasten	*
DN218	Anden form for sten i nedre urinveje	4
DN219	Sten i nedre urinveje UNS	5
DN239	Colica renalis UNS	*
DN250	Nefrogen osteodystrofi	6
DN251	Nefrogen diabetes insipidus	*
DN258	Anden sygdom ved nedsat tubulær nyrefunktion	31
DN259	Nedsat tubulær nyrefunktion UNS	34
DN26	Skrumpenyre UNS	7
DN269	Skrumpenyre UNS	159
DN270	Enkeltsidig nyreatrofi	*
DN271	Dobbeltsidig nyreatrofi	7
DN279	Nyreatrofi UNS	7
DN280	Iskæmi eller infarkt i nyre	19
DN281	Erhvervet nyrecyste	34
DN288	Anden sygdom i nyre eller urinleder	63
DN289	Sygdom i nyre eller urinleder UNS	100
DN300	Akut blærebetændelse	635
DN301	Kronisk interstitiel cystitis	60
DN302	Anden kronisk cystitis	60
DN304	Cystitis forårsaget af bestråling	*
DN308	Anden cystitis	119
DN309	Cystitis UNS	600
DN312	Atonisk neurogen urinblære IKA	*
DN318	Anden neuromuskulær funktionsforstyrrelse i urinblæren	4
DN319	Neuromuskulær funktionsforstyrrelse i urinblæren UNS	*
DN320	Urinblærehalsstenose	*
DN321	Vesikointestinal fistel	57
DN322	Urinblærefistel IKA	6
DN323	Urinblæredivertikel	9
DN324	Ikke-traumatisk urinblæreruptur	12
DN328	Anden sygdom i urinblæren	24
DN329	Sygdom i urinblæren UNS	26
DN340	Uretralabsces	*
DN342	Anden form for uretritis	*
DN351	Postinfektions uretrastriktur IKA	*
DN359	Uretrastriktur UNS	27
DN360	Uretrafistel	*
DN361	Uretradivertikel	*
DN368	Anden sygdom i uretra	*
DN369	Sygdom i uretra UNS	*
DN390	Urinvejsinfektion uden angivelse af lokalisation	4,704
DN391	Vedvarende proteinuri UNS	*
DN393	Stressinkontinens	*
DN394	Anden form for urininkontinens	*
DN398	Anden sygdom i urinvejene	29
DN399	Sygdom i urinvejene UNS	40
DN40	Forstørret blærehalskirtel	156
DN409	Prostatahypertrofi	786
DN410	Akut prostatitis	*
DN411	Kronisk prostatitis	*
DN412	Prostataabsces	5
DN419	Prostatitis UNS	*
DN420	Prostatasten	*
DN421	Prostatablødning	*
DN422	Prostata-atrofi	*
DN423	Dysplasi i prostata	4
DN428	Anden sygdom i prostata	22
DN429	Sygdom i prostata UNS	24
DN433	Hydrocele UNS	7
DN450	Orkitis, epididymitis eller epididymoorkitis med absces	13
DN459	Orkitis, epididymitis eller epididymoorkitis uden absces	15
DN47	Sygdomme i forhuden	*
DN479	Sygdomme i forhuden UNS	*
DN482	Anden betændelsestilstand i penis	*
DN484	Organisk impotens	*
DN488	Anden sygdom i penis	*
DN492	Betændelsestilstand i scrotum	34

DN498	Betændelsestilstand i anden del af de mandlige kønsorganer	14
DN499	Betændelsestilstand i de mandlige kønsorganer UNS	9
DN501	Vaskulær sygdom i de mandlige kønsorganer	*
DN509	Sygdom i de mandlige kønsorganer UNS	*
DN61	Ikke-puerperal betændelse i brystkirtel	*
DN619	Ikke-puerperal betændelse i mamma UNS	*
DN629	Mammahypertrofi	*
DN63	Knude i bryst UNS	*
DN639	Mammatumor UNS	22
DN645	Andet symptom eller fund i mamma	*
DN649	Sygdom i mamma UNS	*
DN700	Akut salpingitis eller ooforitis	*
DN701	Kronisk salpingitis eller ooforitis	*
DN709	Salpingitis eller ooforitis UNS	6
DN710	Akut endometritis	8
DN711	Kronisk endometritis	*
DN719	Endometritis UNS	19
DN732	Parametritis eller flegmone i det kvindelige bækken UNS	*
DN735	Kvindelig pelveoperitonitis UNS	8
DN736	Adhærencer i det kvindelige bækken	*
DN738	Anden infektion i det kvindelige bækken	5
DN739	Infektion i det kvindelige bækken UNS	12
DN751	Absces i Bartholins kirtel	*
DN758	Anden sygdom i Bartholins kirtler	*
DN760	Akut vaginitis	4
DN764	Absces i vulva	8
DN768	Anden betændelsessygdom i vagina eller vulva	*
DN804	Endometriose i septum rectovaginalis eller vagina	*
DN809	Endometriose UNS	*
DN811	Cystocele hos kvinde	5
DN812	Livmoderprolaps uden vaginalprolaps	*
DN813	Inkomplet uterovaginal prolaps	*
DN814	Komplet uterovaginal prolaps	5
DN815	Uterovaginal prolaps UNS	6
DN816	Vaginalt enterocele	*
DN817	Rektocele	*
DN818	Anden form for kvindelig genitalprolaps	*
DN819	Kvindelig genitalprolaps UNS	4
DN820	Vesikovaginal fistel	*
DN821	Anden fistel mellem urinveje og kvindelige kønsorganer	*
DN822	Intestinovaginal fistel	6
DN823	Kolovaginal fistel	27
DN824	Anden fistel mellem kvindelige kønsorganer og tarm	5
DN831	Corpus luteum-cyste	*
DN832	Anden eller ikke specificeret ovariecyste	38
DN835	Torsion af ovarie, æggeleder eller uterine adnekser	*
DN839	Ikke-inflammatorisk sygd i ovarie, æggeleder, parametrie UNS	*
DN840	Polyp i corpus uteri	*
DN841	Polyp i livmoderhalsen	*
DN849	Polyp i kvindelige kønsorganer UNS	*
DN850	Endometriehyperplasi uden atypi	*
DN851	Adenomatøs endometriehyperplasi	*
DN852	Uterushypertrofi	*
DN858	Anden ikke-inflammatorisk sygdom i livmoderen	*
DN859	Ikke-inflammatorisk sygdom i livmoderen UNS	7
DN872	Svær dysplasi på livmoderhalsen	*
DN879	Dysplasi på livmoderhalsen UNS	*
DN893	Dysplasi i vagina UNS	*
DN898	Anden ikke-inflammatorisk sygdom i vagina	*
DN899	Ikke-inflammatorisk sygdom i vagina UNS	*
DN912	Amenoré UNS	*
DN921	Metroragi	*
DN938	Anden form for abnorm blødning fra livmoderen eller vagina	*
DN939	Abnorm blødning fra livmoderen eller vagina UNS	23
DN950	Postmenopausal metroragi	*
Res		
Respir		
DJ009	Akut nasofaryngitis UNS	6
DJ010	Akut kæbehulebetændelse	*
DJ011	Akut pandehulebetændelse	*

DJ014	Akut pansinuitis	*
DJ019	Akut bihulebetændelse UNS	5
DJ020	Akut streptokok faryngitis	*
DJ028	Akut faryngitis forårsaget af anden organisme	*
DJ029	Akut faryngitis UNS	*
DJ030	Akut streptokok tonsillitis	5
DJ038	Akut tonsillitis forårsaget af anden organisme	*
DJ039	Akut tonsillitis UNS	24
DJ040	Akut laryngitis	7
DJ041	Akut trakeitis	*
DJ042	Akut laryngotrakeitis	5
DJ050	Akut obstruktiv laryngitis	4
DJ051	Epiglottitis acuta	16
DJ060	Akut laryngofaryngitis	*
DJ068	Anden akut øvre luftvejsinfektion med flere lokalisationer	14
DJ069	Akut øvre luftvejsinfektion UNS	81
DJ09	Influenza fa. identif zoonotisk el pandemisk type infl.virus	70
DJ10	Influenza f.a. identif. sæsonbestemte typer influenzavirus	49
DJ100	Influenza med lungebetændelse f.a. anden type influenzavirus	78
DJ101	Influenza m an luftvejsmanifest. f.a. an type influenzavirus	22
DJ108	Influenza m. an. manifestation f.a. an. type influenzavirus	5
DJ11	Influenza uden påvist influenzavirus	324
DJ110	Influenza med lungebetændelse uden påvist influenzavirus	360
DJ111	Influenza med an. luftvejsmanifest. u. påvist influenzavirus	158
DJ118	Influenza med anden manifestation uden påvist influenzavirus	265
DJ120	Pneumonia forårsaget af adenovirus	22
DJ121	Pneumoni forårsaget af respiratorisk syncytial virus	24
DJ122	Pneumoni forårsaget af parainfluenzavirus	24
DJ128	Anden viruspneumoni	122
DJ129	Viruspneumoni UNS	155
DJ13	Pneumokok-lungebetændelse	25
DJ139	Pneumoni forårsaget af Streptococcus pneumoniae	514
DJ14	Hæmofilus-lungebetændelse	*
DJ149	Pneumoni forårsaget af Haemophilus influenzae	60
DJ150	Pneumoni forårsaget af Klebsiella pneumoniae	77
DJ151	Pneumoni forårsaget af Pseudomonas	67
DJ152	Pneumoni forårsaget af stafylokokker	110
DJ153	Pneumoni forårsaget af streptokokker, gruppe B	14
DJ154	Pneumoni forårsaget af anden streptokok	41
DJ155	Pneumoni forårsaget af Escherichia coli	19
DJ156	Pneumoni forårsaget af anden gram-negativ bakterie	52
DJ157	Pneumoni forårsaget af Mycoplasma pneumoniae	41
DJ158	Anden bakteriel pneumoni	4,493
DJ159	Bakteriel pneumoni UNS	6,891
DJ160	Klamydiapneumoni	6
DJ168	Pneumoni forårsaget af andet infektiøst agens	21
DJ170	Pneumoni ved bakteriel infektion klassificeret andetsteds	*
DJ172	Pneumoni ved mykose klassificeret andetsteds	4
DJ180	Bronkopneumoni UNS	4,583
DJ181	Lobær pneumoni UNS	534
DJ182	Hypostatisk pneumoni UNS	40
DJ188	Anden pneumoni forårsaget af ikke spec. mikroorganisme UNS	897
DJ189	Pneumoni UNS	25,021
DJ200	Akut bronkitis forårsaget af Mycoplasma pneumoniae	7
DJ202	Akut bronkitis forårsaget af streptokokker	*
DJ205	Akut bronkitis forårsaget af respiratorisk syncytial virus	*
DJ206	Akut bronkitis forårsaget af rhinovirus	*
DJ208	Akut bronkitis forårsaget af anden mikroorganisme	*
DJ209	Akut bronkitis UNS	172
DJ210	Akut bronkiolitis f.a. respiratorisk syncytial virus	*
DJ211	Akut bronkiolitis forårsaget af humant metapneumovirus	*
DJ218	Akut bronkiolitis forårsaget af anden mikroorganisme	6
DJ219	Akut bronkiolitis UNS	23
DJ22	Ikke spec. akutte inf. i nedre luftveje	21
DJ229	Akut nedre luftvejsinfektion UNS	163
DJ320	Kronisk kæbehulebetændelse	4
DJ321	Kronisk pandehulebetændelse	*
DJ329	Kronisk bihulebetændelse UNS	4
DJ339	Næsepolyt UNS	*
DJ340	Absces, furunkel eller karbunkel i næsen	*

DJ348	Anden sygdom i næsehule eller bihule	*
DJ353	Hypertrofi af tonsiller med adenoide vegetationer	*
DJ358	Anden kronisk sygdom i tonsiller og adenoide vegetationer	*
DJ359	Kronisk sygdom i tonsiller eller adenoide vegetationer UNS	*
DJ36	Halsbyld	*
DJ369	Peritonsillær absces	20
DJ370	Kronisk laryngitis	*
DJ380	Paralyse af stemmebånd eller struben	10
DJ381	Polyp på stemmebånd eller i struben	*
DJ383	Anden sygdom i stemmebånd	*
DJ384	Larynxødem	6
DJ385	Laryngospasme	*
DJ387	Anden sygdom i larynx	9
DJ390	Retrofaryngeal eller parafaryngeal absces	8
DJ391	Anden absces i pharynx	5
DJ392	Anden sygdom i pharynx	*
DJ398	Anden sygdom i øvre luftveje	12
DJ399	Sygdom i øvre luftveje UNS	8
DJ40	Bronkitis ikke specificeret som akut eller kronisk	4
DJ409	Bronkitis UNS	98
DJ410	Simpel kronisk bronkitis	106
DJ411	Mukopurulent kronisk bronkitis	69
DJ418	Blandet simpel og mukopurulent kronisk bronkitis	20
DJ42	Kronisk bronkitis ikke nærmere specificeret	168
DJ429	Kronisk bronkitis UNS	5,273
DJ430	Enkeltsidigt lungeemfysem	*
DJ431	Panlobulært lungeemfysem	37
DJ432	Centrilobulært emfysem	11
DJ438	Anden form for lungeemfysem	26
DJ439	Lungeemfysem UNS	1,577
DJ440	Kronisk obstr. lungesygdom m. akut nedre luftvejs infektion	9,145
DJ441	Kronisk obstruktiv lungesygdom med akut eksacerbation UNS	10,610
DJ442		*
DJ448	Anden form for kronisk obstruktiv lungesygdom	7,039
DJ449	Kronisk obstruktiv lungesygdom UNS	45,667
DJ450	Allergisk astma	41
DJ451	Ikke-allergisk astma	78
DJ458	Astma af blandet type	96
DJ459	Astma UNS	2,359
DJ46	Status asthmaticus	4
DJ469	Status asthmaticus UNS	194
DJ47	Udvidelse af bronkier	8
DJ479	Bronkiektasi	107
DJ609	Pneumokoniose forårsaget af kulstøv	*
DJ61	Støvlunge forårsaget af asbest og andre mineralfibre	10
DJ619	Pneumokoniose forårsaget af asbest og andre mineralfibre	186
DJ620	Pneumokoniose forårsaget af talkum	*
DJ628	Anden form for silikose	34
DJ631	Lungefibrose forårsaget af bauxit	8
DJ633	Lungefibrose forårsaget af grafit	10
DJ634	Lungesiderose	*
DJ638	Pneumokoniose forårsaget af andet uorganisk støv	10
DJ64	Støvlunge UNS	*
DJ649	Pneumokoniose UNS	46
DJ659	Pneumokoniose med tuberkulose UNS	4
DJ660	Byssinose	*
DJ662	Cannabinose	*
DJ668	Luftvejssygdom forårsaget af andet organisk støv	6
DJ670	Tærskerlunger	6
DJ672	Fugleholderlunger	*
DJ678	Allergisk alveolitis forårsaget af andet organisk støv	4
DJ679	Allergisk alveolitis forårsaget af organisk støv UNS	23
DJ680	Bronkitis el. pneumonitis f.a. indåndet kemik./gas/røg/damp	8
DJ681	Lungeødem f.a. indåndede kemikalier, gasser, røg eller dampe	14
DJ682	Inflam. i øvre luftveje f.a. indåndede kemik./gas/røg/dampe	*
DJ683	An. tilst. i luftveje f.a. indåndet kemikalie/gas/røg/damp	6
DJ684	Kronisk sygdom i luftveje f.a. indåndet kemik./gas/røg/damp	11
DJ689	Sygdom i luftveje UNS f.a. indåndet kemik./gas/røg/dampe	*
DJ690	Aspirationspneumoni forårsaget af fødeemner el. maveindhold	781
DJ691	Aspirationspneumoni forårsaget af olie eller fedtstoffer	*

DJ698	Aspirationspneumoni f.a. andet fast eller flydende stof	180
DJ700	Strålepneumonitis	36
DJ701	Lungefibrose efter bestråling	58
DJ702	Akut interstitiel lungesygdom forårsaget af lægemiddel	8
DJ703	Kronisk interstitiel lungesygdom forårsaget af lægemiddel	5
DJ704	Interstitiel lungesygdom forårsaget af lægemiddel UNS	8
DJ708	Anden tilstand i luftvejene efter anden ydre påvirkning	6
DJ709	Tilstand i luftvejene efter ydre påvirkning UNS	13
DJ80	Respirationsssvigt som følge af alveolebeskadigelse	11
DJ809	Alveolebeskadigelse med respirationssvigt (ARDS)	66
DJ81	Lungeødem	62
DJ819	Lungeødem UNS	1,369
DJ829	Eosinofile lungeinfiltrater	20
DJ840	Alveolær eller parietoalveolær sygdom	14
DJ841	Anden interstitiel lungesygdom med fibrose	2,133
DJ848	Anden interstitiel lungesygdom	216
DJ849	Interstitiel lungesygdom UNS	923
DJ850	Gangræn og nekrose i lunge	7
DJ851	Lungeabsces med pneumoni	204
DJ852	Lungeabsces UNS	97
DJ853	Absces i mediastinum	18
DJ860	Pleuraempyem med fistel	22
DJ869	Pleuraempyem UNS	357
DJ90	Væskeansamling i lungehinde IKA	30
DJ909	Pleuraeffusion IKA	354
DJ920	Pleurale plaques og belægninger eft kendt asbesteksponering	53
DJ929	Pleurale plaques og belægninger uden kendt asbesteksponering	4
DJ930	Spontan trykpnemothorax	7
DJ931	Anden spontan pneumothorax	21
DJ938	Anden form for pneumothorax	30
DJ939	Pneumothorax UNS	146
DJ940	Kylothorax	26
DJ941	Fibrothorax	11
DJ942	Hæmothorax	52
DJ948	Anden sygdom i lungehinder	84
DJ949	Sygdom i lungehinder UNS	9
DJ952	Akut respirationsinsufficiens efter ekstratorakal kirurgi	4
DJ959	Tilstand i respirationsveje UNS efter indgreb	*
DJ960	Akut respirationsinsufficiens	2,155
DJ961	Kronisk respirationsinsufficiens	662
DJ969	Respirationsinsufficiens UNS	1,136
DJ980	Sygdom i luftrør eller bronkier IKA	11
DJ981	Atelektase i lunge	144
DJ982	Interstitielt lungeemfysem	28
DJ983	Kompensatorisk emfysem	11
DJ984	Anden lungesygdom	829
DJ985	Sygdom i mediastinum IKA	21
DJ986	Sygdom i diafragma	10
DJ988	Anden tilstand i åndedrætsorganer	23
DJ989	Tilstand i åndedrætsorgan UNS	95
DJ991	Lungeforandringer ved anden bindevævssygdom	*

Cause of death for entire population

10:50 Tuesday, January 18, 2022 2

CoD 4 groups											

	CVD	Can	Oth							Res	
	Recod- ed coD	Recod- ed coD	Recoded coD							Recod- ed coD	
	All	CVD	Cancer	Diab	Digest	Extern	Infect	Other	Renal	Urinal	Respir
	N	N	N	N	N	N	N	N	N	N	N

Dødsdato											
1996	60,690	22,893	15,215	19	2,441	3,365	549	9,849	210	414	5,735
1997	59,559	22,685	15,260	22	2,867	3,534	384	8,655	201	459	5,492

1998	57,800	21,991	15,189	24	2,831	3,408	374	7,935	233	474	5,341
1999	58,458	22,272	15,448	26	2,909	3,439	490	7,420	253	488	5,713
2000	56,917	21,402	15,495	13	2,826	3,350	406	7,393	245	467	5,320
2001	57,538	21,743	15,515	15	2,836	3,075	422	7,777	254	462	5,439
2002	58,073	21,039	14,964	28	2,844	2,581	771	8,965	427	494	5,960
2003	57,082	20,344	14,923	30	2,752	2,537	886	8,559	515	524	6,012
2004	55,355	19,064	15,211	29	2,762	2,427	865	8,429	474	551	5,543
2005	54,434	18,022	15,290	28	2,876	2,574	771	8,584	423	552	5,314
2006	54,992	17,491	15,637	17	2,933	2,672	858	8,898	463	649	5,374
2007	55,077	16,338	15,135	37	2,681	2,515	927	10,696	459	517	5,772
2008	54,030	15,393	15,227	55	2,770	2,464	830	10,650	394	480	5,767
2009	54,273	15,175	15,096	53	2,772	2,266	933	10,719	409	511	6,339
2010	53,914	14,770	15,381	57	2,725	2,062	983	11,001	467	417	6,051
2011	51,884	13,793	15,523	51	2,487	2,199	914	10,019	414	470	6,014
2012	51,962	13,717	15,779	49	2,310	2,144	992	10,065	468	396	6,042
2013	51,803	13,175	15,409	65	2,215	2,098	1,112	10,458	477	471	6,323
2014	50,727	12,816	15,613	36	2,240	2,141	999	10,070	466	470	5,876
2015	51,955	13,173	15,687	35	2,133	1,976	1,054	10,741	455	491	6,210
2016	52,199	12,919	15,885	52	2,112	2,030	1,006	11,000	519	438	6,238
2017	52,654	12,602	15,587	37	2,068	2,024	1,108	11,661	566	454	6,547
2018	54,613	12,619	15,648	64	2,204	2,142	1,205	12,531	631	564	7,005
2019	53,361	11,616	15,768	42	2,215	2,197	1,298	13,036	513	506	6,170
2020	*	.	.	.	.	.	.	*	.	.	.

Cause of death for entire population 10:50 Tuesday, January 18, 2022 3

----- CoD 4 groups -----											
	CVD		Can	Oth							Res
	Recod- ed coD	Recod- ed coD		Recoded coD							Recod- ed coD
	All	CVD	Cancer	Diab	Digest	Extern	Infect	Other	Renal	Urinal	Respir
	N	N	N	N	N	N	N	N	N	N	N
Original cod											
CVD	396588	396557	.	31	.	.	.	.	.	.	.
Cancer	369836	.	369802	34	.	.	.	.	.	.	.
Diab	31,264	10,495	83	656	310	14	1,551	12,727	1,520	402	3,506
Digest	61,530	.	.	31	61,499	.	.	.	.	.	.
Extern	61,216	.	.	10	.	61,206	.	.	.	.	.
Infect	18,593	.	.	7	.	.	18,586	.	.	.	.
Other	222488	.	.	103	.	.	.	222385	.	.	.
Renal	8,419	.	.	*	.	.	.	.	8,416	.	.
Respir	138097	.	.	6	.	.	.	.	.	.	138091
Urinal	11,320	.	.	*	.	.	.	.	.	11,317	.

Cause of death for entire population 10:50 Tuesday, January 18, 2022 4

The CONTENTS Procedure

Data Set Name	DMDAT.COD	Observations	1319351
Member Type	DATA	Variables	10
Engine	V9	Indexes	0
Created	18/01/2022 10:50:14	Observation Length	80
Last Modified	18/01/2022 10:50:14	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

```

Data Set Page Size      65536
Number of Data Set Pages 1615
First Data Page        *
Max Obs per Page       817
Obs in First Data Page 791
Number of Data Set Repairs 0
ExtendObsCounter       YES
Filename               E:\workdata\707655\DMreg2020\data\cod.sas7bdat
Release Created        9.0401M5
Host Created           X64_SR12R2
Owner Name             DSTFSE\FDIY7655
File Size              101MB
File Size (bytes)     105906176

```

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
*	pnr	Char	12	\$12.	\$10.	Personnummer
*	doDth	Num	8	DDMMYY10.		Dødsdato
*	cod4	Char	*			CoD 4 groups
4	codX	Char	6			CoD 10 groups w/ DM recoded
5	codD	Char	6			CoD 10 groups
6	daar	Char	8			CoD revised
7	daa1	Char	8	\$4.	\$4.	Primary CoD
8	daa2	Char	8	\$4.	\$4.	Secondary CoD
9	daa3	Char	8	\$4.	\$4.	Tertiary CoD
10	daa4	Char	8	\$4.	\$4.	Quarterary CoD

4.6 00y-base

Reads the files with person information and creates a dataset classified by `pnr` and year (`yr`) 1996–2019, additionally holding variables for municipality (`kom`) and region (`reg`) of residence, level of education (`udd`, `udddk` and `eduen`) and family income (`find`), as of 1 January.

```

1                               "Program: 00y-base.sas"
                                06:28 Wednesday, January 19, 2022

```

```

NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.
NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)
      Licensed to FORSKNING 2, Site 50800723.
NOTE: This session is executing on the X64_SR12R2 platform.

```

```

NOTE: Updated analytical products:
      SAS/STAT 14.3

```

```

NOTE: Additional host information:
      X64_SR12R2 WIN 6.3.9600 Server

```

```

NOTE: SAS initialization used:
      real time      0.09 seconds
      cpu time       0.10 seconds

```

```

NOTE: AUTOEXEC processing beginning; file is
      E:\workdata\707655\DMreg2020\sas\optslibs.sas.

```

```

NOTE: AUTOEXEC processing completed.

```

```

1      libname pop 'E:\workdata\707655\DMreg2020\data\pop' ;
NOTE: Libref POP was successfully assigned as follows:
      Engine:          V9
      Physical Name:  E:\workdata\707655\DMreg2020\data\pop
2      *-----;
3      * the base populations (entire Danish population 1995-2020) classified
4      *   by kom/reg of residence, family income and education at 1 Jan each year ;
5
6      *-----;
7      * the available addresses in DK: compute the reg too ;
8      data adr ;
9      set grund.befadr202103_hjpop ; * updated to marts 2021 (LDIA/PFR);
10     * restrict records to those who group to a region (post-2007 codes)
11     *   that is with a blank as 3rd char after formatting by komreg_x4_kt ;
12     if substr( put( kom, $komreg_v4_KT. ), 3, 1 ) eq " " ;
13     reg = put( kom, $komreg_v4_K. ) ;
14     run ;

```

NOTE: There were 4115955 observations read from the data set GRUND.BEFADR202103_HJPOP.

NOTE: The data set WORK.ADR has 2935677 observations and 4 variables.

NOTE: DATA statement used (Total process time):

```

real time      4.18 seconds
cpu time       2.92 seconds

```

```

15
16     * still there are a few duplicates to remove but by definition these
17     *   are also identical on kom and reg ;
18     proc sort data = adr out = adr nodupkey ; by adresse_id ; run ;

```

NOTE: There were 2935677 observations read from the data set WORK.ADR.

NOTE: 180 observations with duplicate key values were deleted.

NOTE: The data set WORK.ADR has 2935497 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time      0.34 seconds
cpu time       0.93 seconds

```

```

19     * adr is now a dataset with one record per adresse_id and only
20     *   post-2007 municipality codes for each address-id
21     *   sorted by adresse_id which is what we need ;
22
23     *-----;
24     * the available educational achievements ;
25
26     * the first step is to restrict put to only the needed lookups,
27     *   namely the set of unique values of hfaudd ;
28     *   updated to sept 2020 (LDIA/PFR) ;
29     proc sort data = grund.uddf202009 ( where = ( pnr ne ' ' ) )
30     out = uddf
31     nodupkey ;
32     by hfaudd ;
33     run ;

```

NOTE: There were 19123471 observations read from the data set GRUND.UDDF202009.
WHERE pnr not = ' ' ;

NOTE: 19120473 observations with duplicate key values were deleted.

NOTE: The data set WORK.UDDF has 2998 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time      6.09 seconds
cpu time       8.87 seconds

```

```

34
35     data uddtab ( keep = hfaudd hfaudd hfauen ) ;
36     set uddf ;
37     * updated to sept 2020 (BxC) ;
38     hfaudd = put( hfaudd, AUDD2020_HOVED_L1L5_K. ) ;
39     hfauen = put( hfaudd, AUDD_LEVEL_L1L4_K. ) ;

```

```

40      * uncoded values renamed to numerically convertible ones ;
41      if hfaudk eq "**" then hfaudk = "00" ;
42      run ;

```

NOTE: There were 2998 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDDTAB has 2998 observations and 3 variables.
NOTE: At least one W.D format was too small for the number to be printed. The decimal may be shifted by the "BEST" format.
NOTE: DATA statement used (Total process time):

real time	0.13 seconds
cpu time	0.10 seconds

```

43
44      * then merge the approx. 3000 lookups to the original 17 mio. ;
45      proc sort  data = grund.uddf202009 ( where = ( pnr ne ' ' ) )
46              out = uddf ;
47              by hfaudd ;
48      run ;

```

NOTE: There were 19123471 observations read from the data set GRUND.UDDF202009.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.UDDF has 19123471 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):

real time	4.23 seconds
cpu time	10.40 seconds

```

49
50      data uddf ;
51      merge uddf udftab ;
52      by hfaudd ;
53      run ;

```

NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: There were 2998 observations read from the data set WORK.UDDTAB.
NOTE: The data set WORK.UDDF has 19123471 observations and 5 variables.
NOTE: DATA statement used (Total process time):

real time	4.04 seconds
cpu time	2.78 seconds

```

54
55      * the dataset must be sorted by pnr and date for subsequent use ;
56      proc sort  data = uddf ; by pnr hf_vfra ; run ;

```

NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDDF has 19123471 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):

real time	4.62 seconds
cpu time	8.61 seconds

```

57
58      *-----;
59      * macro to get place of residence, no children, family income and
60      * education at 1 January of the year yr. Note that &. is yr-1. ;
61
62      %macro getpop ;
63
64      *****
65      * place of residence is at the end of year &. , but we want to
66      * classify persons by residence at the *start* of year yr.
67      * Also bef refers to the end of year &. ;
68      %do e = &yrf.-1 %to &yrl. ;
69
70      proc sort  data = grund.bef&.12 ( where = ( pnr ne " " ) )
71              out = beftmp ( keep = pnr adresse_id antboernh ) ;
72              by adresse_id ;
73      run ;

```

```

74
75     data geo ( keep = pnr yr kom reg antboernh ) ;
76         merge beftmp ( in = bef )
77             adr ;
78         by adresse_id ;
79         if bef ;
80         yr = &e. + 1 ;
81     run ;
82     proc sort  data = geo ; by pnr ;
83
84     *****
85     * family income is for the calendar year &e., but we want the
86       family income in year yr-1 coded at the start of year yr. ;
87     proc sort  data = grund.bef&e.12 ( where = ( pnr ne " " ) )
88         out = beftmp ( keep = pnr familie_id ) ;
89         by familie_id ;
90     run ;
91
92     data ind ( keep = pnr yr find familie_id ) ;
93         merge beftmp ( in = bef )
94             %if &e. lt 2020 %then /* no faik2020 data */
95             grund.faik&e. ( rename = ( FAMA EKVIVADISP_13 = find ) ) ; ;
96         by familie_id ;
97         if bef ;
98         yr = &e. + 1 ;
99     run ;
100    proc sort  data = ind ; by pnr ; run ;
101
102    *****
103    * highest achieved education before start of year yr. ;
104    data udd ( keep = pnr yr udd udddk eduen ) ;
105        merge grund.bef&e.12 ( keep = pnr
106                               where = ( pnr ne " " )
107                               in = bef )
108            uddf ;
109        by pnr ;
110        if bef ;
111        yr = &e. + 1 ;
112        retain udd udddk eduen ;
113        if first.pnr then do ;
114            udd = . ;
115            udddk = . ;
116            eduen = . ;
117        end ;
118        if hf_vfra le mdy(1, 1, yr) then do ;
119            udd = hfaudd ;
120            udddk = hfauddk ;
121            eduen = hfauen ;
122        end ;
123        if last.pnr then output ;
124    run ;
125
126    data pop.pop&e. ;
127        merge geo ind udd ;
128        by pnr ;
129    run ;
130
131    %end ; * end of loop over years ;
132
133    %mend ; * end of macro getpop ;
134    *-----;
135
136    %getpop ; * run the macro ;

```

NOTE: There were 5210466 observations read from the data set GRUND.BEF199412.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5210466 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	6.00 seconds
cpu time	5.15 seconds

NOTE: There were 5210466 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5210466 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 1.65 seconds
cpu time 1.25 seconds

NOTE: There were 5210466 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5210466 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.08 seconds
cpu time 3.71 seconds

NOTE: There were 5210466 observations read from the data set GRUND.BEF199412.
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5210466 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 3.08 seconds
cpu time 5.15 seconds

NOTE: There were 5210466 observations read from the data set WORK.BEFTMP.
NOTE: There were 2355976 observations read from the data set GRUND.FAIK1994.
NOTE: The data set WORK.IND has 5210466 observations and 4 variables.
NOTE: DATA statement used (Total process time):
real time 1.39 seconds
cpu time 1.12 seconds

NOTE: There were 5210466 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5210466 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.08 seconds
cpu time 3.87 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99

NOTE: There were 5210466 observations read from the data set GRUND.BEF199412.
WHERE pnr not = ' ';
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5210466 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 6.38 seconds
cpu time 5.54 seconds

NOTE: There were 5210466 observations read from the data set WORK.GEO.
NOTE: There were 5210466 observations read from the data set WORK.IND.
NOTE: There were 5210466 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP1994 has 5210466 observations and 10 variables.
NOTE: DATA statement used (Total process time):
real time 3.34 seconds
cpu time 1.96 seconds

NOTE: There were 5245127 observations read from the data set GRUND.BEF199512.

```
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5245127 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time      6.01 seconds
      cpu time       5.06 seconds

NOTE: There were 5245127 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5245127 observations and 5 variables.
NOTE: DATA statement used (Total process time):
      real time      1.65 seconds
      cpu time       1.21 seconds

NOTE: There were 5245127 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5245127 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time      2.11 seconds
      cpu time       3.78 seconds

NOTE: There were 5245127 observations read from the data set GRUND.BEF199512.
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5245127 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time      3.11 seconds
      cpu time       5.37 seconds

NOTE: There were 5245127 observations read from the data set WORK.BEFTMP.
NOTE: There were 2372637 observations read from the data set GRUND.FAIK1995.
NOTE: The data set WORK.IND has 5245127 observations and 4 variables.
NOTE: DATA statement used (Total process time):
      real time      1.70 seconds
      cpu time       1.20 seconds

NOTE: There were 5245127 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5245127 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time      2.09 seconds
      cpu time       3.81 seconds

NOTE: Character values have been converted to numeric values at the places given by:
      (Line):(Column).
      136:77  136:99
NOTE: There were 5245127 observations read from the data set GRUND.BEF199512.
WHERE pnr not = ' ';
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5245127 observations and 5 variables.
NOTE: DATA statement used (Total process time):
      real time      6.43 seconds
      cpu time       5.57 seconds

NOTE: There were 5245127 observations read from the data set WORK.GEO.
NOTE: There were 5245127 observations read from the data set WORK.IND.
NOTE: There were 5245127 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP1995 has 5245127 observations and 10 variables.
NOTE: DATA statement used (Total process time):
      real time      3.25 seconds
```

cpu time 1.95 seconds

NOTE: There were 5268800 observations read from the data set GRUND.BEF199612.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5268800 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 6.02 seconds
cpu time 4.95 seconds

NOTE: There were 5268800 observations read from the data set WORK.BEFTMP.

NOTE: There were 2935497 observations read from the data set WORK.ADR.

NOTE: The data set WORK.GEO has 5268800 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time 1.65 seconds
cpu time 1.23 seconds

NOTE: There were 5268800 observations read from the data set WORK.GEO.

NOTE: The data set WORK.GEO has 5268800 observations and 5 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 2.10 seconds
cpu time 3.76 seconds

NOTE: There were 5268800 observations read from the data set GRUND.BEF199612.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5268800 observations and 2 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 3.12 seconds
cpu time 5.07 seconds

NOTE: There were 5268800 observations read from the data set WORK.BEFTMP.

NOTE: There were 2385495 observations read from the data set GRUND.FAIK1996.

NOTE: The data set WORK.IND has 5268800 observations and 4 variables.

NOTE: DATA statement used (Total process time):

real time 1.42 seconds
cpu time 1.03 seconds

NOTE: There were 5268800 observations read from the data set WORK.IND.

NOTE: The data set WORK.IND has 5268800 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 2.13 seconds
cpu time 3.82 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).

136:77 136:99

NOTE: There were 5268800 observations read from the data set GRUND.BEF199612.

WHERE pnr not = ' ';

NOTE: There were 19123471 observations read from the data set WORK.UDDF.

NOTE: The data set WORK.UDD has 5268800 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time 6.46 seconds
cpu time 5.71 seconds

NOTE: There were 5268800 observations read from the data set WORK.GEO.

NOTE: There were 5268800 observations read from the data set WORK.IND.
NOTE: There were 5268800 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP1996 has 5268800 observations and 10 variables.
NOTE: DATA statement used (Total process time):
 real time 3.47 seconds
 cpu time 2.09 seconds

NOTE: There were 5288526 observations read from the data set GRUND.BEF199712.
 WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5288526 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
 real time 6.13 seconds
 cpu time 5.42 seconds

NOTE: There were 5288526 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5288526 observations and 5 variables.
NOTE: DATA statement used (Total process time):
 real time 1.68 seconds
 cpu time 1.17 seconds

NOTE: There were 5288526 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5288526 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
 real time 2.17 seconds
 cpu time 3.65 seconds

NOTE: There were 5288526 observations read from the data set GRUND.BEF199712.
 WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5288526 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
 real time 3.20 seconds
 cpu time 5.39 seconds

NOTE: There were 5288526 observations read from the data set WORK.BEFTMP.
NOTE: There were 2394099 observations read from the data set GRUND.FAIK1997.
NOTE: The data set WORK.IND has 5288526 observations and 4 variables.
NOTE: DATA statement used (Total process time):
 real time 1.83 seconds
 cpu time 1.07 seconds

NOTE: There were 5288526 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5288526 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
 real time 2.18 seconds
 cpu time 3.81 seconds

NOTE: Character values have been converted to numeric values at the places given by:
 (Line):(Column).
 136:77 136:99
NOTE: There were 5288526 observations read from the data set GRUND.BEF199712.
 WHERE pnr not = ' ' ;
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5288526 observations and 5 variables.
NOTE: DATA statement used (Total process time):
 real time 6.58 seconds

cpu time 5.84 seconds

NOTE: There were 5288526 observations read from the data set WORK.GEO.
NOTE: There were 5288526 observations read from the data set WORK.IND.
NOTE: There were 5288526 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP1997 has 5288526 observations and 10 variables.
NOTE: DATA statement used (Total process time):
real time 3.48 seconds
cpu time 2.09 seconds

NOTE: There were 5308412 observations read from the data set GRUND.BEF199812.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5308412 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 6.11 seconds
cpu time 5.18 seconds

NOTE: There were 5308412 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5308412 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 1.66 seconds
cpu time 1.18 seconds

NOTE: There were 5308412 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5308412 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.14 seconds
cpu time 3.79 seconds

NOTE: There were 5308412 observations read from the data set GRUND.BEF199812.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5308412 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 3.31 seconds
cpu time 5.65 seconds

NOTE: There were 5308412 observations read from the data set WORK.BEFTMP.
NOTE: There were 2401001 observations read from the data set GRUND.FAIK1998.
NOTE: The data set WORK.IND has 5308412 observations and 4 variables.
NOTE: DATA statement used (Total process time):
real time 2.49 seconds
cpu time 1.12 seconds

NOTE: There were 5308412 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5308412 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.20 seconds
cpu time 3.98 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99
NOTE: There were 5308412 observations read from the data set GRUND.BEF199812.

```
WHERE pnr not = ' ';
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5308412 observations and 5 variables.
NOTE: DATA statement used (Total process time):
      real time      6.85 seconds
      cpu time       6.07 seconds

NOTE: There were 5308412 observations read from the data set WORK.GEO.
NOTE: There were 5308412 observations read from the data set WORK.IND.
NOTE: There were 5308412 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP1998 has 5308412 observations and 10 variables.
NOTE: DATA statement used (Total process time):
      real time      3.58 seconds
      cpu time       2.14 seconds

NOTE: There were 5324505 observations read from the data set GRUND.BEF199912.
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5324505 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time      6.15 seconds
      cpu time       5.28 seconds

NOTE: There were 5324505 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5324505 observations and 5 variables.
NOTE: DATA statement used (Total process time):
      real time      1.66 seconds
      cpu time       1.28 seconds

NOTE: There were 5324505 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5324505 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time      2.24 seconds
      cpu time       4.09 seconds

NOTE: There were 5324505 observations read from the data set GRUND.BEF199912.
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5324505 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time      3.24 seconds
      cpu time       5.49 seconds

NOTE: There were 5324505 observations read from the data set WORK.BEFTMP.
NOTE: There were 2405074 observations read from the data set GRUND.FAIK1999.
NOTE: The data set WORK.IND has 5324505 observations and 4 variables.
NOTE: DATA statement used (Total process time):
      real time      1.60 seconds
      cpu time       1.11 seconds

NOTE: There were 5324505 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5324505 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time      2.23 seconds
      cpu time       3.96 seconds
```

NOTE: Character values have been converted to numeric values at the places given by:

(Line):(Column).

136:77 136:99

NOTE: There were 5324505 observations read from the data set GRUND.BEF199912.

WHERE pnr not = ' ';

NOTE: There were 19123471 observations read from the data set WORK.UDDF.

NOTE: The data set WORK.UDD has 5324505 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time 6.76 seconds

cpu time 5.92 seconds

NOTE: There were 5324505 observations read from the data set WORK.GEO.

NOTE: There were 5324505 observations read from the data set WORK.IND.

NOTE: There were 5324505 observations read from the data set WORK.UDD.

NOTE: The data set POP.POP1999 has 5324505 observations and 10 variables.

NOTE: DATA statement used (Total process time):

real time 3.63 seconds

cpu time 2.09 seconds

NOTE: There were 5344465 observations read from the data set GRUND.BEF200012.

WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5344465 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 6.26 seconds

cpu time 5.46 seconds

NOTE: There were 5344465 observations read from the data set WORK.BEFTMP.

NOTE: There were 2935497 observations read from the data set WORK.ADR.

NOTE: The data set WORK.GEO has 5344465 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time 1.66 seconds

cpu time 1.28 seconds

NOTE: There were 5344465 observations read from the data set WORK.GEO.

NOTE: The data set WORK.GEO has 5344465 observations and 5 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 2.25 seconds

cpu time 4.03 seconds

NOTE: There were 5344465 observations read from the data set GRUND.BEF200012.

WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5344465 observations and 2 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 3.17 seconds

cpu time 5.31 seconds

NOTE: There were 5344465 observations read from the data set WORK.BEFTMP.

NOTE: There were 2414649 observations read from the data set GRUND.FAIK2000.

NOTE: The data set WORK.IND has 5344465 observations and 4 variables.

NOTE: DATA statement used (Total process time):

real time 1.55 seconds

cpu time 1.21 seconds

NOTE: There were 5344465 observations read from the data set WORK.IND.

NOTE: The data set WORK.IND has 5344465 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 2.19 seconds
cpu time 3.92 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99

NOTE: There were 5344465 observations read from the data set GRUND.BEF200012.
WHERE pnr not = ' ';

NOTE: There were 19123471 observations read from the data set WORK.UDDF.

NOTE: The data set WORK.UDD has 5344465 observations and 5 variables.

NOTE: DATA statement used (Total process time):
real time 6.72 seconds
cpu time 6.14 seconds

NOTE: There were 5344465 observations read from the data set WORK.GEO.

NOTE: There were 5344465 observations read from the data set WORK.IND.

NOTE: There were 5344465 observations read from the data set WORK.UDD.

NOTE: The data set POP.POP2000 has 5344465 observations and 10 variables.

NOTE: DATA statement used (Total process time):
real time 3.62 seconds
cpu time 2.04 seconds

NOTE: There were 5363002 observations read from the data set GRUND.BEF200112.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5363002 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 6.28 seconds
cpu time 5.68 seconds

NOTE: There were 5363002 observations read from the data set WORK.BEFTMP.

NOTE: There were 2935497 observations read from the data set WORK.ADR.

NOTE: The data set WORK.GEO has 5363002 observations and 5 variables.

NOTE: DATA statement used (Total process time):
real time 1.70 seconds
cpu time 1.26 seconds

NOTE: There were 5363002 observations read from the data set WORK.GEO.

NOTE: The data set WORK.GEO has 5363002 observations and 5 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 2.18 seconds
cpu time 4.00 seconds

NOTE: There were 5363002 observations read from the data set GRUND.BEF200112.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5363002 observations and 2 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 3.26 seconds
cpu time 5.54 seconds

NOTE: There were 5363002 observations read from the data set WORK.BEFTMP.

NOTE: There were 2424801 observations read from the data set GRUND.FAIK2001.

NOTE: The data set WORK.IND has 5363002 observations and 4 variables.

NOTE: DATA statement used (Total process time):
real time 2.29 seconds
cpu time 1.14 seconds

NOTE: There were 5363002 observations read from the data set WORK.IND.

NOTE: The data set WORK.IND has 5363002 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	2.21 seconds
cpu time	3.87 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).

136:77 136:99

NOTE: There were 5363002 observations read from the data set GRUND.BEF200112.

WHERE pnr not = ' ';

NOTE: There were 19123471 observations read from the data set WORK.UDDF.

NOTE: The data set WORK.UDD has 5363002 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time	6.66 seconds
cpu time	5.86 seconds

NOTE: There were 5363002 observations read from the data set WORK.GEO.

NOTE: There were 5363002 observations read from the data set WORK.IND.

NOTE: There were 5363002 observations read from the data set WORK.UDD.

NOTE: The data set POP.POP2001 has 5363002 observations and 10 variables.

NOTE: DATA statement used (Total process time):

real time	3.48 seconds
cpu time	1.98 seconds

NOTE: There were 5378270 observations read from the data set GRUND.BEF200212.

WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5378270 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	6.51 seconds
cpu time	5.48 seconds

NOTE: There were 5378270 observations read from the data set WORK.BEFTMP.

NOTE: There were 2935497 observations read from the data set WORK.ADR.

NOTE: The data set WORK.GEO has 5378270 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time	1.67 seconds
cpu time	1.26 seconds

NOTE: There were 5378270 observations read from the data set WORK.GEO.

NOTE: The data set WORK.GEO has 5378270 observations and 5 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	2.24 seconds
cpu time	3.95 seconds

NOTE: There were 5378270 observations read from the data set GRUND.BEF200212.

WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5378270 observations and 2 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	3.26 seconds
cpu time	5.37 seconds

NOTE: There were 5378270 observations read from the data set WORK.BEFTMP.

NOTE: There were 2432796 observations read from the data set GRUND.FAIK2002.
NOTE: The data set WORK.IND has 5378270 observations and 4 variables.
NOTE: DATA statement used (Total process time):
real time 1.46 seconds
cpu time 1.12 seconds

NOTE: There were 5378270 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5378270 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.22 seconds
cpu time 3.89 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99

NOTE: There were 5378270 observations read from the data set GRUND.BEF200212.
WHERE pnr not = ' ' ;
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5378270 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 6.78 seconds
cpu time 6.07 seconds

NOTE: There were 5378270 observations read from the data set WORK.GEO.
NOTE: There were 5378270 observations read from the data set WORK.IND.
NOTE: There were 5378270 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP2002 has 5378270 observations and 10 variables.
NOTE: DATA statement used (Total process time):
real time 3.62 seconds
cpu time 2.21 seconds

NOTE: There were 5391853 observations read from the data set GRUND.BEF200312.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5391853 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 6.36 seconds
cpu time 6.10 seconds

NOTE: There were 5391853 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5391853 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 1.79 seconds
cpu time 1.20 seconds

NOTE: There were 5391853 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5391853 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.22 seconds
cpu time 3.76 seconds

NOTE: There were 5391853 observations read from the data set GRUND.BEF200312.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5391853 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 3.26 seconds

cpu time 5.42 seconds

NOTE: There were 5391853 observations read from the data set WORK.BEFTMP.
NOTE: There were 2441436 observations read from the data set GRUND.FAIK2003.
NOTE: The data set WORK.IND has 5391853 observations and 4 variables.
NOTE: DATA statement used (Total process time):
real time 1.48 seconds
cpu time 1.09 seconds

NOTE: There were 5391853 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5391853 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.19 seconds
cpu time 3.93 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99

NOTE: There were 5391853 observations read from the data set GRUND.BEF200312.
WHERE pnr not = ' ' ;
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5391853 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 6.76 seconds
cpu time 6.04 seconds

NOTE: There were 5391853 observations read from the data set WORK.GEO.
NOTE: There were 5391853 observations read from the data set WORK.IND.
NOTE: There were 5391853 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP2003 has 5391853 observations and 10 variables.
NOTE: DATA statement used (Total process time):
real time 3.67 seconds
cpu time 2.23 seconds

NOTE: There were 5406591 observations read from the data set GRUND.BEF200412.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5406591 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 6.20 seconds
cpu time 5.70 seconds

NOTE: There were 5406591 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5406591 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 1.65 seconds
cpu time 1.18 seconds

NOTE: There were 5406591 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5406591 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.16 seconds
cpu time 3.85 seconds

NOTE: There were 5406591 observations read from the data set GRUND.BEF200412.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5406591 observations and 2 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 3.37 seconds
cpu time 5.78 seconds

NOTE: There were 5406591 observations read from the data set WORK.BEFTMP.

NOTE: There were 2455961 observations read from the data set GRUND.FAIK2004.

NOTE: The data set WORK.IND has 5406591 observations and 4 variables.

NOTE: DATA statement used (Total process time):
real time 1.46 seconds
cpu time 1.17 seconds

NOTE: There were 5406591 observations read from the data set WORK.IND.

NOTE: The data set WORK.IND has 5406591 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 2.15 seconds
cpu time 4.00 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99

NOTE: There were 5406591 observations read from the data set GRUND.BEF200412.
WHERE pnr not = ' ';

NOTE: There were 19123471 observations read from the data set WORK.UDDF.

NOTE: The data set WORK.UDD has 5406591 observations and 5 variables.

NOTE: DATA statement used (Total process time):
real time 6.70 seconds
cpu time 5.96 seconds

NOTE: There were 5406591 observations read from the data set WORK.GEO.

NOTE: There were 5406591 observations read from the data set WORK.IND.

NOTE: There were 5406591 observations read from the data set WORK.UDD.

NOTE: The data set POP.POP2004 has 5406591 observations and 10 variables.

NOTE: DATA statement used (Total process time):
real time 3.42 seconds
cpu time 2.01 seconds

NOTE: There were 5423306 observations read from the data set GRUND.BEF200512.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5423306 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 6.48 seconds
cpu time 5.21 seconds

NOTE: There were 5423306 observations read from the data set WORK.BEFTMP.

NOTE: There were 2935497 observations read from the data set WORK.ADR.

NOTE: The data set WORK.GEO has 5423306 observations and 5 variables.

NOTE: DATA statement used (Total process time):
real time 1.65 seconds
cpu time 1.20 seconds

NOTE: There were 5423306 observations read from the data set WORK.GEO.

NOTE: The data set WORK.GEO has 5423306 observations and 5 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 2.22 seconds
cpu time 3.87 seconds

NOTE: There were 5423306 observations read from the data set GRUND.BEF200512.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5423306 observations and 2 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 3.28 seconds
cpu time 5.51 seconds

NOTE: There were 5423306 observations read from the data set WORK.BEFTMP.

NOTE: There were 2471730 observations read from the data set GRUND.FAIK2005.

NOTE: The data set WORK.IND has 5423306 observations and 4 variables.

NOTE: DATA statement used (Total process time):

real time 4.04 seconds
cpu time 1.21 seconds

NOTE: There were 5423306 observations read from the data set WORK.IND.

NOTE: The data set WORK.IND has 5423306 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 2.18 seconds
cpu time 3.70 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).

136:77 136:99

NOTE: There were 5423306 observations read from the data set GRUND.BEF200512.

WHERE pnr not = ' ';

NOTE: There were 19123471 observations read from the data set WORK.UDDF.

NOTE: The data set WORK.UDD has 5423306 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time 6.69 seconds
cpu time 6.04 seconds

NOTE: There were 5423306 observations read from the data set WORK.GEO.

NOTE: There were 5423306 observations read from the data set WORK.IND.

NOTE: There were 5423306 observations read from the data set WORK.UDD.

NOTE: The data set POP.POP2005 has 5423306 observations and 10 variables.

NOTE: DATA statement used (Total process time):

real time 3.43 seconds
cpu time 2.14 seconds

NOTE: There were 5447075 observations read from the data set GRUND.BEF200612.

WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5447075 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 6.27 seconds
cpu time 5.28 seconds

NOTE: There were 5447075 observations read from the data set WORK.BEFTMP.

NOTE: There were 2935497 observations read from the data set WORK.ADR.

NOTE: The data set WORK.GEO has 5447075 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time 1.66 seconds
cpu time 1.23 seconds

NOTE: There were 5447075 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5447075 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.19 seconds
cpu time 3.93 seconds

NOTE: There were 5447075 observations read from the data set GRUND.BEF200612.
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5447075 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 3.23 seconds
cpu time 5.48 seconds

NOTE: There were 5447075 observations read from the data set WORK.BEFTMP.
NOTE: There were 2480716 observations read from the data set GRUND.FAIK2006.
NOTE: The data set WORK.IND has 5447075 observations and 4 variables.
NOTE: DATA statement used (Total process time):
real time 1.48 seconds
cpu time 1.12 seconds

NOTE: There were 5447075 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5447075 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.19 seconds
cpu time 3.81 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99

NOTE: There were 5447075 observations read from the data set GRUND.BEF200612.
WHERE pnr not = ' ';
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5447075 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 6.84 seconds
cpu time 6.09 seconds

NOTE: There were 5447075 observations read from the data set WORK.GEO.
NOTE: There were 5447075 observations read from the data set WORK.IND.
NOTE: There were 5447075 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP2006 has 5447075 observations and 10 variables.
NOTE: DATA statement used (Total process time):
real time 3.55 seconds
cpu time 2.15 seconds

NOTE: There were 5475682 observations read from the data set GRUND.BEF200712.
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5475682 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 6.62 seconds
cpu time 5.50 seconds

NOTE: There were 5475682 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.

NOTE: The data set WORK.GEO has 5475682 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time	1.69 seconds
cpu time	1.17 seconds

NOTE: There were 5475682 observations read from the data set WORK.GEO.

NOTE: The data set WORK.GEO has 5475682 observations and 5 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	2.19 seconds
cpu time	3.85 seconds

NOTE: There were 5475682 observations read from the data set GRUND.BEF200712.

WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5475682 observations and 2 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	3.25 seconds
cpu time	5.40 seconds

NOTE: There were 5475682 observations read from the data set WORK.BEFTMP.

NOTE: There were 2499815 observations read from the data set GRUND.FAIK2007.

NOTE: The data set WORK.IND has 5475682 observations and 4 variables.

NOTE: DATA statement used (Total process time):

real time	1.48 seconds
cpu time	1.14 seconds

NOTE: There were 5475682 observations read from the data set WORK.IND.

NOTE: The data set WORK.IND has 5475682 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	2.19 seconds
cpu time	3.87 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).

136:77 136:99

NOTE: There were 5475682 observations read from the data set GRUND.BEF200712.

WHERE pnr not = ' ';

NOTE: There were 19123471 observations read from the data set WORK.UDDF.

NOTE: The data set WORK.UDD has 5475682 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time	6.88 seconds
cpu time	6.20 seconds

NOTE: There were 5475682 observations read from the data set WORK.GEO.

NOTE: There were 5475682 observations read from the data set WORK.IND.

NOTE: There were 5475682 observations read from the data set WORK.UDD.

NOTE: The data set POP.POP2007 has 5475682 observations and 10 variables.

NOTE: DATA statement used (Total process time):

real time	3.44 seconds
cpu time	2.01 seconds

NOTE: There were 5511247 observations read from the data set GRUND.BEF200812.

WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5511247 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	6.36 seconds
cpu time	5.15 seconds

NOTE: There were 5511247 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5511247 observations and 5 variables.
NOTE: DATA statement used (Total process time):
 real time 1.69 seconds
 cpu time 1.21 seconds

NOTE: There were 5511247 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5511247 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
 real time 2.23 seconds
 cpu time 3.89 seconds

NOTE: There were 5511247 observations read from the data set GRUND.BEF200812.
 WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5511247 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
 real time 3.28 seconds
 cpu time 5.43 seconds

NOTE: There were 5511247 observations read from the data set WORK.BEFTMP.
NOTE: There were 2515985 observations read from the data set GRUND.FAIK2008.
NOTE: The data set WORK.IND has 5511247 observations and 4 variables.
NOTE: DATA statement used (Total process time):
 real time 1.48 seconds
 cpu time 1.09 seconds

NOTE: There were 5511247 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5511247 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
 real time 2.19 seconds
 cpu time 3.90 seconds

NOTE: Character values have been converted to numeric values at the places given by:
 (Line):(Column).
 136:77 136:99

NOTE: There were 5511247 observations read from the data set GRUND.BEF200812.
 WHERE pnr not = ' ' ;
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5511247 observations and 5 variables.
NOTE: DATA statement used (Total process time):
 real time 6.84 seconds
 cpu time 6.07 seconds

NOTE: There were 5511247 observations read from the data set WORK.GEO.
NOTE: There were 5511247 observations read from the data set WORK.IND.
NOTE: There were 5511247 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP2008 has 5511247 observations and 10 variables.
NOTE: DATA statement used (Total process time):
 real time 3.70 seconds
 cpu time 2.12 seconds

NOTE: There were 5534637 observations read from the data set GRUND.BEF200912.

```
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5534637 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time      6.43 seconds
      cpu time       5.81 seconds

NOTE: There were 5534637 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5534637 observations and 5 variables.
NOTE: DATA statement used (Total process time):
      real time      1.68 seconds
      cpu time       1.18 seconds

NOTE: There were 5534637 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5534637 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time      2.20 seconds
      cpu time       3.92 seconds

NOTE: There were 5534637 observations read from the data set GRUND.BEF200912.
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5534637 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time      3.30 seconds
      cpu time       5.51 seconds

NOTE: There were 5534637 observations read from the data set WORK.BEFTMP.
NOTE: There were 2534513 observations read from the data set GRUND.FAIK2009.
NOTE: The data set WORK.IND has 5534637 observations and 4 variables.
NOTE: DATA statement used (Total process time):
      real time      1.50 seconds
      cpu time       1.20 seconds

NOTE: There were 5534637 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5534637 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time      2.22 seconds
      cpu time       3.93 seconds

NOTE: Character values have been converted to numeric values at the places given by:
      (Line):(Column).
      136:77  136:99
NOTE: There were 5534637 observations read from the data set GRUND.BEF200912.
WHERE pnr not = ' ';
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5534637 observations and 5 variables.
NOTE: DATA statement used (Total process time):
      real time      6.80 seconds
      cpu time       5.98 seconds

NOTE: There were 5534637 observations read from the data set WORK.GEO.
NOTE: There were 5534637 observations read from the data set WORK.IND.
NOTE: There were 5534637 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP2009 has 5534637 observations and 10 variables.
NOTE: DATA statement used (Total process time):
      real time      3.55 seconds
```

cpu time 2.32 seconds

NOTE: There were 5560522 observations read from the data set GRUND.BEF201012.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5560522 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 6.38 seconds
cpu time 5.28 seconds

NOTE: There were 5560522 observations read from the data set WORK.BEFTMP.

NOTE: There were 2935497 observations read from the data set WORK.ADR.

NOTE: The data set WORK.GEO has 5560522 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time 1.69 seconds
cpu time 1.20 seconds

NOTE: There were 5560522 observations read from the data set WORK.GEO.

NOTE: The data set WORK.GEO has 5560522 observations and 5 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 2.23 seconds
cpu time 3.90 seconds

NOTE: There were 5560522 observations read from the data set GRUND.BEF201012.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5560522 observations and 2 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 3.30 seconds
cpu time 5.56 seconds

NOTE: There were 5560522 observations read from the data set WORK.BEFTMP.

NOTE: There were 2552442 observations read from the data set GRUND.FAIK2010.

NOTE: The data set WORK.IND has 5560522 observations and 4 variables.

NOTE: DATA statement used (Total process time):

real time 1.69 seconds
cpu time 1.23 seconds

NOTE: There were 5560522 observations read from the data set WORK.IND.

NOTE: The data set WORK.IND has 5560522 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 2.22 seconds
cpu time 3.96 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).

136:77 136:99

NOTE: There were 5560522 observations read from the data set GRUND.BEF201012.

WHERE pnr not = ' ';

NOTE: There were 19123471 observations read from the data set WORK.UDDF.

NOTE: The data set WORK.UDD has 5560522 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time 6.86 seconds
cpu time 6.15 seconds

NOTE: There were 5560522 observations read from the data set WORK.GEO.

NOTE: There were 5560522 observations read from the data set WORK.IND.
NOTE: There were 5560522 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP2010 has 5560522 observations and 10 variables.
NOTE: DATA statement used (Total process time):
real time 3.52 seconds
cpu time 2.23 seconds

NOTE: There were 5580429 observations read from the data set GRUND.BEF201112.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5580429 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 6.42 seconds
cpu time 5.14 seconds

NOTE: There were 5580429 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5580429 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 1.71 seconds
cpu time 1.34 seconds

NOTE: There were 5580429 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5580429 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.31 seconds
cpu time 3.95 seconds

NOTE: There were 5580429 observations read from the data set GRUND.BEF201112.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5580429 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 3.32 seconds
cpu time 5.62 seconds

NOTE: There were 5580429 observations read from the data set WORK.BEFTMP.
NOTE: There were 2571094 observations read from the data set GRUND.FAIK2011.
NOTE: The data set WORK.IND has 5580429 observations and 4 variables.
NOTE: DATA statement used (Total process time):
real time 1.51 seconds
cpu time 1.26 seconds

NOTE: There were 5580429 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5580429 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.29 seconds
cpu time 4.10 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99
NOTE: There were 5580429 observations read from the data set GRUND.BEF201112.
WHERE pnr not = ' ' ;
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5580429 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 6.88 seconds

cpu time 6.07 seconds

NOTE: There were 5580429 observations read from the data set WORK.GEO.
NOTE: There were 5580429 observations read from the data set WORK.IND.
NOTE: There were 5580429 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP2011 has 5580429 observations and 10 variables.
NOTE: DATA statement used (Total process time):
real time 3.51 seconds
cpu time 2.11 seconds

NOTE: There were 5602535 observations read from the data set GRUND.BEF201212.
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5602535 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 6.39 seconds
cpu time 5.59 seconds

NOTE: There were 5602535 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5602535 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 1.69 seconds
cpu time 1.28 seconds

NOTE: There were 5602535 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5602535 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.23 seconds
cpu time 3.92 seconds

NOTE: There were 5602535 observations read from the data set GRUND.BEF201212.
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5602535 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 3.35 seconds
cpu time 5.70 seconds

NOTE: There were 5602535 observations read from the data set WORK.BEFTMP.
NOTE: There were 2591739 observations read from the data set GRUND.FAIK2012.
NOTE: The data set WORK.IND has 5602535 observations and 4 variables.
NOTE: DATA statement used (Total process time):
real time 1.49 seconds
cpu time 1.10 seconds

NOTE: There were 5602535 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5602535 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.25 seconds
cpu time 3.89 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99
NOTE: There were 5602535 observations read from the data set GRUND.BEF201212.

```
WHERE pnr not = ' ';
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5602535 observations and 5 variables.
NOTE: DATA statement used (Total process time):
      real time           6.94 seconds
      cpu time            6.15 seconds

NOTE: There were 5602535 observations read from the data set WORK.GEO.
NOTE: There were 5602535 observations read from the data set WORK.IND.
NOTE: There were 5602535 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP2012 has 5602535 observations and 10 variables.
NOTE: DATA statement used (Total process time):
      real time           3.60 seconds
      cpu time            1.93 seconds

NOTE: There were 5627159 observations read from the data set GRUND.BEF201312.
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5627159 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time           6.53 seconds
      cpu time            5.21 seconds

NOTE: There were 5627159 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5627159 observations and 5 variables.
NOTE: DATA statement used (Total process time):
      real time           1.73 seconds
      cpu time            1.25 seconds

NOTE: There were 5627159 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5627159 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time           2.34 seconds
      cpu time            4.09 seconds

NOTE: There were 5627159 observations read from the data set GRUND.BEF201312.
WHERE pnr not = ' ';
NOTE: The data set WORK.BEFTMP has 5627159 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time           3.32 seconds
      cpu time            5.86 seconds

NOTE: There were 5627159 observations read from the data set WORK.BEFTMP.
NOTE: There were 2617075 observations read from the data set GRUND.FAIK2013.
NOTE: The data set WORK.IND has 5627159 observations and 4 variables.
NOTE: DATA statement used (Total process time):
      real time           1.51 seconds
      cpu time            1.21 seconds

NOTE: There were 5627159 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5627159 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time           2.29 seconds
      cpu time            4.00 seconds
```

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99

NOTE: There were 5627159 observations read from the data set GRUND.BEF201312.
WHERE pnr not = ' ';

NOTE: There were 19123471 observations read from the data set WORK.UDDF.

NOTE: The data set WORK.UDD has 5627159 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time	6.98 seconds
cpu time	6.21 seconds

NOTE: There were 5627159 observations read from the data set WORK.GEO.

NOTE: There were 5627159 observations read from the data set WORK.IND.

NOTE: There were 5627159 observations read from the data set WORK.UDD.

NOTE: The data set POP.POP2013 has 5627159 observations and 10 variables.

NOTE: DATA statement used (Total process time):

real time	3.55 seconds
cpu time	2.18 seconds

NOTE: There were 5659654 observations read from the data set GRUND.BEF201412.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5659654 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	6.52 seconds
cpu time	5.97 seconds

NOTE: There were 5659654 observations read from the data set WORK.BEFTMP.

NOTE: There were 2935497 observations read from the data set WORK.ADR.

NOTE: The data set WORK.GEO has 5659654 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time	1.69 seconds
cpu time	1.28 seconds

NOTE: There were 5659654 observations read from the data set WORK.GEO.

NOTE: The data set WORK.GEO has 5659654 observations and 5 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	2.31 seconds
cpu time	4.12 seconds

NOTE: There were 5659654 observations read from the data set GRUND.BEF201412.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5659654 observations and 2 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	3.39 seconds
cpu time	5.73 seconds

NOTE: There were 5659654 observations read from the data set WORK.BEFTMP.

NOTE: There were 2644252 observations read from the data set GRUND.FAIK2014.

NOTE: The data set WORK.IND has 5659654 observations and 4 variables.

NOTE: DATA statement used (Total process time):

real time	1.51 seconds
cpu time	1.21 seconds

NOTE: There were 5659654 observations read from the data set WORK.IND.

NOTE: The data set WORK.IND has 5659654 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 2.28 seconds
cpu time 4.04 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99

NOTE: There were 5659654 observations read from the data set GRUND.BEF201412.
WHERE pnr not = ' ';

NOTE: There were 19123471 observations read from the data set WORK.UDDF.

NOTE: The data set WORK.UDD has 5659654 observations and 5 variables.

NOTE: DATA statement used (Total process time):
real time 7.03 seconds
cpu time 6.10 seconds

NOTE: There were 5659654 observations read from the data set WORK.GEO.

NOTE: There were 5659654 observations read from the data set WORK.IND.

NOTE: There were 5659654 observations read from the data set WORK.UDD.

NOTE: The data set POP.POP2014 has 5659654 observations and 10 variables.

NOTE: DATA statement used (Total process time):
real time 3.60 seconds
cpu time 2.06 seconds

NOTE: There were 5707176 observations read from the data set GRUND.BEF201512.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5707176 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 6.97 seconds
cpu time 5.73 seconds

NOTE: There were 5707176 observations read from the data set WORK.BEFTMP.

NOTE: There were 2935497 observations read from the data set WORK.ADR.

NOTE: The data set WORK.GEO has 5707176 observations and 5 variables.

NOTE: DATA statement used (Total process time):
real time 1.72 seconds
cpu time 1.21 seconds

NOTE: There were 5707176 observations read from the data set WORK.GEO.

NOTE: The data set WORK.GEO has 5707176 observations and 5 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 2.32 seconds
cpu time 4.07 seconds

NOTE: There were 5707176 observations read from the data set GRUND.BEF201512.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5707176 observations and 2 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 3.42 seconds
cpu time 5.79 seconds

NOTE: There were 5707176 observations read from the data set WORK.BEFTMP.

NOTE: There were 2677212 observations read from the data set GRUND.FAIK2015.

NOTE: The data set WORK.IND has 5707176 observations and 4 variables.

NOTE: DATA statement used (Total process time):
real time 1.61 seconds
cpu time 1.29 seconds

NOTE: There were 5707176 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5707176 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
 real time 2.29 seconds
 cpu time 4.04 seconds

NOTE: Character values have been converted to numeric values at the places given by:
 (Line):(Column).
 136:77 136:99

NOTE: There were 5707176 observations read from the data set GRUND.BEF201512.
WHERE pnr not = ' ';

NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5707176 observations and 5 variables.
NOTE: DATA statement used (Total process time):
 real time 7.11 seconds
 cpu time 6.47 seconds

NOTE: There were 5707176 observations read from the data set WORK.GEO.
NOTE: There were 5707176 observations read from the data set WORK.IND.
NOTE: There were 5707176 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP2015 has 5707176 observations and 10 variables.
NOTE: DATA statement used (Total process time):
 real time 3.64 seconds
 cpu time 2.15 seconds

NOTE: There were 5748720 observations read from the data set GRUND.BEF201612.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5748720 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
 real time 6.99 seconds
 cpu time 5.75 seconds

NOTE: There were 5748720 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5748720 observations and 5 variables.
NOTE: DATA statement used (Total process time):
 real time 1.73 seconds
 cpu time 1.24 seconds

NOTE: There were 5748720 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5748720 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
 real time 2.36 seconds
 cpu time 4.28 seconds

NOTE: There were 5748720 observations read from the data set GRUND.BEF201612.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5748720 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
 real time 3.46 seconds
 cpu time 5.70 seconds

NOTE: There were 5748720 observations read from the data set WORK.BEFTMP.

NOTE: There were 2701720 observations read from the data set GRUND.FAIK2016.
NOTE: The data set WORK.IND has 5748720 observations and 4 variables.
NOTE: DATA statement used (Total process time):
real time 1.54 seconds
cpu time 1.07 seconds

NOTE: There were 5748720 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5748720 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.31 seconds
cpu time 4.06 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99

NOTE: There were 5748720 observations read from the data set GRUND.BEF201612.
WHERE pnr not = ' ' ;
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5748720 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 7.19 seconds
cpu time 6.42 seconds

NOTE: There were 5748720 observations read from the data set WORK.GEO.
NOTE: There were 5748720 observations read from the data set WORK.IND.
NOTE: There were 5748720 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP2016 has 5748720 observations and 10 variables.
NOTE: DATA statement used (Total process time):
real time 3.73 seconds
cpu time 2.25 seconds

NOTE: There were 5781131 observations read from the data set GRUND.BEF201712.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5781131 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 6.72 seconds
cpu time 5.76 seconds

NOTE: There were 5781131 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5781131 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 1.72 seconds
cpu time 1.28 seconds

NOTE: There were 5781131 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5781131 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.32 seconds
cpu time 4.17 seconds

NOTE: There were 5781131 observations read from the data set GRUND.BEF201712.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5781131 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 3.44 seconds

cpu time 5.70 seconds

NOTE: There were 5781131 observations read from the data set WORK.BEFTMP.
NOTE: There were 2728643 observations read from the data set GRUND.FAIK2017.
NOTE: The data set WORK.IND has 5781131 observations and 4 variables.
NOTE: DATA statement used (Total process time):
real time 1.63 seconds
cpu time 1.20 seconds

NOTE: There were 5781131 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5781131 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.34 seconds
cpu time 4.28 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99

NOTE: There were 5781131 observations read from the data set GRUND.BEF201712.
WHERE pnr not = ' ' ;
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5781131 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 7.26 seconds
cpu time 6.32 seconds

NOTE: There were 5781131 observations read from the data set WORK.GEO.
NOTE: There were 5781131 observations read from the data set WORK.IND.
NOTE: There were 5781131 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP2017 has 5781131 observations and 10 variables.
NOTE: DATA statement used (Total process time):
real time 3.66 seconds
cpu time 2.23 seconds

NOTE: There were 5806044 observations read from the data set GRUND.BEF201812.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5806044 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 6.68 seconds
cpu time 5.42 seconds

NOTE: There were 5806044 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5806044 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 1.74 seconds
cpu time 1.15 seconds

NOTE: There were 5806044 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5806044 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.37 seconds
cpu time 4.21 seconds

NOTE: There were 5806044 observations read from the data set GRUND.BEF201812.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5806044 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 3.43 seconds
cpu time 5.68 seconds

NOTE: There were 5806044 observations read from the data set WORK.BEFTMP.
NOTE: There were 2728643 observations read from the data set GRUND.FAIK2018.
NOTE: The data set WORK.IND has 5806044 observations and 4 variables.
NOTE: DATA statement used (Total process time):
real time 1.56 seconds
cpu time 1.28 seconds

NOTE: There were 5806044 observations read from the data set WORK.IND.
NOTE: The data set WORK.IND has 5806044 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 2.35 seconds
cpu time 4.28 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).
136:77 136:99

NOTE: There were 5806044 observations read from the data set GRUND.BEF201812.
WHERE pnr not = ' ' ;
NOTE: There were 19123471 observations read from the data set WORK.UDDF.
NOTE: The data set WORK.UDD has 5806044 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 7.35 seconds
cpu time 6.61 seconds

NOTE: There were 5806044 observations read from the data set WORK.GEO.
NOTE: There were 5806044 observations read from the data set WORK.IND.
NOTE: There were 5806044 observations read from the data set WORK.UDD.
NOTE: The data set POP.POP2018 has 5806044 observations and 10 variables.
NOTE: DATA statement used (Total process time):
real time 4.84 seconds
cpu time 2.34 seconds

NOTE: There were 5711375 observations read from the data set GRUND.BEF201912.
WHERE pnr not = ' ' ;
NOTE: The data set WORK.BEFTMP has 5711375 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 11.93 seconds
cpu time 5.54 seconds

NOTE: There were 5711375 observations read from the data set WORK.BEFTMP.
NOTE: There were 2935497 observations read from the data set WORK.ADR.
NOTE: The data set WORK.GEO has 5711375 observations and 5 variables.
NOTE: DATA statement used (Total process time):
real time 1.71 seconds
cpu time 1.25 seconds

NOTE: There were 5711375 observations read from the data set WORK.GEO.
NOTE: The data set WORK.GEO has 5711375 observations and 5 variables.
NOTE: PROCEDURE SORT used (Total process time):

real time 2.32 seconds
cpu time 4.01 seconds

NOTE: There were 5711375 observations read from the data set GRUND.BEF201912.
WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5711375 observations and 2 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 3.45 seconds
cpu time 5.84 seconds

NOTE: There were 5711375 observations read from the data set WORK.BEFTMP.

NOTE: There were 3041677 observations read from the data set GRUND.FAIK2019.

NOTE: The data set WORK.IND has 5711375 observations and 4 variables.

NOTE: DATA statement used (Total process time):

real time 4.88 seconds
cpu time 1.20 seconds

NOTE: There were 5711375 observations read from the data set WORK.IND.

NOTE: The data set WORK.IND has 5711375 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 2.28 seconds
cpu time 4.03 seconds

NOTE: Character values have been converted to numeric values at the places given by:
(Line):(Column).

136:77 136:99

NOTE: There were 5711375 observations read from the data set GRUND.BEF201912.

WHERE pnr not = ' ';

NOTE: There were 19123471 observations read from the data set WORK.UDDF.

NOTE: The data set WORK.UDD has 5711375 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time 7.19 seconds
cpu time 6.45 seconds

NOTE: There were 5711375 observations read from the data set WORK.GEO.

NOTE: There were 5711375 observations read from the data set WORK.IND.

NOTE: There were 5711375 observations read from the data set WORK.UDD.

NOTE: The data set POP.POP2019 has 5711375 observations and 10 variables.

NOTE: DATA statement used (Total process time):

real time 3.60 seconds
cpu time 2.23 seconds

NOTE: There were 5639966 observations read from the data set GRUND.BEF202012.

WHERE pnr not = ' ';

NOTE: The data set WORK.BEFTMP has 5639966 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 7.20 seconds
cpu time 5.51 seconds

NOTE: There were 5639966 observations read from the data set WORK.BEFTMP.

NOTE: There were 2935497 observations read from the data set WORK.ADR.

NOTE: The data set WORK.GEO has 5639966 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time 1.71 seconds
cpu time 1.26 seconds

NOTE: There were 5639966 observations read from the data set WORK.GEO.
 NOTE: The data set WORK.GEO has 5639966 observations and 5 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 2.23 seconds
 cpu time 4.17 seconds

NOTE: There were 5639966 observations read from the data set GRUND.BEF202012.
 WHERE pnr not = ' ' ;
 NOTE: The data set WORK.BEFTMP has 5639966 observations and 2 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 3.42 seconds
 cpu time 5.75 seconds

WARNING: The variable find in the DROP, KEEP, or RENAME list has never been referenced.
 NOTE: There were 5639966 observations read from the data set WORK.BEFTMP.
 NOTE: The data set WORK.IND has 5639966 observations and 3 variables.
 NOTE: DATA statement used (Total process time):
 real time 1.14 seconds
 cpu time 0.74 seconds

NOTE: There were 5639966 observations read from the data set WORK.IND.
 NOTE: The data set WORK.IND has 5639966 observations and 3 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 2.33 seconds
 cpu time 4.03 seconds

NOTE: Character values have been converted to numeric values at the places given by:
 (Line):(Column).
 136:77 136:99
 NOTE: There were 5639966 observations read from the data set GRUND.BEF202012.
 WHERE pnr not = ' ' ;
 NOTE: There were 19123471 observations read from the data set WORK.UDDF.
 NOTE: The data set WORK.UDD has 5639966 observations and 5 variables.
 NOTE: DATA statement used (Total process time):
 real time 7.10 seconds
 cpu time 6.43 seconds

NOTE: There were 5639966 observations read from the data set WORK.GEO.
 NOTE: There were 5639966 observations read from the data set WORK.IND.
 NOTE: There were 5639966 observations read from the data set WORK.UDD.
 NOTE: The data set POP.POP2020 has 5639966 observations and 9 variables.
 NOTE: DATA statement used (Total process time):
 real time 3.41 seconds
 cpu time 2.20 seconds

```

137
138      *-----;
139      * then stack the datafiles from each year ;
140
141      %macro combyrs ;
142      data DMdat.popstat ( keep = pnr yr
143                          kom reg
144                          familie_id antboernh
145                          find
146                          udd uddk eduen
147                          label = 'The population status at start of each year (yr)' ) ;
148      set %do e = &yrf.-1 %to &yrl. ; pop.pop&e. %end ; ;

```

```

149     label pnr = "personnummer"
150         yr = "dato (år)"
151         kom = "kommune"
152         reg = "region"
153         find = "disponibel fam. indkomst"
154     familie_id = "familie id"
155         udd = "uddannelseskode"
156         udddk = "grupperet uddannelse"
157         eduen = "grouped education" ;
158     format kom kom_v4_KT.
159         reg reg_v4_KT.
160         udddk AUDD_HOVED_L5L5_KT.
161         eduen AUDD_LEVEL_L4L4_KT. ;
162     run ;
163     %mend ;
164     %combyrs ;

```

```

NOTE: There were 5210466 observations read from the data set POP.POP1994.
NOTE: There were 5245127 observations read from the data set POP.POP1995.
NOTE: There were 5268800 observations read from the data set POP.POP1996.
NOTE: There were 5288526 observations read from the data set POP.POP1997.
NOTE: There were 5308412 observations read from the data set POP.POP1998.
NOTE: There were 5324505 observations read from the data set POP.POP1999.
NOTE: There were 5344465 observations read from the data set POP.POP2000.
NOTE: There were 5363002 observations read from the data set POP.POP2001.
NOTE: There were 5378270 observations read from the data set POP.POP2002.
NOTE: There were 5391853 observations read from the data set POP.POP2003.
NOTE: There were 5406591 observations read from the data set POP.POP2004.
NOTE: There were 5423306 observations read from the data set POP.POP2005.
NOTE: There were 5447075 observations read from the data set POP.POP2006.
NOTE: There were 5475682 observations read from the data set POP.POP2007.
NOTE: There were 5511247 observations read from the data set POP.POP2008.
NOTE: There were 5534637 observations read from the data set POP.POP2009.
NOTE: There were 5560522 observations read from the data set POP.POP2010.
NOTE: There were 5580429 observations read from the data set POP.POP2011.
NOTE: There were 5602535 observations read from the data set POP.POP2012.
NOTE: There were 5627159 observations read from the data set POP.POP2013.
NOTE: There were 5659654 observations read from the data set POP.POP2014.
NOTE: There were 5707176 observations read from the data set POP.POP2015.
NOTE: There were 5748720 observations read from the data set POP.POP2016.
NOTE: There were 5781131 observations read from the data set POP.POP2017.
NOTE: There were 5806044 observations read from the data set POP.POP2018.
NOTE: There were 5711375 observations read from the data set POP.POP2019.
NOTE: There were 5639966 observations read from the data set POP.POP2020.
NOTE: The data set DMDAT.POPSTAT has 148346675 observations and 10 variables.
NOTE: DATA statement used (Total process time):
      real time           3:18.00
      cpu time            20.76 seconds

```

```

165
166     *-----;
167     * overview of data ;
168
169     title1 'The population status at start of each year' ;
170     proc contents data = DMdat.popstat varnum ; run ;

```

```

NOTE: PROCEDURE CONTENTS used (Total process time):
      real time           0.03 seconds
      cpu time            0.03 seconds

```

NOTE: The PROCEDURE CONTENTS printed page 1.

```

171     proc tabulate data = DMdat.popstat noseps missing ;
172         class yr reg kom udddk eduen ;
173         var find ;
174         table yr,
175             ( reg all ) * f=comma9.
176             / rts=6 ;
177         table yr,

```

```

178         find * ( (n nmiss) * f=comma9.
179             ( p10 median mean p90 ) * f=comma10. )
180         / rts=8 ;
181     table udddk eduen,
182         find * ( p10 median p90 ) * f=comma9.
183         / rts=50 indent=2 ;
184     table udddk udddk * eduen
185         eduen eduen * udddk,
186         n * f=comma12.
187         / rts=55 indent=3 ;
188     run ;

```

NOTE: There were 148346675 observations read from the data set DMDAT.POPSTAT.

NOTE: The PROCEDURE TABULATE printed pages 2-5.

NOTE: PROCEDURE TABULATE used (Total process time):

```

real time      5:35.45
cpu time       8:07.46

```

```

189
190     *-----;
191     * labels to be transported to R ;
192
193     proc format library = dsfmt.discsd
194             cntlout = udd ( keep = fmtname start label type ) ;
195         select AUDD_HOVED_L5L5_T
196             AUDD_LEVEL_L4L4_T ;
197     run ;

```

NOTE: PROCEDURE FORMAT used (Total process time):

```

real time      0.10 seconds
cpu time       0.07 seconds

```

NOTE: The data set WORK.UDD has 24 observations and 4 variables.

```

198
199     proc format library = dsfmt.geokoder
200             cntlout = geo ( keep = fmtname start label type ) ;
201         select kom_v4_T
202             reg_v4_T ;
203     run ;

```

NOTE: PROCEDURE FORMAT used (Total process time):

```

real time      0.03 seconds
cpu time       0.03 seconds

```

NOTE: The data set WORK.GEO has 105 observations and 4 variables.

```

204
205     data DMdat.statlabels ;set udd geo ; run ;

```

NOTE: There were 24 observations read from the data set WORK.UDD.

NOTE: There were 105 observations read from the data set WORK.GEO.

NOTE: The data set DMDAT.STATLABELS has 129 observations and 4 variables.

NOTE: DATA statement used (Total process time):

```

real time      0.03 seconds
cpu time       0.01 seconds

```

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414

NOTE: The SAS System used:

```

real time      22:03.19
cpu time       22:20.93

```

4.6.1 00y-base.lst

The population status at start of each year 06:28 Wednesday, January 19, 2022 1

The CONTENTS Procedure

Data Set Name	DMDAT.POPSTAT	Observations	148346675
Member Type	DATA	Variables	10
Engine	V9	Indexes	0
Created	19/01/2022 06:41:39	Observation Length	80
Last Modified	19/01/2022 06:41:39	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label	The population status at start of each year (yr)		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	181575
First Data Page	*
Max Obs per Page	817
Obs in First Data Page	789
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\popstat.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	11GB
File Size (bytes)	11899764736

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
*	PNR	Char	12	\$12.	\$10.	personnummer
*	ANTBOERNH	Num	8	5.	5.	Antal børn i husstanden
*	KOM	Char	*	\$KOM_V4_KT.		kommune
4	reg	Char	*	\$REG_V4_KT.		region
5	yr	Num	8			dato (år)
6	FAMILIE_ID	Char	12	\$12.		familie id
7	find	Num	8			disponibel fam. indkomst
8	udd	Num	8			uddannelseskode
9	udddk	Num	8	AUDD_HOVED_L5L5_KT.		grupperet uddannelse
10	eduen	Num	8	AUDD_LEVEL_L4L4_KT.		grouped education

The population status at start of each year 06:28 Wednesday, January 19, 2022 2

```

-----
                      region
-----
                      81      82      83      84      85
                      Nordjyll- Midtjyll- Syddanma- Hovedsta-  Sjølland
                      and      and      rk      den
-----
                      N      N      N      N      N      N
-----
dato
(år)
1995  232,332  542,505  1,105,203  1,101,828  1,492,825  735,773  5,210,466
1996  227,097  545,626  1,115,391  1,109,786  1,506,850  740,377  5,245,127
1997  212,752  548,909  1,123,995  1,117,687  1,520,542  744,915  5,268,800
    
```

1998	201,368	551,596	1,131,226	1,123,490	1,531,258	749,588	5,288,526
1999	188,891	553,700	1,138,783	1,127,923	1,544,369	754,746	5,308,412
2000	174,634	555,692	1,146,500	1,132,044	1,555,200	760,435	5,324,505
2001	161,831	557,712	1,154,512	1,136,365	1,567,909	766,136	5,344,465
2002	148,157	559,655	1,163,183	1,141,747	1,577,726	772,534	5,363,002
2003	132,012	561,713	1,172,569	1,147,169	1,586,399	778,408	5,378,270
2004	115,158	563,801	1,180,984	1,153,949	1,593,932	784,029	5,391,853
2005	97,530	565,067	1,190,235	1,161,423	1,601,478	790,858	5,406,591
2006	79,664	566,658	1,200,685	1,167,049	1,610,427	798,823	5,423,306
2007	65,806	568,696	1,211,636	1,174,832	1,620,389	805,716	5,447,075
2008	46,356	572,887	1,225,015	1,184,187	1,635,139	812,098	5,475,682
2009	25,576	576,940	1,240,392	1,193,662	1,657,217	817,460	5,511,247
2010	.	579,622	1,253,978	1,200,254	1,680,231	820,552	5,534,637
2011	.	579,823	1,260,971	1,200,633	1,699,343	819,752	5,560,522
2012	.	579,984	1,266,663	1,201,323	1,714,561	817,898	5,580,429
2013	.	580,268	1,272,481	1,201,398	1,732,039	816,349	5,602,535
2014	.	581,043	1,277,517	1,202,498	1,749,387	816,714	5,627,159
2015	.	582,630	1,282,732	1,205,717	1,768,103	820,472	5,659,654
2016	.	585,496	1,293,290	1,211,762	1,789,144	827,484	5,707,176
2017	.	587,335	1,304,240	1,217,215	1,807,386	832,544	5,748,720
2018	.	589,145	1,313,574	1,220,754	1,822,639	835,019	5,781,131
2019	.	589,754	1,320,667	1,223,344	1,835,547	836,732	5,806,044
2020	75,527	571,151	1,282,411	1,188,535	1,776,338	817,413	5,711,375
2021	148,218	556,250	1,247,404	1,157,886	1,730,359	799,849	5,639,966

The population status at start of each year 06:28 Wednesday, January 19, 2022 3

disponibel fam. indkomst						

	N	NMiss	P10	Median	Mean	P90

dato						
(år)						
1995	4,756,295	454,171	74,362	121,299	127,440	186,163
1996	4,791,583	453,544	76,453	125,422	132,709	194,043
1997	4,816,338	452,462	78,449	129,544	137,940	202,517
1998	4,834,666	453,860	80,944	133,536	143,502	210,770
1999	4,850,470	457,942	83,727	139,061	149,587	220,853
2000	4,859,734	464,771	85,979	143,248	153,642	226,514
2001	4,879,565	464,900	88,469	148,010	159,961	235,348
2002	4,901,556	461,446	90,954	153,028	165,386	245,269
2003	4,916,359	461,911	95,955	159,417	171,749	254,645
2004	4,929,108	462,745	98,836	164,161	176,598	262,420
2005	4,952,442	454,149	102,358	173,677	187,203	279,215
2006	4,977,159	446,147	104,739	178,822	195,106	291,018
2007	4,993,340	453,735	108,598	184,219	203,052	300,764
2008	5,018,126	457,556	111,284	188,938	208,314	307,787
2009	5,046,158	465,089	111,783	193,852	206,607	313,377
2010	5,070,854	463,783	113,980	199,066	210,777	320,721
2011	5,096,360	464,162	120,531	212,352	230,649	353,328
2012	5,112,758	467,671	121,842	215,989	235,664	361,964
2013	5,134,411	468,124	125,137	219,975	242,101	370,700
2014	5,162,586	464,573	126,130	224,112	249,163	383,022
2015	5,197,606	462,048	126,865	229,315	254,131	393,700
2016	5,240,396	466,780	127,338	232,752	261,245	402,629
2017	5,276,149	472,571	127,153	237,153	265,888	411,701
2018	5,311,511	469,620	128,517	243,464	273,697	424,199
2019	5,305,336	500,708	128,402	243,405	273,497	424,023
2020	5,711,375	0	132,965	252,764	287,283	443,782
2021	0	5,639,966	.	.	.	.

The population status at start of each year 06:28 Wednesday, January 19, 2022 4

disponibel fam. indkomst		

P10	Median	P90

.	87,561	160,680	294,838
0	253,652	253,652	253,652
10 Grundskole	90,717	157,997	280,635
20 Gymnasiale uddannelser	62,497	155,851	329,674
30 Erhvervsfaglige uddannelser	114,451	191,402	326,820
35 Adgangsgivende uddannelsesforløb	69,015	153,522	303,098
40 Korte videregående uddannelser, KVU	117,413	217,123	373,687
50 Mellemlange videregående uddannelser, MVU	131,448	229,435	390,885
60 Bacheloruddannelser, BACH	62,441	159,499	350,090
70 Lange videregående uddannelser, LVU	137,199	277,935	516,719
80 Ph.d. og forskeruddannelser	167,980	311,626	546,833
.	87,561	160,680	294,838
* Primary	94,150	194,807	348,348
* Lower secondary	90,817	157,475	278,199
* Upper secondary	101,565	186,393	327,212
5 Short cycle tertiary	117,850	217,599	374,892
6 Bachelor or equivalent	120,824	224,427	387,755
7 Master or equivalent	137,199	277,935	516,719
8 Doctoral or equivalent	167,980	311,626	546,833
9 Not elsewhere classified	66,657	117,940	199,815

The population status at start of each year

06:28 Wednesday, January 19, 2022 5

		N
.		29,787,435
0		10
10 Grundskole		41,981,251
20 Gymnasiale uddannelser		9,551,692
30 Erhvervsfaglige uddannelser		38,160,970
35 Adgangsgivende uddannelsesforløb		102,006
40 Korte videregående uddannelser, KVU		4,521,119
50 Mellemlange videregående uddannelser, MVU		14,613,699
60 Bacheloruddannelser, BACH		1,767,411
70 Lange videregående uddannelser, LVU		7,369,228
80 Ph.d. og forskeruddannelser		491,854
.		29,787,435
0		
* Upper secondary		7
7 Master or equivalent		*
10 Grundskole		
* Primary		1,252,983
* Lower secondary		40,537,221
9 Not elsewhere classified		191,047
20 Gymnasiale uddannelser		
* Upper secondary		9,551,692
30 Erhvervsfaglige uddannelser		
* Upper secondary		38,160,970
35 Adgangsgivende uddannelsesforløb		
* Upper secondary		102,006
40 Korte videregående uddannelser, KVU		
5 Short cycle tertiary		4,521,119
50 Mellemlange videregående uddannelser, MVU		
5 Short cycle tertiary		145,094
6 Bachelor or equivalent		14,468,605
60 Bacheloruddannelser, BACH		
6 Bachelor or equivalent		1,767,411
70 Lange videregående uddannelser, LVU		
7 Master or equivalent		7,369,228
80 Ph.d. og forskeruddannelser		
8 Doctoral or equivalent		491,854
.		29,787,435
* Primary		1,252,983
* Lower secondary		40,537,221
* Upper secondary		47,814,675
5 Short cycle tertiary		4,666,213

6 Bachelor or equivalent	16,236,016
7 Master or equivalent	7,369,231
8 Doctoral or equivalent	491,854
9 Not elsewhere classified	191,047
.	
.	29,787,435
* Primary	
10 Grundskole	1,252,983
* Lower secondary	
10 Grundskole	40,537,221
* Upper secondary	
0	7
20 Gymnasiale uddannelser	9,551,692
30 Erhvervsfaglige uddannelser	38,160,970
35 Adgangsgivende uddannelsesforløb	102,006
5 Short cycle tertiary	
40 Korte videregående uddannelser, KVU	4,521,119
50 Mellemlange videregående uddannelser, MVU	145,094
6 Bachelor or equivalent	
50 Mellemlange videregående uddannelser, MVU	14,468,605
60 Bacheloruddannelser, BACH	1,767,411
7 Master or equivalent	
0	*
70 Lange videregående uddannelser, LVU	7,369,228
8 Doctoral or equivalent	
80 Ph.d. og forskeruddannelser	491,854
9 Not elsewhere classified	
10 Grundskole	191,047

4.7 01-npr

Processes the records from the NPR, and produces records with GDM diagnoses and PCOS diagnoses.

Persons cannot enter on any criterion in a 365 days grace period after each GDM diagnosis. GDM diagnoses occurring within 200 days of another one is not counted, though. Thus all GDM diagnoses in the same person are at least 200 days apart.

Outputs the earliest NPR diagnosis clear of GDM and PCOS, and derives a tentative T1 / T2 classification in the variable `nprtyp` based on the ICD10 codes for action diagnoses.

1 "Program: 01-npr.sas" 07:56 Wednesday, January 19, 2022

NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.

NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)

Licensed to FORSKNING 2, Site 50800723.

NOTE: This session is executing on the X64_SR12R2 platform.

NOTE: Updated analytical products:

SAS/STAT 14.3

NOTE: Additional host information:

X64_SR12R2 WIN 6.3.9600 Server

NOTE: SAS initialization used:

real time 0.09 seconds

cpu time 0.14 seconds

NOTE: AUTOEXEC processing beginning; file is

E:\workdata\707655\DMreg2020\sas\optslibs.sas.

NOTE: AUTOEXEC processing completed.

```

1      *-----;
2      * read the NPR datasets (three different formats) ;
3      *-----;
4
5      * Including both primary and secondary diagnoses (A,B and G) from diag
5      ! (PFR/LDIA). Previously only A diagnoses;
6      %macro mold2 ;
7      * Combine all diagnoses from 1977-1993;
8      data all_diag1977_93 ;
9          set %do i = 1977 %to 1993 ;
10             grund.lpr_diag&i. (keep = recnum c_diag c_diagtype)
11             %end ; ;
12      * the ICD-8 codes incl. GDM / PCOS ;
13      if c_diag in('24900','24901','24902','24903','24904',
14                  '24905','24906','24907','24908','24909',
15                  '25000','25001','25002','25003','25004',
16                  '25005','25006','25007','25008','25009',
17                  '63474','Y6449','61520','61521') ;
18      if c_diagtype in ("A", "B", "G");
19      if substr(c_diag,1,3) eq '249' then nprtyp = 'T1' ; else
20      if substr(c_diag,1,3) eq '250' then nprtyp = 'T2' ;
21      run ;
22
23      * Combine all contacts from 1977-1993;;
24      data all_adm1977_93 ;
25          set %do i = 1977 %to 1993 ;
26             grund.lpr_adm&i. (keep = pnr recnum d_inddto d_uddto)
27             %end ; ;
28      run;
29      %mend ;
30      %mold2 ;

```

NOTE: There were 1386740 observations read from the data set GRUND.LPR_DIAG1977.
NOTE: There were 1511035 observations read from the data set GRUND.LPR_DIAG1978.
NOTE: There were 1551775 observations read from the data set GRUND.LPR_DIAG1979.
NOTE: There were 1564925 observations read from the data set GRUND.LPR_DIAG1980.
NOTE: There were 1553377 observations read from the data set GRUND.LPR_DIAG1981.
NOTE: There were 1596419 observations read from the data set GRUND.LPR_DIAG1982.
NOTE: There were 1642621 observations read from the data set GRUND.LPR_DIAG1983.
NOTE: There were 1668430 observations read from the data set GRUND.LPR_DIAG1984.
NOTE: There were 1693933 observations read from the data set GRUND.LPR_DIAG1985.
NOTE: There were 1709064 observations read from the data set GRUND.LPR_DIAG1986.
NOTE: There were 1619762 observations read from the data set GRUND.LPR_DIAG1987.
NOTE: There were 1642229 observations read from the data set GRUND.LPR_DIAG1988.
NOTE: There were 1646510 observations read from the data set GRUND.LPR_DIAG1989.
NOTE: There were 1652372 observations read from the data set GRUND.LPR_DIAG1990.
NOTE: There were 1643919 observations read from the data set GRUND.LPR_DIAG1991.
NOTE: There were 1671096 observations read from the data set GRUND.LPR_DIAG1992.
NOTE: There were 1669960 observations read from the data set GRUND.LPR_DIAG1993.
NOTE: The data set WORK.ALL_DIAG1977_93 has 626391 observations and 4 variables.
NOTE: DATA statement used (Total process time):
real time 4.47 seconds
cpu time 2.34 seconds

NOTE: There were 805332 observations read from the data set GRUND.LPR_ADM1977.
NOTE: There were 867531 observations read from the data set GRUND.LPR_ADM1978.
NOTE: There were 882896 observations read from the data set GRUND.LPR_ADM1979.
NOTE: There were 889120 observations read from the data set GRUND.LPR_ADM1980.
NOTE: There were 883805 observations read from the data set GRUND.LPR_ADM1981.
NOTE: There were 910878 observations read from the data set GRUND.LPR_ADM1982.
NOTE: There were 938875 observations read from the data set GRUND.LPR_ADM1983.
NOTE: There were 953048 observations read from the data set GRUND.LPR_ADM1984.
NOTE: There were 971292 observations read from the data set GRUND.LPR_ADM1985.

NOTE: There were 992916 observations read from the data set GRUND.LPR_ADM1986.
 NOTE: There were 1007181 observations read from the data set GRUND.LPR_ADM1987.
 NOTE: There were 1032422 observations read from the data set GRUND.LPR_ADM1988.
 NOTE: There were 1042588 observations read from the data set GRUND.LPR_ADM1989.
 NOTE: There were 1049307 observations read from the data set GRUND.LPR_ADM1990.
 NOTE: There were 1044150 observations read from the data set GRUND.LPR_ADM1991.
 NOTE: There were 1064970 observations read from the data set GRUND.LPR_ADM1992.
 NOTE: There were 1078440 observations read from the data set GRUND.LPR_ADM1993.
 NOTE: The data set WORK.ALL_ADM1977_93 has 16414751 observations and 4 variables.
 NOTE: DATA statement used (Total process time):
 real time 7.45 seconds
 cpu time 2.01 seconds

```
31
32      proc sort data = all_diag1977_93; by recnum; run;
```

NOTE: There were 626391 observations read from the data set WORK.ALL_DIAG1977_93.
 NOTE: The data set WORK.ALL_DIAG1977_93 has 626391 observations and 4 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 0.10 seconds
 cpu time 0.26 seconds

```
33      proc sort data = all_adm1977_93; by recnum; run;
```

NOTE: There were 16414751 observations read from the data set WORK.ALL_ADM1977_93.
 NOTE: The data set WORK.ALL_ADM1977_93 has 16414751 observations and 4 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 6.99 seconds
 cpu time 13.46 seconds

```
34
35      *Merge contacts and diagnoses;
36      data all_npr1977_93;
37      merge all_diag1977_93 (in = a)
38            all_adm1977_93 ;
39      by recnum;
40      if a;
41      run;
```

NOTE: There were 626391 observations read from the data set WORK.ALL_DIAG1977_93.
 NOTE: There were 16414751 observations read from the data set WORK.ALL_ADM1977_93.
 NOTE: The data set WORK.ALL_NPR1977_93 has 626391 observations and 7 variables.
 NOTE: DATA statement used (Total process time):
 real time 3.39 seconds
 cpu time 2.73 seconds

```
42
43      proc sort data = all_npr1977_93 ; by pnr ; run ;
```

NOTE: There were 626391 observations read from the data set WORK.ALL_NPR1977_93.
 NOTE: The data set WORK.ALL_NPR1977_93 has 626391 observations and 7 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 0.20 seconds
 cpu time 0.35 seconds

```
44
45      title1 "Diagnosis types 1977 - 93" ;
46      proc tabulate data = all_npr1977_93 missing noseps ;
47      class c_diagtype ;
48      table all c_diagtype,
49            n * f=comma12.
50            / rts = 15 ;
51      run ;
```

NOTE: There were 626391 observations read from the data set WORK.ALL_NPR1977_93.

NOTE: The PROCEDURE TABULATE printed page 1.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.11 seconds
 cpu time 0.07 seconds

```

52      title ;
53
54      %macro mnew2 ;
55      * Combine all diagnoses from 1994-2018;
56      data all_diag1994_18 ;
57          set %do i = 1994 %to 2018 ;
58              grund.lpr_diag&i. (keep = recnum c_diag c_diagtype)
59              %end ;
60          grund.uaf_diag2018 (keep = recnum c_diag c_diagtype);
61      * the ICD-10 codes incl GDM / PCOS ;
62      if substr(c_diag,2,3) in ('E10','E11','E12','E13','E14','O24') or
63      substr(c_diag,2,4) in ('H360','E282') ;
64      if c_diagtype in ("A", "B", "G");
65      if substr(c_diag,2,3) eq 'E10' then nprtyp = 'T1' ;
66      if substr(c_diag,2,3) eq 'E11' then nprtyp = 'T2' ;
67      if substr(c_diag,2,3) in ('E12','E13','E14') then nprtyp = 'Tx' ;
68      run ;
69
70      * Combine all contacts from 1994-2018;
71      data all_adm1994_18 ;
72          set %do i = 1994 %to 2018 ;
73              grund.lpr_adm&i. (keep = pnr recnum d_inddto d_uddto)
74              %end ;
75          grund.uaf_adm2018 (keep = pnr recnum d_inddto d_uddto);
76      run ;
77      %mend ;
78      %mnew2 ;

```

WARNING: Multiple lengths were specified for the variable C_DIAG by input data set(s).
 This can cause truncation of data.

NOTE: There were 3061037 observations read from the data set GRUND.LPR_DIAG1994.
 NOTE: There were 4417984 observations read from the data set GRUND.LPR_DIAG1995.
 NOTE: There were 5114752 observations read from the data set GRUND.LPR_DIAG1996.
 NOTE: There were 5526027 observations read from the data set GRUND.LPR_DIAG1997.
 NOTE: There were 5979155 observations read from the data set GRUND.LPR_DIAG1998.
 NOTE: There were 7331856 observations read from the data set GRUND.LPR_DIAG1999.
 NOTE: There were 7904652 observations read from the data set GRUND.LPR_DIAG2000.
 NOTE: There were 8505005 observations read from the data set GRUND.LPR_DIAG2001.
 NOTE: There were 9702689 observations read from the data set GRUND.LPR_DIAG2002.
 NOTE: There were 10113403 observations read from the data set GRUND.LPR_DIAG2003.
 NOTE: There were 10928441 observations read from the data set GRUND.LPR_DIAG2004.
 NOTE: There were 11483126 observations read from the data set GRUND.LPR_DIAG2005.
 NOTE: There were 11957102 observations read from the data set GRUND.LPR_DIAG2006.
 NOTE: There were 12147472 observations read from the data set GRUND.LPR_DIAG2007.
 NOTE: There were 12766717 observations read from the data set GRUND.LPR_DIAG2008.
 NOTE: There were 13482499 observations read from the data set GRUND.LPR_DIAG2009.
 NOTE: There were 13660985 observations read from the data set GRUND.LPR_DIAG2010.
 NOTE: There were 14347430 observations read from the data set GRUND.LPR_DIAG2011.
 NOTE: There were 14357996 observations read from the data set GRUND.LPR_DIAG2012.
 NOTE: There were 14676150 observations read from the data set GRUND.LPR_DIAG2013.
 NOTE: There were 14832333 observations read from the data set GRUND.LPR_DIAG2014.
 NOTE: There were 15650577 observations read from the data set GRUND.LPR_DIAG2015.
 NOTE: There were 15131689 observations read from the data set GRUND.LPR_DIAG2016.
 NOTE: There were 15628953 observations read from the data set GRUND.LPR_DIAG2017.
 NOTE: There were 15356228 observations read from the data set GRUND.LPR_DIAG2018.
 NOTE: There were 4613813 observations read from the data set GRUND.UAF_DIAG2018.
 NOTE: The data set WORK.ALL_DIAG1994_18 has 2703168 observations and 4 variables.
 NOTE: DATA statement used (Total process time):
 real time 1:07.57
 cpu time 28.57 seconds

NOTE: There were 2259996 observations read from the data set GRUND.LPR_ADM1994.

NOTE: There were 3099974 observations read from the data set GRUND.LPR_ADM1995.
 NOTE: There were 3292287 observations read from the data set GRUND.LPR_ADM1996.
 NOTE: There were 3381783 observations read from the data set GRUND.LPR_ADM1997.
 NOTE: There were 3465660 observations read from the data set GRUND.LPR_ADM1998.
 NOTE: There were 3573247 observations read from the data set GRUND.LPR_ADM1999.
 NOTE: There were 3617984 observations read from the data set GRUND.LPR_ADM2000.
 NOTE: There were 3908224 observations read from the data set GRUND.LPR_ADM2001.
 NOTE: There were 4593785 observations read from the data set GRUND.LPR_ADM2002.
 NOTE: There were 4630303 observations read from the data set GRUND.LPR_ADM2003.
 NOTE: There were 4770380 observations read from the data set GRUND.LPR_ADM2004.
 NOTE: There were 4970849 observations read from the data set GRUND.LPR_ADM2005.
 NOTE: There were 5148038 observations read from the data set GRUND.LPR_ADM2006.
 NOTE: There were 5176587 observations read from the data set GRUND.LPR_ADM2007.
 NOTE: There were 5467668 observations read from the data set GRUND.LPR_ADM2008.
 NOTE: There were 5892674 observations read from the data set GRUND.LPR_ADM2009.
 NOTE: There were 5906779 observations read from the data set GRUND.LPR_ADM2010.
 NOTE: There were 6204786 observations read from the data set GRUND.LPR_ADM2011.
 NOTE: There were 6127472 observations read from the data set GRUND.LPR_ADM2012.
 NOTE: There were 6329051 observations read from the data set GRUND.LPR_ADM2013.
 NOTE: There were 6495594 observations read from the data set GRUND.LPR_ADM2014.
 NOTE: There were 6927895 observations read from the data set GRUND.LPR_ADM2015.
 NOTE: There were 6852448 observations read from the data set GRUND.LPR_ADM2016.
 NOTE: There were 6857872 observations read from the data set GRUND.LPR_ADM2017.
 NOTE: There were 6707411 observations read from the data set GRUND.LPR_ADM2018.
 NOTE: There were 1977489 observations read from the data set GRUND.UAF_ADM2018.
 NOTE: The data set WORK.ALL_ADM1994_18 has 127636236 observations and 4 variables.
 NOTE: DATA statement used (Total process time):
 real time 1:11.30
 cpu time 15.64 seconds

79
 80 proc sort data = all_diag1994_18; by recnum; run;

NOTE: There were 2703168 observations read from the data set WORK.ALL_DIAG1994_18.
 NOTE: The data set WORK.ALL_DIAG1994_18 has 2703168 observations and 4 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 0.41 seconds
 cpu time 0.98 seconds

81 proc sort data = all_adm1994_18; by recnum; run;

NOTE: There were 127636236 observations read from the data set WORK.ALL_ADM1994_18.
 NOTE: The data set WORK.ALL_ADM1994_18 has 127636236 observations and 4 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 1:06.64
 cpu time 1:55.23

82
 83 *Merge contacts and diagnoses;
 84 data all_npr1994_18;
 85 merge all_diag1994_18 (in=a)
 86 all_adm1994_18 (in=b);
 87 by recnum;
 88 if a;
 89 run;

NOTE: There were 2703168 observations read from the data set WORK.ALL_DIAG1994_18.
 NOTE: There were 127636236 observations read from the data set WORK.ALL_ADM1994_18.
 NOTE: The data set WORK.ALL_NPR1994_18 has 2703168 observations and 7 variables.
 NOTE: DATA statement used (Total process time):
 real time 26.43 seconds
 cpu time 20.71 seconds

90
 91 proc sort data = all_npr1994_18; by pnr; run;

NOTE: There were 2703168 observations read from the data set WORK.ALL_NPR1994_18.
 NOTE: The data set WORK.ALL_NPR1994_18 has 2703168 observations and 7 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 1.07 seconds
 cpu time 1.90 seconds

```

92
93     title1 "Diagnosis types 1994 - 2018" ;
94     proc tabulate data = all_npr1994_18 missing noseps ;
95         class c_diagtype ;
96         table all c_diagtype,
97             n * f=comma12.
98             / rts = 15 ;
99     run ;

```

NOTE: There were 2703168 observations read from the data set WORK.ALL_NPR1994_18.
 NOTE: The PROCEDURE TABULATE printed page 2.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.31 seconds
 cpu time 0.32 seconds

```

100     title ;
101
102     *-----
103     Diagnoses from 2019-20 contains A and B diagnoses and only those,
104     so we do not need to restrict on type
105     *-----;
106     data all_diag2019_20 (keep = kontakt_id c_diag art nprtyp) ;
107         set nydat.diagnose ;
108         length c_diag $6 ;
109         c_diag = trim(kode) ;
110         if substr(c_diag,2,3) in ('E10','E11','E12','E13','E14','024') or
111             substr(c_diag,2,4) in ('H360','E282') ;
112         if substr(c_diag,2,3) eq 'E10' then nprtyp = 'T1' ;
113         if substr(c_diag,2,3) eq 'E11' then nprtyp = 'T2' ;
114         if substr(c_diag,2,3) in ('E12','E13','E14') then nprtyp = 'Tx' ;
115     run;

```

NOTE: There were 45572962 observations read from the data set NYDAT.DIAGNOSE.
 NOTE: The data set WORK.ALL_DIAG2019_20 has 1257260 observations and 4 variables.
 NOTE: DATA statement used (Total process time):
 real time 32.67 seconds
 cpu time 7.92 seconds

```

116
117     title1 "Diagnosis types 2019 - 2020" ;
118     proc tabulate data = all_diag2019_20 missing noseps ;
119         class c_diag nprtyp ;
120         table all c_diag,
121             nprtyp * f=comma12.
122             / rts = 15 ;
123     run ;

```

NOTE: There were 1257260 observations read from the data set WORK.ALL_DIAG2019_20.
 NOTE: The PROCEDURE TABULATE printed page 3.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.11 seconds
 cpu time 0.29 seconds

```

124     title ;
125
126     * Merge with contact table to get information on contact, pnr and forloebid;
127     proc sort data = nydat.kontakt out = kontakt ; by kontakt_id ; run ;

```

NOTE: There were 34247060 observations read from the data set NYDAT.KONTAKT.
 NOTE: The data set WORK.KONTAKT has 34247060 observations and 16 variables.

NOTE: PROCEDURE SORT used (Total process time):
 real time 57.46 seconds
 cpu time 45.17 seconds

```
128      proc sort data = all_diag2019_20 ;                by kontakt_id ; run ;
```

NOTE: There were 1257260 observations read from the data set WORK.ALL_DIAG2019_20.
 NOTE: The data set WORK.ALL_DIAG2019_20 has 1257260 observations and 4 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 0.43 seconds
 cpu time 0.76 seconds

```
129
130      data all_cont2019_20 (keep = personnummer kontakt_id forloebelement_id
131                               c_diag nprtyp starttidspunkt sluttidspunkt);
132      merge all_diag2019_20 (in=a)
133             kontakt (in=b);
134      by kontakt_id;
135      if a ;
136      run;
```

NOTE: There were 1257260 observations read from the data set WORK.ALL_DIAG2019_20.
 NOTE: There were 34247060 observations read from the data set WORK.KONTAKT.
 NOTE: The data set WORK.ALL_CONT2019_20 has 1257260 observations and 7 variables.
 NOTE: DATA statement used (Total process time):
 real time 17.75 seconds
 cpu time 9.51 seconds

```
137
138      * Rename variables before merge with LPR2;
139      data all_npr2019_20 (keep = pnr c_diag d_inddto d_uddto nprtyp
140                               kontakt_id forloebelement_id);
141      set all_cont2019_20 (rename = (personnummer = pnr));
142      d_inddto = datepart(STARTTIDSPUNKT) ;
143      d_uddto = datepart( SLUTTIDSPUNKT) ;
144      run;
```

NOTE: Missing values were generated as a result of performing an operation on missing values.

Each place is given by: (Number of times) at (Line):(Column).
 578 at 143:14

NOTE: There were 1257260 observations read from the data set WORK.ALL_CONT2019_20.
 NOTE: The data set WORK.ALL_NPR2019_20 has 1257260 observations and 7 variables.
 NOTE: DATA statement used (Total process time):
 real time 0.32 seconds
 cpu time 0.18 seconds

```
145
146      *-----
147      Until the data with forloeb is fixed by DST we ignore the duplicates,
148      as we expect the problem to be small
149      -----;
150
151      *-----
152      Merge with forloebelement table to be able to link and check for
153      duplicates with LPR2 in the transfer period
154      -----;
155      proc sort data = nydat.forloebelement out = forloeb;
156      by forloebelement_id ;
157      run ;
```

NOTE: There were 14583296 observations read from the data set NYDAT.FORLOEBELEMENT.
 NOTE: The data set WORK.FORLOEB has 14583296 observations and 22 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 1:04.01
 cpu time 30.76 seconds

```

158
159     proc sort data = all_cont2019_20 ; by forloebelement_id; run;

```

NOTE: There were 1257260 observations read from the data set WORK.ALL_CONT2019_20.
NOTE: The data set WORK.ALL_CONT2019_20 has 1257260 observations and 7 variables.
NOTE: PROCEDURE SORT used (Total process time):

real time	0.48 seconds
cpu time	0.89 seconds

```

160
161     data all_npr2019_20 (keep = personnummer kontakt_id forloebelement_id
162                             c_diag nprtyp STARTTIDSPUNKT forloeb_start
163                             HENVISNINGSTIDSPUNKT HENVISNINGSAARSAG
164     ! HENVISENDEINSTANS);
165     merge all_cont2019_20 (in = a)
166           forloeb (rename = (STARTTIDSPUNKT = forloeb_start));
167     by forloebelement_id;
168     if a;
169     run;

```

NOTE: There were 1257260 observations read from the data set WORK.ALL_CONT2019_20.
NOTE: There were 14583296 observations read from the data set WORK.FORLOEB.
NOTE: The data set WORK.ALL_NPR2019_20 has 1257260 observations and 10 variables.
NOTE: DATA statement used (Total process time):

real time	16.55 seconds
cpu time	6.45 seconds

```

169     *-----
170     OBS! Der kommer ikke nogen værdier på forloeb - har spurgt Maria om der
171     er brugt samme afidentificeringsnøgle på forloebelement_id
172     -----;
173
174     *-----
175     End of reading raw NPR data
176     -----;
177
178     *-----
179     c_adiaq has length 6 in the old data (1977-93) but length 10
180     in the new data (1994-18 and 2019-20), so the data set with the
181     longer variable length must be mentioned >first< in order to avoid
182     truncation
183     -----;
184     data all_npr (keep = pnr c_diag d_inddto d_uddto nprtyp recnum
185                     kontakt_id forloebelement_id);
186     set all_npr2019_20
187         all_npr1994_18
188         all_npr1977_93 ;
189     run ;

```

NOTE: There were 1257260 observations read from the data set WORK.ALL_NPR2019_20.
NOTE: There were 2703168 observations read from the data set WORK.ALL_NPR1994_18.
NOTE: There were 626391 observations read from the data set WORK.ALL_NPR1977_93.
NOTE: The data set WORK.ALL_NPR has 4586819 observations and 8 variables.
NOTE: DATA statement used (Total process time):

real time	1.20 seconds
cpu time	0.53 seconds

```

190
191     proc sort data = all_npr ; by pnr d_inddto ; run ;

```

NOTE: There were 4586819 observations read from the data set WORK.ALL_NPR.
NOTE: The data set WORK.ALL_NPR has 4586819 observations and 8 variables.
NOTE: PROCEDURE SORT used (Total process time):

real time	1.40 seconds
cpu time	2.01 seconds

```

192
193 *-----;
194   only records from persons in the base population -
195   GDM & PCOS diagnoses are put in separate files
196 *-----;
197 data DM
198     gdm
199     pcos ;
200     merge all_npr   ( in = npr )
201           DMdat.pop ( in = pop ) ;
202     by pnr ;
203     length diaggr $ 4 ;
204     if npr and pop ;
205     * GDM / PCOS (excluding men) ;
206     if substr(c_diag,2,4) in('0244','0249') or
207        c_diag           in('63474','Y6449')
208        then do ;
209         if sex eq "W" then diaggr = 'GDM' ; else delete ;
210     end ;
211     else
212     if substr(c_diag,2,4) in('E282'           ) or
213        c_diag           in('61520','61521')
214        then do ;
215         if sex eq "W" then diaggr = 'PCOS' ; else delete ;
216     end ;
217     else
218     if nprtyp in ("T1", "T2", "Tx") then diaggr = 'DM' ;
219     if diaggr eq 'DM' then output  DM ;
220     if diaggr eq 'GDM' then output  gdm ;
221     if diaggr eq 'PCOS' then output  pcos ;
222 run ;

```

NOTE: There were 4586819 observations read from the data set WORK.ALL_NPR.
NOTE: There were 8298837 observations read from the data set DMDAT.POP.
NOTE: The data set WORK.DM has 2596044 observations and 12 variables.
NOTE: The data set WORK.GDM has 103911 observations and 12 variables.
NOTE: The data set WORK.PCOS has 58736 observations and 12 variables.
NOTE: DATA statement used (Total process time):
real time 3.92 seconds
cpu time 2.62 seconds

```

223
224 *-----;
225   title1 'PCOS: id and first date of PCOS' ;
226   proc sort data = pcos ; by pnr d_inddto ; run ;

```

NOTE: There were 58736 observations read from the data set WORK.PCOS.
NOTE: The data set WORK.PCOS has 58736 observations and 12 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 0.03 seconds
cpu time 0.00 seconds

```

227   data DMdat.pcos ( keep = pnr doPCOS c_diag ) ;
228   set pcos ;
229   by pnr d_inddto ;
230   if first.pnr ;
231   doPCOS = d_inddto ;
232 run ;

```

NOTE: There were 58736 observations read from the data set WORK.PCOS.
NOTE: The data set DMDAT.PCOS has 38078 observations and 3 variables.
NOTE: DATA statement used (Total process time):
real time 0.03 seconds
cpu time 0.01 seconds


```
233
234      proc contents data = DMdat.pcos ; run ;
```

```
NOTE: PROCEDURE CONTENTS used (Total process time):
      real time      0.01 seconds
      cpu time       0.01 seconds
```

```
NOTE: The PROCEDURE CONTENTS printed page 4.
```

```
235      proc tabulate data = DMdat.pcos missing noseps ;
236          class doPCOS c_diag ;
237          table c_diag, n * f=comma9.
238              / rts = 60 ;
239          table doPCOS, n * f=comma9.
240              / rts = 8 ;
241          format doPCOS year4.
242              c_diag $dob_L1L1_KT. ;
243      run ;
```

```
NOTE: There were 38078 observations read from the data set DMDAT.PCOS.
```

```
NOTE: The PROCEDURE TABULATE printed pages 5-6.
```

```
NOTE: PROCEDURE TABULATE used (Total process time):
      real time      0.18 seconds
      cpu time       0.06 seconds
```

```
244
245      *-----;
246      title1 'GDM records - id and any date of GDM' ;
247      proc tabulate data = gdm (rename = (d_inddto = doGDM)) missing noseps ;
248          class doGDM c_diag ;
249          table c_diag, n * f=comma9. / rts = 60 ;
250          table doGDM, n * f=comma9. / rts = 8 ;
251          format doGDM year4.
252              c_diag $dob_L1L1_KT. ;
253      run ;
```

```
NOTE: There were 103911 observations read from the data set WORK.GDM.
```

```
NOTE: The PROCEDURE TABULATE printed pages 7-8.
```

```
NOTE: PROCEDURE TABULATE used (Total process time):
      real time      0.09 seconds
      cpu time       0.09 seconds
```

```
254
255      title1 'GDM records - id and any date of GDM except if too close' ;
256      proc sort data = gdm ; by pnr d_inddto ; run ;
```

```
NOTE: There were 103911 observations read from the data set WORK.GDM.
```

```
NOTE: The data set WORK.GDM has 103911 observations and 12 variables.
```

```
NOTE: PROCEDURE SORT used (Total process time):
```

```
      real time      0.05 seconds
      cpu time       0.04 seconds
```

```
257      data gdm ( keep = pnr doGDM dno c_diag ) ;
258          set gdm ( rename = ( d_inddto = doGDM ) ) ;
259          by pnr doGDM ;
260          retain prevGDM ;
261          if first.pnr then do ;
262              dno = 1 ;
263              prevGDM = doGDM ;
264              output ;
265              end ;
266          if ~first.pnr and ( doGDM - prevGDM ) gt &gdmint. then do ;
267              dno + 1 ;
268              output ;
269              prevGDM = doGDM ;
270              end ;
271      run ;
```

NOTE: There were 103911 observations read from the data set WORK.GDM.
 NOTE: The data set WORK.GDM has 45135 observations and 4 variables.
 NOTE: DATA statement used (Total process time):
 real time 0.03 seconds
 cpu time 0.01 seconds

```
272
273     proc transpose  data = gdm
274                   out = DMdat.gdm ( drop = _NAME_ _LABEL_ )
275                   prefix = doGDM ;
276     by pnr ;
277     var doGDM ;
278     id dno ;
279     run ;
```

NOTE: There were 45135 observations read from the data set WORK.GDM.
 NOTE: The data set DMDAT.GDM has 32127 observations and 14 variables.
 NOTE: PROCEDURE TRANSPOSE used (Total process time):
 real time 0.12 seconds
 cpu time 0.07 seconds

```
280
281     %let doGDMn = doGDM2 doGDM3 doGDM4 doGDM5 doGDM6
282                   doGDM7 doGDM8 doGDM9 doGDM10 doGDM11 ;
283     title 'The recorded dates of Gestational diabetes' ;
284     proc contents  data = DMdat.gdm ; run ;
```

NOTE: PROCEDURE CONTENTS used (Total process time):
 real time 0.00 seconds
 cpu time 0.01 seconds

NOTE: The PROCEDURE CONTENTS printed page 9.

```
285     proc tabulate  data = DMdat.gdm missing noseps ;
286     class doGDM1 ;
287     var &doGDMn. ;
288     table doGDM1 all &doGDMn.,
289           n * f=comma10. / rts=9 ;
290     format doGDM1 year4. ;
291     run ;
```

NOTE: There were 32127 observations read from the data set DMDAT.GDM.
 NOTE: The PROCEDURE TABULATE printed page 10.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.03 seconds
 cpu time 0.03 seconds

```
292
293     *-----;
294     title1 'DM diagnoses from NPR (no. of records)' ;
295     proc tabulate  data = DM missing noseps ;
296     class c_diag nprtyp d_inddto ;
297     table all c_diag,
298           nprtyp * f=comma7.
299           / rts = 65 ;
300     table all d_inddto,
301           nprtyp * ( n * f=comma9.
302           pctn<nprtyp> * f=5.1 )
303           / rts = 10 ;
304     format c_diag $dob_L1L1_KT. /* Diagnose Operation Behandling */
305           d_inddto year4. ;
306     run ;
```

NOTE: There were 2596044 observations read from the data set WORK.DM.
 NOTE: The PROCEDURE TABULATE printed pages 11-12.
 NOTE: PROCEDURE TABULATE used (Total process time):

```

real time          0.69 seconds
cpu time           1.35 seconds

```

```

307     title1 ;
308
309     *-----;
310     * Excluding NPR-records in the GDM windows ;
311     options mprint ;
312     data npr ( keep = pnr sex d_inddto nprtyp c_diag ) ;
313         merge DM ( in = DM )
314             DMdat.gdm ;
315         by pnr ;
316         if DM ;
317     * Do not count NPR diagnoses in window around GDM ;
318     %xgdm( d_inddto ) ;
MPRINT(XGDM):   if ( doGDM1 - 280 ) < d_inddto < ( doGDM1 + 280 ) then delete ;
MPRINT(XGDM):   if ( doGDM2 - 280 ) < d_inddto < ( doGDM2 + 280 ) then delete ;
MPRINT(XGDM):   if ( doGDM3 - 280 ) < d_inddto < ( doGDM3 + 280 ) then delete ;
MPRINT(XGDM):   if ( doGDM4 - 280 ) < d_inddto < ( doGDM4 + 280 ) then delete ;
MPRINT(XGDM):   if ( doGDM5 - 280 ) < d_inddto < ( doGDM5 + 280 ) then delete ;
MPRINT(XGDM):   if ( doGDM6 - 280 ) < d_inddto < ( doGDM6 + 280 ) then delete ;
MPRINT(XGDM):   if ( doGDM7 - 280 ) < d_inddto < ( doGDM7 + 280 ) then delete ;
MPRINT(XGDM):   if ( doGDM8 - 280 ) < d_inddto < ( doGDM8 + 280 ) then delete ;
MPRINT(XGDM):   if ( doGDM9 - 280 ) < d_inddto < ( doGDM9 + 280 ) then delete ;
MPRINT(XGDM):   if ( doGDM10 - 280 ) < d_inddto < ( doGDM10 + 280 ) then delete ;
MPRINT(XGDM):   if ( doGDM11 - 280 ) < d_inddto < ( doGDM11 + 280 ) then delete ;
MPRINT(XGDM):   if ( doGDM12 - 280 ) < d_inddto < ( doGDM12 + 280 ) then delete ;
319     run ;

```

NOTE: Missing values were generated as a result of performing an operation on missing values.

Each place is given by: (Number of times) at (Line):(Column).

```

2543852 at 318:18  2543852 at 318:54  2578470 at 318:20  2578470 at 318:56
2587914 at 318:20  2587914 at 318:56  2590127 at 318:20  2590127 at 318:56
2590593 at 318:20  2590593 at 318:56  2590758 at 318:20  2590758 at 318:56
2590778 at 318:20  2590778 at 318:56  2590779 at 318:20  2590779 at 318:56
2590782 at 318:20  2590782 at 318:56  2590782 at 318:20  2590782 at 318:56
2590782 at 318:20  2590782 at 318:56  2590782 at 318:20  2590782 at 318:56

```

NOTE: There were 2596044 observations read from the data set WORK.DM.

NOTE: There were 32127 observations read from the data set DMDAT.GDM.

NOTE: The data set WORK.NPR has 2590782 observations and 5 variables.

NOTE: DATA statement used (Total process time):

```

real time          7.25 seconds
cpu time           7.01 seconds

```

```

320     options nomprint ;
321
322     *-----;
323     NPR type of diabetes (nprtyp) should be the type in the last record
324     this is brought forward in the dataset npr1 - npr1 is the only
325     of the resulting datasets with the variable nprtyp
326     *-----;
327     data npr1 ( keep = pnr doNPR )
328         npr2 ( keep = pnr doNPR
329             rename = ( doNPR = doNPR2 ) )
330         npr1 ( keep = pnr nprtyp doNPR
331             rename = ( doNPR = lastNPR ) ) ;
332     set npr ( keep = pnr d_inddto c_diag nprtyp
333         rename = ( d_inddto = doNPR ) ) ;
334     by pnr ;
335     if first.pnr then nprN = 0 ;
336     nprN + 1 ;
337     if first.pnr then output npr1 ;
338     if nprN eq 2 then output npr2 ;
339     if last.pnr then output npr1 ;
340     run ;

```

NOTE: There were 2590782 observations read from the data set WORK.NPR.

NOTE: The data set WORK.NPR1 has 373106 observations and 2 variables.
 NOTE: The data set WORK.NPR2 has 288489 observations and 2 variables.
 NOTE: The data set WORK.NPRL has 373106 observations and 3 variables.
 NOTE: DATA statement used (Total process time):
 real time 0.36 seconds
 cpu time 0.21 seconds

```

341
342      /*
343      title1 'Date of last NPR recording for each person - all diagnoses' ;
344      proc tabulate data = npr1 missing noseps ;
345          class nprtyp lastNPR ;
346          table all lastNPR,
347              nprtyp * f=comma7.
348              / rts = 6 ;
349          format lastNPR year4. ;
350      run ;
351      title1 ;
352      */
353
354      *-----
355      Classifiy persons according to the last occurring type on NPR and
356      define doNPR as the first date of diabetes in NPR, and doNPR2 as the
357      date of the second, while the nprtyp comes from the last record in NPR
358      -----;
359      data DMdat.npr ;
360          merge npr1 npr2 npr1 ;
361          by pnr ;
362          label doNPR = '1st NPR date'
363              doNPR2 = '2nd NPR date'
364              nprtyp = 'NPR type of DM' ;
365      run ;

```

NOTE: There were 373106 observations read from the data set WORK.NPR1.
 NOTE: There were 288489 observations read from the data set WORK.NPR2.
 NOTE: There were 373106 observations read from the data set WORK.NPRL.
 NOTE: The data set DMDAT.NPR has 373106 observations and 5 variables.
 NOTE: DATA statement used (Total process time):
 real time 0.19 seconds
 cpu time 0.12 seconds

```

366
367      title1 'NPR - one record per person in NPR with DM diagnosis' ;
368      proc tabulate data = DMdat.npr missing noseps ;
369          class doNPR nprtyp ;
370          table doNPR, nprtyp * f=comma12. / rts = 6 ;
371          format doNPR year4. ;
372      run ;

```

NOTE: There were 373106 observations read from the data set DMDAT.NPR.
 NOTE: The PROCEDURE TABULATE printed page 13.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.12 seconds
 cpu time 0.17 seconds

```

373
374      proc contents data = DMdat.npr varnum ; run ;

```

NOTE: PROCEDURE CONTENTS used (Total process time):
 real time 0.00 seconds
 cpu time 0.00 seconds

NOTE: The PROCEDURE CONTENTS printed page 14.

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414
 NOTE: The SAS System used:
 real time 7:42.32

cpu time 5:21.26

4.7.1 01-npr.lst

Diagnosis types 1977 - 93 07:56 Wednesday, January 19, 2022 1

```

-----
                        N
-----
All                    626,391
C_DIAGTYPE
A                      238,382
B                      388,009
-----
    
```

Diagnosis types 1994 - 2018 07:56 Wednesday, January 19, 2022 2

```

-----
                        N
-----
All                    2,703,168
C_DIAGTYPE
A                      1,145,705
B                      1,537,813
G                       19,650
-----
    
```

Diagnosis types 2019 - 2020 07:56 Wednesday, January 19, 2022 3

```

-----
                        nprtyp
-----
                        T1      T2      Tx
-----
                        N      N      N      N
-----
All                    241,111  404,848  560,801  50,500
c_diag
DE10                   .         47      .         .
DE100                  .         29      .         .
DE101                   .        4,534  .         .
DE102                   .       19,501  .         .
DE103                   .       55,711  .         .
DE104                   .       14,370  .         .
DE105                   .        2,706  .         .
DE105A                  .         641      .         .
DE105B                  .        5,684  .         .
DE105C                  .         306      .         .
DE105D                  .         340      .         .
DE106                   .        5,268  .         .
DE107                   .       53,394  .         .
DE108                   .       11,384  .         .
DE109                   .      183,212  .         .
DE109A                  .       47,721  .         .
DE11                    .         .         67      .
DE110                   .         .         152     .
DE111                   .         .        1,053  .
DE112                   .         .       79,514  .
DE113                   .         .       29,200  .
DE114                   .         .      41,479  .
DE115                   .         .        8,757  .
DE115A                  .         .        1,268  .
DE115B                  .         .       27,566  .
DE115C                  .         .        1,145  .
-----
    
```

DE115D	.	.	921	.
DE116	.	.	28,597	.
DE117	.	.	109,521	.
DE118	.	.	32,827	.
DE119	.	.	101,821	.
DE119A	.	.	96,913	.
DE120	.	.	.	6
DE121	.	.	.	8
DE122	.	.	.	*
DE123	.	.	.	*
DE124	.	.	.	*
DE125	.	.	.	5
DE125B	.	.	.	*
DE125C	.	.	.	*
DE126	.	.	.	7
DE127	.	.	.	6
DE128	.	.	.	*
DE129	.	.	.	33
DE13	.	.	.	*
DE130	.	.	.	10
DE131	.	.	.	240
DE132	.	.	.	1,406
DE133	.	.	.	1,074
DE134	.	.	.	1,335
DE135	.	.	.	246
DE135A	.	.	.	29
DE135B	.	.	.	437
DE135C	.	.	.	40
DE135D	.	.	.	11
DE136	.	.	.	1,077
DE137	.	.	.	2,103
DE138	.	.	.	915
DE139	.	.	.	14,825
DE14	.	.	.	*
DE140	.	.	.	17
DE141	.	.	.	1,606
DE142	.	.	.	569
DE143	.	.	.	430
DE144	.	.	.	1,132
DE145	.	.	.	430
DE145A	.	.	.	60
DE145B	.	.	.	5,327
DE145C	.	.	.	646
DE145D	.	.	.	33
DE146	.	.	.	1,164
DE147	.	.	.	655
DE148	.	.	.	2,636
DE149	.	.	.	11,966
DE282	25,417	.	.	.
DE282A	9	.	.	.
DE282C	710	.	.	.
DH360	37,555	.	.	.
DH360H	12,098	.	.	.
DH360J	16,002	.	.	.
DH360K	29,593	.	.	.
D0240	8,399	.	.	.
D0240A	8,741	.	.	.
D0240B	16	.	.	.
D0240C	78	.	.	.
D0241	4,893	.	.	.
D0241A	4,411	.	.	.
D0241B	14	.	.	.
D0241C	44	.	.	.
D0242	*	.	.	.
D0243	380	.	.	.
D0243A	7	.	.	.
D0243B	*	.	.	.
D0243C	*	.	.	.
D0244	23,875	.	.	.
D0244B	718	.	.	.

D0244C	153	.	.	.
D0244D	56,775	.	.	.
D0244E	10,630	.	.	.
D0245	541	.	.	.
D0249	10	.	.	.
D0249A	33	.	.	.
D0249C	5	.	.	.

PCOS: id and first date of PCOS 07:56 Wednesday, January 19, 2022 4

The CONTENTS Procedure

Data Set Name	DMDAT.PCOS	Observations	38078
Member Type	DATA	Variables	*
Engine	V9	Indexes	0
Created	19/01/2022 08:03:58	Observation Length	32
Last Modified	19/01/2022 08:03:58	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	19
First Data Page	*
Max Obs per Page	2039
Obs in First Data Page	1997
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\pcos.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	1MB
File Size (bytes)	1310720

Alphabetic List of Variables and Attributes

#	Variable	Type	Len	Format	Informat	Label
2	PNR	Char	12	\$12.	\$10.	Personnummer
1	c_diag	Char	6	\$6.	\$6.	C_DIAG
3	doPCOS	Num	8			

PCOS: id and first date of PCOS 07:56 Wednesday, January 19, 2022 5

			N
C_DIAG			
61520	CYSTIS FOLLICULARIS OVARIII		7,980
61521	CYSTIS CORPORIS LUTEI OVARIII		10,490
DE282	Polycystisk ovariesyndrom (PCOS)		19,334
DE282A	Sklerocystisk ovariesyndrom		5
DE282B	Stein-Leventhal's syndrom		18
DE282C	Polycystiske ovarier uden anovulation		251

PCOS: id and first date of PCOS 07:56 Wednesday, January 19, 2022 6

			N
doPCOS			

1976	5
1977	1,110
1978	1,183
1979	1,204
1980	1,233
1981	1,294
1982	1,270
1983	1,397
1984	1,231
1985	1,223
1986	1,207
1987	1,007
1988	1,002
1989	929
1990	938
1991	871
1992	775
1993	644
1994	153
1995	152
1996	221
1997	225
1998	263
1999	334
2000	317
2001	369
2002	431
2003	526
2004	655
2005	783
2006	829
2007	902
2008	847
2009	1,027
2010	1,120
2011	1,181
2012	1,213
2013	1,371
2014	1,288
2015	1,255
2016	1,297
2017	1,425
2018	1,371

GDM records - id and any date of GDM

07:56 Wednesday, January 19, 2022 7

```

-----
N
-----
C_DIAG
63474 DIABETES MELLITUS GESTATIONIS 2,111
D0244 Gravditet, fødsel eller barsel med gestationel
diabetes 28,226
D0244A Gravditas med nyopstået diabetes mellitus 8
D0244B Fødsel med gestationel diabetes 2,731
D0244C Barsel med gestationel diabetes 575
D0244D Gravditet med gestationel diabetes 56,095
D0244E Gravditet med insulinbehandlet gestationel
diabetes 8,693
D0249 Gravditet, fødsel eller barsel med diabetes UNS 5,126
D0249A Gravditet med diabetes UNS 120
D0249B Fødsel med diabetes UNS 8
D0249C Barsel med diabetes UNS 124
Y6449 DIABETES MELLITUS(GESTATIONS-)ANTEA 94
-----

```

GDM records - id and any date of GDM

07:56 Wednesday, January 19, 2022 8

```

-----
N
D_IND-
DT0
1986      *
1987      132
1988      244
1989      342
1990      352
1991      338
1992      333
1993      503
1994      984
1995      1,065
1996      1,652
1997      1,375
1998      1,582
1999      1,464
2000      1,592
2001      1,718
2002      2,002
2003      2,616
2004      3,045
2005      3,400
2006      4,097
2007      5,080
2008      5,917
2009      6,686
2010      5,898
2011      6,237
2012      5,263
2013      5,718
2014      6,459
2015      6,667
2016      6,802
2017      7,069
2018      7,277
-----

```

The recorded dates of Gestational diabetes

07:56 Wednesday, January 19, 2022 9

The CONTENTS Procedure

Data Set Name	DMDAT.GDM	Observations	32127
Member Type	DATA	Variables	14
Engine	V9	Indexes	0
Created	19/01/2022 08:03:58	Observation Length	120
Last Modified	19/01/2022 08:03:58	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	59
First Data Page	*
Max Obs per Page	545
Obs in First Data Page	525
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\gdm.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	4MB
File Size (bytes)	3932160

Alphabetic List of Variables and Attributes

#	Variable	Type	Len	Format	Informat	Label
*	PNR	Char	12	\$12.	\$10.	Personnummer
*	doGDM1	Num	8	DATE9.		
*	doGDM2	Num	8	DATE9.		
4	doGDM3	Num	8	DATE9.		
5	doGDM4	Num	8	DATE9.		
6	doGDM5	Num	8	DATE9.		
7	doGDM6	Num	8	DATE9.		
8	doGDM7	Num	8	DATE9.		
9	doGDM8	Num	8	DATE9.		
10	doGDM9	Num	8	DATE9.		
11	doGDM10	Num	8	DATE9.		
12	doGDM11	Num	8	DATE9.		
13	doGDM12	Num	8	DATE9.		
14	doGDM13	Num	8	DATE9.		

The recorded dates of Gestational diabetes

07:56 Wednesday, January 19, 2022 10

```

-----
N
-----
doGDM1
1986      *
1987      110
1988      172
1989      248
1990      200
1991      207
1992      218
1993      344
1994      463
1995      505
1996      755
1997      654
1998      660
1999      624
2000      617
2001      592
2002      673
2003      910
2004      1,065
2005      1,113
2006      1,223
2007      1,324
2008      1,561
2009      1,584
2010      1,463
2011      1,595
2012      1,479
2013      1,607
2014      1,729
2015      1,985
2016      2,168
2017      2,207
2018      2,070
All       32,127
doGDM2    10,026
doGDM3    2,164
doGDM4     618
doGDM5    135
doGDM6     40
doGDM7     13
doGDM8      5
doGDM9     *
doGDM10    *

```

doGDM11 *

DM diagnoses from NPR (no. of records)

07:56 Wednesday, January 19, 2022 11

	nrpty		
	T1	T2	Tx
	N	N	N
All	845,644	1565785	184,615
C_DIAG			
24900 DIABETES MELLITUS,INSULINO DEPENDENTE,SINE COMPLICATIONE	9,079	.	.
24901 CATARACTA,RETINOPATHIA DIABETICA INSULINO DEPENDENTE	6,313	.	.
24902 NEPHROPATHIA DIABETICA,SYNDR. KIMMELSTIEL-WILSON,INSUL.DEPEN.	2,330	.	.
24903 NEUROPATHIA,POLYNEURITIS DIABETICA,INSULINO DEPENDENTE	1,880	.	.
24904 ANGIOPATHIA DIABETICA EXTREMITATUM,INSULINO DEPENDENTE	289	.	.
24905 GANGRAENA DIABETICA, INSULINO DEPENDENTE	808	.	.
24906 COMA DIABETICUM SINE KETONURIA,INSULINO DEPENDENTE	94	.	.
24907 COMA(INCL.PRAECOMA)DIABETICUM,INSULINO DEPENDENTE	1,728	.	.
24908 DIABETES MELLITUS,INSULINO DEPENDENTE,CUM COMPL.ALIA DEFIN.	2,982	.	.
24909 DIABETES MELLITUS,INSULINO DEPENDENTE	32,405	.	.
25000 DIABETES MELLITUS,INSULINO INDEPENDENTE,SINE COMPLICATIONE	.	34,615	.
25001 CATARACTA,RETINOPATHIA DIABETICA,INSULINO INDEPENDENTE	.	11,192	.
25002 NEPHROPATHIA DIAB.,SYNDR.KIMMELSTIEL-WILSON,INSULINO INDEP	.	2,464	.
25003 NEUROPATHIA,POLYNEURITIS DIABETICA,INSULINO INDEPENDENTE	.	3,921	.
25004 ANGIOPATHIA DIABETICA EXTREMITATUM,INSULINO INDEPENDENTE	.	353	.
25005 GANGRAENA DIABETICA,INSULINO INDEPENDENTE	.	926	.
25006 COMA DIABETICUM SINE KETONURIA,INSULINO INDEPENDENTE	.	163	.
25007 COMA(INCL.PRAECOMA)DIABETICUM, INSULINO INDEPENDENTE	.	3,093	.
25008 DIABETES MELLITUS,INSULINO INDEPENDENTE,CUM COMPL.ALIA DEFI	.	5,486	.
25009 DIABETES MELLITUS, INSULINO INDEPENDENTE	.	87,725	.
DE10 Type 1-diabetes	2,126	.	.
DE100 Type 1-diabetes med koma	6,234	.	.
DE100A Coma diabeticum, hyperosmolær ved IDDM	38	.	.
DE100B Coma diabeticum ved IDDM med ketoacidose	447	.	.
DE100C Coma diabeticum ved IDDM uden ketoacidose	37	.	.
DE100D Coma diabeticum, hyperglykæmisk ved IDDM	97	.	.
DE100E Coma diabeticum, hypoglykæmisk ved IDDM	538	.	.
DE100F Diabetes mellitus insulino dependente med coma diabeticum	557	.	.
DE101 Type 1-diabetes med ketoacidose	27,260	.	.
DE102 Type 1-diabetes med nyrekompikation	45,063	.	.
DE103 Type 1-diabetes med øjenkompikation	48,683	.	.
DE104 Type 1-diabetes med neurologisk kompikation	26,322	.	.
DE105 Type 1-diabetes med kompikationer i perifere karsystem	31,825	.	.
DE105A Type 1-diabetes med perifer angiopati	420	.	.
DE105B Type 1-diabetes med fodsår	6,974	.	.
DE105C Type 1-diabetes med gangræn	1,703	.	.
DE105D Type 1-diabetes med mikroangiopati	138	.	.
DE106 Type 1-diabetes med anden kompikation	8,865	.	.
DE107 Type 1-diabetes med multiple kompikationer	61,292	.	.
DE108 Type 1-diabetes med kompikation UNS	84,496	.	.
DE109 Type 1-diabetes uden kompikationer	400,877	.	.
DE109A Type 1-diabetes UNS	33,744	.	.
DE11 Type 2-diabetes	.	1,588	.
DE110 Type 2-diabetes med koma	.	10,206	.
DE110A Coma diabeticum ved NIDDM uden ketoacidose	.	48	.
DE110B Coma diabeticum, hypoglykæmisk ved NIDDM	.	214	.
DE110C Coma diabeticum, hyperosmolær ved NIDDM	.	70	.
DE110D Coma diabeticum, hyperglykæmisk ved NIDDM	.	51	.
DE110E Coma diabeticum ved NIDDM med ketoacidose	.	62	.
DE111 Type 2-diabetes med ketoacidose	.	4,478	.

DE112	Type 2-diabetes med nyrekomplikation	. 75,428	.
DE113	Type 2-diabetes med øjenkomplikation	. 33,366	.
DE114	Type 2-diabetes med neurologisk komplikation	. 49,968	.
DE115	Type 2-diabetes med komplikationer i perifere karsystem	. 45,784	.
DE115A	Type 2-diabetes med perifer angiopati	. 1,140	.
DE115B	Type 2-diabetes med fodsår	. 22,819	.
DE115C	Type 2-diabetes med gangræn	. 2,569	.
DE115D	Type 2-diabetes med mikroangiopati	. 436	.
DE116	Type 2-diabetes med anden komplikation	. 20,410	.
DE117	Type 2-diabetes med multiple komplikationer	. 71,847	.
DE118	Type 2-diabetes med komplikation UNS	. 161,473	.
DE119	Type 2-diabetes uden komplikationer	. 774,759	.
DE119A	Type 2-diabetes UNS	. 139,131	.
DE12	Diabetes forårsaget af underernæring	.	9
DE120	Diabetes forårsaget af underernæring med koma	.	473
DE120A	Coma diabeticum, hyperglykæmisk ved diab mell malnutritioni	.	12
DE120B	Coma diabeticum, hypoglykæmisk ved diab mell malnutritionis	.	10
DE120C	Coma diabeticum ved diab mell malnutrit med ketoacidose	.	*
DE120E	Coma diabeticum, hyperosmolær ved diab mell malnutritionis	.	*
DE121	Diabetes forårsaget af underernæring med ketoacidose	.	209
DE122	Diabetes forårsaget af underernæring med nyrekomplikation	.	343
DE123	Diabetes forårsaget af underernæring med øjenkomplikation	.	142
DE124	Diabetes f.a. underernæring med neurologisk komplikation	.	177
DE125	Diabetes f.a. underernæring med kompl. i perifere karsystem	.	600
DE125A	Diabetes forårsaget af underernæring med perifer angiopati	.	5
DE125B	Diabetes forårsaget af underernæring med fodsår	.	76
DE125C	Diabetes forårsaget af underernæring med gangræn	.	59
DE125D	Diabetes forårsaget af underernæring med mikroangiopati	.	*
DE126	Diabetes forårsaget af underernæring med anden komplikation	.	87
DE127	Diabetes f.a. underernæring med multiple komplikationer	.	275
DE128	Diabetes forårsaget af underernæring med komplikation UNS	.	408
DE129	Diabetes forårsaget af underernæring uden komplikationer	.	962
DE13	Andre former for diabetes	.	68
DE130	Anden diabetes med koma	.	196
DE131	Anden diabetes med ketoacidose	.	884
DE132	Anden diabetes med nyrekomplikation	.	1,055
DE133	Anden diabetes med øjenkomplikationer	.	4,037
DE134	Anden diabetes med neurologisk komplikation	.	741
DE135	Anden diabetes med komplikationer i perifere karsystem	.	472
DE135A	Anden diabetes med perifer angiopati	.	10
DE135B	Anden diabetes med fodsår	.	427
DE135C	Anden diabetes med gangræn	.	116
DE135D	Anden diabetes med mikroangiopati	.	31
DE136	Anden diabetes med anden komplikation	.	454
DE137	Anden diabetes med multiple komplikationer	.	821
DE138	Anden diabetes med komplikation UNS	.	1,853
DE139	Anden diabetes uden komplikationer	.	11,009
DE14	Ikke spec. diabetes	.	625
DE140	Diabetes UNS med koma	.	1,267
DE140A	Coma diabeticum ved diabetes mellitus uden specifikation	.	71
DE140B	Coma diabeticum, hyperglykæmisk ved diab mell uden specifik	.	12
DE140C	Coma diabeticum, hyperosmolær ved diab mell uden specifik	.	24
DE140D	Coma diabeticum, hypoglykæmisk ved diab mell uden specifik	.	23
DE141	Diabetes UNS med ketoacidose	.	4,064
DE142	Diabetes UNS med nyrekomplikation	.	3,515
DE143	Diabetes UNS med øjenkomplikation	.	4,268
DE144	Diabetes UNS med neurologisk komplikation	.	6,058

DE145	Diabetes UNS med komplikationer i perifere karsystem	.	.	9,077
DE145A	Diabetes UNS med perifer angiopati	.	.	94
DE145B	Diabetes UNS med fodsår	.	.	6,003
DE145C	Diabetes UNS med gangræn	.	.	1,066
DE145D	Diabetes UNS med mikroangiopati	.	.	87
DE146	Diabetes UNS med anden komplikation	.	.	1,661
DE147	Diabetes UNS med multiple komplikationer	.	.	2,885
DE148	Diabetes UNS med komplikation UNS	.	.	33,886
DE149	Diabetes UNS uden komplikationer	.	.	83,903

DM diagnoses from NPR (no. of records)

07:56 Wednesday, January 19, 2022 12

nprtyp						

	T1		T2		Tx	
	N	PctN	N	PctN	N	PctN

All	845,644	32.6	1,565,785	60.3	184,615	7.1
D_INDDTO						
1941	*	100.0	.	.	.	.
1968	*	100.0	.	.	.	.
1970	*	100.0	.	.	.	.
1971	*	100.0	.	.	.	.
1972	9	100.0	.	.	.	.
1973	22	91.7	*	*	.	.
1974	18	94.7	*	5.3	.	.
1975	16	80.0	*	15.0	*	5.0
1976	20	18.0	91	82.0	.	.
1977	10	0.2	5,190	99.8	.	.
1978	23	0.4	6,454	99.6	.	.
1979	30	0.4	7,010	99.6	.	.
1980	34	0.4	7,860	99.6	*	0.0
1981	31	0.4	8,367	99.6	.	.
1982	27	0.3	9,161	99.7	.	.
1983	59	0.6	9,552	99.4	.	.
1984	46	0.4	11,105	99.6	*	0.0
1985	72	0.5	13,053	99.4	4	0.0
1986	260	1.9	13,551	98.1	6	0.0
1987	6,437	46.2	7,506	53.8	*	0.0
1988	7,725	52.5	6,971	47.4	12	0.1
1989	8,721	54.3	7,316	45.6	24	0.1
1990	9,051	53.2	7,921	46.6	29	0.2
1991	10,225	53.2	8,969	46.7	28	0.1
1992	10,943	51.1	10,403	48.6	60	0.3
1993	22,436	56.6	16,794	42.4	391	1.0
1994	18,912	48.3	18,072	46.2	2,145	5.5
1995	21,546	46.4	22,387	48.2	2,522	5.4
1996	23,509	43.4	27,437	50.6	3,231	6.0
1997	24,509	42.6	29,096	50.6	3,932	6.8
1998	25,186	40.8	32,469	52.6	4,093	6.6
1999	29,714	40.6	38,733	52.9	4,761	6.5
2000	31,706	38.9	44,854	55.0	5,006	6.1
2001	32,953	38.3	47,736	55.5	5,362	6.2
2002	34,352	37.7	51,074	56.1	5,637	6.2
2003	35,048	35.3	56,510	57.0	7,591	7.7
2004	36,254	36.2	56,351	56.2	7,617	7.6
2005	42,237	37.7	62,307	55.6	7,606	6.8
2006	36,321	34.8	60,648	58.1	7,436	7.1
2007	32,340	33.6	54,867	56.9	9,142	9.5
2008	38,951	35.0	62,930	56.6	9,331	8.4
2009	37,063	33.9	63,630	58.1	8,753	8.0
2010	33,862	32.6	61,067	58.8	8,861	8.5
2011	37,202	33.3	65,718	58.8	8,912	8.0
2012	30,477	27.5	69,923	63.0	10,537	9.5
2013	32,663	25.5	83,496	65.2	11,858	9.3
2014	24,028	22.8	70,634	67.1	10,541	10.0
2015	33,923	25.9	87,331	66.7	9,625	7.4

2016	24,218	21.5	78,063	69.2	10,605	9.4
2017	30,982	23.9	88,216	68.2	10,198	7.9
2018	21,465	20.4	74,956	71.3	8,752	8.3

NPR - one record per person in NPR with DM diagnosis

13
07:56 Wednesday, January 19, 2022

	NPR type of DM		
	T1	T2	Tx
	N	N	N
1st			
NPR			
date			
1941	.	.	*
1968	*	.	.
1970	*	.	.
1971	*	.	.
1972	6	*	*
1973	16	*	.
1974	15	*	*
1975	15	.	*
1976	61	33	8
1977	2,253	828	162
1978	1,842	813	139
1979	1,494	909	135
1980	1,377	1,005	117
1981	1,168	957	131
1982	1,226	1,191	114
1983	1,153	1,240	122
1984	1,172	1,372	141
1985	1,198	1,599	148
1986	1,273	1,611	180
1987	1,213	1,822	157
1988	1,241	1,838	170
1989	1,263	2,041	214
1990	1,343	2,235	200
1991	1,369	2,603	205
1992	1,475	2,860	234
1993	1,978	3,832	365
1994	2,017	4,478	512
1995	1,970	5,150	503
1996	2,075	6,022	590
1997	2,129	6,231	631
1998	2,284	7,114	672
1999	2,184	7,700	768
2000	2,399	8,574	844
2001	2,423	9,073	841
2002	2,489	9,543	907
2003	2,498	10,408	1,013
2004	2,448	10,479	1,000
2005	2,419	10,486	984
2006	2,433	10,473	1,060
2007	2,332	10,508	1,056
2008	2,319	10,414	1,080
2009	2,271	10,702	1,050
2010	2,368	11,410	1,025
2011	2,248	11,907	1,110
2012	2,037	12,004	1,243
2013	2,026	11,626	1,298
2014	1,912	11,194	1,247
2015	1,985	11,080	1,082
2016	1,824	11,602	1,114
2017	1,469	11,341	1,232
2018	1,262	9,752	1,253

NPR - one record per person in NPR with DM diagnosis

14

07:56 Wednesday, January 19, 2022

The CONTENTS Procedure

Data Set Name	DMDAT.NPR	Observations	373106
Member Type	DATA	Variables	5
Engine	V9	Indexes	0
Created	19/01/2022 08:04:07	Observation Length	40
Last Modified	19/01/2022 08:04:07	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	229
First Data Page	*
Max Obs per Page	1632
Obs in First Data Page	1593
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\npr.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	14MB
File Size (bytes)	15073280

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	PNR	Char	12	\$12.	\$10.	Personnummer
2	doNPR	Num	8	DATE9.	DATE9.	1st NPR date
3	doNPR2	Num	8	DATE9.	DATE9.	2nd NPR date
4	nprtyp	Char	*			NPR type of DM
5	lastNPR	Num	8	DATE9.	DATE9.	D_INDDTO

4.8 02-dvdd

The DVDD contains annual records for diabetes patients, mostly from out-patient clinics, but (eventually, but not yet) also from GPs. There records contain type and date of diagnosis. The program chooses the earliest reported date of diagnosis and the classification as T1 or T2 if reported more than half of the times (`dvdtyp`). This may be missing if neither occur in more than half of the records for a given person.

Uses the GDM dates to exclude possible inclusion dates in GDM grace periods.

1 "Program: 02-dvdd.sas" 10:13 Friday, January 21, 2022

NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.

NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)

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NOTE: This session is executing on the X64_SR12R2 platform.

NOTE: Updated analytical products:

SAS/STAT 14.3

NOTE: Additional host information:

X64_SR12R2 WIN 6.3.9600 Server

NOTE: SAS initialization used:

real time 0.10 seconds
cpu time 0.14 seconds

NOTE: AUTOEXEC processing beginning; file is
E:\workdata\707655\DMreg2020\sas\optslibs.sas.

NOTE: AUTOEXEC processing completed.

```
1      proc sort  data = ekstn.else_dvdd /* opdateret datasæt (LDIA/PFR)*/
2          out = dvdd ( keep = cpr_nr status_dato diag_dato diag_type );
3      by cpr_nr status_dato diag_dato diag_type ;
4      run ;
```

NOTE: There were 1072208 observations read from the data set EKSTN.ELSE_DVDD.

NOTE: The data set WORK.DVDD has 1072208 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 9.29 seconds
cpu time 2.51 seconds

```
5
6      * check number of *persons* in the data set ;
7      proc sort data = dvdd out = pers nodupkey ;
8          by cpr_nr ;
9      run ;
```

NOTE: There were 1072208 observations read from the data set WORK.DVDD.

NOTE: 796638 observations with duplicate key values were deleted.

NOTE: The data set WORK.PERS has 275570 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 0.17 seconds
cpu time 0.35 seconds

```
10
11     * check values of diag_type ;
12     proc tabulate data = dvdd missing noseps ;
13         class diag_type ;
14         table diag_type, n * f=comma12. / rts = 20 ;
15     run ;
```

NOTE: There were 1072208 observations read from the data set WORK.DVDD.

NOTE: The PROCEDURE TABULATE printed page 1.

NOTE: PROCEDURE TABULATE used (Total process time):

real time 0.11 seconds
cpu time 0.17 seconds

```
16
17     * only persons in base and included before end-date
18     and not in GDM grace period ;
19     options mprint ;
20     data dvdd ;
21         merge dvdd ( in = dvdd rename = (cpr_nr = pnr) )
22             DMdat.pop ( in = pop )
23             DMdat.GDM ;
24     by pnr ;
25     if pop and dvdd ;
26
```



```

27      * remove status records after the end date ;
28      if status_dato > &end. then delete ;
29
30      * remove records with diag_type '-Ingen-' ;
31      if diag_type eq "-Ingen-" then delete ;
32
33      * do not count diagnosis dates in the GDM grace period ;
34      %xgdm(diag_dato) ;
MPRINT(XGDM):  if ( doGDM1 - 280 ) < diag_dato < ( doGDM1 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM2 - 280 ) < diag_dato < ( doGDM2 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM3 - 280 ) < diag_dato < ( doGDM3 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM4 - 280 ) < diag_dato < ( doGDM4 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM5 - 280 ) < diag_dato < ( doGDM5 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM6 - 280 ) < diag_dato < ( doGDM6 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM7 - 280 ) < diag_dato < ( doGDM7 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM8 - 280 ) < diag_dato < ( doGDM8 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM9 - 280 ) < diag_dato < ( doGDM9 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM10 - 280 ) < diag_dato < ( doGDM10 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM11 - 280 ) < diag_dato < ( doGDM11 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM12 - 280 ) < diag_dato < ( doGDM12 + 280 ) then delete ;
35      run ;

```

NOTE: Missing values were generated as a result of performing an operation on missing values.

Each place is given by: (Number of times) at (Line):(Column).

1039774 at 34:18	1039774 at 34:54	1059191 at 34:20	1059191 at 34:56
1064881 at 34:20	1064881 at 34:56	1066166 at 34:20	1066166 at 34:56
1066464 at 34:20	1066464 at 34:56	1066573 at 34:20	1066573 at 34:56
1066584 at 34:20	1066584 at 34:56	1066586 at 34:20	1066586 at 34:56
1066586 at 34:20	1066586 at 34:56	1066586 at 34:20	1066586 at 34:56
1066586 at 34:20	1066586 at 34:56	1066586 at 34:20	1066586 at 34:56

NOTE: There were 1072208 observations read from the data set WORK.DVDD.

NOTE: There were 8298837 observations read from the data set DMDAT.POP.

NOTE: There were 32127 observations read from the data set DMDAT.GDM.

NOTE: The data set WORK.DVDD has 1066586 observations and 20 variables.

NOTE: DATA statement used (Total process time):

real time	4.65 seconds
cpu time	3.70 seconds

```

36
37      * clean out multiple status dates and return a date of diagnosis ;
38      data DMdat.dvdd (keep = pnr doDVDD dvdtyp lastDVDD
39                    label = "DVDD status and -date") ;
40      set dvdd      (keep = pnr status_dato diag_dato diag_type) ;
41      by pnr status_dato diag_dato ;
42
43      * use only the first among identical status dates within each person ;
44      if first.status_dato ;
45
46      * set the revised DM date to the earlier of diag_dato and
47      status_dato across all records for each person ;
48      retain doDVDD ;
49      if first.pnr then doDVDD = min(          diag_dato, status_dato) ;
50      else doDVDD = min(doDVDD, diag_dato, status_dato) ;
51
52      * output one record per person ;
53      if last.pnr then do ;
54      * Type classification: diag_type from last status record ;
55      if substr( diag_type, 1, 2 ) eq "Ty"
56      then dvdtyp = "T" || substr( diag_type, 6, 1 ) ;
57      else dvdtyp = "Tx" ; * "Anden type" ;
58
59      * last date of meeting the dvdd criterion ;
60      lastDVDD = status_dato ;
61      output DMdat.dvdd ;
62      end ;
63      run ;

```

NOTE: There were 1066586 observations read from the data set WORK.DVDD.

NOTE: The data set DMDAT.DVDD has 270016 observations and 4 variables.
 NOTE: DATA statement used (Total process time):
 real time 0.41 seconds
 cpu time 0.31 seconds

```
64
65     title1 'Seasonality of DVDD dates' ;
66     data dvdd ;
67     set DMdat.dvdd ;
68     moDVDD = put( doDVDD, month. ) ;
69     run ;
```

NOTE: There were 270016 observations read from the data set DMDAT.DVDD.
 NOTE: The data set WORK.DVDD has 270016 observations and 5 variables.
 NOTE: DATA statement used (Total process time):
 real time 0.11 seconds
 cpu time 0.06 seconds

```
70
71     proc tabulate data = dvdd missing noseps order=fmt ;
72         class moDVDD doDVDD ;
73         table all doDVDD="Date",
74             all * f=comma7.
75             moDVDD * f=5.
76             / rts=6 ;
77         table all doDVDD="Date",
78             all * pctn<all doDVDD>* f=5.1
79             moDVDD * pctn<all doDVDD * moDVDD>* f=5.1
80             / rts=6 ;
81         format doDVDD day. ;
82     run ;
```

NOTE: There were 270016 observations read from the data set WORK.DVDD.
 NOTE: At least one W.D format was too small for the number to be printed. The decimal may be shifted by the "BEST" format.
 NOTE: The PROCEDURE TABULATE printed pages 2-3.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.05 seconds
 cpu time 0.06 seconds

```
83
84     title1 'Range of DVDD dates' ;
85     proc tabulate data = DMdat.dvdd missing noseps ;
86         class doDVDD dvdtyp ;
87         table all doDVDD,
88             ( all dvdtyp ) * f=comma8.
89             / rts = 10 ;
90         format doDVDD year4. ;
91     run ;
```

NOTE: There were 270016 observations read from the data set DMDAT.DVDD.
 NOTE: The PROCEDURE TABULATE printed page 4.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.05 seconds
 cpu time 0.09 seconds

```
92     proc tabulate data = DMdat.dvdd missing noseps ;
93         where doDVDD ge '01Jan2018'd ;
94         class doDVDD dvdtyp ;
95         table all doDVDD,
96             ( all dvdtyp ) * f=comma8.
97             / rts = 10 ;
98         format doDVDD yyms8. ;
99     run ;
```

NOTE: There were 27554 observations read from the data set DMDAT.DVDD.

```
WHERE doDVDD>='01JAN2018'D;
NOTE: The PROCEDURE TABULATE printed page 5.
NOTE: PROCEDURE TABULATE used (Total process time):
      real time      0.03 seconds
      cpu time       0.03 seconds
```

```
100
101      title1 ;
102      proc contents data = DMdat.dvdd varnum ;
103      run ;
```

```
NOTE: PROCEDURE CONTENTS used (Total process time):
      real time      0.01 seconds
      cpu time       0.01 seconds
```

NOTE: The PROCEDURE CONTENTS printed page 6.

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414

```
NOTE: The SAS System used:
      real time      15.16 seconds
      cpu time       7.49 seconds
```

4.8.1 02-dvdd.lst

The SAS System 10:13 Friday, January 21, 2022 1

```
-----
                          N
-----
Diabetestype
-Ingen-                      84
Anden type                   20,331
Type 1                       263,377
Type 2                       788,416
-----
```

Seasonality of DVDD dates 10:13 Friday, January 21, 2022 2

```
-----
                          moDVDD
-----
      All      1      2      3      4      5      6      7      8      9      10      11      12
-----
      N        N        N        N        N        N        N        N        N        N        N        N        N
-----
All 270,016 82445 8338 9265 8126 8949 118E3 4950 5577 6591 6388 6059 5136
Date
1   88,663 74784 964 1026 806 1024 5871 789 621 602 786 696 694
2   2,365 177 269 270 176 303 240 131 92 123 206 185 193
3   2,423 170 216 225 269 307 260 154 95 197 229 131 170
4   2,640 186 236 236 341 225 322 178 85 248 232 145 206
5   2,362 183 267 292 238 250 88 155 80 257 186 177 189
6   2,697 208 319 312 184 260 395 151 85 224 176 194 189
7   2,572 201 286 309 190 295 319 99 129 178 169 188 209
8   2,618 233 247 299 222 275 338 99 144 165 210 209 177
9   2,608 265 248 269 226 311 274 118 146 180 226 174 171
10  2,572 263 205 243 278 224 281 108 130 229 290 137 184
11  2,685 228 223 258 353 235 350 134 103 220 220 158 203
12  2,623 197 243 287 297 168 369 126 128 220 202 184 202
13  2,708 234 233 355 230 224 395 120 194 226 123 187 187
14  2,522 262 209 322 203 260 371 92 185 197 112 161 148
15  110,383 626 606 684 478 602 105E3 1057 329 337 306 331 367
16  2,416 315 183 267 269 276 203 97 191 154 132 163 166
-----
```

17	2,329	255	181	204	210	255	222	106	203	207	151	142	193
18	2,505	255	224	263	277	230	242	113	148	245	136	184	188
19	2,558	239	292	288	304	214	263	95	125	243	110	173	212
20	2,599	238	296	308	235	172	303	89	184	243	139	229	163
21	2,447	249	275	317	151	197	297	79	206	198	113	200	165
22	2,510	245	268	276	134	327	265	70	234	166	194	196	135
23	2,466	280	245	228	260	309	206	75	185	157	208	229	84
24	2,253	286	217	148	275	257	182	86	201	215	209	160	17
25	2,330	262	265	203	281	203	250	99	124	246	215	169	13
26	2,443	258	324	264	258	207	274	95	169	224	179	180	11
27	2,423	259	318	266	216	228	252	77	191	226	142	176	72
28	2,554	269	361	247	226	232	280	63	219	203	177	204	73
29	2,156	256	118	179	216	266	200	95	230	131	206	186	73
30	2,245	285	.	200	323	305	220	91	220	130	198	211	62
31	1,341	277	.	220	.	308	.	109	201	.	206	.	20

Seasonality of DVDD dates

10:13 Friday, January 21, 2022 3

All Date	moDVDD												
	All	1	2	3	4	5	6	7	8	9	10	11	12
	PctN	PctN	PctN	PctN	PctN	PctN	PctN	PctN	PctN	PctN	PctN	PctN	PctN
1	100.0	27.7	0.4	0.4	0.3	0.4	2.2	0.3	0.2	0.2	0.3	0.3	0.3
2	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
3	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1
4	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
5	100.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1
6	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
7	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1
8	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
9	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
10	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1
11	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1
12	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1
13	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1
14	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1
15	100.0	0.2	0.2	0.3	0.2	0.2	38.8	0.4	0.1	0.1	0.1	0.1	0.1
16	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1
17	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
18	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
19	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1
20	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
21	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1
22	100.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
23	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
24	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
25	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0
26	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
27	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
28	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
29	100.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0
30	100.0	0.1	.	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0
31	100.0	0.1	.	0.1	.	0.1	.	0.0	0.1	.	0.1	.	0.0

Range of DVDD dates

10:13 Friday, January 21, 2022 4

All	dvdtyp		
	T1	T2	Tx
	N	N	N

All	270,016	30,620	235,002	4,394
doDVDD				
1890	*	.	*	.
1899	*	.	*	.
1900	56	9	4*	*
1901	*	.	*	.
1903	*	.	*	.
1905	*	.	*	.
1907	*	.	*	.
1909	*	.	.	*
1910	*	.	*	.
1920	10	*	5	*
1922	*	.	*	.
1923	*	.	*	.
1927	*	*	*	.
1931	*	.	*	.
1933	*	*	.	.
1934	*	*	*	.
1936	*	.	*	.
1937	*	*	*	.
1938	*	*	.	.
1939	5	*	*	.
1940	7	4	*	.
1941	6	4	*	.
1942	8	7	*	.
1943	4	*	*	.
1944	1*	10	*	.
1945	18	16	*	.
1946	14	12	*	.
1947	2*	18	4	*
1948	3*	29	*	.
1949	2*	23	*	.
1950	46	35	11	.
1951	41	36	5	.
1952	42	31	11	.
1953	48	43	5	.
1954	5*	46	7	*
1955	8*	64	18	*
1956	12*	118	9	*
1957	92	83	9	.
1958	11*	105	13	*
1959	11*	98	11	*
1960	20*	165	34	*
1961	17*	161	10	*
1962	19*	167	23	*
1963	20*	177	22	*
1964	197	164	29	4
1965	22*	183	42	*
1966	21*	175	40	*
1967	23*	204	29	*
1968	223	187	32	4
1969	26*	220	46	*
1970	449	301	138	10
1971	32*	267	51	*
1972	43*	323	108	*
1973	37*	289	83	*
1974	41*	322	93	*
1975	512	308	200	4
1976	47*	344	126	*
1977	497	342	148	7
1978	647	425	215	7
1979	571	390	174	7
1980	1,166	508	643	15
1981	661	421	235	5
1982	852	437	405	10
1983	845	427	406	12
1984	891	431	456	4
1985	1,428	455	961	12
1986	1,139	486	640	13
1987	1,254	485	754	15

1988	1,400	485	896	19
1989	1,359	487	850	22
1990	3,139	654	2,451	34
1991	1,713	537	1,145	31
1992	2,442	571	1,846	25
1993	2,323	549	1,743	31
1994	2,640	634	1,969	37
1995	4,475	649	3,779	47
1996	3,526	651	2,837	38
1997	3,703	675	2,977	51
1998	5,005	684	4,275	46
1999	4,795	647	4,096	52
2000	9,309	818	8,388	103
2001	6,388	797	5,514	77
2002	7,080	685	6,312	83
2003	7,937	691	7,155	91
2004	8,996	750	8,135	111
2005	10,171	716	9,327	128
2006	10,333	773	9,409	151
2007	11,332	754	10,435	143
2008	13,291	758	12,359	174
2009	13,398	746	12,457	195
2010	15,297	730	14,361	206
2011	17,234	659	16,376	199
2012	13,789	662	12,911	216
2013	10,983	618	10,146	219
2014	8,519	545	7,743	231
2015	7,628	504	6,923	201
2016	8,857	509	8,121	227
2017	9,330	534	8,530	266
2018	15,727	594	14,848	285
2019	7,934	528	7,166	240
2020	3,893	454	3,189	250

Range of DVDD dates

10:13 Friday, January 21, 2022 5

	dvdtyp			
	All	T1	T2	Tx
	N	N	N	N
All	27,554	1,576	25,203	775
doDVDD				
2018/01	2,398	238	2,051	109
2018/02	1,125	29	1,084	12
2018/03	1,333	37	1,274	22
2018/04	1,311	32	1,266	13
2018/05	1,566	35	1,515	16
2018/06	1,647	37	1,582	28
2018/07	743	17	710	16
2018/08	1,249	29	1,206	14
2018/09	1,437	40	1,383	14
2018/10	1,376	33	1,329	14
2018/11	904	38	850	16
2018/12	638	29	598	11
2019/01	2,169	200	1,889	80
2019/02	691	33	647	11
2019/03	684	30	639	15
2019/04	570	27	524	19
2019/05	619	31	567	21
2019/06	508	33	463	12
2019/07	349	22	316	11
2019/08	462	38	411	13
2019/09	542	29	500	13
2019/10	485	25	444	16
2019/11	448	32	405	11
2019/12	407	28	361	18

2020/01	1,259	100	1,106	53
2020/02	403	33	352	18
2020/03	357	27	311	19
2020/04	267	38	209	20
2020/05	298	38	236	24
2020/06	215	49	138	28
2020/07	117	25	75	17
2020/08	241	65	163	13
2020/09	205	19	177	9
2020/10	197	28	155	14
2020/11	185	17	153	15
2020/12	149	15	114	20

10:13 Friday, January 21, 2022 6

The CONTENTS Procedure

Data Set Name	DMDAT.DVDD	Observations	270016
Member Type	DATA	Variables	4
Engine	V9	Indexes	0
Created	21/01/2022 10:13:26	Observation Length	48
Last Modified	21/01/2022 10:13:26	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label	DVDD status and -date		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	199
First Data Page	*
Max Obs per Page	1361
Obs in First Data Page	1331
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\dvdd.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	13MB
File Size (bytes)	13107200

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	pnr	Char	12	\$12.	\$10.	Personnummer
2	doDVDD	Num	8			
3	dvdtyp	Char	20			
4	lastDVDD	Num	8			

4.9 03-nhsr

Extracts dates of foot therapy from the National Health Services Register.

Uses the GDM dates to exclude possible inclusion dates in GDM grace periods.

1 "Program: 03-nhsr.sas" 10:46 Friday, January 21, 2022

NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.
 NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)
 Licensed to FORSKNING 2, Site 50800723.

NOTE: This session is executing on the X64_SR12R2 platform.

NOTE: Updated analytical products:

SAS/STAT 14.3

NOTE: Additional host information:

X64_SR12R2 WIN 6.3.9600 Server

NOTE: SAS initialization used:

real time 0.09 seconds
cpu time 0.09 seconds

NOTE: AUTOEXEC processing beginning; file is
E:\workdata\707655\DMreg2020\sas\optslibs.sas.

NOTE: AUTOEXEC processing completed.

```

1      %macro getssy ;
2      data foot ( keep = pnr doP speciale ) ;
3          set %do i = 1990 %to 2005 ;
4              grund.sysi&i. ( keep = pnr speciale honuge )
5          %end ;
6          %do i = 2005 %to 2020 ; /* changed from 2018 (LDIA/PFR)*/
7              grund.sssy&i. ( keep = pnr speciale honuge )
8          %end ; ;
9          if substr( speciale, 1, 2 ) eq '54' ;
10         yr = input( substr( honuge, 1, 2 ), 2. ) ;
11         wk = input( substr( honuge, 3, 2 ), 2. ) ;
12         doP = ( 1900 + yr + 100 * (yr<50) - 1960 ) * 365.25 + wk * 7 ;
13     run ;
14     %mend ;
15
16     %getssy ;

```

NOTE: There were 133344 observations read from the data set GRUND.SYSI1990.
NOTE: There were 145830 observations read from the data set GRUND.SYSI1991.
NOTE: There were 162331 observations read from the data set GRUND.SYSI1992.
NOTE: There were 175648 observations read from the data set GRUND.SYSI1993.
NOTE: There were 193396 observations read from the data set GRUND.SYSI1994.
NOTE: There were 219430 observations read from the data set GRUND.SYSI1995.
NOTE: There were 239616 observations read from the data set GRUND.SYSI1996.
NOTE: There were 263392 observations read from the data set GRUND.SYSI1997.
NOTE: There were 289082 observations read from the data set GRUND.SYSI1998.
NOTE: There were 318830 observations read from the data set GRUND.SYSI1999.
NOTE: There were 278443 observations read from the data set GRUND.SYSI2000.
NOTE: There were 157321 observations read from the data set GRUND.SYSI2001.
NOTE: There were 361516 observations read from the data set GRUND.SYSI2002.
NOTE: There were 486671 observations read from the data set GRUND.SYSI2003.
NOTE: There were 537483 observations read from the data set GRUND.SYSI2004.
NOTE: There were 279213 observations read from the data set GRUND.SYSI2005.
NOTE: There were 279214 observations read from the data set GRUND.SSSY2005.
NOTE: There were 69820 observations read from the data set GRUND.SSSY2006.
NOTE: There were 74814 observations read from the data set GRUND.SSSY2007.
NOTE: There were 85976 observations read from the data set GRUND.SSSY2008.
NOTE: There were 97168 observations read from the data set GRUND.SSSY2009.
NOTE: There were 114076 observations read from the data set GRUND.SSSY2010.
NOTE: There were 405604 observations read from the data set GRUND.SSSY2011.
NOTE: There were 616974 observations read from the data set GRUND.SSSY2012.
NOTE: There were 709354 observations read from the data set GRUND.SSSY2013.
NOTE: There were 719588 observations read from the data set GRUND.SSSY2014.
NOTE: There were 727427 observations read from the data set GRUND.SSSY2015.
NOTE: There were 854129 observations read from the data set GRUND.SSSY2016.
NOTE: There were 887268 observations read from the data set GRUND.SSSY2017.
NOTE: There were 907382 observations read from the data set GRUND.SSSY2018.

NOTE: There were 902285 observations read from the data set GRUND.SSSY2019.
 NOTE: There were 828308 observations read from the data set GRUND.SSSY2020.
 NOTE: The data set WORK.FOOT has 10751229 observations and 3 variables.
 NOTE: DATA statement used (Total process time):
 real time 4.12 seconds
 cpu time 2.26 seconds

```
17
18           proc sort  data = foot  nodupkey ;  by pnr doP ;  run ;
```

NOTE: There were 10751229 observations read from the data set WORK.FOOT.
 NOTE: 3127030 observations with duplicate key values were deleted.
 NOTE: The data set WORK.FOOT has 7624199 observations and 3 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 1.73 seconds
 cpu time 4.23 seconds

```
19           data foot ;
20           merge foot ( in = f )
21           DMdat.GDM ;
22           by pnr ;
23           if f ;
24           %xgdm( dop ) ;
25           run ;
```

NOTE: Missing values were generated as a result of performing an operation on missing values.

Each place is given by: (Number of times) at (Line):(Column).

7556573 at 24:18	7556573 at 24:54	7605084 at 24:20	7605084 at 24:56
7618157 at 24:20	7618157 at 24:56	7620839 at 24:20	7620839 at 24:56
7621573 at 24:20	7621573 at 24:56	7621843 at 24:20	7621843 at 24:56
7621897 at 24:20	7621897 at 24:56	7621908 at 24:20	7621908 at 24:56
7621908 at 24:20	7621908 at 24:56	7621908 at 24:20	7621908 at 24:56
7621908 at 24:20	7621908 at 24:56	7621908 at 24:20	7621908 at 24:56

NOTE: There were 7624199 observations read from the data set WORK.FOOT.
 NOTE: There were 32127 observations read from the data set DMDAT.GDM.
 NOTE: The data set WORK.FOOT has 7621908 observations and 16 variables.
 NOTE: DATA statement used (Total process time):
 real time 9.37 seconds
 cpu time 8.79 seconds

```
26
27           title1 'Date of >>any<< podiatry' ;
28           proc tabulate  data = foot  noseps  missing ;
29           class doP ;
30           table all doP = 'doPod', n * f=comma10. / rts = 10 ;
31           format doP  year4. ;
32           run ;
```

NOTE: There were 7621908 observations read from the data set WORK.FOOT.
 NOTE: The PROCEDURE TABULATE printed page 1.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 1.71 seconds
 cpu time 2.31 seconds

```
33
34           data DMdat.foot (label = "Podiatry for diabetes pts.") ;
35           set foot ( keep = pnr doP speciale ) ;
36           by pnr doP ;
37           drop doP ;
38           retain doPod ;
39           if first.pnr then doPod = doP ;
40           if last.pnr then do ;
41           lastPod = doP ;
42           output ;
43           end ;
```

```

44          label doPod = 'Date of first podiatry'
45          lastPod = 'Date of last podiatry' ;
46          run ;

```

NOTE: There were 7621908 observations read from the data set WORK.FOOT.

NOTE: The data set DMDAT.FOOT has 312877 observations and 4 variables.

NOTE: DATA statement used (Total process time):

```

real time      2.37 seconds
cpu time       1.28 seconds

```

```

47
48          title1 'Date of >>first<< podiatry' ;
49          proc tabulate data = DMdat.foot noseps missing ;
50              class doPod ;
51              table all doPod, n * f=comma10. / rts = 10 ;
52              format doPod year4. ;
53          run ;

```

NOTE: There were 312877 observations read from the data set DMDAT.FOOT.

NOTE: The PROCEDURE TABULATE printed page 2.

NOTE: PROCEDURE TABULATE used (Total process time):

```

real time      0.08 seconds
cpu time       0.09 seconds

```

```

54
55          title1 ;
56          proc contents data = DMdat.foot varnum ; run ;

```

NOTE: PROCEDURE CONTENTS used (Total process time):

```

real time      0.01 seconds
cpu time       0.01 seconds

```

NOTE: The PROCEDURE CONTENTS printed page 3.

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414

NOTE: The SAS System used:

```

real time      19.60 seconds
cpu time       19.10 seconds

```

4.9.1 03-nhsr.lst

Date of >>any<< podiatry

10:46 Friday, January 21, 2022 1

```

-----
N
-----
All          7,621,908
doPod
1990         103,232
1991         113,116
1992         125,431
1993         134,816
1994         148,905
1995         167,940
1996         183,882
1997         204,348
1998         224,269
1999         249,138
2000         213,704
2001         106,521
2002         264,821
2003         356,730

```

2004	397,928
2005	205,618
2006	48,476
2007	50,670
2008	53,323
2009	53,581
2010	53,395
2011	218,655
2012	342,993
2013	387,075
2014	417,249
2015	435,589
2016	457,611
2017	475,237
2018	482,486
2019	490,414
2020	454,755

Date of >>first<< podiatry

10:46 Friday, January 21, 2022 2

```

-----
N
-----
All          312,877
Date of
first
podiatry
1990         19,122
1991         5,505
1992         5,704
1993         6,083
1994         6,752
1995         7,719
1996         7,902
1997         8,334
1998         9,000
1999         9,783
2000         8,007
2001         5,010
2002        16,089
2003        14,236
2004        14,357
2005         6,955
2006         1,458
2007         1,585
2008         1,597
2009         1,404
2010         1,882
2011        35,260
2012        18,513
2013        14,062
2014        12,455
2015        12,086
2016        12,558
2017        12,721
2018        13,009
2019        12,362
2020        11,367
-----

```

10:46 Friday, January 21, 2022 3

The CONTENTS Procedure

Data Set Name	DMDAT.FOOT	Observations	312877
Member Type	DATA	Variables	4
Engine	V9	Indexes	0
Created	21/01/2022 10:46:59	Observation Length	40
Last Modified	21/01/2022 10:46:59	Deleted Observations	0

Protection		Compressed	NO
Data Set Type		Sorted	NO
Label	Podiatry for diabetes pts.		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	192
First Data Page	*
Max Obs per Page	1632
Obs in First Data Page	1594
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\foot.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	12MB
File Size (bytes)	12648448

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	PNR	Char	12	\$12.	\$10.	Personnummer
2	SPECIALE	Char	6	\$6.	\$6.	6-cifret speciale
3	doPod	Num	8			Date of first podiatry
4	lastPod	Num	8			Date of last podiatry

4.10 04-rmps

Processes the records from the RMPS with other target medications and creates a file (pRMPS) with one record per person with at least one prescription of either OAD or insulin. Computes the first and second date of OAD, respectively insulin purchase.

Uses the GDM dates to exclude possible inclusion dates in GDM grace periods.

```
1                                "Program: 04-rmps.sas"
                                09:58 Wednesday, November 24, 2021
```

NOTE: Unable to open SASUSER.REGSTRY. WORK.REGSTRY will be opened instead.

NOTE: All registry changes will be lost at the end of the session.

WARNING: Unable to copy SASUSER registry to WORK registry. Because of this, you will not see registry customizations during this session.

NOTE: Unable to open SASUSER.PROFILE. WORK.PROFILE will be opened instead.

NOTE: All profile changes will be lost at the end of the session.

NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.

NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)

Licensed to FORSKNING 1, Site 50800722.

NOTE: This session is executing on the X64_SR12R2 platform.

NOTE: Updated analytical products:

SAS/STAT 14.3

NOTE: Additional host information:

X64_SR12R2 WIN 6.3.9600 Server

NOTE: SAS initialization used:
 real time 0.12 seconds
 cpu time 0.12 seconds

NOTE: AUTOEXEC processing beginning; file is
 E:\workdata\707655\DMreg2020\sas\optslibs.sas.

NOTE: AUTOEXEC processing completed.

```

1      %macro getmed ;
2      data rmps
3          fert ( rename = ( eksd = doFb ) ) ;
4          set %do i = 1995 %to 2019 ; /*der vil være et overlap med epikur, men det
4      ! fjerner vi længere nede*/
5          grund.lmdb&i.      ( keep = pnr atc eksd
6                          where = ( substr(atc,1,3) in ("A10","G03") ) )
7          grund.lmdb&i._brutto ( keep = pnr atc eksd
8                          where = ( substr(atc,1,3) in ("A10","G03") ) )
9          %end ; ;
10         if substr( atc, 1, 4 ) in ("G03G","G03H") then output fert ;
11         if substr( atc, 1, 4 ) in ("A10A","A10B") then output rmps ;
12     run ;
13     %mend ;
14     %getmed ;

```

NOTE: There were 583837 observations read from the data set GRUND.LMDB1995.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 564309 observations read from the data set GRUND.LMDB1995_BRUTTO.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 646713 observations read from the data set GRUND.LMDB1996.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 628673 observations read from the data set GRUND.LMDB1996_BRUTTO.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 690515 observations read from the data set GRUND.LMDB1997.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 673272 observations read from the data set GRUND.LMDB1997_BRUTTO.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 751178 observations read from the data set GRUND.LMDB1998.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 734724 observations read from the data set GRUND.LMDB1998_BRUTTO.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 812675 observations read from the data set GRUND.LMDB1999.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 797198 observations read from the data set GRUND.LMDB1999_BRUTTO.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 843479 observations read from the data set GRUND.LMDB2000.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 829201 observations read from the data set GRUND.LMDB2000_BRUTTO.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 922459 observations read from the data set GRUND.LMDB2001.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 908987 observations read from the data set GRUND.LMDB2001_BRUTTO.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 1000624 observations read from the data set GRUND.LMDB2002.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 987387 observations read from the data set GRUND.LMDB2002_BRUTTO.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 1082273 observations read from the data set GRUND.LMDB2003.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 1069550 observations read from the data set GRUND.LMDB2003_BRUTTO.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 1195096 observations read from the data set GRUND.LMDB2004.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 1182980 observations read from the data set GRUND.LMDB2004_BRUTTO.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: There were 1306429 observations read from the data set GRUND.LMDB2005.

WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

```

NOTE: There were 1294466 observations read from the data set GRUND.LMDB2005_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 1423247 observations read from the data set GRUND.LMDB2006.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 1411671 observations read from the data set GRUND.LMDB2006_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 1535243 observations read from the data set GRUND.LMDB2007.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 1523697 observations read from the data set GRUND.LMDB2007_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 1673701 observations read from the data set GRUND.LMDB2008.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 1662816 observations read from the data set GRUND.LMDB2008_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 1765353 observations read from the data set GRUND.LMDB2009.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 1754160 observations read from the data set GRUND.LMDB2009_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 1885400 observations read from the data set GRUND.LMDB2010.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 1877610 observations read from the data set GRUND.LMDB2010_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2012463 observations read from the data set GRUND.LMDB2011.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2005300 observations read from the data set GRUND.LMDB2011_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2113065 observations read from the data set GRUND.LMDB2012.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2104229 observations read from the data set GRUND.LMDB2012_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2142429 observations read from the data set GRUND.LMDB2013.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2133412 observations read from the data set GRUND.LMDB2013_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2163345 observations read from the data set GRUND.LMDB2014.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2154513 observations read from the data set GRUND.LMDB2014_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2176058 observations read from the data set GRUND.LMDB2015.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2166529 observations read from the data set GRUND.LMDB2015_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2263674 observations read from the data set GRUND.LMDB2016.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2254229 observations read from the data set GRUND.LMDB2016_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2318789 observations read from the data set GRUND.LMDB2017.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2313898 observations read from the data set GRUND.LMDB2017_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2369981 observations read from the data set GRUND.LMDB2018.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2370542 observations read from the data set GRUND.LMDB2018_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2480185 observations read from the data set GRUND.LMDB2019.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: There were 2460080 observations read from the data set GRUND.LMDB2019_BRUTTO.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');
NOTE: The data set WORK.RMPS has 75619542 observations and 3 variables.
NOTE: The data set WORK.FERT has 402102 observations and 3 variables.
NOTE: DATA statement used (Total process time):
      real time          16:29.11
      cpu time           4:09.98

```

```

15
16      data rmps2
17          fert2 ( rename = ( eksd = doFb ) ) ;
18          set nydat.epikur ( keep = cpr atc eksd
19                          rename = ( cpr = pnr )

```

```

20           where = ( substr(atc,1,3) in ("A10","G03") ) ) ;
21       if substr( atc, 1, 4 ) in ("G03G","G03H") then output fert2 ;
22       if substr( atc, 1, 4 ) in ("A10A","A10B") then output rmps2 ;
23       run ;

```

NOTE: There were 8738937 observations read from the data set NYDAT.EPIKUR.
WHERE SUBSTR(atc, 1, 3) in ('A10', 'G03');

NOTE: The data set WORK.RMPS2 has 4661542 observations and 3 variables.

NOTE: The data set WORK.FERT2 has 199728 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time      41.37 seconds
cpu time       19.87 seconds

```

```

24
25       data rmps ; set rmps2 rmps; run ;

```

NOTE: There were 4661542 observations read from the data set WORK.RMPS2.

NOTE: There were 75619542 observations read from the data set WORK.RMPS.

NOTE: The data set WORK.RMPS has 80281084 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time      11.97 seconds
cpu time       8.42 seconds

```

```

26       data fert ; set fert2 fert; run ;

```

NOTE: There were 199728 observations read from the data set WORK.FERT2.

NOTE: There were 402102 observations read from the data set WORK.FERT.

NOTE: The data set WORK.FERT has 601830 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time      0.10 seconds
cpu time       0.07 seconds

```

```

27
28       *-----;
29       * delete duplicates ;
30       proc sort  data = rmps  nodupkey ; by pnr eksd atc ; run ;

```

NOTE: There were 80281084 observations read from the data set WORK.RMPS.

NOTE: 41119635 observations with duplicate key values were deleted.

NOTE: The data set WORK.RMPS has 39161449 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time      18.72 seconds
cpu time       37.25 seconds

```

```

31       proc sort  data = fert  nodupkey ; by pnr doFb atc ; run ;

```

NOTE: There were 601830 observations read from the data set WORK.FERT.

NOTE: 76694 observations with duplicate key values were deleted.

NOTE: The data set WORK.FERT has 525136 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time      0.13 seconds
cpu time       0.31 seconds

```

```

32
33       *-----;
34       * we need sex as variable in alloAD and excluding ;
35       data alloAD
36           allIns ;
37       merge rmps      ( in = r )
38           DMdat.pcos ( in = p )
39           DMdat.gdm
40           DMdat.pop  ( in = b  keep = pnr doBth sex ) ;
41       by pnr ;
42       if r and b ;
43       * exclude drug dispensation in the GDM-windows ;

```

```

44      %xgdm( eksd ) ;
45      * drop metformin in PCOSrange ;
46      inPCOSrg = ( doBth + 365.25*&pcoslo. )
47                < eksd <
48                ( doBth + 365.25*&pcoshi. ) ;
49      if inPCOSrg and
50          sex eq "W" and
51          atc eq "A10BA02" then delete ;
52      if substr( atc, 1, 4 ) eq "A10A" then output allIns ;
53      if substr( atc, 1, 4 ) eq "A10B" then output allLOAD ;
54      run ;

```

NOTE: Missing values were generated as a result of performing an operation on missing values.

Each place is given by: (Number of times) at (Line):(Column).

```

38327560 at 44:18  38327560 at 44:54  38880660 at 44:20  38880660 at 44:56
39049357 at 44:20  39049357 at 44:56  39089023 at 44:20  39089023 at 44:56
39098771 at 44:20  39098771 at 44:56  39102806 at 44:20  39102806 at 44:56
39103264 at 44:20  39103264 at 44:56  39103379 at 44:20  39103379 at 44:56
39103564 at 44:20  39103564 at 44:56  39103564 at 44:20  39103564 at 44:56
39103564 at 44:20  39103564 at 44:56  39103564 at 44:20  39103564 at 44:56

```

NOTE: There were 39161449 observations read from the data set WORK.RMPS.

NOTE: There were 40366 observations read from the data set DMDAT.PCOS.

NOTE: There were 37448 observations read from the data set DMDAT.GDM.

NOTE: There were 8298837 observations read from the data set DMDAT.POP.

NOTE: The data set WORK.ALLOAD has 25920161 observations and 21 variables.

NOTE: The data set WORK.ALLINS has 12826067 observations and 21 variables.

NOTE: DATA statement used (Total process time):

```

real time      1:00.97
cpu time       52.29 seconds

```

```

55
56      *-----;
57      proc sort data = allIns; by pnr eksd; run;

```

NOTE: There were 12826067 observations read from the data set WORK.ALLINS.

NOTE: The data set WORK.ALLINS has 12826067 observations and 21 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time      7.95 seconds
cpu time       6.79 seconds

```

```

57      !                               *Added by LDIA/PFR;
58      proc sort data = allLOAD; by pnr eksd; run;

```

NOTE: There were 25920161 observations read from the data set WORK.ALLOAD.

NOTE: The data set WORK.ALLOAD has 25920161 observations and 21 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time      17.36 seconds
cpu time       15.36 seconds

```

```

58      !                               *Added by LDIA/PFR;

```

```

59
60      * generate data sets with second date of OAD / Ins ;
61      %macro second( tp ) ;
62      data &tp.1 ( keep = pnr last&tp. ) ;
63          set all&tp. ( rename = ( eksd = last&tp. ) ) ;
64          by pnr ;
65          if last.pnr then output ;
66      run ;
67
68      data &tp.2 ( keep = pnr do&tp.2 ) ;
69          set all&tp. ( rename = ( eksd = do&tp.2 ) ) ;
70          by pnr ;
71          if first.pnr then dno = 0 ;
72          dno + 1 ;
73          if dno eq 2 then output ;
74      run ;

```



```

75
76     data &tp. ( keep = pnr do&tp. ) ;
77         set all&tp. ( rename = ( eksd = do&tp. ) ) ;
78         by pnr ;
79         if first.pnr ;
80     run ;
81     %mend ;
82
83     options mprint ;
84     %second( OAD ) ;
MPRINT(SECOND):  data OAD1 ( keep = pnr lastOAD ) ;
MPRINT(SECOND):  set alloAD ( rename = ( eksd = lastOAD ) ) ;
MPRINT(SECOND):  by pnr ;
MPRINT(SECOND):  if last.pnr then output ;
MPRINT(SECOND):  run ;

```

NOTE: There were 25920161 observations read from the data set WORK.ALLOAD.
NOTE: The data set WORK.OADL has 446490 observations and 2 variables.
NOTE: DATA statement used (Total process time):
real time 7.62 seconds
cpu time 3.40 seconds

```

MPRINT(SECOND):  data OAD2 ( keep = pnr doOAD2 ) ;
MPRINT(SECOND):  set alloAD ( rename = ( eksd = doOAD2 ) ) ;
MPRINT(SECOND):  by pnr ;
MPRINT(SECOND):  if first.pnr then dno = 0 ;
MPRINT(SECOND):  dno + 1 ;
MPRINT(SECOND):  if dno eq 2 then output ;
MPRINT(SECOND):  run ;

```

NOTE: There were 25920161 observations read from the data set WORK.ALLOAD.
NOTE: The data set WORK.OAD2 has 420893 observations and 2 variables.
NOTE: DATA statement used (Total process time):
real time 7.08 seconds
cpu time 3.26 seconds

```

MPRINT(SECOND):  data OAD ( keep = pnr doOAD ) ;
MPRINT(SECOND):  set alloAD ( rename = ( eksd = doOAD ) ) ;
MPRINT(SECOND):  by pnr ;
MPRINT(SECOND):  if first.pnr ;
MPRINT(SECOND):  run ;

```

NOTE: There were 25920161 observations read from the data set WORK.ALLOAD.
NOTE: The data set WORK.OAD has 446490 observations and 2 variables.
NOTE: DATA statement used (Total process time):
real time 7.05 seconds
cpu time 3.07 seconds

```

85     %second( Ins ) ;
MPRINT(SECOND):  data Insl ( keep = pnr lastIns ) ;
MPRINT(SECOND):  set allIns ( rename = ( eksd = lastIns ) ) ;
MPRINT(SECOND):  by pnr ;
MPRINT(SECOND):  if last.pnr then output ;
MPRINT(SECOND):  run ;

```

NOTE: There were 12826067 observations read from the data set WORK.ALLINS.
NOTE: The data set WORK.INSL has 181671 observations and 2 variables.
NOTE: DATA statement used (Total process time):
real time 3.87 seconds
cpu time 1.64 seconds

```

MPRINT(SECOND):  data Ins2 ( keep = pnr doIns2 ) ;
MPRINT(SECOND):  set allIns ( rename = ( eksd = doIns2 ) ) ;
MPRINT(SECOND):  by pnr ;
MPRINT(SECOND):  if first.pnr then dno = 0 ;
MPRINT(SECOND):  dno + 1 ;

```

```
MPRINT(SECOND):  if dno eq 2 then output ;
MPRINT(SECOND):  run ;
```

NOTE: There were 12826067 observations read from the data set WORK.ALLINS.

NOTE: The data set WORK.INS2 has 167457 observations and 2 variables.

NOTE: DATA statement used (Total process time):

```
real time      3.64 seconds
cpu time       1.74 seconds
```

```
MPRINT(SECOND):  data Ins ( keep = pnr doIns ) ;
MPRINT(SECOND):  set allIns ( rename = ( eksd = doIns ) );
MPRINT(SECOND):  by pnr ;
MPRINT(SECOND):  if first.pnr ;
MPRINT(SECOND):  run ;
```

NOTE: There were 12826067 observations read from the data set WORK.ALLINS.

NOTE: The data set WORK.INS has 181671 observations and 2 variables.

NOTE: DATA statement used (Total process time):

```
real time      3.48 seconds
cpu time       1.70 seconds
```

```
86      options nomprint ;
87
88      data DMdat.rmps ( label = "Antidiabetic drug purchase DK 1995-2019") ;
89          merge OAD OAD2 OAD1
90              Ins Ins2 Insl ;
91          by pnr ;
92          label doOAD = 'Date of 1st OAD'
93              doOAD2 = 'Date of 2nd OAD'
94              lastOAD = 'Date of last OAD'
95              doIns = 'Date of 1st Ins'
96              doIns2 = 'Date of 2nd Ins'
97              lastIns = 'Date of last Ins' ;
98          format doOAD doOAD2 lastOAD doIns doIns2 lastIns  ddmmyys10. ;
99          run ;
```

NOTE: There were 446490 observations read from the data set WORK.OAD.

NOTE: There were 420893 observations read from the data set WORK.OAD2.

NOTE: There were 446490 observations read from the data set WORK.OADL.

NOTE: There were 181671 observations read from the data set WORK.INS.

NOTE: There were 167457 observations read from the data set WORK.INS2.

NOTE: There were 181671 observations read from the data set WORK.INSL.

NOTE: The data set DMDAT.RMPS has 504163 observations and 7 variables.

NOTE: DATA statement used (Total process time):

```
real time      0.53 seconds
cpu time       0.29 seconds
```

```
100
101      proc tabulate data = DMdat.rmps noseps missing ;
102          class doINS doOAD ;
103          var doINS2 doOAD2 ;
104          table all doOAD="doOAD",
105              all * f=comma7.
106              doOAD2='N:OAD2' * n * f=comma7.
107              doIns2='N:Ins2' * n * f=comma7.
108              doIns="doIns" * f=comma7.
109              / rts = 7 ;
110          format doINS doOAD
111              doINS2 doOAD2 year4. ;
112          keylabel n = ' ' ;
113          run ;
```

NOTE: There were 504163 observations read from the data set DMDAT.RMPS.

NOTE: The PROCEDURE TABULATE printed pages 1-3.

NOTE: PROCEDURE TABULATE used (Total process time):

```
real time      0.41 seconds
cpu time       0.40 seconds
```

```
114
115      proc contents data = DMdat.rmps ; run ;
```

NOTE: PROCEDURE CONTENTS used (Total process time):
 real time 0.02 seconds
 cpu time 0.00 seconds

NOTE: The PROCEDURE CONTENTS printed page 4.

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414

NOTE: The SAS System used:
 real time 19:41.82
 cpu time 6:46.12

4.10.1 04-rmps.lst

The SAS System 09:58 Wednesday, November 24, 2021 1

----- doIns -----										
	All	N:OAD2	N:Ins2	.	1995	1996	1997	1998	1999	2000
All	504,163	420,893	167,457	322,492	32,026	4,830	4,028	4,364	4,801	4,971
doOAD										
.	57,673	0	53,340	.	25,710	2,006	1,199	1,125	1,108	1,133
1995	46,090	45,267	21,826	23,151	2,504	2,162	1,971	1,997	2,069	1,853
1996	10,893	10,182	4,899	5,743	372	289	259	279	317	363
1997	10,150	9,477	4,530	5,369	266	49	274	250	276	271
1998	11,163	10,512	5,108	5,771	278	28	63	328	304	302
1999	11,419	10,746	5,148	5,981	292	33	30	74	379	281
2000	11,534	10,934	5,055	6,186	271	28	25	36	63	402
2001	12,233	11,677	5,296	6,618	232	15	20	24	30	70
2002	12,100	11,525	4,985	6,773	213	24	19	18	37	39
2003	14,276	13,675	5,522	8,385	177	16	23	19	30	23
2004	14,674	13,958	5,084	9,192	123	18	9	18	21	24
2005	14,488	13,882	4,911	9,194	119	7	8	12	18	23
2006	15,025	14,355	4,641	10,027	99	10	13	18	17	15
2007	16,491	15,800	4,632	11,457	123	13	14	24	15	14
2008	18,232	17,457	4,426	13,357	112	13	9	11	13	22
2009	19,132	18,307	4,173	14,513	133	13	8	19	12	20
2010	21,356	20,424	3,988	16,910	119	7	11	14	14	11
2011	25,110	24,051	3,656	20,993	128	13	9	19	5	15
2012	22,006	20,904	2,995	18,583	132	12	6	15	10	15
2013	16,071	15,247	2,365	13,357	95	4	9	12	7	10
2014	14,965	14,233	2,076	12,580	64	17	9	7	5	6
2015	16,886	16,020	1,977	14,554	63	13	8	4	7	8
2016	18,293	17,348	1,715	16,268	77	5	6	6	12	8
2017	17,658	16,714	1,514	15,824	70	5	7	10	6	11
2018	18,022	16,920	1,354	16,378	62	12	6	8	8	11
2019	19,522	17,993	1,346	17,868	110	7	6	10	13	14
2020	18,701	13,285	895	17,460	82	11	7	7	5	7

(Continued)

The SAS System 09:58 Wednesday, November 24, 2021 2

----- doIns -----									
2001	2002	2003	2004	2005	2006	2007	2008	2009	2010

	4,900	5,209	5,968	6,422	6,242	6,309	6,563	6,224	6,294	5,990
All										
do0AD										
.	1,127	1,151	1,117	1,192	1,168	1,248	1,260	1,279	1,268	1,264
1995	1,414	1,418	1,406	1,204	931	773	627	439	365	312
1996	329	335	356	363	281	277	243	177	151	121
1997	337	308	376	347	322	266	234	190	141	140
1998	336	331	431	409	361	311	325	239	200	180
1999	284	321	406	418	349	339	339	279	233	186
2000	291	271	381	380	385	344	354	282	266	211
2001	455	301	371	393	399	361	410	330	304	260
2002	59	458	324	381	354	348	339	301	315	259
2003	33	62	478	406	404	414	436	372	371	300
2004	30	33	60	556	375	348	342	377	348	292
2005	24	33	21	63	598	358	371	321	345	311
2006	23	20	32	33	62	566	356	324	367	307
2007	18	22	17	35	46	64	613	328	330	287
2008	18	17	31	32	25	39	75	681	321	288
2009	13	17	21	33	21	34	38	70	717	303
2010	20	19	22	29	26	40	51	47	82	718
2011	18	18	26	27	26	35	30	35	33	79
2012	12	5	16	18	22	31	20	24	33	67
2013	9	11	12	14	12	22	12	21	21	21
2014	12	7	11	16	7	22	22	24	10	22
2015	5	10	6	21	13	11	18	17	9	10
2016	5	5	5	12	8	7	8	9	14	13
2017	9	7	12	16	9	11	9	18	9	9
2018	8	8	10	10	12	13	14	14	12	12
2019	8	11	15	9	14	13	11	15	18	11
2020	*	10	5	5	12	14	6	11	11	7

(Continued)

	doIns									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
All	6,292	6,331	6,649	6,700	7,024	7,223	7,405	6,990	6,386	5,530
do0AD										
.	1,207	1,147	1,355	1,322	1,290	1,351	1,437	1,425	1,454	1,330
1995	291	238	202	175	143	133	109	68	85	50
1996	114	92	82	77	69	44	56	53	32	19
1997	138	116	82	81	81	65	46	47	47	31
1998	170	149	145	93	91	90	84	67	39	38
1999	186	172	165	140	134	120	93	83	60	42
2000	220	197	161	171	165	119	114	79	74	58
2001	245	240	234	176	161	158	131	120	105	70
2002	257	229	228	225	204	178	195	142	115	66
2003	336	288	284	279	257	241	208	185	146	103
2004	343	301	319	273	278	285	238	195	165	111
2005	320	348	314	285	312	280	279	216	167	141
2006	328	325	302	305	299	309	303	215	203	147
2007	333	330	357	376	358	336	330	279	198	174
2008	275	339	356	358	376	361	377	282	255	189
2009	299	305	339	349	367	361	347	307	259	214
2010	319	279	279	312	385	402	385	343	284	228
2011	715	316	287	305	321	374	375	361	296	251
2012	59	721	288	269	263	296	314	315	250	210
2013	27	70	702	233	252	249	270	255	177	187
2014	21	22	60	713	256	243	231	234	194	150
2015	19	31	30	65	794	283	258	250	212	167
2016	16	20	17	41	65	786	251	229	222	178
2017	19	12	19	24	30	65	818	262	188	179
2018	14	16	10	20	29	39	74	825	218	179
2019	12	13	20	14	23	39	47	111	865	225
2020	9	15	12	19	21	16	35	42	76	793

The SAS System 09:58 Wednesday, November 24, 2021 4

The CONTENTS Procedure

Data Set Name	DMDAT.RMPS	Observations	504163
Member Type	DATA	Variables	7
Engine	V9	Indexes	0
Created	24/11/2021 10:18:05	Observation Length	64
Last Modified	24/11/2021 10:18:05	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label	Antidiabetic drug purchase DK 1995-2019		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	494
First Data Page	*
Max Obs per Page	1021
Obs in First Data Page	991
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\rmps.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FGWC7655
File Size	31MB
File Size (bytes)	32440320

Alphabetic List of Variables and Attributes

#	Variable	Type	Len	Format	Informat	Label
5	doIns	Num	8	DDMMYYS10.	DATE9.	Date of 1st Ins
6	doIns2	Num	8	DDMMYYS10.	DATE9.	Date of 2nd Ins
2	doOAD	Num	8	DDMMYYS10.	DATE9.	Date of 1st OAD
3	doOAD2	Num	8	DDMMYYS10.	DATE9.	Date of 2nd OAD
7	lastIns	Num	8	DDMMYYS10.	DATE9.	Date of last Ins
4	lastOAD	Num	8	DDMMYYS10.	DATE9.	Date of last OAD
1	pnr	Char	12	\$12.	\$10.	Personnummer

4.11 05-diab

Uses eye-screening dates from the national eye-screening database to supplement persons with diabetes and update dates of diabetes diagnosis.

Uses the dataset with GDM dates to exclude examination dates in GDM grace periods.

1 "Program: 05-diab.sas" 11:10 Friday, January 21, 2022

NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.

NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)

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NOTE: This session is executing on the X64_SR12R2 platform.

NOTE: Updated analytical products:

SAS/STAT 14.3

NOTE: Additional host information:

X64_SR12R2 WIN 6.3.9600 Server

NOTE: SAS initialization used:

real time 0.10 seconds
cpu time 0.14 seconds

NOTE: AUTOEXEC processing beginning; file is
E:\workdata\707655\DMreg2020\sas\optslibs.sas.

NOTE: AUTOEXEC processing completed.

```
1      options nofmterr ;
2
3      proc sort  data = ekstn.diabase_forskning
4                ( rename = (Report_EyeScreeningDate = doDia) )
5                out = diab ( keep = pnr doDia ) ;
6      by pnr doDia ;
7      run ;
```

NOTE: There were 723554 observations read from the data set EKSTN.DIABASE_FORSKNING.

NOTE: The data set WORK.DIAB has 723554 observations and 2 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 1.31 seconds
cpu time 0.81 seconds

```
8
9      data diab ;
10     merge diab ( in = d )
11           DMdat.GDM ;
12     by pnr ;
13     if d ;
14     %xgdm( doDia ) ;
15     run ;
```

NOTE: Missing values were generated as a result of performing an operation on missing values.

Each place is given by: (Number of times) at (Line):(Column).

```
704490 at 14:18  704490 at 14:54  716758 at 14:20  716758 at 14:56
720631 at 14:20  720631 at 14:56  721494 at 14:20  721494 at 14:56
721751 at 14:20  721751 at 14:56  721866 at 14:20  721866 at 14:56
721880 at 14:20  721880 at 14:56  721889 at 14:20  721889 at 14:56
721897 at 14:20  721897 at 14:56  721897 at 14:20  721897 at 14:56
721897 at 14:20  721897 at 14:56  721897 at 14:20  721897 at 14:56
```

NOTE: There were 723554 observations read from the data set WORK.DIAB.

NOTE: There were 32127 observations read from the data set DMDAT.GDM.

NOTE: The data set WORK.DIAB has 721897 observations and 15 variables.

NOTE: DATA statement used (Total process time):

real time 0.87 seconds
cpu time 0.85 seconds

```
16
17     data DiaF
18         DiaB
19         DiaL ;
20     set diab ( keep = pnr doDia ) ;
21     by pnr ;
22     visit = 'Repeat' ;
23     if first.pnr then do ;
24         output DiaF ;
25         visit = 'First' ;
26     end ;
27     output DiaB ;
28     if last.pnr then do ;
```

```

29         output Dial ;
30         end ;
31         format doDia ddmmyy10. ;
32         run ;

```

NOTE: There were 721897 observations read from the data set WORK.DIAB.
NOTE: The data set WORK.DIAF has 221594 observations and 3 variables.
NOTE: The data set WORK.DIAB has 721897 observations and 3 variables.
NOTE: The data set WORK.DIAL has 221594 observations and 3 variables.
NOTE: DATA statement used (Total process time):

real time	0.20 seconds
cpu time	0.20 seconds

```

33
34         proc tabulate data = DiaB missing noseps ;
35         class doDia visit ;
36         table all doDia,
37             ( visit all ) * f =comma9.
38             / rts = 10 ;
39         format doDia yyqs8. ;
40         run ;

```

NOTE: There were 721897 observations read from the data set WORK.DIAB.
NOTE: The PROCEDURE TABULATE printed page 1.
NOTE: PROCEDURE TABULATE used (Total process time):

real time	0.23 seconds
cpu time	0.32 seconds

```

41
42         data DMdat.DiaB ;
43         merge DiaF
44             DiaL ( rename = ( doDia = lastDia ) ) ;
45         by pnr ;
46         drop visit ;
47         label doDia = 'First EyeScreen date'
48             lastDia = 'Last EyeScreen date' ;
49         run ;

```

NOTE: There were 221594 observations read from the data set WORK.DIAF.
NOTE: There were 221594 observations read from the data set WORK.DIAL.
NOTE: The data set DMDAT.DIAB has 221594 observations and 3 variables.
NOTE: DATA statement used (Total process time):

real time	0.14 seconds
cpu time	0.06 seconds

```

50
51         proc contents data = DMdat.DiaB varnum ; run ;

```

NOTE: PROCEDURE CONTENTS used (Total process time):

real time	0.02 seconds
cpu time	0.00 seconds

NOTE: The PROCEDURE CONTENTS printed page 2.

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414

NOTE: The SAS System used:

real time	3.01 seconds
cpu time	2.42 seconds

4.11.1 05-diab.lst

	visit		
	First	Repeat	All
	N	N	N
All	221,594	500,303	721,897
Øjenscr- eenings- dato			
2009/1	1,723	*	1,72*
2009/2	1,460	8*	1,541
2009/3	1,339	239	1,578
2009/4	1,519	268	1,787
2010/1	1,977	739	2,716
2010/2	1,930	1,063	2,993
2010/3	3,106	1,366	4,472
2010/4	3,626	1,674	5,300
2011/1	4,244	2,390	6,634
2011/2	2,847	2,390	5,237
2011/3	2,193	2,701	4,894
2011/4	2,349	3,607	5,956
2012/1	2,199	4,019	6,218
2012/2	1,963	3,654	5,617
2012/3	1,198	3,072	4,270
2012/4	1,049	3,418	4,467
2013/1	3,303	3,879	7,182
2013/2	5,833	4,429	10,262
2013/3	4,666	4,002	8,668
2013/4	6,631	5,085	11,716
2014/1	9,931	7,235	17,166
2014/2	12,074	9,170	21,244
2014/3	12,041	8,043	20,084
2014/4	11,221	9,651	20,872
2015/1	12,719	13,359	26,078
2015/2	11,886	17,194	29,080
2015/3	7,628	16,102	23,730
2015/4	10,419	20,289	30,708
2016/1	7,190	22,124	29,314
2016/2	6,879	26,205	33,084
2016/3	4,788	18,826	23,614
2016/4	4,957	24,339	29,296
2017/1	5,342	23,591	28,933
2017/2	6,430	26,340	32,770
2017/3	5,249	19,874	25,123
2017/4	7,055	26,994	34,049
2018/1	6,867	25,937	32,804
2018/2	6,698	32,258	38,956
2018/3	4,539	23,263	27,802
2018/4	4,777	28,768	33,545
2019/1	4,418	25,966	30,384
2019/2	3,331	26,696	30,027

The SAS System

11:10 Friday, January 21, 2022 2

The CONTENTS Procedure

Data Set Name	DMDAT.DIAB	Observations	221594
Member Type	DATA	Variables	*
Engine	V9	Indexes	0
Created	21/01/2022 11:10:04	Observation Length	32
Last Modified	21/01/2022 11:10:04	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

```

Data Set Page Size          65536
Number of Data Set Pages    109
First Data Page             *
Max Obs per Page           2039
Obs in First Data Page     1995
Number of Data Set Repairs  0
ExtendObsCounter           YES
Filename                    E:\workdata\707655\DMreg2020\data\diab.sas7bdat
Release Created             9.0401M5
Host Created                X64_SR12R2
Owner Name                  DSTFSE\FDIY7655
File Size                   7MB
File Size (bytes)          7208960

```

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	pnr	Char	12	\$12.	\$10.	Personnummer
2	doDia	Num	8	DDMMYY10.	IS8601DA10.	First EyeScreen date
3	lastDia	Num	8	DDMMYY10.	IS8601DA10.	Last EyeScreen date

4.12 05-hba1c

Uses data from DVDD and LABKA to establish two consecutive HbA_{1c} measurements of 48 or more.

Uses the dataset with GDM dates to exclude dates in GDM grace periods.

```
1                                "Program: 05-hba1c.sas"    14:51 Friday, January 21, 2022
```

```
NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.
```

```
NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)
```

```
      Licensed to FORSKNING 2, Site 50800723.
```

```
NOTE: This session is executing on the X64_SR12R2 platform.
```

```
NOTE: Updated analytical products:
```

```
      SAS/STAT 14.3
```

```
NOTE: Additional host information:
```

```
      X64_SR12R2 WIN 6.3.9600 Server
```

```
NOTE: SAS initialization used:
```

```
      real time          0.12 seconds
```

```
      cpu time           0.12 seconds
```

```
NOTE: AUTOEXEC processing beginning; file is
```

```
      E:\workdata\707655\DMreg2020\sas\optslibs.sas.
```

```
NOTE: AUTOEXEC processing completed.
```

```
1                                *-----
2                                First get the HbA1c measurements from DVDD
3                                -----;
4                                title1 "HbA1c measurements from DVDD" ;
```

```

5      data dvh (keep = pnr HbA1c doHbA) ;
6          set ekstn.else_dvdd (keep = cpr_nr HbA1c_dato HbA1c HbA1c_npu
7              rename = (cpr_nr = pnr
8                  HbA1c_dato = doHbA) ) ;
9
10         * if either date or measurement value is missing it is useless ;
11         if not (missing(HbA1c) or missing(doHbA)) ;
12
13         * early entries considered errors only use 2005+ ;
14         if doHbA gt '31DEC2004'd ;
15
16         * convert percent to mmol/mol -
17         conversion formula is only sensible for percentages >= 3 ;
18         if HbA1c_npu eq "NPU03835" then do ;
19             if HbA1c < 3 then delete ;
20             HbA1c = 10.93 * HbA1c - 23.54 ;
21         end ;
22     run ;

```

NOTE: There were 1072208 observations read from the data set EKSTN.ELSE_DVDD.

NOTE: The data set WORK.DVH has 1022093 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time      3.77 seconds
cpu time       0.87 seconds

```

```

23
24     proc tabulate data = dvh missing noseps ;
25         class doHbA ;
26         * where doHbA gt '31DEC2005'd ;
27         var HbA1c ;
28         table doHbA,
29             HbA1c * (n * f=comma9.
30                 (p10 p25 p50 p75 p90) * f=7.1)
31             / rts = 14 ;
32         format doHbA year4. ;
33     run ;

```

NOTE: There were 1022093 observations read from the data set WORK.DVH.

NOTE: The PROCEDURE TABULATE printed page 1.

NOTE: PROCEDURE TABULATE used (Total process time):

```

real time      0.38 seconds
cpu time       0.67 seconds

```

```

34
35     *-----
36     ...then get the HbA1c measurements from LABKA
37     -----;
38     title1 "HbA1c measurements from LABKA" ;
39     /*-----
40     proc contents data = lbdat.hba1 varnum ; run ;
41
42     * Background for the fidgeting with the values
43     - results NOT to be transmitted ;
44     proc tabulate data = lbdat.hba1 missing noseps ;
45         class VALUE UNIT;
46         table VALUE, UNIT * f=comma12. / rts = 9 ;
47     run ;
48     -----*/
49
50     data lbh (keep = pnr HbA1c doHbA) ;
51         set lbdat.hba1 (rename = (SAMPLINGDATE = doHbA)) ;
52
53         * early entries considered errors ;
54         if doHbA gt '31DEC2004'd ;
55
56         * incredible values deleted ;
57         if VALUE in ("0", "<9") then delete ;
58

```

```

59      * comma to dot ;
60      VALUE = translate(VALUE, '.', ',') ;
61
62      * convert to numeric ;
63      HbA1c = input(VALUE, best10.) ;
64
65      * some of the old values appear as decimal not as percentages ;
66      if HbA1c < 1 then HbA1c = HbA1c * 100 ;
67
68      * convert percent to mmol/mol -
69      the conversion formula is only sensible for percentages >= 3 ;
70      if UNIT eq "" then do ;
71          if HbA1c < 3 then delete ;
72          HbA1c = 10.93 * HbA1c - 23.54 ;
73      end ;
74      run ;

```

NOTE: There were 11944532 observations read from the data set LBDAT.HBA1.

NOTE: The data set WORK.LBH has 11944490 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time          9.94 seconds
cpu time           4.24 seconds

```

```

75
76      proc tabulate data = lbh missing noseps ;
77          class doHbA ;
78          var HbA1c ;
79          table doHbA,
80              HbA1c * (n * f=comma9.
81                  (p10 p25 p50 p75 p90) * f=7.1)
82              / rts = 14 ;
83          format doHbA year4. ;
84      run ;

```

NOTE: There were 11944490 observations read from the data set WORK.LBH.

NOTE: The PROCEDURE TABULATE printed page 2.

NOTE: PROCEDURE TABULATE used (Total process time):

```

real time          3.66 seconds
cpu time           6.09 seconds

```

```

85
86      *-----
87      Put the two datasets head to foot, and sort with HbA1c descending
88      within sampling date for each person so that we take the largest
89      recorded value if more than one is recorded on the same day.
90      -----;
91      title 'DVDD & LABKA data combined' ;
92      data hba ;
93          set dvh lbh ;
94      run ;

```

NOTE: There were 1022093 observations read from the data set WORK.DVH.

NOTE: There were 11944490 observations read from the data set WORK.LBH.

NOTE: The data set WORK.HBA has 12966583 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time          2.69 seconds
cpu time           1.64 seconds

```

```

95      proc sort data = hba ; by pnr doHbA descending HbA1c ; run ;

```

NOTE: There were 12966583 observations read from the data set WORK.HBA.

NOTE: The data set WORK.HBA has 12966583 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time          4.23 seconds
cpu time           9.79 seconds

```

```

96
97      *-----
98      Remove HbA-measurements during GDM.
99      -----;
100     options mprint ;
101     data hba ;
102         merge hba
103             dmDat.gdm ;
104         by pnr ;
105         %xgdm(doHbA) ;
MPRINT(XGDM):  if ( doGDM1 - 280 ) < doHbA < ( doGDM1 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM2 - 280 ) < doHbA < ( doGDM2 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM3 - 280 ) < doHbA < ( doGDM3 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM4 - 280 ) < doHbA < ( doGDM4 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM5 - 280 ) < doHbA < ( doGDM5 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM6 - 280 ) < doHbA < ( doGDM6 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM7 - 280 ) < doHbA < ( doGDM7 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM8 - 280 ) < doHbA < ( doGDM8 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM9 - 280 ) < doHbA < ( doGDM9 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM10 - 280 ) < doHbA < ( doGDM10 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM11 - 280 ) < doHbA < ( doGDM11 + 280 ) then delete ;
MPRINT(XGDM):  if ( doGDM12 - 280 ) < doHbA < ( doGDM12 + 280 ) then delete ;
106         run ;

```

NOTE: Missing values were generated as a result of performing an operation on missing values.

Each place is given by: (Number of times) at (Line):(Column).

12771961 at 105:18	12771961 at 105:54	12893701 at 105:20	12893701 at 105:56
12935292 at 105:20	12935292 at 105:56	12944609 at 105:20	12944609 at 105:56
12947490 at 105:20	12947490 at 105:56	12948465 at 105:20	12948465 at 105:56
12948669 at 105:20	12948669 at 105:56	12948712 at 105:20	12948712 at 105:56
12948750 at 105:20	12948750 at 105:56	12948750 at 105:20	12948750 at 105:56
12948751 at 105:20	12948751 at 105:56	12948751 at 105:20	12948751 at 105:56

NOTE: There were 12966583 observations read from the data set WORK.HBA.

NOTE: There were 32127 observations read from the data set DMDAT.GDM.

NOTE: The data set WORK.HBA has 12948757 observations and 16 variables.

NOTE: DATA statement used (Total process time):

real time	23.03 seconds
cpu time	18.98 seconds

```

107     options nomprint ;
108
109     proc sort data = hba ; by pnr doHbA descending HbA1c ; run ;

```

NOTE: There were 12948757 observations read from the data set WORK.HBA.

NOTE: The data set WORK.HBA has 12948757 observations and 16 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	10.21 seconds
cpu time	10.45 seconds

```

110
111     * if two measurements on the same day, take first (i.e. largest) ;
112     data hba ;
113         set hba ;
114         by pnr doHbA descending HbA1c ;
115         if first.doHbA ;
116     run ;

```

NOTE: There were 12948757 observations read from the data set WORK.HBA.

NOTE: The data set WORK.HBA has 12453184 observations and 16 variables.

NOTE: DATA statement used (Total process time):

real time	8.72 seconds
cpu time	4.26 seconds

```

117
118     title2 'Successive within-person distances between HbA1c measurements' ;
119     data hba ;

```

```

120     set hba ;
121     by pnr ;
122     * difference between successive HbA1c dates within persons ;
123     sdif = dif(doHbA) ;
124     if first.pnr then sdif = . ;
125     if sdif > 0 then cdif = "d" || put(floor(sdif      ), z2.) ;
126     if sdif > 9 then cdif = "d10" ;
127     if sdif > 30 then cdif = "m" || put(floor(sdif / 30 ), z2.) ;
128     if sdif > 365 then cdif = "y" || put(floor(sdif / 365), z2.) ;
129     run ;

```

NOTE: There were 12453184 observations read from the data set WORK.HBA.

NOTE: The data set WORK.HBA has 12453184 observations and 18 variables.

NOTE: At least one W.D format was too small for the number to be printed. The decimal may be shifted by the "BEST" format.

NOTE: DATA statement used (Total process time):

```

real time      9.87 seconds
cpu time       5.84 seconds

```

```

130
131     title3 'd - days / d10 10-29 days / m - months / y - years' ;
132     proc tabulate data = hba missing noseps ;
133         class cdif doHbA ;
134         table cdif,
135             all * f=comma11.
136             doHbA * f=comma7. / rts = 10 ;
137         format doHbA year4. ;
138     run ;

```

NOTE: There were 12453184 observations read from the data set WORK.HBA.

NOTE: The PROCEDURE TABULATE printed pages 3-4.

NOTE: PROCEDURE TABULATE used (Total process time):

```

real time      2.97 seconds
cpu time       5.26 seconds

```

```

139
140     *-----
141     Now extract (at most) one record per person, namely the record with
142     the first occurrence of a second consecutive HbA1c >= 48
143     Also collect the last date of HbA measurement for included persons
144     -----;
145     title1 'Date with second consecutive HbA1c >= 48' ;
146     data hba1c (keep = pnr doHbA HbA1c lagHb)
147         hbalast (keep = pnr lastHbA) ;
148     set hba ;
149     by pnr ;
150     retain pdone ;
151
152     * previous HbA1c ;
153     lagHb = lag(HbA1c) ;
154
155     * reset indicator of completed output to 0 at each new person ;
156     if first.pnr then pdone = 0 ;
157
158     * select records to use as doHbA:
159     'not first.pnr' ensures that HbA1c and lagHb are from same person ;
160     if (not first.pnr) and
161         (not pdone) and
162         (lagHb ge 48) and
163         (HbA1c ge 48) then do ;
164         output hba1c ;
165         pdone = 1 ;
166     end ;
167
168     if last.pnr and
169         pdone then do ;
170         lastHbA = doHbA ;
171         output hbalast ;
172     end ;

```

```
172      run ;
```

NOTE: There were 12453184 observations read from the data set WORK.HBA.
 NOTE: The data set WORK.HBA1C has 257350 observations and 4 variables.
 NOTE: The data set WORK.HBALAST has 257350 observations and 2 variables.
 NOTE: DATA statement used (Total process time):
 real time 4.03 seconds
 cpu time 2.17 seconds

```
173
174      data DMdat.hba (label = "HbA1c events for DMreg") ;
175          merge hba1c
176                hbalast ;
177          by pnr ;
178          label doHbA = "Date of 2nd value >= 48"
179                HbA1c = "HbA1c (2nd value >= 48)"
180                lagHb = "HbA1c (1st value >= 48)"
181                lastHbA = "Date of last HbA1c" ;
182      run ;
```

NOTE: There were 257350 observations read from the data set WORK.HBA1C.
 NOTE: There were 257350 observations read from the data set WORK.HBALAST.
 NOTE: The data set DMDAT.HBA has 257350 observations and 5 variables.
 NOTE: DATA statement used (Total process time):
 real time 0.13 seconds
 cpu time 0.06 seconds

```
183
184      title1 "HbA1c measurements triggering inclusion" ;
185      proc tabulate data = DMdat.hba missing noseps ;
186          * where doHbA gt '01JAN2006'd ; * avoiding quantiles based on few persons ;
187          class doHbA ;
188          var HbA1c lagHb ;
189          table doHbA,
190                n * f=comma7.
191                (lagHb HbA1c) * (p10 p25 p50 p75 p90) * f=5.1
192                / rts = 13 ;
193          format doHbA year4. ;
194      run ;
```

NOTE: There were 257350 observations read from the data set DMDAT.HBA.
 NOTE: The PROCEDURE TABULATE printed page 5.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.10 seconds
 cpu time 0.14 seconds

```
195
196      title1 ;
197      proc contents data = DMdat.hba varnum ; run ;
```

NOTE: PROCEDURE CONTENTS used (Total process time):
 real time 0.01 seconds
 cpu time 0.01 seconds

NOTE: The PROCEDURE CONTENTS printed page 6.

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414
 NOTE: The SAS System used:
 real time 1:24.07
 cpu time 1:10.70

4.12.1 05-hba1c.lst

!bA1c measurements from DVDD 14:51 Friday, January 21, 2022 1

HbA1c (værdi)						
	N	P10	P25	P50	P75	P90

HbA1c-dato						
2005	2,426	42.0	48.6	58.4	69.4	81.4
2006	15,374	44.2	50.8	59.5	70.5	81.4
2007	28,127	44.2	51.9	60.6	71.6	83.6
2008	35,895	43.1	49.7	58.4	69.4	81.4
2009	44,055	43.1	49.7	59.5	70.5	82.5
2010	46,229	43.1	49.7	58.4	69.4	81.4
2011	68,794	43.1	48.0	57.0	68.3	81.0
2012	91,164	41.0	46.4	54.0	65.0	78.0
2013	122,301	40.0	45.0	52.0	63.0	76.0
2014	105,319	41.0	46.0	53.0	64.0	77.0
2015	48,549	46.0	53.0	61.0	71.0	84.0
2016	49,401	47.0	54.0	62.0	72.0	85.0
2017	50,952	46.0	52.0	61.0	71.0	83.0
2018	103,784	42.0	47.0	54.0	64.0	77.0
2019	129,388	43.0	47.0	54.0	64.0	76.0
2020	80,335	43.0	48.0	55.0	65.0	78.0

HbA1c measurements from LABKA 14:51 Friday, January 21, 2022 2

HbA1c						
	N	P10	P25	P50	P75	P90

doHbA						
2008	14,855	34.4	37.7	44.2	56.2	71.6
2009	19,972	34.4	37.7	45.3	57.3	72.6
2010	147,987	34.0	38.0	42.0	52.0	65.0
2011	196,437	34.0	38.0	43.0	53.0	67.0
2012	312,668	33.3	37.0	41.0	50.0	64.0
2013	341,656	32.0	34.0	38.0	45.0	58.0
2014	917,281	32.0	35.0	38.0	45.0	58.0
2015	1,203,470	32.0	35.0	39.0	46.0	59.0
2016	1,645,941	32.0	35.0	39.0	46.0	59.0
2017	1,775,091	32.0	35.0	38.0	46.0	59.0
2018	1,840,329	32.0	34.0	38.0	45.0	58.0
2019	1,936,748	32.0	34.0	38.0	45.0	57.0
2020	1,592,055	32.0	35.0	38.0	45.0	57.0

DVDD & LABKA data combined 14:51 Friday, January 21, 2022 3
 Successive within-person distances between HbaAc measurements
 d - days / d10 10-29 days / m - months / y - years

HbA1c-dato									
All	.	2005	2006	2007	2008	2009	2010	2011	

N	N	N	N	N	N	N	N	N	N

cdif	2,447,366	10,096	2,291	13,596	16,564	24,378	22,548	87,388	78,813
d01	41,595	.	.	.	*	38	66	700	2,102
d02	27,061	.	.	*	*	29	53	479	1,089
d03	21,733	.	.	.	*	17	46	349	674

d04	21,031	.	.	.	*	19	50	312	655
d05	20,037	.	.	.	.	22	37	266	482
d06	24,013	.	.	.	*	21	37	259	416
d07	37,271	.	.	.	*	34	85	484	718
d08	23,735	.	.	.	.	21	44	256	369
d09	18,306	.	.	.	*	16	32	171	264
d10	468,298	.	*	6	37	476	1,007	4,233	6,859
m01	680,244	.	.	*	83	362	587	5,239	9,383
m02	802,764	.	.	19	149	427	1,136	7,658	13,875
m03	1,395,548	.	.	20	666	1,018	2,760	13,973	28,676
m04	658,598	.	*	21	495	555	1,390	5,837	12,461
m05	524,236	.	.	15	313	382	837	3,853	8,547
m06	590,297	.	.	46	403	521	1,108	4,055	9,204
m07	374,582	.	.	22	459	797	1,437	2,738	6,812
m08	302,378	.	.	45	414	942	1,967	2,279	6,255
m09	284,286	.	.	59	590	1,359	2,356	2,517	6,151
m10	288,079	.	.	50	712	1,797	2,279	2,819	5,770
m11	399,306	.	.	81	860	2,268	3,959	4,563	7,020
m12	152,952	.	.	286	1,039	769	1,805	2,235	2,811
y01	1,943,066	.	.	270	3,628	11,564	14,849	20,013	25,884
y02	502,636	.	.	.	118	1,003	1,471	3,106	3,508
y03	209,746	.	.	.	.	64	299	859	1,089
y04	102,842	.	.	.	.	.	50	367	324
y05	50,622	.	.	.	.	.	.	55	145
y06	22,775	.	.	.	.	.	.	.	23
y07	10,156	.	.	.	.	.	.	.	.
y08	4,485	.	.	.	.	.	.	.	.
y09	2,084	.	.	.	.	.	.	.	.
y10	702	.	.	.	.	.	.	.	.
y11	242	.	.	.	.	.	.	.	.
y12	84	.	.	.	.	.	.	.	.
y13	22	.	.	.	.	.	.	.	.
y14	6	.	.	.	.	.	.	.	.

(Continued)

DVDD & LABKA data combined

14:51 Friday, January 21, 2022 4

Successive within-person distances between HbaAc measurements

d - days / d10 10-29 days / m - months / y - years

----- HbA1c-dato -----									
	2012	2013	2014	2015	2016	2017	2018	2019	2020
	N	N	N	N	N	N	N	N	N
cdif	131,637	160,835	376,748	342,928	375,198	252,806	203,543	208,531	139,466
d01	3,050	3,967	5,889	2,263	2,832	4,709	5,490	5,571	4,917
d02	2,405	2,467	2,816	1,910	2,269	2,922	3,536	3,729	3,354
d03	1,452	1,510	2,048	1,729	2,140	2,637	3,164	3,090	2,876
d04	1,372	1,457	1,937	1,817	2,046	2,439	3,080	2,957	2,889
d05	1,054	957	1,719	1,813	2,188	2,568	3,027	3,118	2,786
d06	815	824	1,906	2,416	2,783	3,276	3,949	3,840	3,470
d07	1,086	1,221	3,002	3,889	4,374	5,011	5,994	5,971	5,401
d08	692	629	1,792	2,495	2,944	3,348	3,763	3,915	3,467
d09	462	441	1,334	1,877	2,338	2,705	3,068	2,884	2,712
d10	9,886	9,859	33,625	48,630	62,053	70,324	78,039	74,716	68,547
m01	12,653	12,589	43,503	67,097	98,891	108,242	114,398	109,542	97,672
m02	17,336	17,279	53,896	80,201	123,046	133,072	131,940	122,855	99,875
m03	35,124	33,389	93,547	134,861	223,387	240,056	228,454	194,998	164,619
m04	17,172	17,230	39,722	59,326	95,272	102,502	108,927	105,499	92,188
m05	10,888	13,777	30,499	46,433	72,466	81,481	88,279	94,390	72,076
m06	10,983	15,282	33,722	50,723	77,617	89,270	101,656	112,628	83,079
m07	7,852	11,672	20,823	31,754	47,547	56,740	62,135	66,698	57,096
m08	6,997	10,666	17,633	25,806	36,489	45,598	48,713	51,079	47,495
m09	7,057	10,653	18,863	24,558	33,317	42,484	44,802	48,184	41,336
m10	7,053	11,003	17,817	25,634	33,252	43,061	46,241	48,981	41,610

m11	9,789	16,022	22,684	35,009	44,026	59,150	65,301	72,127	56,447
m12	3,287	6,240	8,260	13,383	15,437	22,492	24,803	29,164	20,941
y01	45,230	62,412	102,319	159,066	212,008	289,901	318,752	375,129	302,041
y02	8,359	14,335	25,688	32,629	47,650	68,680	88,943	110,298	96,848
y03	2,509	4,787	10,978	11,951	15,475	25,562	37,146	53,583	45,444
y04	903	2,046	4,480	6,065	6,744	9,894	19,453	26,717	25,799
y05	269	865	2,740	2,294	3,613	4,323	7,916	14,847	13,555
y06	112	232	1,233	1,099	1,468	2,434	3,251	6,173	6,750
y07	14	94	148	527	545	978	1,842	2,753	3,255
y08	.	12	5*	50	245	354	780	1,563	1,422
y09	.	.	*	47	36	174	271	656	898
y10	.	.	.	6	2*	21	140	199	311
y11	.	.	.	.	*	5	41	95	100
y12	.	.	.	.	.	4	1*	24	41
y13	.	.	.	.	.	.	*	1*	11
y14	.	.	.	.	.	.	.	*	4

HbA1c measurements triggering inclusion 14:51 Friday, January 21, 2022 5

	HbA1c (1st value >= 48)					HbA1c (2nd value >= 48)					
	N	P10	P25	P50	P75	P90	P10	P25	P50	P75	P90
Date of 2nd value >= 48											
2005	*	(removed)									
2006	722	51.9	56.2	63.9	71.6	82.5	51.9	56.2	63.9	71.6	80.3
2007	7,205	51.9	57.3	63.9	73.7	83.6	53.0	57.3	63.9	72.6	83.6
2008	11,864	51.9	56.2	63.9	73.7	85.8	51.9	56.2	63.9	73.7	84.7
2009	10,259	50.8	54.1	61.7	72.6	86.9	50.8	54.1	61.7	72.6	85.8
2010	17,582	49.7	52.0	58.0	69.4	84.7	49.0	52.0	57.3	68.0	81.4
2011	16,731	49.0	51.0	58.0	70.5	86.9	49.0	51.9	58.0	69.4	84.0
2012	15,102	49.0	50.8	56.0	69.0	88.0	49.0	51.0	56.2	67.0	83.0
2013	16,047	49.0	51.0	56.2	67.2	85.8	49.0	51.0	56.0	66.0	82.0
2014	28,643	48.6	50.0	55.0	65.0	84.0	49.0	51.0	55.0	65.0	80.0
2015	25,072	48.0	49.0	53.0	63.0	84.0	48.0	50.0	54.0	64.0	81.0
2016	31,172	48.0	49.0	52.0	61.0	84.0	48.0	50.0	53.0	62.0	81.0
2017	20,218	48.0	49.0	52.0	64.0	90.0	48.0	50.0	53.0	64.0	85.0
2018	19,091	48.0	49.0	52.0	65.0	92.0	48.0	50.0	53.0	64.0	85.0
2019	20,333	48.0	49.0	52.0	62.0	89.0	48.0	50.0	53.0	63.0	83.0
2020	17,307	48.0	49.0	52.0	61.0	89.0	48.0	50.0	53.0	62.0	84.0

14:51 Friday, January 21, 2022 6

The CONTENTS Procedure

Data Set Name	DMDAT.HBA	Observations	257350
Member Type	DATA	Variables	5
Engine	V9	Indexes	0
Created	21/01/2022 14:52:36	Observation Length	48
Last Modified	21/01/2022 14:52:36	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label	HbA1c events for DMreg		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	190
First Data Page	1
Max Obs per Page	1361
Obs in First Data Page	1327
Number of Data Set Repairs	0
ExtendObsCounter	YES

```

Filename                E:\workdata\707655\DMreg2020\data\hba.sas7bdat
Release Created         9.0401M5
Host Created            X64_SR12R2
Owner Name              DSTFSE\FDIY7655
File Size               12MB
File Size (bytes)      12517376

```

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	pnr	Char	12	\$12.	\$10.	Personnummer
2	doHbA	Num	8	DDMMYY10.	DDMMYY10.	Date of 2nd value >= 48
3	HbA1c	Num	8			HbA1c (2nd value >= 48)
4	lagHb	Num	8			HbA1c (1st value >= 48)
5	lastHbA	Num	8			Date of last HbA1c

4.13 06-define

Collects records from the processed registers and defines a diabetes register and the relevant dates in it.

The inclusion date will be the smaller of the earliest dates from the data sets NPR, RMPS, DVDD, NHR and DIAB, and the inclusion criterion will be the one that triggered the inclusion.

Persons are only included in the register at the second of the dates from NPR and RMPS, and the corresponding inclusion criterion is therefore one of 9 possible

Diabetes type is derived as described above.

Also derives a diabetes register exclusively based on drug information only.

```
1                                "Program: 06-define.sas" 14:11 Tuesday, January 25, 2022
```

```
NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.
```

```
NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)
```

```
      Licensed to FORSKNING 2, Site 50800723.
```

```
NOTE: This session is executing on the X64_SR12R2 platform.
```

```
NOTE: Updated analytical products:
```

```
      SAS/STAT 14.3
```

```
NOTE: Additional host information:
```

```
      X64_SR12R2 WIN 6.3.9600 Server
```

```
NOTE: SAS initialization used:
```

```
      real time          0.10 seconds
```

```
      cpu time           0.12 seconds
```

```
NOTE: AUTOEXEC processing beginning; file is
```

```
      E:\workdata\707655\DMreg2020\sas\optslibs.sas.
```

```
NOTE: AUTOEXEC processing completed.
```

```
1          * Constants used ;
2          %put ini = &ini. end = &end. t1ins = &t1ins. ;
ini = '01JAN1996'd end = '31DEC2020'd t1ins = 30
3
```

```

4      * A data set of all persons mentioned in any of the source registers (excl.
4      ! DiaBasen);
5      data DMreg ;
6          label pnr      = "Person-id"
7                  sex    = "Sex"
8                  doBth  = "Date of birth"
9                  doDM   = "Date of inclusion"
10                 doLast = "Date of latest criterion"
11                 doDth  = "Date of death"
12                 DMtp   = "Type of DM (T1/T2)"
13                 DMtx   = "Type of DM (T1/T2/Tx)"
14                 dvdtyp = "Type from DVDD"
15                 nprtyp = "Type from NPR"
16                 only1  = "Only one criterion"
17                 hasdvd = "has DVDD record"
18                 inCr   = "Incl. criterion"
19                 do2nd  = "Date of 2nd of Ins/OAD/NPR"
20                 doNPR  = "Date of 1st NPR"
21                 doNPR2 = "Date of 2nd NPR"
22                 doOAD  = "Date of 1st OAD"
23                 doOAD2 = "Date of 2nd OAD"
24                 doIns  = "Date of 1st Ins"
25                 doIns2 = "Date of 2nd Ins"
26                 doPod  = "Date of Podiatry"
27                 doHbA  = "Date of HbA1c"
28                 doDia  = "Date of diaBase"
29                 doDVD  = "Date of DVDD" ;
30     merge DMdat.npr ( in = npr   keep = pnr doNPR doNPR2 nprtyp lastNPR )
31           DMdat.dvdd ( in = dvdd  keep = pnr doDVDD          dvdtyp lastDVDD)
32           DMdat.rmps ( in = rmps  keep = pnr doOAD doOAD2    lastOAD
33                   doIns doIns2    lastIns )
34           DMdat.foot ( in = foot  keep = pnr doPod          lastPod )
35           DMdat.DiaB ( in = diab  keep = pnr doDia          lastDia )
36           DMdat.hba  ( in = hba   keep = pnr doHbA         lastHbA )
37           DMdat.pop  ( in = pop ) ;
38     by pnr ;
39     format doBth doDM doLast doDth
40            doNPR doOAD doIns
41            doNPR2 doOAD2 doIns2 do2nd doDVD doPod doDia doHbA
42            ddmmyy10. ;
43     * must be in the population and meet at least one criterion ;
44     if pop and ( npr or dvdd or rmps or foot or diab or hba ) ;
45
46     * The DVDD date of diagnosis is too uncertain to be used except when
47     no other criterion than DVDD is met.
48     Thus, date of diagnosis from DVDD is only used if the person meets no
49     other criterion, in which case we define doDVD as the doDVDD to
50     be used (doDVD will be missing if doDVDD is not used).
51     This will have the effect that we occasionally put the date of
52     inclusion later than if we had used the DVDD date as we do the
53     other dates ;
54
55     if nmiss(doNPR, doOAD, doIns, doPod, doDia, doHbA) eq 6 then doDVD = doDVDD ;
56
57     *-----;
58     * Date of diagnosis as 2nd date of EITHER dispense OR NPR diagnosis:
59     1) find the date of the 1st and 2nd criterion met
60     2) record the criterion met at the earliest date ;
61     if doOAD eq min(doOAD ,doIns ,doNPR ) then do ;
62         do2nd = min(doOAD2,doIns ,doNPR ) ; fC = "O" ; end ;
63     if doIns eq min(doOAD ,doIns ,doNPR ) then do ;
64         do2nd = min(doOAD ,doIns2,doNPR ) ; fC = "I" ; end ;
65     if doNPR eq min(doOAD ,doIns ,doNPR ) then do ;
66         do2nd = min(doOAD ,doIns ,doNPR2) ; fC = "N" ; end ;
67     * compute the type of 2nd criterion between OAD, Ins and NPR ;
68     if do2nd eq doOAD or do2nd eq doOAD2 then inCr = fC||"-O" ;
69     if do2nd eq doIns or do2nd eq doIns2 then inCr = fC||"-I" ;
70     if do2nd eq doNPR or do2nd eq doNPR2 then inCr = fC||"-N" ;
71
72     * Date of inclusion using 2nd record of dispense OR NPR ;

```

```

73         doDM = min( do2nd, doPod, doDia, doHbA, doDVD ) ;
74         * Inclusion criterion based on 2nd purchase / 2nd NPR ;
75         if doDM le .z      then inCr = "---" ; * never happens... ;
76         else do ;
77         if doDM eq doDVD then inCr = "DVD" ;
78         if doDM eq doPod then inCr = "Pod" ;
79         if doDM eq doDia then inCr = "Dia" ;
80         if doDM eq doHbA then inCr = "HbA" ;
81         end ;
82
83         *-----;
84         * indicator of only a single criterion met
85         and whether the person has a DVDD record ;
86         only1 = nmiss(do2nd, doDVD, doPod, doDia, doHbA) eq 4 ;
87         hasdvd = not missing( doDVDD ) ;
88
89         * date of last criterion met;
90         doLast = max(lastNPR, lastOAD, lastIns,
91                     lastDVDD, lastPod, lastDia, lastHbA) ;
92
93         *-----;
94         * Type definintion of diabetes ;
95
96         * Using DVDD and NPR criteria ;
97         if dvdtyp ne " " then DMtx = dvdtyp ;
98         else DMtx = nprtyp ;
99
100        * unknown type is classified as T2 ;
101        if DMtx eq " " then DMtx = "T2" ;
102
103        * if missing DVDD record always use insulin age criterion ;
104        if not hasdvd and
105           .z < (doIns - doBth) < ( 365.25 * &t1ins. ) then DMtx = "T1" ;
106
107        * finally, it is impossible to be T1 without insulin ;
108        if missing(doIns) and DMtx eq "T1" then DMtx = "T2" ;
109
110        * the dichotomized type is just Tx -> T2 ;
111        if DMtx eq "Tx" then DMtp = "T2" ;
112        else DMtp = DMtx ;
113        run ;

```

NOTE: Missing values were generated as a result of performing an operation on missing values.

Each place is given by: (Number of times) at (Line):(Column).

38207 at 61:15 55687 at 62:15 38207 at 63:15 41167 at 64:15
38207 at 65:15 66009 at 66:15 39713 at 73:13 407896 at 105:18

NOTE: There were 373106 observations read from the data set DMDAT.NPR.
NOTE: There were 270016 observations read from the data set DMDAT.DVDD.
NOTE: There were 504163 observations read from the data set DMDAT.RMPS.
NOTE: There were 312877 observations read from the data set DMDAT.FOOT.
NOTE: There were 221594 observations read from the data set DMDAT.DIAB.
NOTE: There were 257350 observations read from the data set DMDAT.HBA.
NOTE: There were 8298837 observations read from the data set DMDAT.POP.
NOTE: The data set WORK.DMREG has 589567 observations and 33 variables.
NOTE: DATA statement used (Total process time):
real time 5.41 seconds
cpu time 4.73 seconds

```

114
115         title1 "The diabetes register DMreg2020" ;
116         data Dmdat.DMreg ( label = "DMreg for Denmark 2020"
117                          keep = pnr sex DMtp DMtx dvdtyp nprtyp
118                               inCr only1 hasdvd
119                               doBth doDM doDth doLast
120                               doNPR doOAD doIns
121                               doNPR2 doOAD2 doIns2 do2nd
122                               doDVD doPod doDia doHbA ) ;
123         set DMreg ;

```

```

124      * only sane results accepted ;
125      if doDM gt doBth and
126          doDM le &end. ;
127      run ;

```

NOTE: There were 589567 observations read from the data set WORK.DMREG.
NOTE: The data set DMDAT.DMREG has 549852 observations and 24 variables.
NOTE: DATA statement used (Total process time):
real time 0.49 seconds
cpu time 0.28 seconds

```

128
129      * temporary variables for the tabulation ;
130      data a ;
131          set DMdat.DMreg ;
132          * age at diagnosis ;
133          ageDM = ( doDM - doBth ) / 365.25 ;
134          a1 = floor( ageDM ) ;
135          * date of diagnosis moved to end 1995 ;
136          doDM = max( doDM , &ini.-1 ) + doDM - doDM ;
137          o1 = only1 * 100 ;
138          if index(inCr, "-") then inCr = substr(inCr, 3, 1) ;
139      run ;

```

NOTE: There were 549852 observations read from the data set DMDAT.DMREG.
NOTE: The data set WORK.A has 549852 observations and 27 variables.
NOTE: DATA statement used (Total process time):
real time 0.66 seconds
cpu time 0.17 seconds

```

140
141      proc format ;
142          value onlyone 0=">1 crit" 1=" only 1" ;
NOTE: Format ONLYONE has been output.
143          value hasdvd 0="no DVDD" 1="in DVDD" ;
NOTE: Format HASDVD has been output.
144      run ;

```

NOTE: PROCEDURE FORMAT used (Total process time):
real time 0.00 seconds
cpu time 0.01 seconds

```

145
146      title2 "Inclusion using 2nd OAD/Ins/NPR (the official version)" ;
147      proc tabulate data = a ( where = (doDM > .z) )
148          missing noseps ; * formchar = " - " ;
149      /* missing noseps formchar = " - - - " ; */
150      class sex doDth doDM inCr a1 ageDM
151          only1 hasdvd dvdtyp nprtyp DMtp DMtx ;
152      var o1 doIns ;
153      keylabel n = " "
154          mean = " " ;
155      table dvdtyp = "DVDD" * nprtyp = "NPR"
156          all
157          doDM,
158          ( all DMtp DMtx ) * f=comma10.
159          / rts = 13 ;
160      table all only1 only1 * doDM,
161          all * f = comma7.
162          inCr * f = comma7.
163          / rts = 15 indent = 2 ;
164      table all only1 only1 * doDM,
165          all * f = comma7.
166          (all inCr) * pctn<all inCr> * f = 5.1
167          / rts = 15 indent = 2 ;
168      table only1 * doDM,
169          all * f = comma7.

```

```

170          (all inCr) * pctn<only1> * f = 5.1
171          / rts = 15 indent = 2
172          box = "% meeting >1 criterion (resp. only 1)" ;
173          format doDM year4.
174          ageDM agr.
175          only1 onlyone.
176          hasdvd hasdvd. ;
177          label doDM = only1 =;
178          run ;

```

NOTE: There were 549852 observations read from the data set WORK.A.
WHERE doDM>.Z;

NOTE: The PROCEDURE TABULATE printed pages 1-4.

NOTE: PROCEDURE TABULATE used (Total process time):

```

real time      0.38 seconds
cpu time       0.95 seconds

```

```

179
180          title1 ;
181          proc contents data = DMdat.DMreg varnum ; run ;

```

NOTE: PROCEDURE CONTENTS used (Total process time):

```

real time      0.01 seconds
cpu time       0.01 seconds

```

NOTE: The PROCEDURE CONTENTS printed page 5.

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414

NOTE: The SAS System used:

```

real time      7.19 seconds
cpu time       6.31 seconds

```

4.13.1 06-define.lst

The following is a tabular documentation of the most important features of the constructed register.

The diabetes register DMreg2020 14:11 Tuesday, January 25, 2022 1
Inclusion using 2nd OAD/Ins/NPR (the official version)

		Type of DM (T1/T2)			Type of DM (T1/T2/Tx)		
		All	T1	T2	T1	T2	Tx
DVDD	NPR	117,096	1,059	116,037	1,059	116,037	.
	T1	33,401	25,632	7,769	25,632	7,769	.
	T2	118,394	184	118,210	184	118,210	.
	Tx	11,976	229	11,747	229	.	11,747
T1		997	767	230	767	230	.
	T1	25,385	25,261	124	25,261	124	.
	T2	3,122	2,881	241	2,881	241	.
	Tx	1,096	1,073	23	1,073	23	.
T2		81,858	.	81,858	.	81,858	.
	T1	10,201	.	10,201	.	10,201	.
	T2	131,883	.	131,883	.	131,883	.
	Tx	10,095	.	10,095	.	10,095	.
Tx		556	.	556	.	.	556
	T1	750	.	750	.	.	750
	T2	1,622	.	1,622	.	.	1,622
	Tx	1,420	.	1,420	.	.	1,420
All		549,852	57,086	492,766	57,086	476,671	16,095
doDM							

1995	87,073	28,173	58,900	28,173	55,331	3,569
1996	12,719	1,708	11,011	1,708	10,549	462
1997	12,102	1,526	10,576	1,526	10,104	472
1998	13,173	1,554	11,619	1,554	11,177	442
1999	13,670	1,422	12,248	1,422	11,752	496
2000	13,716	1,385	12,331	1,385	11,839	492
2001	13,889	1,390	12,499	1,390	12,028	471
2002	16,713	1,361	15,352	1,361	14,803	549
2003	18,288	1,326	16,962	1,326	16,380	582
2004	18,491	1,208	17,283	1,208	16,715	568
2005	16,174	1,156	15,018	1,156	14,490	528
2006	15,728	1,201	14,527	1,201	14,028	499
2007	17,021	1,141	15,880	1,141	15,377	503
2008	18,984	1,127	17,857	1,127	17,355	502
2009	20,106	1,142	18,964	1,142	18,453	511
2010	22,941	1,073	21,868	1,073	21,333	535
2011	29,922	1,019	28,903	1,019	28,293	610
2012	24,583	940	23,643	940	23,066	577
2013	19,615	996	18,619	996	18,067	552
2014	19,799	956	18,843	956	18,283	560
2015	21,114	984	20,130	984	19,539	591
2016	22,949	970	21,979	970	21,414	565
2017	21,132	951	20,181	951	19,615	566
2018	20,001	951	19,050	951	18,558	492
2019	20,244	786	19,458	786	19,234	224
2020	19,705	640	19,065	640	18,888	177

The diabetes register DMreg2020 14:11 Tuesday, January 25, 2022 2
 Inclusion using 2nd OAD/Ins/NPR (the official version)

	Incl. criterion							
	All	DVD	Dia	HbA	I	N	0	Pod
All	549,852	4,997	11,982	72,028	19,174	120,150	251,479	70,042
>1 crit	392,924	.	7,483	57,683	11,186	87,484	175,483	53,605
only *	156,928	4,997	4,499	14,345	7,988	32,666	75,996	16,437
>1 crit								
1995	67,357	.	.	.	2,275	33,247	14,214	17,621
1996	8,728	.	.	.	444	2,166	4,659	1,459
1997	8,557	.	.	.	406	2,185	4,410	1,556
1998	9,549	.	.	.	374	2,396	5,027	1,752
1999	9,854	.	.	.	383	2,457	5,011	2,003
2000	9,771	.	.	.	352	2,696	5,056	1,667
2001	9,944	.	.	.	383	2,754	5,761	1,046
2002	12,102	.	.	.	391	2,887	5,648	3,176
2003	13,101	.	.	.	326	3,032	6,499	3,244
2004	13,175	.	.	.	382	2,849	6,522	3,422
2005	10,981	.	.	.	322	2,610	6,359	1,690
2006	10,719	.	.	*	308	2,801	7,272	336
2007	11,997	.	.	1*	319	2,733	8,565	365
2008	13,627	.	.	132	405	2,829	9,904	357
2009	14,971	.	209	250	323	2,899	11,003	287
2010	17,604	.	281	1,668	326	2,920	12,074	335
2011	23,042	.	413	2,011	348	2,678	13,190	4,402
2012	19,003	.	204	2,372	302	2,252	11,331	2,542
2013	14,860	.	710	2,095	363	2,050	8,093	1,549
2014	14,981	.	1,544	4,640	312	1,770	5,632	1,083
2015	15,909	.	1,423	6,528	300	1,616	5,076	966
2016	16,890	.	878	9,493	288	1,382	4,071	778
2017	14,794	.	807	8,263	288	1,272	3,509	655
2018	13,021	.	669	7,723	284	1,003	2,836	506
2019	11,266	.	345	7,267	621	.	2,505	528
2020	7,121	.	.	5,224	361	.	1,256	280
only 1								
1995	19,716	41	.	.	1,471	8,317	7,285	2,602
1996	3,991	11	.	.	263	849	2,273	595
1997	3,545	4	.	.	190	803	1,918	630

1998	3,624	9	.	.	155	801	2,007	652
1999	3,816	9	.	.	176	889	2,028	714
2000	3,945	44	.	.	175	1,087	1,972	667
2001	3,945	36	.	.	163	1,159	2,075	512
2002	4,611	34	.	.	144	1,084	1,886	1,463
2003	5,187	53	.	.	165	1,248	2,167	1,554
2004	5,316	70	.	.	181	1,241	2,480	1,344
2005	5,193	104	.	.	229	1,448	2,707	705
2006	5,009	163	.	.	256	1,501	2,938	151
2007	5,024	210	.	.	278	1,375	2,928	233
2008	5,357	338	.	5	289	1,294	3,169	262
2009	5,135	322	54	11	272	1,234	3,059	183
2010	5,337	470	34	67	232	1,146	3,194	194
2011	6,880	503	78	94	206	1,083	3,524	1,392
2012	5,580	394	25	189	220	1,027	3,204	521
2013	4,755	406	412	155	251	972	2,266	293
2014	4,818	227	998	337	245	890	1,927	194
2015	5,205	71	987	780	214	835	2,122	196
2016	6,059	108	517	1,534	232	847	2,630	191
2017	6,338	148	586	1,610	242	822	2,741	189
2018	6,980	495	576	1,657	278	714	3,094	166
2019	8,978	403	232	2,989	609	.	4,507	238
2020	12,584	324	.	4,917	852	.	5,895	596

The diabetes register DMreg2020 14:11 Tuesday, January 25, 2022 3
 Inclusion using 2nd OAD/Ins/NPR (the official version)

	All	Incl. criterion							
		All	DVD	Dia	HbA	I	N	O	Pod
		PctN	PctN	PctN	PctN	PctN	PctN	PctN	PctN
All	549,852	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
>1 crit	392,924	100.0	.	1.9	14.7	2.8	22.3	44.7	13.6
only 1	156,928	100.0	3.2	2.9	9.1	5.1	20.8	48.4	10.5
>1 crit									
1995	67,357	100.0	.	.	.	3.4	49.4	21.1	26.2
1996	8,728	100.0	.	.	.	5.1	24.8	53.4	16.7
1997	8,557	100.0	.	.	.	4.7	25.5	51.5	18.2
1998	9,549	100.0	.	.	.	3.9	25.1	52.6	18.3
1999	9,854	100.0	.	.	.	3.9	24.9	50.9	20.3
2000	9,771	100.0	.	.	.	3.6	27.6	51.7	17.1
2001	9,944	100.0	.	.	.	3.9	27.7	57.9	10.5
2002	12,102	100.0	.	.	.	3.2	23.9	46.7	26.2
2003	13,101	100.0	.	.	.	2.5	23.1	49.6	24.8
2004	13,175	100.0	.	.	.	2.9	21.6	49.5	26.0
2005	10,981	100.0	.	.	.	2.9	23.8	57.9	15.4
2006	10,719	100.0	.	.	0.0	2.9	26.1	67.8	3.1
2007	11,997	100.0	.	.	0.1	2.7	22.8	71.4	3.0
2008	13,627	100.0	.	.	1.0	3.0	20.8	72.7	2.6
2009	14,971	100.0	.	1.4	1.7	2.2	19.4	73.5	1.9
2010	17,604	100.0	.	1.6	9.5	1.9	16.6	68.6	1.9
2011	23,042	100.0	.	1.8	8.7	1.5	11.6	57.2	19.1
2012	19,003	100.0	.	1.1	12.5	1.6	11.9	59.6	13.4
2013	14,860	100.0	.	4.8	14.1	2.4	13.8	54.5	10.4
2014	14,981	100.0	.	10.3	31.0	2.1	11.8	37.6	7.2
2015	15,909	100.0	.	8.9	41.0	1.9	10.2	31.9	6.1
2016	16,890	100.0	.	5.2	56.2	1.7	8.2	24.1	4.6
2017	14,794	100.0	.	5.5	55.9	1.9	8.6	23.7	4.4
2018	13,021	100.0	.	5.1	59.3	2.2	7.7	21.8	3.9
2019	11,266	100.0	.	3.1	64.5	5.5	.	22.2	4.7
2020	7,121	100.0	.	.	73.4	5.1	.	17.6	3.9
only 1									
1995	19,716	100.0	0.2	.	.	7.5	42.2	36.9	13.2
1996	3,991	100.0	0.3	.	.	6.6	21.3	57.0	14.9
1997	3,545	100.0	0.1	.	.	5.4	22.7	54.1	17.8
1998	3,624	100.0	0.2	.	.	4.3	22.1	55.4	18.0

1999	3,816	100.0	0.2	.	.	4.6	23.3	53.1	18.7
2000	3,945	100.0	1.1	.	.	4.4	27.6	50.0	16.9
2001	3,945	100.0	0.9	.	.	4.1	29.4	52.6	13.0
2002	4,611	100.0	0.7	.	.	3.1	23.5	40.9	31.7
2003	5,187	100.0	1.0	.	.	3.2	24.1	41.8	30.0
2004	5,316	100.0	1.3	.	.	3.4	23.3	46.7	25.3
2005	5,193	100.0	2.0	.	.	4.4	27.9	52.1	13.6
2006	5,009	100.0	3.3	.	.	5.1	30.0	58.7	3.0
2007	5,024	100.0	4.2	.	.	5.5	27.4	58.3	4.6
2008	5,357	100.0	6.3	.	0.1	5.4	24.2	59.2	4.9
2009	5,135	100.0	6.3	1.1	0.2	5.3	24.0	59.6	3.6
2010	5,337	100.0	8.8	0.6	1.3	4.3	21.5	59.8	3.6
2011	6,880	100.0	7.3	1.1	1.4	3.0	15.7	51.2	20.2
2012	5,580	100.0	7.1	0.4	3.4	3.9	18.4	57.4	9.3
2013	4,755	100.0	8.5	8.7	3.3	5.3	20.4	47.7	6.2
2014	4,818	100.0	4.7	20.7	7.0	5.1	18.5	40.0	4.0
2015	5,205	100.0	1.4	19.0	15.0	4.1	16.0	40.8	3.8
2016	6,059	100.0	1.8	8.5	25.3	3.8	14.0	43.4	3.2
2017	6,338	100.0	2.3	9.2	25.4	3.8	13.0	43.2	3.0
2018	6,980	100.0	7.1	8.3	23.7	4.0	10.2	44.3	2.4
2019	8,978	100.0	4.5	2.6	33.3	6.8	.	50.2	2.7
2020	12,584	100.0	2.6	.	39.1	6.8	.	46.8	4.7

The diabetes register DMreg2020 14:11 Tuesday, January 25, 2022 4
 Inclusion using 2nd OAD/Ins/NPR (the official version)

% meeting >1 criterion (resp. only 1)	Incl. criterion								
	All	DVD	Dia	HbA	I	N	O	Pod	
	PctN	PctN	PctN	PctN	PctN	PctN	PctN	PctN	PctN
>1 crit									
1995	67,357	77.4	.	.	.	60.7	80.0	66.1	87.1
1996	8,728	68.6	.	.	.	62.8	71.8	67.2	71.0
1997	8,557	70.7	.	.	.	68.1	73.1	69.7	71.2
1998	9,549	72.5	.	.	.	70.7	74.9	71.5	72.9
1999	9,854	72.1	.	.	.	68.5	73.4	71.2	73.7
2000	9,771	71.2	.	.	.	66.8	71.3	71.9	71.4
2001	9,944	71.6	.	.	.	70.1	70.4	73.5	67.1
2002	12,102	72.4	.	.	.	73.1	72.7	75.0	68.5
2003	13,101	71.6	.	.	.	66.4	70.8	75.0	67.6
2004	13,175	71.3	.	.	.	67.9	69.7	72.5	71.8
2005	10,981	67.9	.	.	.	58.4	64.3	70.1	70.6
2006	10,719	68.2	.	.	100.0	54.6	65.1	71.2	69.0
2007	11,997	70.5	.	.	100.0	53.4	66.5	74.5	61.0
2008	13,627	71.8	.	.	96.4	58.4	68.6	75.8	57.7
2009	14,971	74.5	.	79.5	95.8	54.3	70.1	78.2	61.1
2010	17,604	76.7	.	89.2	96.1	58.4	71.8	79.1	63.3
2011	23,042	77.0	.	84.1	95.5	62.8	71.2	78.9	76.0
2012	19,003	77.3	.	89.1	92.6	57.9	68.7	78.0	83.0
2013	14,860	75.8	.	63.3	93.1	59.1	67.8	78.1	84.1
2014	14,981	75.7	.	60.7	93.2	56.0	66.5	74.5	84.8
2015	15,909	75.3	.	59.0	89.3	58.4	65.9	70.5	83.1
2016	16,890	73.6	.	62.9	86.1	55.4	62.0	60.8	80.3
2017	14,794	70.0	.	57.9	83.7	54.3	60.7	56.1	77.6
2018	13,021	65.1	.	53.7	82.3	50.5	58.4	47.8	75.3
2019	11,266	55.7	.	59.8	70.9	50.5	.	35.7	68.9
2020	7,121	36.1	.	.	51.5	29.8	.	17.6	32.0
only 1									
1995	19,716	22.6	100.0	.	.	39.3	20.0	33.9	12.9
1996	3,991	31.4	100.0	.	.	37.2	28.2	32.8	29.0
1997	3,545	29.3	100.0	.	.	31.9	26.9	30.3	28.8
1998	3,624	27.5	100.0	.	.	29.3	25.1	28.5	27.1
1999	3,816	27.9	100.0	.	.	31.5	26.6	28.8	26.3
2000	3,945	28.8	100.0	.	.	33.2	28.7	28.1	28.6
2001	3,945	28.4	100.0	.	.	29.9	29.6	26.5	32.9
2002	4,611	27.6	100.0	.	.	26.9	27.3	25.0	31.5

2003	5,187	28.4	100.0	.	.	33.6	29.2	25.0	32.4
2004	5,316	28.7	100.0	.	.	32.1	30.3	27.5	28.2
2005	5,193	32.1	100.0	.	.	41.6	35.7	29.9	29.4
2006	5,009	31.8	100.0	.	.	45.4	34.9	28.8	31.0
2007	5,024	29.5	100.0	.	.	46.6	33.5	25.5	39.0
2008	5,357	28.2	100.0	.	3.6	41.6	31.4	24.2	42.3
2009	5,135	25.5	100.0	20.5	4.2	45.7	29.9	21.8	38.9
2010	5,337	23.3	100.0	10.8	3.9	41.6	28.2	20.9	36.7
2011	6,880	23.0	100.0	15.9	4.5	37.2	28.8	21.1	24.0
2012	5,580	22.7	100.0	10.9	7.4	42.1	31.3	22.0	17.0
2013	4,755	24.2	100.0	36.7	6.9	40.9	32.2	21.9	15.9
2014	4,818	24.3	100.0	39.3	6.8	44.0	33.5	25.5	15.2
2015	5,205	24.7	100.0	41.0	10.7	41.6	34.1	29.5	16.9
2016	6,059	26.4	100.0	37.1	13.9	44.6	38.0	39.2	19.7
2017	6,338	30.0	100.0	42.1	16.3	45.7	39.3	43.9	22.4
2018	6,980	34.9	100.0	46.3	17.7	49.5	41.6	52.2	24.7
2019	8,978	44.3	100.0	40.2	29.1	49.5	.	64.3	31.1
2020	12,584	63.9	100.0	.	48.5	70.2	.	82.4	68.0

14:11 Tuesday, January 25, 2022 5

The CONTENTS Procedure

Data Set Name	DMDAT.DMREG	Observations	549852
Member Type	DATA	Variables	24
Engine	V9	Indexes	0
Created	25/01/2022 14:11:39	Observation Length	200
Last Modified	25/01/2022 14:11:39	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label	DMreg for Denmark 2020		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	1682
First Data Page	*
Max Obs per Page	327
Obs in First Data Page	308
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\dmreg.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	105MB
File Size (bytes)	110297088

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
*	pnr	Char	12	\$12.	\$10.	Person-id
*	sex	Char	*			Sex
*	doBth	Num	8	DDMMYY10.		Date of birth
4	doDM	Num	8	DDMMYY10.		Date of inclusion
5	doLast	Num	8	DDMMYY10.		Date of latest criterion
6	doDth	Num	8	DDMMYY10.		Date of death
7	DMtp	Char	*			Type of DM (T1/T2)
8	DMtx	Char	20			Type of DM (T1/T2/Tx)
9	dvdtyp	Char	20			Type from DVDD
10	nprtyp	Char	*			Type from NPR
11	only1	Num	8			Only one criterion
12	hasdvd	Num	8			has DVDD record
13	inCr	Char	*			Incl. criterion

14	do2nd	Num	8	DDMMYY10.		Date of 2nd of Ins/OAD/NPR
15	doNPR	Num	8	DDMMYY10.	DATE9.	Date of 1st NPR
16	doNPR2	Num	8	DDMMYY10.	DATE9.	Date of 2nd NPR
17	doOAD	Num	8	DDMMYY10.	DATE9.	Date of 1st OAD
18	doOAD2	Num	8	DDMMYY10.	DATE9.	Date of 2nd OAD
19	doIns	Num	8	DDMMYY10.	DATE9.	Date of 1st Ins
20	doIns2	Num	8	DDMMYY10.	DATE9.	Date of 2nd Ins
21	doPod	Num	8	DDMMYY10.		Date of Podiatry
22	doHbA	Num	8	DDMMYY10.	DDMMYY10.	Date of HbA1c
23	doDia	Num	8	DDMMYY10.	IS8601DA10.	Date of diaBase
24	doDVD	Num	8	DDMMYY10.		Date of DVDD

4.14 06d-define

Defines the diabetes *drug-register*, i.e. the register exclusively based on drug purchases. Persons are included on the 2nd purchase of drugs, while type of diabetes is taken from DMreg.

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1                               "Program: 06d-define.sas" 14:40 Tuesday, January 25, 2022
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NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)
```

```
      Licensed to FORSKNING 2, Site 50800723.
```

```
NOTE: This session is executing on the X64_SR12R2 platform.
```

```
NOTE: Updated analytical products:
```

```
      SAS/STAT 14.3
```

```
NOTE: Additional host information:
```

```
      X64_SR12R2 WIN 6.3.9600 Server
```

```
NOTE: SAS initialization used:
```

```
      real time          0.17 seconds
```

```
      cpu time           0.09 seconds
```

```
NOTE: AUTOEXEC processing beginning; file is
```

```
      E:\workdata\707655\DMreg2020\sas\optslibs.sas.
```

```
NOTE: AUTOEXEC processing completed.
```

```
1      title1 'The reconstructed diabetes *drug* register' ;
2      data DMdreg ;
3          label pnr      = 'Person id'
4                 sex     = 'Sex'
5                 DMtp    = 'Type of DM'
6                 DMtx    = 'Type of DM (T1/T2/Tx)'
7                 doBth   = 'Date of birth'
8                 doDM    = 'Date of inclusion'
9                 doDth   = 'Date of death'
10                inCr    = 'Incl. criterion'
11                doOAD    = 'Date of 1st OAD'
12                doIns    = 'Date of 1st Ins' ;
13      merge DMdat.RMPS ( in = rmps keep = pnr doOAD doIns
14                        doOAD2 doIns2 )
15            DMdat.pop ( in = pop )
16            DMdat.DMreg ( in = dmr keep = pnr DMtp DMtx ) ;
17      by pnr ;
18      keep pnr sex DMtp DMtx inCr
19            doBth doDM doOAD doIns doDth ;
```

```

20      format doBth doDM doOAD doIns doDth ddmmyy10. ;
21      if pop and rmeps and dmr ;
22      * Date of diagnosis - GDM and PCOS are taken care of in RMPS ;
23      if doOAD eq min(doOAD ,doIns ) then do ;
24          doDM = min(doOAD2,doIns ) ; fC = '0' ; end ;
25      if doIns eq min(doOAD ,doIns ) then do ;
26          doDM = min(doOAD ,doIns2) ; fC = 'I' ; end ;
27      * compute the type of 2nd criterion between OAD and Ins ;
28      if doDM eq doOAD or doDM eq doOAD2 then inCr = fC||"-0" ;
29      if doDM eq doIns or doDM eq doIns2 then inCr = fC||"-I" ;
30      if doDM gt .z and doDM lt &end. ;
31      run ;

```

NOTE: Missing values were generated as a result of performing an operation on missing values.

Each place is given by: (Number of times) at (Line):(Column).

8313 at 24:15 1602 at 26:15

NOTE: There were 504163 observations read from the data set DMDAT.RMPS.

NOTE: There were 8298837 observations read from the data set DMDAT.POP.

NOTE: There were 549852 observations read from the data set DMDAT.DMREG.

NOTE: The data set WORK.DMDREG has 478294 observations and 10 variables.

NOTE: DATA statement used (Total process time):

```

real time      7.70 seconds
cpu time       1.86 seconds

```

```

32
33      data DMdat.DMreg
34          (label = 'Reconstructed DM register, only persons on drugs') ;
35      set DMdreg ;
36      run ;

```

NOTE: There were 478294 observations read from the data set WORK.DMDREG.

NOTE: The data set DMDAT.DMDREG has 478294 observations and 10 variables.

NOTE: DATA statement used (Total process time):

```

real time      0.33 seconds
cpu time       0.09 seconds

```

```

37
38      proc tabulate data = DMdat.DMreg missing noseps ;
39          class doDM DMtp inCr ;
40          table all doDM,
41              ( all * f=comma7.
42                  DMtp * ( all * f=comma7.
43                      inCr * f=comma6. ) )
44              / rts = 6 ;
45          table doDM,
46              (DMtp * ( (all InCr) * pctn<all InCr> )) * f = 6.1
47              / rts = 6 ;
48          keylabel n = ' ' ;
49          format doDM year4. ;
50      run ;

```

NOTE: There were 478294 observations read from the data set DMDAT.DMDREG.

NOTE: The PROCEDURE TABULATE printed pages 1-2.

NOTE: PROCEDURE TABULATE used (Total process time):

```

real time      1.27 seconds
cpu time       0.26 seconds

```

```

51
52      proc contents data = DMdat.DMreg varnum ; run ;

```

NOTE: PROCEDURE CONTENTS used (Total process time):

```

real time      0.03 seconds
cpu time       0.00 seconds

```

NOTE: The PROCEDURE CONTENTS printed page 3.


```

-----
Date
of
inc-
lus-
sion
1995 100.0 80.2 0.2 0.6 18.9 100.0 17.9 0.2 0.6 81.3
1996 100.0 69.4 0.5 1.5 28.6 100.0 7.3 0.4 0.6 91.7
1997 100.0 57.5 0.7 2.2 39.6 100.0 5.5 0.5 0.8 93.2
1998 100.0 53.4 0.8 3.5 42.3 100.0 5.5 0.5 0.7 93.3
1999 100.0 54.7 0.8 3.5 41.0 100.0 5.5 0.6 0.7 93.2
2000 100.0 59.4 1.1 2.5 37.0 100.0 5.9 0.5 0.9 92.7
2001 100.0 56.9 0.9 4.3 37.9 100.0 5.8 0.3 0.9 93.0
2002 100.0 61.7 0.5 5.1 32.7 100.0 5.5 0.4 0.9 93.1
2003 100.0 59.5 0.5 4.3 35.7 100.0 4.8 0.4 1.0 93.7
2004 100.0 66.0 . 4.7 29.3 100.0 5.3 0.5 1.3 92.9
2005 100.0 66.4 0.6 5.2 27.7 100.0 5.5 0.4 1.1 93.1
2006 100.0 70.5 0.5 5.2 23.8 100.0 5.3 0.3 1.3 93.1
2007 100.0 69.7 0.4 6.3 23.6 100.0 5.2 0.4 1.2 93.3
2008 100.0 71.3 0.9 4.7 23.1 100.0 4.7 0.4 1.2 93.7
2009 100.0 73.2 0.7 6.0 20.1 100.0 4.4 0.4 1.1 94.1
2010 100.0 77.0 0.8 5.0 17.2 100.0 3.9 0.4 1.1 94.5
2011 100.0 76.4 0.6 4.6 18.4 100.0 3.3 0.2 1.0 95.5
2012 100.0 78.7 0.6 4.9 15.8 100.0 3.3 0.4 0.9 95.4
2013 100.0 78.6 0.6 5.5 15.3 100.0 5.0 0.5 1.3 93.2
2014 100.0 81.9 0.7 5.2 12.2 100.0 5.4 0.5 1.6 92.5
2015 100.0 81.3 1.0 6.4 11.3 100.0 5.3 0.6 1.6 92.5
2016 100.0 86.3 0.9 5.2 7.6 100.0 4.4 0.5 1.5 93.6
2017 100.0 86.5 1.1 4.0 8.4 100.0 4.7 0.5 1.6 93.2
2018 100.0 86.5 0.6 6.3 6.5 100.0 4.9 0.6 1.6 92.9
2019 100.0 89.5 1.0 4.9 4.6 100.0 5.0 0.5 1.5 93.0
2020 100.0 94.1 1.2 3.6 1.2 100.0 5.2 0.5 1.6 92.6
-----

```

The reconstructed diabetes *drug* register

14:40 Tuesday, January 25, 2022 3

The CONTENTS Procedure

Data Set Name	DMDAT.DMDREG	Observations	478294
Member Type	DATA	Variables	10
Engine	V9	Indexes	0
Created	25/01/2022 14:40:22	Observation Length	80
Last Modified	25/01/2022 14:40:22	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label	Reconstructed DM register, only persons on drugs		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	586
First Data Page	1
Max Obs per Page	817
Obs in First Data Page	790
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\dmdreg.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	37MB
File Size (bytes)	38469632

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	pnr	Char	12	\$12.	\$10.	Person id
2	sex	Char	1			Sex
3	DMtp	Char	2			Type of DM
4	DMtx	Char	20			Type of DM (T1/T2/Tx)
5	doBth	Num	8	DDMMYY10.		Date of birth
6	doDM	Num	8	DDMMYY10.		Date of inclusion
7	doDth	Num	8	DDMMYY10.		Date of death
8	inCr	Char	3			Incl. criterion
9	doOAD	Num	8	DDMMYY10.	DATE9.	Date of 1st OAD
10	doIns	Num	8	DDMMYY10.	DATE9.	Date of 1st Ins

4.15 10-labcomp

Reads the files of urine albumin/creatinine from LABKA and the albumin/creatinine ratio from DVDD and the GFR from the LABKA data base and plasma creatinine measurements from the DVDD. Measurements and dates of measurement are then combined to dates of severe, moderate and end stage kidney disease and to dates of micro- and macroalbuminuria in the file DMdat.micompl.

```
1                                "Program: 10-labcomp.sas"
                                15:48 Wednesday, December 29, 2021
```

NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.

NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)
Licensed to FORSKNING 2, Site 50800723.

NOTE: This session is executing on the X64_SR12R2 platform.

NOTE: Updated analytical products:

SAS/STAT 14.3

NOTE: Additional host information:

X64_SR12R2 WIN 6.3.9600 Server

NOTE: SAS initialization used:

real time 0.09 seconds
cpu time 0.10 seconds

NOTE: AUTOEXEC processing beginning; file is
E:\workdata\707655\DMreg2020\sas\optslibs.sas.

NOTE: AUTOEXEC processing completed.

```
1      options mprint ;
2      *-----;
3      * KIDNEY complications are derived from LABKA and DVDD, from each we
4      derive a date and a measurement value (eGFR or Alb) in the
5      appropriate values units.
6      Then complications are derived from these taking timing into account
7      using macros for eGFR and Albumin ;
8
9      *-----;
10     * LABORATORY data ;
11
12     title "Tabulation of LABKA showing fishy range for NPU03918" ;
13     data Uacr ;
14         set lbdat.Uacr ;
```

```

15         length numval 8 ;
16         if value eq '<10' then numval = . ; else
17         numval = input( translate( value, '.', '>/' ), best8. ) ;
18         run ;

```

NOTE: There were 2468127 observations read from the data set LBDAT.UACR.

NOTE: The data set WORK.UACR has 2468127 observations and 8 variables.

NOTE: DATA statement used (Total process time):

```

real time      1.32 seconds
cpu time       0.62 seconds

```

```

19
20         proc tabulate data = Uacr missing noseps ;
21         class value analysiscode unit ;
22         var numval ;
23         table analysiscode * unit,
24         numval * ( ( n nmiss ) * f=comma7.
25         (p5 p25 p50 p75 p95) * f=7.3 )
26         / rts=20 indent=2 condense ;
27         run ;

```

NOTE: There were 2468127 observations read from the data set WORK.UACR.

NOTE: The PROCEDURE TABULATE printed page 1.

NOTE: PROCEDURE TABULATE used (Total process time):

```

real time      0.28 seconds
cpu time       0.92 seconds

```

```

28         title1 ;
29
30         *-----;
31         * Albumin ;
32         data labAlb ( keep = pnr doAlb Alb ) ;
33         set lbdatt.Uacr ;
34
35         * change "," to "." and remove "<>/" and convert to numeric ;
36         nval = input( translate( value, '.', '<>/' ), best8. ) ;
37
38         * values for NPU03918 are obviously wrong (see tabulation) ;
39         if analysiscode eq "NPU03918" then nval = nval * 1000 ;
40
41         * convert from g/mol to mg/g: molecular mass of creatine: 113.12 ;
42         if unit eq 'g/mol' then Alb = nval / 113.12 * 1000 ;
43         else Alb = nval ;
44         doAlb = samplingdate ;
45         run ;

```

NOTE: There were 2468127 observations read from the data set LBDAT.UACR.

NOTE: The data set WORK.LABALB has 2468127 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time      0.62 seconds
cpu time       0.61 seconds

```

```

46
47         *-----;
48         * GFR ;
49         data labGFR ( keep = pnr doGFR eGFR ) ;
50         set lbdatt.eGFR
51         lbdatt.GFR ;
52         doC = samplingdate ;
53         * change "," to "." and remove "<>/" and convert to numeric ;
54         nval = input( translate( value, '.', '<>/' ), best8. ) ;
55         eGFR = nval ;
56         doGFR = samplingdate ;
57         run ;

```

NOTE: There were 28886389 observations read from the data set LBDAT.EGFR.

NOTE: There were 1991 observations read from the data set LBDAT.GFR.

NOTE: The data set WORK.LABGFR has 2888380 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```
real time      15.59 seconds
cpu time       6.03 seconds
```

```
58
59 *-----;
60 * DVDD data ;
61
62 * sort by pnr so we can merge with population data ;
63 proc sort data = ekstn.else_dvdd (rename = (cpr_nr = pnr))
64         /*changed to updated dataset (LDIA/PFR)*/
65         out = dvdd ;
66     by pnr ;
67 run ;
```

NOTE: There were 1072208 observations read from the data set EKSTN.ELSE_DVDD.

NOTE: The data set WORK.DVDD has 1072208 observations and 93 variables.

NOTE: PROCEDURE SORT used (Total process time):

```
real time      7.61 seconds
cpu time       2.78 seconds
```

```
68
69 * a macro to convert albumin measurements to mg/g ;
70 %macro fixalb ;
71 * code to fix the scalings of the albumin in DVDD ;
72 * molecular mass of albumin: 66437, of creatine: 113.12 ;
73 * so this is merely an exercise in quantitative chemistry ;
74 if unAlb eq 'A/K ratio mg/g' then Alb = Alb ; else
75 if unAlb eq 'A/K ratio mg/mmol' then Alb = Alb / 0.11312 ; else
76 if unAlb eq 'A/K ratio mikromol/millimol' then Alb = Alb / 0.11312 * 66.437 ;
77 else
78 if unAlb eq 'Albumin ud. g/døgn' then Alb = Alb * 1000 ; else
79 if unAlb eq 'Albumin ud. mg/døgn' then Alb = Alb ; else
80 if unAlb eq 'Albumin ud. mikrogram/min' then Alb = Alb * 24*60 / 1000 ;
81 else
82 if unAlb eq 'Albumin ud. mikromol/døgn' then Alb = Alb * 66.437 ; else
83 output fishy ;
84 %mend ;
85
86 * Computing eGFR requires sex and age hence a merge with DMdat.pop ;
87 data dvddGFR (keep = pnr doGFR eGFR)
88     dvddAlb (keep = pnr doAlb Alb unAlb)
89     fishy (keep = pnr doAlb Alb unAlb) ;
90     merge dvdd (keep = pnr
91         plasmakreatinin plasmakreatinin_dato
92         albuminuri albuminuri_dato albuminuri_enhed
93         albuminuri2 albuminuri_dato2 albuminuri_enhed2
94         albuminuri3 albuminuri_dato3 albuminuri_enhed3
95         in = dvdd)
96     DMdat.pop (keep = pnr sex doBth) ;
97     by pnr ;
98     if dvdd ;
99 * Kidney function computed from plasma creatinine ;
100 doGFR = plasmakreatinin_dato ;
101 scr = plasmakreatinin * 0.011312 ; * convert to mg/dl for the formula ;
102 age = (doGFR - doBth) / 365.25 ;
103 if scr gt 0 then do ; * remove missing and nonsense ;
104 if( sex eq "W" and scr le 0.7 ) then egfr = 144*(scr/0.7)**(-0.329)*0.993**age
104 ! ;
105 if( sex eq "W" and scr gt 0.7 ) then egfr = 144*(scr/0.7)**(-1.209)*0.993**age
105 ! ;
106 if( sex eq "M" and scr le 0.9 ) then egfr = 144*(scr/0.9)**(-0.411)*0.993**age
106 ! ;
107 if( sex eq "M" and scr gt 0.9 ) then egfr = 144*(scr/0.9)**(-1.209)*0.993**age
107 ! ;
108 end ;
109 if egfr > 0 then output dvddgfr ; * remove missing and nonsense ;
```

```

110      * Albumin levels ;
111      * first measurement ;
112      doAlb = albuminuri_dato ;
113      unAlb = albuminuri_ened ;
114      Alb = albuminuri ;
115      %fixalb ;
MPRINT(FIXALB): * code to fix the scalings of the albumin in DVDD ;
MPRINT(FIXALB): * molecular mass of albumin: 66437, of creatine: 113.12 ;
MPRINT(FIXALB): * so this is merely an exercise in quantitative chemistry ;
MPRINT(FIXALB): if unAlb eq 'A/K ratio mg/g' then Alb = Alb ;
MPRINT(FIXALB): else if unAlb eq 'A/K ratio mg/mmol' then Alb = Alb / 0.11312 ;
MPRINT(FIXALB): else if unAlb eq 'A/K ratio mikromol/millimol' then Alb = Alb / 0.11312
* 66.437 ;
MPRINT(FIXALB): else if unAlb eq 'Albumin ud. g/døgn' then Alb = Alb * 1000 ;
MPRINT(FIXALB): else if unAlb eq 'Albumin ud. mg/døgn' then Alb = Alb ;
MPRINT(FIXALB): else if unAlb eq 'Albumin ud. mikrogram/min' then Alb = Alb * 24*60 /
1000 ;
MPRINT(FIXALB): else if unAlb eq 'Albumin ud. mikromol/døgn' then Alb = Alb * 66.437 ;
MPRINT(FIXALB): else output fishy ;
116      if Alb > 0 then output dvddalb ; * remove missing and nonsense ;
117      * second measurement ;
118      doAlb = albuminuri_dato2 ;
119      unAlb = albuminuri_ened2 ;
120      Alb = albuminuri2 ;
121      %fixalb ;
MPRINT(FIXALB): * code to fix the scalings of the albumin in DVDD ;
MPRINT(FIXALB): * molecular mass of albumin: 66437, of creatine: 113.12 ;
MPRINT(FIXALB): * so this is merely an exercise in quantitative chemistry ;
MPRINT(FIXALB): if unAlb eq 'A/K ratio mg/g' then Alb = Alb ;
MPRINT(FIXALB): else if unAlb eq 'A/K ratio mg/mmol' then Alb = Alb / 0.11312 ;
MPRINT(FIXALB): else if unAlb eq 'A/K ratio mikromol/millimol' then Alb = Alb / 0.11312
* 66.437 ;
MPRINT(FIXALB): else if unAlb eq 'Albumin ud. g/døgn' then Alb = Alb * 1000 ;
MPRINT(FIXALB): else if unAlb eq 'Albumin ud. mg/døgn' then Alb = Alb ;
MPRINT(FIXALB): else if unAlb eq 'Albumin ud. mikrogram/min' then Alb = Alb * 24*60 /
1000 ;
MPRINT(FIXALB): else if unAlb eq 'Albumin ud. mikromol/døgn' then Alb = Alb * 66.437 ;
MPRINT(FIXALB): else output fishy ;
122      if Alb > 0 then output dvddalb ; * remove missing and nonsense ;
123      * third measurement ;
124      doAlb = albuminuri_dato3 ;
125      unAlb = albuminuri_ened3 ;
126      Alb = albuminuri3 ;
127      %fixalb ;
MPRINT(FIXALB): * code to fix the scalings of the albumin in DVDD ;
MPRINT(FIXALB): * molecular mass of albumin: 66437, of creatine: 113.12 ;
MPRINT(FIXALB): * so this is merely an exercise in quantitative chemistry ;
MPRINT(FIXALB): if unAlb eq 'A/K ratio mg/g' then Alb = Alb ;
MPRINT(FIXALB): else if unAlb eq 'A/K ratio mg/mmol' then Alb = Alb / 0.11312 ;
MPRINT(FIXALB): else if unAlb eq 'A/K ratio mikromol/millimol' then Alb = Alb / 0.11312
* 66.437 ;
MPRINT(FIXALB): else if unAlb eq 'Albumin ud. g/døgn' then Alb = Alb * 1000 ;
MPRINT(FIXALB): else if unAlb eq 'Albumin ud. mg/døgn' then Alb = Alb ;
MPRINT(FIXALB): else if unAlb eq 'Albumin ud. mikrogram/min' then Alb = Alb * 24*60 /
1000 ;
MPRINT(FIXALB): else if unAlb eq 'Albumin ud. mikromol/døgn' then Alb = Alb * 66.437 ;
MPRINT(FIXALB): else output fishy ;
128      if Alb > 0 then output dvddalb ; * remove missing and nonsense ;
129      run ;

```

NOTE: Missing values were generated as a result of performing an operation on missing values.

Each place is given by: (Number of times) at (Line):(Column).

416434 at 101:27	366079 at 102:18	1 at 105:68	1 at 105:74
2 at 106:68	2 at 106:74	2 at 107:68	2 at 107:74
31 at 115:50	929 at 115:124	8 at 115:26	23 at 115:174
2 at 115:133	32 at 121:50	1812 at 121:124	215 at 121:26
1514 at 121:174	487 at 121:133	32 at 127:50	1812 at 127:124
215 at 127:26	1514 at 127:174	487 at 127:133	

NOTE: There were 1072208 observations read from the data set WORK.DVDD.

NOTE: There were 8298837 observations read from the data set DMDAT.POP.
 NOTE: The data set WORK.DVDDGFR has 655619 observations and 3 variables.
 NOTE: The data set WORK.DVDDALB has 1543896 observations and 4 variables.
 NOTE: The data set WORK.FISHY has 1628351 observations and 4 variables.
 NOTE: DATA statement used (Total process time):
 real time 4.06 seconds
 cpu time 2.84 seconds

```
130
131     title1 "DVDD records of albumin that were ignored due to unAlb" ;
132     proc tabulate data = fishy noseps missing ;
133         class unAlb doAlb ;
134         table all doAlb,
135             ( all unAlb ) * f=comma11. ;
136         format doAlb year4. ;
137     run ;
```

NOTE: There were 1628351 observations read from the data set WORK.FISHY.
 NOTE: The PROCEDURE TABULATE printed page 2.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.17 seconds
 cpu time 0.25 seconds

```
138
139     title1 "DVDD records of albumin used" ;
140     proc tabulate data = dvddalb missing noseps ;
141         class unalb doAlb ;
142         var Alb ;
143         table doAlb,
144             ( all unalb ) * f=comma9.
145         / rts = 7 ;
146         table unalb,
147             Alb * ( n * f=comma9.
148                 nmiss * f=comma5.
149                 ( p5 p25 p50 p75 p95 ) * f=7.1 )
150         / rts =30 ;
151         format doAlb year4. ;
152     run ;
```

NOTE: There were 1543896 observations read from the data set WORK.DVDDALB.
 NOTE: The PROCEDURE TABULATE printed pages 3-4.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.39 seconds
 cpu time 0.71 seconds

```
153     title1 ;
154
155     *-----;
156     * construct GFR stages (ModL, SevL, ESRL) ;
157     %macro kidney( typ, lim ) ;
158         retain ts&typ. has&typ. done&typ. ;
159         if first.pnr then do ;
160             ts&typ. = 0 ;
161             has&typ. = 0 ;
162             done&typ. = 0 ;
163         end ;
164         has&typ. + (eGFR < &lim.) ; * any value beyond threshold yet? ;
165         if ^first.pnr then do ;
166             ts&typ. = ( ts&typ. + difGFR ) * ( has&typ. ge 1 ) ;
167             if ts&typ. >= 60 and eGFR <= &lim. and ^done&typ. then do ;
168                 doC = doGFR ;
169                 compl = "&typ." ;
170                 output ;
171                 done&typ. = 1 ;
172             end ;
173         end ;
174     %mend kidney ;
```

```

175
176     * combine the eGFR info from LABKA and DVDD and restrict to one record
177     per date by taking the mean of the measurements on that day ;
178     data gfr ; set labGFR dvddGFR ; run ;

```

NOTE: There were 28883380 observations read from the data set WORK.LABGFR.

NOTE: There were 655619 observations read from the data set WORK.DVDDGFR.

NOTE: The data set WORK.GFR has 29543999 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time      4.02 seconds
cpu time       2.48 seconds

```

```

179     proc summary data = gfr nway ;
180         class pnr doGFR ;
181         var eGFR ;
182         output out = gfr ( keep = pnr doGFR eGFR )
183             mean = ;
184     run ;

```

NOTE: There were 29543999 observations read from the data set WORK.GFR.

NOTE: The data set WORK.GFR has 28441529 observations and 3 variables.

NOTE: PROCEDURE SUMMARY used (Total process time):

```

real time      31.63 seconds
cpu time       46.20 seconds

```

```

185
186     data gfr ( keep = pnr doC compl ) ;
187     set gfr ;
188     by pnr doGFR ;
189     difGFR = dif( doGFR ) ;
190     * complications named alphabetically from most to least severe ---
191     used in the first.DoC below ;
192     %kidney( CModL, 60 ) ;
MPRINT(KIDNEY): retain tsCModL hasCModL doneCModL ;
MPRINT(KIDNEY): if first.pnr then do ;
MPRINT(KIDNEY): tsCModL = 0 ;
MPRINT(KIDNEY): hasCModL = 0 ;
MPRINT(KIDNEY): doneCModL = 0 ;
MPRINT(KIDNEY): end ;
MPRINT(KIDNEY): hasCModL + (eGFR < 60) ;
MPRINT(KIDNEY): * any value beyond threshold yet? ;
MPRINT(KIDNEY): if ^first.pnr then do ;
MPRINT(KIDNEY): tsCModL = ( tsCModL + difGFR ) * (hasCModL ge 1) ;
MPRINT(KIDNEY): if tsCModL >= 60 and eGFR <= 60 and ^doneCModL then do ;
MPRINT(KIDNEY): doC = doGFR ;
MPRINT(KIDNEY): compl = "CModL" ;
MPRINT(KIDNEY): output ;
MPRINT(KIDNEY): doneCModL = 1 ;
MPRINT(KIDNEY): end ;
MPRINT(KIDNEY): end ;
193     %kidney( BSevL, 30 ) ;
MPRINT(KIDNEY): retain tsBSevL hasBSevL doneBSevL ;
MPRINT(KIDNEY): if first.pnr then do ;
MPRINT(KIDNEY): tsBSevL = 0 ;
MPRINT(KIDNEY): hasBSevL = 0 ;
MPRINT(KIDNEY): doneBSevL = 0 ;
MPRINT(KIDNEY): end ;
MPRINT(KIDNEY): hasBSevL + (eGFR < 30) ;
MPRINT(KIDNEY): * any value beyond threshold yet? ;
MPRINT(KIDNEY): if ^first.pnr then do ;
MPRINT(KIDNEY): tsBSevL = ( tsBSevL + difGFR ) * (hasBSevL ge 1) ;
MPRINT(KIDNEY): if tsBSevL >= 60 and eGFR <= 30 and ^doneBSevL then do ;
MPRINT(KIDNEY): doC = doGFR ;
MPRINT(KIDNEY): compl = "BSevL" ;
MPRINT(KIDNEY): output ;
MPRINT(KIDNEY): doneBSevL = 1 ;
MPRINT(KIDNEY): end ;
MPRINT(KIDNEY): end ;

```

```

194      %kidney( AESRL, 15 ) ;
MPRINT(KIDNEY):  retain tsAESRL hasAESRL doneAESRL ;
MPRINT(KIDNEY):  if first.pnr then do ;
MPRINT(KIDNEY):  tsAESRL = 0 ;
MPRINT(KIDNEY):  hasAESRL = 0 ;
MPRINT(KIDNEY):  doneAESRL = 0 ;
MPRINT(KIDNEY):  end ;
MPRINT(KIDNEY):  hasAESRL + (eGFR < 15) ;
MPRINT(KIDNEY):  * any value beyond threshold yet? ;
MPRINT(KIDNEY):  if ^first.pnr then do ;
MPRINT(KIDNEY):  tsAESRL = ( tsAESRL + difGFR ) * (hasAESRL ge 1) ;
MPRINT(KIDNEY):  if tsAESRL >= 60 and eGFR <= 15 and ^doneAESRL then do ;
MPRINT(KIDNEY):  doC = doGFR ;
MPRINT(KIDNEY):  compl = "AESRL" ;
MPRINT(KIDNEY):  output ;
MPRINT(KIDNEY):  doneAESRL = 1 ;
MPRINT(KIDNEY):  end ;
MPRINT(KIDNEY):  end ;
195      run ;

```

NOTE: There were 28441529 observations read from the data set WORK.GFR.

NOTE: The data set WORK.GFR has 439506 observations and 3 variables.

NOTE: DATA statement used (Total process time):

real time	7.21 seconds
cpu time	6.06 seconds

```

196
197      * if two complications appear on the same date we only take the most severe ;
198      proc sort data = gfr ; by pnr doC compl ; run ;

```

NOTE: There were 439506 observations read from the data set WORK.GFR.

NOTE: The data set WORK.GFR has 439506 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time	0.07 seconds
cpu time	0.17 seconds

```

199      data gfr ( keep = pnr doC compl ) ;
200      set gfr ;
201      by pnr doC ;
202      if first.doC ;
203      compl = substr( compl, 2, 4 ) ;
204      run ;

```

NOTE: There were 439506 observations read from the data set WORK.GFR.

NOTE: The data set WORK.GFR has 418074 observations and 3 variables.

NOTE: DATA statement used (Total process time):

real time	0.10 seconds
cpu time	0.09 seconds

```

205
206      *-----;
207      * construct Albumin states (MicA, MacA) ;
208      %macro albumin( typ, lim ) ;
209      retain ts&typ. has&typ. done&typ. ;
210      if first.pnr then do ;
211      ts&typ. = 0 ;
212      has&typ. = 0 ;
213      done&typ. = 0 ;
214      end ;
215      has&typ. + (Alb >= &lim.) ; * any value beyond threshold yet? ;
216      if ^first.pnr
217      then do ;
218      ts&typ. = (ts&typ. + difAlb) * (has&typ. ge 1);
219      if ts&typ. >= 60 and Alb >= &lim. and ^done&typ.
220      then do ;
221      doC = doAlb ;
222      compl = "&typ." ;

```

```

223             output ;
224             done&typ. = 1 ;
225             end ;
226         end ;
227     %mend albumin ;
228
229     *-----;
230     * combine the Albumin info from LABKA and DVDD and restrict to one
231     record per date by taking the mean of the measurements on days with
232     more than one measurement ;
233     data alb ; set labalb dvddalb ; run ;

```

NOTE: There were 2468127 observations read from the data set WORK.LABALB.

NOTE: There were 1543896 observations read from the data set WORK.DVDDALB.

NOTE: The data set WORK.ALB has 4012023 observations and 4 variables.

NOTE: DATA statement used (Total process time):

```

real time      0.68 seconds
cpu time       0.37 seconds

```

```

234
235     *-----;
236     * only include measurements less than 10,000 ;
237     proc summary data = alb (where = (Alb < 10000) ) nway ;
238         class pnr doAlb ;
239         var Alb ;
240         output out = alb ( keep = pnr doAlb Alb )
241             mean = ;
242     run ;

```

NOTE: There were 4011310 observations read from the data set WORK.ALB.
WHERE Alb<10000;

NOTE: The data set WORK.ALB has 3154003 observations and 3 variables.

NOTE: PROCEDURE SUMMARY used (Total process time):

```

real time      4.40 seconds
cpu time       6.84 seconds

```

```

243
244     data alb ( keep = pnr doC compl ) ;
245     set alb ;
246     by pnr doAlb ;
247     difAlb = dif( doAlb ) ;
248     * complications named alphabetically from most to least severe ---
249     used in the first.DoC below ;
250     %albumin( BMicA, 30 ) ;
MPRINT(ALBUMIN): retain tsBMicA hasBMicA doneBMicA ;
MPRINT(ALBUMIN): if first.pnr then do ;
MPRINT(ALBUMIN): tsBMicA = 0 ;
MPRINT(ALBUMIN): hasBMicA = 0 ;
MPRINT(ALBUMIN): doneBMicA = 0 ;
MPRINT(ALBUMIN): end ;
MPRINT(ALBUMIN): hasBMicA + (Alb >= 30) ;
MPRINT(ALBUMIN): * any value beyond threshold yet? ;
MPRINT(ALBUMIN): if ^first.pnr then do ;
MPRINT(ALBUMIN): tsBMicA = (tsBMicA + difAlb) * (hasBMicA ge 1);
MPRINT(ALBUMIN): if tsBMicA >= 60 and Alb >= 30 and ^doneBMicA then do ;
MPRINT(ALBUMIN): doC = doAlb ;
MPRINT(ALBUMIN): compl = "BMicA" ;
MPRINT(ALBUMIN): output ;
MPRINT(ALBUMIN): doneBMicA = 1 ;
MPRINT(ALBUMIN): end ;
MPRINT(ALBUMIN): end ;
251     %albumin( AMacA, 300 ) ;
MPRINT(ALBUMIN): retain tsAMacA hasAMacA doneAMacA ;
MPRINT(ALBUMIN): if first.pnr then do ;
MPRINT(ALBUMIN): tsAMacA = 0 ;
MPRINT(ALBUMIN): hasAMacA = 0 ;
MPRINT(ALBUMIN): doneAMacA = 0 ;
MPRINT(ALBUMIN): end ;

```

```

MPRINT(ALBUMIN):  hasAMacA + (Alb >= 300) ;
MPRINT(ALBUMIN):  * any value beyond threshold yet? ;
MPRINT(ALBUMIN):  if ^first.pnr then do ;
MPRINT(ALBUMIN):  tsAMacA = (tsAMacA + difAlb) * (hasAMacA ge 1);
MPRINT(ALBUMIN):  if tsAMacA >= 60 and Alb >= 300 and ^doneAMacA then do ;
MPRINT(ALBUMIN):  doC = doAlb ;
MPRINT(ALBUMIN):  compl = "AMacA" ;
MPRINT(ALBUMIN):  output ;
MPRINT(ALBUMIN):  doneAMacA = 1 ;
MPRINT(ALBUMIN):  end ;
MPRINT(ALBUMIN):  end ;
252      run ;

```

NOTE: There were 3154003 observations read from the data set WORK.ALB.

NOTE: The data set WORK.ALB has 255351 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time      0.74 seconds
cpu time       0.67 seconds

```

```

253
254      *-----;
255      * if two complications appear on the same date we only take the most severe ;
256      proc sort  data = alb ; by pnr doC compl ; run ;

```

NOTE: There were 255351 observations read from the data set WORK.ALB.

NOTE: The data set WORK.ALB has 255351 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time      0.04 seconds
cpu time       0.06 seconds

```

```

257      data alb ( keep = pnr doC compl ) ;
258      set alb ;
259      by pnr doC ;
260      if first.doC ;
261      compl = substr( compl, 2, 4 ) ;
262      run ;

```

NOTE: There were 255351 observations read from the data set WORK.ALB.

NOTE: The data set WORK.ALB has 231889 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time      0.06 seconds
cpu time       0.06 seconds

```

```

263
264      data DMdat.micompl ; set alb gfr ; run ;

```

NOTE: There were 231889 observations read from the data set WORK.ALB.

NOTE: There were 418074 observations read from the data set WORK.GFR.

NOTE: The data set DMDAT.MICOMPL has 649963 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time      0.14 seconds
cpu time       0.09 seconds

```

```

265
266      title1 "Measurement-based complications from LABKA and DVDD" ;
267      proc contents  data = DMdat.micompl varnum ; run ;

```

NOTE: PROCEDURE CONTENTS used (Total process time):

```

real time      0.01 seconds
cpu time       0.00 seconds

```

NOTE: The PROCEDURE CONTENTS printed page 5.

```

268      proc tabulate  data = DMdat.micompl noseps missing ;
269      class doC compl ;
270      table doC,

```

```

271          ( all compl ) * f=comma9.
272          / rts = 6 ;
273          format doC year4. ;
274          run ;
    
```

NOTE: There were 649963 observations read from the data set DMDAT.MICOMPL.
 NOTE: The PROCEDURE TABULATE printed page 6.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.17 seconds
 cpu time 0.31 seconds

```

275          * End of lab-based complication definitions ;
276          *-----;
    
```

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414
 NOTE: The SAS System used:
 real time 1:19.59
 cpu time 1:18.40

4.15.1 10-labcomp.lst

Tabulation of LABKA showing fishy range for NPU03918 1
15:48 Wednesday, December 29, 2021

	numval						
	N	NMiss	P5	P25	P50	P75	P95
NPU03918							
10 ⁻³	6,389	0	0.004	0.010	0.023	0.072	0.757
NPU19661							
10E-3	96,859	156,968	10.000	15.000	27.000	68.000	380.000
10 ⁻³	651,885	0	3.000	6.000	14.000	47.000	526.000
mg/g	775,198	0	2.000	5.000	10.000	31.000	328.000
x 10E-3	240,201	0	5.000	9.000	18.000	55.000	705.000
x 10 < sup > -3 < /sup	290,757	0	4.100	7.800	16.600	54.900	709.500
x 10 ⁻³	226,966	0	5.000	9.000	17.000	52.000	667.000
NPU28842							
g/mol	22,904	0	0.400	0.800	1.800	5.400	47.800

DVDD records of albumin that were ignored due to unAlb 2
15:48 Wednesday, December 29, 2021

	unAlb		
	All	-Ingen-	
	N	N	N
All	1,628,351	111,464	1,516,887
doAlb			
.	1,420,935	56,924	1,364,011
1996	*	.	*
1997	*	*	.
1998	*	*	.
1999	7	*	*
2000	49	49	.
2001	85	85	.
2002	14	14	.
2003	155	155	.

2004	91	86	5
2005	868	846	22
2006	1,323	1,254	69
2007	1,857	1,634	223
2008	8,107	6,171	1,936
2009	13,630	7,688	5,942
2010	16,484	7,549	8,935
2011	22,426	8,961	13,465
2012	24,129	7,606	16,523
2013	21,963	4,890	17,073
2014	18,544	2,826	15,718
2015	14,723	2,064	12,659
2016	14,977	655	14,322
2017	15,799	1,001	14,798
2018	16,747	969	15,778
2019	11,426	30	11,396
2020	4,009	.	4,009

DVDD records of albumin used 15:48 Wednesday, December 29, 2021 3

unAlb								
All	A/K ratio mg/g	A/K ratio mg/mmol	A/K ratio mikromol- /millimol	Albumin ud. g/døgn	Albumin ud. mg/døgn	Albumin ud. mikrogra- m/min	Albumin ud. mikromol- /døgn	
N	N	N	N	N	N	N	N	N
doAlb								
.	6,450	12	6,432	*	*	*	.	*
1993	*	.	.	.	.	.	*	.
1995	6	*	.	.	.	5	.	.
1996	4	.	*	.	.	*	.	.
1997	4	*	*	.	.	*	.	.
1998	17	8	*	.	.	7	.	.
1999	32	16	*	*	.	6	6	.
2000	117	59	13	.	.	10	33	*
2001	4,83*	4,711	42	.	.	10	72	*
2002	421	113	120	*	*	7	171	6
2003	789	187	248	20	.	10	312	12
2004	1,766	266	1,214	23	4	47	186	26
2005	5,478	538	4,011	47	31	314	468	69
2006	16,105	1,815	10,515	209	40	2,212	1,103	211
2007	23,200	2,953	15,080	637	41	3,543	625	321
2008	24,998	3,997	16,866	589	56	2,855	506	129
2009	31,393	9,628	18,542	110	83	2,611	406	13
2010	45,396	30,649	12,265	314	126	1,720	317	5
2011	86,507	61,817	19,248	3,406	178	1,618	240	.
2012	170,369	131,518	35,959	389	60	2,310	132	*
2013	190,794	188,664	241	*	*	1,882	*	.
2014	141,642	139,898	.	.	.	1,744	.	.
2015	100,493	98,963	.	.	.	1,530	.	.
2016	115,286	113,779	.	.	.	1,507	.	.
2017	153,959	151,679	.	.	.	2,280	.	.
2018	202,473	198,584	.	.	.	3,889	.	.
2019	161,835	158,822	.	.	.	3,013	.	.
2020	59,524	58,665	.	.	.	859	.	.

DVDD records of albumin used 15:48 Wednesday, December 29, 2021 4

Alb							
N	NMiss	P5	P25	P50	P75	P95	
unAlb							

A/K ratio mg/g	1,357,343	0	2.0	6.0	12.0	40.0	409.0
A/K ratio mg/mmol	140,806	0	3.5	9.7	26.5	88.4	663.0
A/K ratio mikromol/millimol	5,751	0	2.9	9.4	72.2	418.8	2349.3
Albumin ud. g/døgn	624	0	17.0	150.0	325.0	1200.0	4050.0
Albumin ud. mg/døgn	33,992	0	3.0	7.0	21.0	122.0	1681.0
Albumin ud. mikrogram/min	4,581	0	7.2	15.8	46.1	295.2	2289.6
Albumin ud. mikromol/døgn	799	0	6.0	20.6	69.8	242.5	1742.6

Measurement-based complications from LABKA and DVDD

15:48 Wednesday, December 29, 2021 5

The CONTENTS Procedure

Data Set Name	DMDAT.MICOMPL	Observations	649963
Member Type	DATA	Variables	*
Engine	V9	Indexes	0
Created	29/12/2021 15:50:18	Observation Length	32
Last Modified	29/12/2021 15:50:18	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	319
First Data Page	*
Max Obs per Page	2039
Obs in First Data Page	1998
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\micompl.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	20MB
File Size (bytes)	20971520

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	pnr	Char	12	\$12.	\$10.	Personnummer
2	doC	Num	8			
3	compl	Char	5			

Measurement-based complications from LABKA and DVDD

15:48 Wednesday, December 29, 2021 6

	compl					
	All	ESRL	MacA	MicA	ModL	SevL
	N	N	N	N	N	N
doC						
2000	*	.	.	*	.	.
2001	*	.	*	*	.	.
2002	6	.	*	*	.	.
2003	1*	.	*	11	.	.
2004	36	.	8	28	.	.
2005	254	.	55	199	.	.
2006	524	.	84	440	.	.
2007	2,196	.	483	1,713	.	.

2008	2,781	.	681	2,100	.	.
2009	3,606	5	816	2,746	32	7
2010	13,105	163	1,266	4,553	6,629	494
2011	23,881	390	2,784	7,974	11,893	840
2012	30,682	348	2,846	11,075	15,282	1,131
2013	29,992	342	2,043	10,815	15,420	1,372
2014	67,061	1,046	3,166	12,351	46,548	3,950
2015	69,771	1,205	3,506	14,301	46,595	4,164
2016	96,887	1,451	4,845	20,077	63,714	6,800
2017	82,085	1,502	5,492	24,422	44,267	6,402
2018	81,651	2,025	6,021	26,968	39,298	7,339
2019	82,651	2,615	6,265	27,130	37,686	8,955
2020	62,777	2,212	4,659	19,954	28,649	7,303

4.16 10-compl

Reads ICD10-codes from NPR for the period 1994–2018 and classifies these as belonging in 18 mutually exclusive groups of complications. The complications defined in 10-labcomp are appended. Some of the complication groups are combined in super-groups, and a total 26 different groups are formed.

1 "Program: 10-compl.sas" 05:19 Tuesday, January 4, 2022

NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.

NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)

Licensed to FORSKNING 1, Site 50800722.

NOTE: This session is executing on the X64_SR12R2 platform.

NOTE: Updated analytical products:

SAS/STAT 14.3

NOTE: Additional host information:

X64_SR12R2 WIN 6.3.9600 Server

NOTE: SAS initialization used:

real time 0.09 seconds

cpu time 0.12 seconds

NOTE: AUTOEXEC processing beginning; file is

E:\workdata\707655\DMreg2020\sas\optslibs.sas.

NOTE: AUTOEXEC processing completed.

```

1 *-----;
2 * Creates a data frame for the entire DK pop with complications dates:
3   for each complication the first date of the complication ;
4
5 *-----;
6 * ADMINISTRATIVE RECORDS from NPR:
7   Read the link between recno and pnr and keep the date of
8   hospitalization to be used as the date of complication ;
9   %MACRO mrec;
10  data recpnr ( keep = pnr recnum doC ) ;
11    set %do i = 1994 %to 2018 ; /* only relevant from 1994 */
12      grund.lpr_adm&i.
13    %end ;
14    grund.uaf_adm2018 ;

```

```

15         doC = d_inddto ;
16         run;
17         %MEND ;
18         %mrec ;

```

```

NOTE: There were 2259996 observations read from the data set GRUND.LPR_ADM1994.
NOTE: There were 3099974 observations read from the data set GRUND.LPR_ADM1995.
NOTE: There were 3292287 observations read from the data set GRUND.LPR_ADM1996.
NOTE: There were 3381783 observations read from the data set GRUND.LPR_ADM1997.
NOTE: There were 3465660 observations read from the data set GRUND.LPR_ADM1998.
NOTE: There were 3573247 observations read from the data set GRUND.LPR_ADM1999.
NOTE: There were 3617984 observations read from the data set GRUND.LPR_ADM2000.
NOTE: There were 3908224 observations read from the data set GRUND.LPR_ADM2001.
NOTE: There were 4593785 observations read from the data set GRUND.LPR_ADM2002.
NOTE: There were 4630303 observations read from the data set GRUND.LPR_ADM2003.
NOTE: There were 4770380 observations read from the data set GRUND.LPR_ADM2004.
NOTE: There were 4970849 observations read from the data set GRUND.LPR_ADM2005.
NOTE: There were 5148038 observations read from the data set GRUND.LPR_ADM2006.
NOTE: There were 5176587 observations read from the data set GRUND.LPR_ADM2007.
NOTE: There were 5467668 observations read from the data set GRUND.LPR_ADM2008.
NOTE: There were 5892674 observations read from the data set GRUND.LPR_ADM2009.
NOTE: There were 5906779 observations read from the data set GRUND.LPR_ADM2010.
NOTE: There were 6204786 observations read from the data set GRUND.LPR_ADM2011.
NOTE: There were 6127472 observations read from the data set GRUND.LPR_ADM2012.
NOTE: There were 6329051 observations read from the data set GRUND.LPR_ADM2013.
NOTE: There were 6495594 observations read from the data set GRUND.LPR_ADM2014.
NOTE: There were 6927895 observations read from the data set GRUND.LPR_ADM2015.
NOTE: There were 6852448 observations read from the data set GRUND.LPR_ADM2016.
NOTE: There were 6857872 observations read from the data set GRUND.LPR_ADM2017.
NOTE: There were 6707411 observations read from the data set GRUND.LPR_ADM2018.
NOTE: There were 1977489 observations read from the data set GRUND.UAF_ADM2018.
NOTE: The data set WORK.RECPNR has 127636236 observations and 3 variables.
NOTE: DATA statement used (Total process time):
      real time          52.11 seconds
      cpu time           16.68 seconds

```

```

19         * Sort so data can be merged on recnum with
20           diagnosis, surgery and procedures records ;
21         proc sort data = recpnr ; by recnum ; RUN ;

```

```

NOTE: There were 127636236 observations read from the data set WORK.RECPNR.
NOTE: The data set WORK.RECPNR has 127636236 observations and 3 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time          1:04.15
      cpu time           1:58.92

```

```

22
23         *-----;
24         * ICD10 diagnosis data (we should include pre 1994 using ICD8) ;
25         %MACRO mdiag ;
26           data diags ( keep = recnum diag compl ) ;
27           length c_diag $ 10 ; * has length 6 in the 1994 file ;
28           set %do i = 1994 %to 2018 ; /* only relevant from 1994 */
29             grund.lpr_diag&i.
30           %end ;
31           grund.uaf_diag2018 ;
32           * Retain only observations that are not referrals ;
33           if c_diagtype eq "H" then delete ;
34           * group the diagnoses, first by full code ;
35           compl = put(          c_diag          , $compsub.) ;
36           * ...then by the first 4 digits ;
37           if compl eq 'Other' then
38             compl = put(substr(c_diag, 1, 4), $cmp4sub.) ;
39           diag = c_diag ;
40           * only records with one of the specified complications ;
41           if compl ne 'Other' then output ;
42         run ;
43         %MEND ;

```

```
44      %mdiag ;
```

```
NOTE: There were 3061037 observations read from the data set GRUND.LPR_DIAG1994.
NOTE: There were 4417984 observations read from the data set GRUND.LPR_DIAG1995.
NOTE: There were 5114752 observations read from the data set GRUND.LPR_DIAG1996.
NOTE: There were 5526027 observations read from the data set GRUND.LPR_DIAG1997.
NOTE: There were 5979155 observations read from the data set GRUND.LPR_DIAG1998.
NOTE: There were 7331856 observations read from the data set GRUND.LPR_DIAG1999.
NOTE: There were 7904652 observations read from the data set GRUND.LPR_DIAG2000.
NOTE: There were 8505005 observations read from the data set GRUND.LPR_DIAG2001.
NOTE: There were 9702689 observations read from the data set GRUND.LPR_DIAG2002.
NOTE: There were 10113403 observations read from the data set GRUND.LPR_DIAG2003.
NOTE: There were 10928441 observations read from the data set GRUND.LPR_DIAG2004.
NOTE: There were 11483126 observations read from the data set GRUND.LPR_DIAG2005.
NOTE: There were 11957102 observations read from the data set GRUND.LPR_DIAG2006.
NOTE: There were 12147472 observations read from the data set GRUND.LPR_DIAG2007.
NOTE: There were 12766717 observations read from the data set GRUND.LPR_DIAG2008.
NOTE: There were 13482499 observations read from the data set GRUND.LPR_DIAG2009.
NOTE: There were 13660985 observations read from the data set GRUND.LPR_DIAG2010.
NOTE: There were 14347430 observations read from the data set GRUND.LPR_DIAG2011.
NOTE: There were 14357996 observations read from the data set GRUND.LPR_DIAG2012.
NOTE: There were 14676150 observations read from the data set GRUND.LPR_DIAG2013.
NOTE: There were 14832333 observations read from the data set GRUND.LPR_DIAG2014.
NOTE: There were 15650577 observations read from the data set GRUND.LPR_DIAG2015.
NOTE: There were 15131689 observations read from the data set GRUND.LPR_DIAG2016.
NOTE: There were 15628953 observations read from the data set GRUND.LPR_DIAG2017.
NOTE: There were 15356228 observations read from the data set GRUND.LPR_DIAG2018.
NOTE: There were 4613813 observations read from the data set GRUND.UAF_DIAG2018.
NOTE: The data set WORK.DIAGS has 11553101 observations and 3 variables.
NOTE: DATA statement used (Total process time):
      real time          1:31.71
      cpu time           59.48 seconds
```

```
45
46      *-----;
47      * Surgery data ;
48      %MACRO msurg ;
49      data surgs ( keep = recnum diag compl ) ;
50          set %do i = 1996 %to 2018 ; /* only exist from 1996 */
51              grund.lpr_sksopr&i.
52              %end ;
53              grund.uaf_sksopr2018
54              grund.uaf_opr1996 ; * must be last: C_diag has only length 6 ;
55              compl = put(          c_opr          , $compsub.) ;
56              if compl eq 'Other' then
57                  compl = put(substr(c_opr, 1, 4), $cmp4sub.) ;
58              diag = c_opr ;
59              * only records with one of the complications ;
60              if compl ne 'Other' then output surgs ;
61      run ;
62      %MEND ;
63      %msurg ;
```

```
NOTE: There were 1005520 observations read from the data set GRUND.LPR_SKSOPR1996.
NOTE: There were 1068015 observations read from the data set GRUND.LPR_SKSOPR1997.
NOTE: There were 1172159 observations read from the data set GRUND.LPR_SKSOPR1998.
NOTE: There were 1202449 observations read from the data set GRUND.LPR_SKSOPR1999.
NOTE: There were 1355194 observations read from the data set GRUND.LPR_SKSOPR2000.
NOTE: There were 1566517 observations read from the data set GRUND.LPR_SKSOPR2001.
NOTE: There were 1601589 observations read from the data set GRUND.LPR_SKSOPR2002.
NOTE: There were 1726606 observations read from the data set GRUND.LPR_SKSOPR2003.
NOTE: There were 1865271 observations read from the data set GRUND.LPR_SKSOPR2004.
NOTE: There were 1968744 observations read from the data set GRUND.LPR_SKSOPR2005.
NOTE: There were 2029382 observations read from the data set GRUND.LPR_SKSOPR2006.
NOTE: There were 2037839 observations read from the data set GRUND.LPR_SKSOPR2007.
NOTE: There were 2112855 observations read from the data set GRUND.LPR_SKSOPR2008.
NOTE: There were 2202248 observations read from the data set GRUND.LPR_SKSOPR2009.
NOTE: There were 2248493 observations read from the data set GRUND.LPR_SKSOPR2010.
NOTE: There were 2467102 observations read from the data set GRUND.LPR_SKSOPR2011.
```

NOTE: There were 2451266 observations read from the data set GRUND.LPR_SKSOPR2012.
 NOTE: There were 2608265 observations read from the data set GRUND.LPR_SKSOPR2013.
 NOTE: There were 2647552 observations read from the data set GRUND.LPR_SKSOPR2014.
 NOTE: There were 3159681 observations read from the data set GRUND.LPR_SKSOPR2015.
 NOTE: There were 2881706 observations read from the data set GRUND.LPR_SKSOPR2016.
 NOTE: There were 2942536 observations read from the data set GRUND.LPR_SKSOPR2017.
 NOTE: There were 2741472 observations read from the data set GRUND.LPR_SKSOPR2018.
 NOTE: There were 1721434 observations read from the data set GRUND.UAF_SKSOPR2018.
 NOTE: There were 18753 observations read from the data set GRUND.UAF_OPR1996.
 NOTE: The data set WORK.SURGS has 2714202 observations and 3 variables.
 NOTE: DATA statement used (Total process time):
 real time 24.10 seconds
 cpu time 12.45 seconds

```

64
65 *-----;
66 * Examination and procedures data ;
67 %MACRO mexam ;
68 data exams ( keep = recnum diag compl ) ;
69   set %do i = 1999 %to 2018 ; /* only exist from 1999 */
70     grund.lpr_sksube&i.
71     %end ;
72     grund.uaf_sksube2018 ;
73     compl = put(          c_opr          , $compsub. ) ;
74     if compl eq 'Other' then
75       compl = put(substr(c_opr, 1, 4), $cmp4sub. ) ;
76     diag = c_opr ;
77     if compl ne 'Other' then output exams ;
78 run ;
79 %MEND ;
80 %mexam ;

```

NOTE: There were 790360 observations read from the data set GRUND.LPR_SKSUBE1999.
 NOTE: There were 1331778 observations read from the data set GRUND.LPR_SKSUBE2000.
 NOTE: There were 3549220 observations read from the data set GRUND.LPR_SKSUBE2001.
 NOTE: There were 8650787 observations read from the data set GRUND.LPR_SKSUBE2002.
 NOTE: There were 11008755 observations read from the data set GRUND.LPR_SKSUBE2003.
 NOTE: There were 15801484 observations read from the data set GRUND.LPR_SKSUBE2004.
 NOTE: There were 17662628 observations read from the data set GRUND.LPR_SKSUBE2005.
 NOTE: There were 20015620 observations read from the data set GRUND.LPR_SKSUBE2006.
 NOTE: There were 20400478 observations read from the data set GRUND.LPR_SKSUBE2007.
 NOTE: There were 24272485 observations read from the data set GRUND.LPR_SKSUBE2008.
 NOTE: There were 24827897 observations read from the data set GRUND.LPR_SKSUBE2009.
 NOTE: There were 25466350 observations read from the data set GRUND.LPR_SKSUBE2010.
 NOTE: There were 31485421 observations read from the data set GRUND.LPR_SKSUBE2011.
 NOTE: There were 37251165 observations read from the data set GRUND.LPR_SKSUBE2012.
 NOTE: There were 46899955 observations read from the data set GRUND.LPR_SKSUBE2013.
 NOTE: There were 47031584 observations read from the data set GRUND.LPR_SKSUBE2014.
 NOTE: There were 55087013 observations read from the data set GRUND.LPR_SKSUBE2015.
 NOTE: There were 54408611 observations read from the data set GRUND.LPR_SKSUBE2016.
 NOTE: There were 55661241 observations read from the data set GRUND.LPR_SKSUBE2017.
 NOTE: There were 50416994 observations read from the data set GRUND.LPR_SKSUBE2018.
 NOTE: There were 37387739 observations read from the data set GRUND.UAF_SKSUBE2018.
 NOTE: The data set WORK.EXAMS has 5838364 observations and 3 variables.
 NOTE: DATA statement used (Total process time):
 real time 3:57.77
 cpu time 2:12.14

```

81
82 *-----;
83 * Append diagnoses, surgery and procedures, group complications
84   and delete codes we will not use ;
85 data compl ( keep = recnum diag compl compGr ) ;
86   set diags surgs exams ;
87   compGr = put( compl, $sub2grp. ) ;
88   if diag in ("KFNG20","KFNG22","DG453","DG454") then delete ;
89 run ;

```

NOTE: There were 11553101 observations read from the data set WORK.DIAGS.
 NOTE: There were 2714202 observations read from the data set WORK.SURGS.
 NOTE: There were 5838364 observations read from the data set WORK.EXAMS.
 NOTE: The data set WORK.COMPL has 20077707 observations and 4 variables.
 NOTE: DATA statement used (Total process time):
 real time 4.08 seconds
 cpu time 3.98 seconds

```
90
91      *-----;
92      * Sort by recnum to merge with adm and obtain pnr ;
93      proc sort data = compl ; by recnum ; run ;
```

NOTE: There were 20077707 observations read from the data set WORK.COMPL.
 NOTE: The data set WORK.COMPL has 20077707 observations and 4 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 2.96 seconds
 cpu time 7.96 seconds

```
94      * Append the pnr and the dates to NPR diagnoses via recnum ;
95      data compl ;
96          merge compl (in = dg)
97              recpnr ;
98          by recnum ;
99          if dg ;
100         * recnum not needed any more ;
101         drop recnum ;
102         run ;
```

NOTE: There were 20077707 observations read from the data set WORK.COMPL.
 NOTE: There were 127636236 observations read from the data set WORK.RECPNR.
 NOTE: The data set WORK.COMPL has 20077707 observations and 5 variables.
 NOTE: DATA statement used (Total process time):
 real time 24.51 seconds
 cpu time 24.51 seconds

```
103      * compl is now a dataset with all diagnoses assigned to a group from:
104      - lprdiag (diagnoses)
105      - lprskso (surgery)
106      - lprsksub (procedures)
107      The sort order is not used ;
108
109      *-----;
110      * Extract complications from LPR3 (2019-2020) (LDIA/PFR);
111
112      *-----;
113      * ADMINISTRATIVE RECORDS from NPR (LPR3);
114      data recpnr3 ( keep = pnr kontakt_id doC ) ;
115          set nydat.kontakt;
116          doC = datepart(starttidspunkt) ; /* er i datetime format */
117          pnr = personnummer;
118          run;
```

NOTE: There were 34247060 observations read from the data set NYDAT.KONTAKT.
 NOTE: The data set WORK.RECPNR3 has 34247060 observations and 3 variables.
 NOTE: DATA statement used (Total process time):
 real time 26.82 seconds
 cpu time 7.20 seconds

```
119
120      * Sort so data can be merged on recnum with
121      diagnosis, surgery and procedures records ;
122      proc sort data = recpnr3 ; by kontakt_id ; run ;
```

NOTE: There were 34247060 observations read from the data set WORK.RECPNR3.
 NOTE: The data set WORK.RECPNR3 has 34247060 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):
 real time 16.28 seconds
 cpu time 29.12 seconds

```

123
124 *-----;
125 * ICD10 DIAGNOSIS data from LPR3;
126 data diags3 ( keep = kontakt_id diag compl starttidspunkt ) ;
127   length kode $ 10 ;
128   set nydat.diagnose;
129   * NOTE: only A and B diagnoses in this table ;
130
131   * group the diagnoses, first by full code ;
132   compl = put(      kode      , $compsub.) ;
133
134   * ...then by the first 4 digits ;
135   if compl eq 'Other' then
136     compl = put(substr(kode, 1, 4), $cmp4sub.) ;
137     diag = kode ;
138
139   * only records with one of the specified complications ;
140   if compl ne 'Other' then output ;
141   run ;

```

WARNING: Multiple lengths were specified for the variable kode by input data set(s). This can cause truncation of data.

WARNING: The variable starttidspunkt in the DROP, KEEP, or RENAME list has never been referenced.

NOTE: There were 45572962 observations read from the data set NYDAT.DIAGNOSE.

NOTE: The data set WORK.DIAGS3 has 2538559 observations and 3 variables.

NOTE: DATA statement used (Total process time):
 real time 34.33 seconds
 cpu time 13.09 seconds

```

142
143 *-----;
144 * SURGERY data from LPR3 ;
145 data surgs3 ( keep = kontakt_id forloebelement_id diag compl starttidspunkt ) ;
146   set nydat.procedurer;
147
148   * group the diagnoses, first by full code ;
149   compl = put(      kode      , $compsub.) ;
150
151   * ...then by the first 4 digits ;
152   if compl eq 'Other' then
153     compl = put(substr(kode, 1, 4), $cmp4sub.) ;
154     diag = kode ;
155
156   * only records with one of the specified complications ;
157   if compl ne 'Other' then output ;
158   run ;

```

NOTE: There were 81505370 observations read from the data set NYDAT.PROCEDURER.

NOTE: The data set WORK.SURGS3 has 861076 observations and 5 variables.

NOTE: DATA statement used (Total process time):
 real time 1:14.79
 cpu time 26.14 seconds

```

159
160 *-----;
161 * Append diagnoses and surgery from LPR3, group complications
162   and delete codes we will not use ;
163 data compl3 ( keep = kontakt_id diag compl compGr ) ;
164   set diags3 surgs3 ;
165   compGr = put( compl, $sub2grp. ) ;
166   if diag in ("KFNG20","KFNG22","DG453","DG454") then delete ;
167   run ;

```


WARNING: Multiple lengths were specified for the variable diag by input data set(s). This can cause truncation of data.

NOTE: There were 2538559 observations read from the data set WORK.DIAGS3.

NOTE: There were 861076 observations read from the data set WORK.SURGS3.

NOTE: The data set WORK.COMPL3 has 3394394 observations and 4 variables.

NOTE: DATA statement used (Total process time):

real time 0.71 seconds

cpu time 0.68 seconds

```

168
169 *-----;
170 * måske skal vi også koble med forloebelement_id for at få de procedurer
171   der kun er tilknyttet forløb? ;
172
173 *-----;
174 * Sort by kontakt_id to merge with contact table and obtain pnr ;
175 proc sort data = compl3 ; by kontakt_id ; run ;

```

NOTE: There were 3394394 observations read from the data set WORK.COMPL3.

NOTE: The data set WORK.COMPL3 has 3394394 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 0.99 seconds

cpu time 2.18 seconds

```

176
177 * Append the pnr and the dates to NPR diagnoses via kontakt_id ;
178 data compl3 ;
179   merge compl3 (in = dg)
180     recpnr3 ;
181   by kontakt_id ;
182   if dg ;
183   * kontakt_id not needed any more ;
184   drop kontakt_id ;
185 run ;

```

NOTE: There were 3394394 observations read from the data set WORK.COMPL3.

NOTE: There were 34247060 observations read from the data set WORK.RECPNR3.

NOTE: The data set WORK.COMPL3 has 3394394 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time 6.01 seconds

cpu time 6.01 seconds

```

186
187 *-----;
188 * Append complications from LPR2 with LPR3 and the labdata-based
189   complications created by program 10-labcompl ;
190 data compl ;
191   set compl
192     compl3
193     DMdat.micompl ;
194 run ;

```

NOTE: There were 20077707 observations read from the data set WORK.COMPL.

NOTE: There were 3394394 observations read from the data set WORK.COMPL3.

NOTE: There were 649963 observations read from the data set DMDAT.MICOMPL.

NOTE: The data set WORK.COMPL has 24122064 observations and 5 variables.

NOTE: DATA statement used (Total process time):

real time 2.66 seconds

cpu time 2.61 seconds

```

195
196 *-----;
197 * Show the collected diagnoses, surgery and procedures and the
198   classification of these - several records per person,
199   but classified after whether it is a first or duplicate of the diag ;

```

```
200      proc sort  data = compl  out = icompl ; by pnr diag ; run ;
```

NOTE: There were 24122064 observations read from the data set WORK.COMPL.
 NOTE: The data set WORK.ICOMPL has 24122064 observations and 5 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 8.30 seconds
 cpu time 16.51 seconds

```
201
202      data icompl ;
203      set icompl ;
204      by pnr diag ;
205      if first.diag then fdiag = "first" ;
206      else fdiag = "later" ;
207      run ;
```

NOTE: There were 24122064 observations read from the data set WORK.ICOMPL.
 NOTE: The data set WORK.ICOMPL has 24122064 observations and 6 variables.
 NOTE: DATA statement used (Total process time):
 real time 4.40 seconds
 cpu time 4.40 seconds

```
208
209      proc tabulate data = icompl noseps missing ;
210      class diag compl compGr fdiag ;
211      table all compGr * compl * diag,
212      fdiag * f=comma10.
213      / rts = 66
214      indent = 1
215      box = "No. of NPR records retrieved" ;
216      format diag $dob_l111_kt.
217      compGr compl $ab2abtx. ;
218      run ;
```

NOTE: There were 24122064 observations read from the data set WORK.ICOMPL.
 NOTE: The PROCEDURE TABULATE printed page 1.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 1.89 seconds
 cpu time 6.59 seconds

```
219
220      *-----;
221      * Construction of the datasets with complication dates
222      * sort by pnr, complication and date within complication ;
223      proc sort  data = compl ; by pnr compl doC ; run ;
```

NOTE: There were 24122064 observations read from the data set WORK.COMPL.
 NOTE: The data set WORK.COMPL has 24122064 observations and 5 variables.
 NOTE: PROCEDURE SORT used (Total process time):
 real time 8.21 seconds
 cpu time 16.68 seconds

```
224
225      * Select the first complication of each (sub)type within each person ;
226      data fcompl ( keep = pnr compl compGr doC ) ;
227      set compl ;
228      by pnr compl ;
229      if first.compl ;
230      compGr = put( compl, $sub2grp. ) ;
231      format doC ddmmyy10. ;
232      run ;
```

NOTE: There were 24122064 observations read from the data set WORK.COMPL.
 NOTE: The data set WORK.FCOMPL has 4516488 observations and 4 variables.
 NOTE: DATA statement used (Total process time):
 real time 3.32 seconds

cpu time 3.32 seconds

```

233
234     * Transpose to one record per person with compl-dates ;
235     proc transpose data = fcompl ( drop = compGr )
236         out = wcompl ( drop = _name_ )
237         prefix = do ;
238         by pnr ;
239         id compl ;
240         var doC ;
241     run ;

```

NOTE: There were 4516488 observations read from the data set WORK.FCOMPL.

NOTE: The data set WORK.WCOMPL has 1961504 observations and 25 variables.

NOTE: PROCEDURE TRANSPOSE used (Total process time):

real time 4.88 seconds
cpu time 4.87 seconds

```

242
243     *-----;
244     * The coarser grouping but same procedure as above ;
245     proc sort data = fcompl out = cmpgr ; by pnr compGr doC ; run ;

```

NOTE: There were 4516488 observations read from the data set WORK.FCOMPL.

NOTE: The data set WORK.CMPGR has 4516488 observations and 4 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 0.52 seconds
cpu time 1.75 seconds

```

246     data cmpgr ;
247         set cmpgr ;
248         by pnr compGr ;
249         if first.compGr ;
250     run ;

```

NOTE: There were 4516488 observations read from the data set WORK.CMPGR.

NOTE: The data set WORK.CMPGR has 3231243 observations and 4 variables.

NOTE: DATA statement used (Total process time):

real time 0.82 seconds
cpu time 0.82 seconds

```

251
252     * Transpose to one record per person with compGr-dates ;
253     proc transpose data = cmpgr ( drop = compl )
254         out = wgrps ( drop = _name_ )
255         prefix = do ;
256         by pnr ;
257         id compGR ;
258         var doC ;
259     run ;

```

NOTE: There were 3231243 observations read from the data set WORK.CMPGR.

NOTE: The data set WORK.WGRPS has 1961504 observations and 12 variables.

NOTE: PROCEDURE TRANSPOSE used (Total process time):

real time 3.68 seconds
cpu time 3.68 seconds

```

260
261     * Merge side-by side ;
262     data DMdat.wcompl (label = 'Dates of first complications for entire DKpop') ;
263         merge wcompl wgrps ;
264         by pnr ;
265
266     * Groupings not possible using the hierarchy ;
267     doIHD = min(doIHDx, doMI) ;

```

```

268     doStr = min(doHStr, doIStr) ;
269     doACD = min(doStr, doTCI, doIHD, doMatD) ;
270     doMajA= min(doUppA, doMedA) ;
271     format doIHD doStr doACD doMajA ddmmyy10. ;
272
273     * Variable labels ;
274     label doCVD = "Cardiovascular Disease"
275           doMatD = "Macrovascular atherosclerotic disease"
276           doACD = "Atherosclerotic cardiovascular disease"
277           doAFib = "Atrial fibrillation"
278           doCbVD = "Cerebrovascular disease"
279           doTCI = "Transient cerebral ischaemia"
280           doHF = "Heart failure"
281           doHypD = "Hypertensive disease"
282           doHpoG = "Hypoglycaemia"
283           doIHD = "Ischeamic heart disease"
284           doIHDx = "non-MI Ischeamic heart disease"
285           doMI = "Myocardial Infarction"
286           doStr = "Stroke"
287           doIStr = "Ischaemic stroke"
288           doHStr = "Haemmoragic stroke"
289
290           doAmp = "Amputation"
291           doMajA = "Major amputation"
292           doUppA = "Upper amputation"
293           doMedA = "Medium amputation"
294           doMinA = "Minor amputation"
295
296           doNeur = "Neuropathy"
297           doReti = "Retinopathy"
298           doKeto = "Ketoacidosis"
299
300           doNefr = "Nephropathy"
301           doModC = "Moderate CKD"
302           doSevC = "Severe CKD"
303           doESRD = "End-stage CKD"
304
305           doNefL = "Nephropathy (lab)"
306           doModL = "Moderate CKD (lab)"
307           doSevL = "Severe CKD (lab)"
308           doESRL = "End-stage CKD (lab)"
309
310           doDNef = "Diabetic nephropathy"
311           doMicA = "Micro-abuminuria"
312           doMacA = "Macro-abuminuria" ;
313     run ;

```

NOTE: Missing values were generated as a result of performing an operation on missing values.

Each place is given by: (Number of times) at (Line):(Column).

1346537 at 267:11 1562940 at 268:11 880487 at 269:11 1933126 at 270:11

NOTE: There were 1961504 observations read from the data set WORK.WCOMPL.

NOTE: There were 1961504 observations read from the data set WORK.WGRPS.

NOTE: The data set DMDAT.WCOMPL has 1961504 observations and 35 variables.

NOTE: DATA statement used (Total process time):

```

real time      2.62 seconds
cpu time       1.68 seconds

```

```

314
315     *-----;
316     * For ketoacidosis, hypoglycaemia, stroke (combined) and MI
317     we also want to keep all recurring complications ;
318     data DMdat.rcompl (keep = pnr compl doC
319           label = 'Dates of *all* recurrent complications in DKpop') ;
320     label pnr = 'Person id'
321           compl = 'Complication group'
322           doC = 'Date of complication' ;
323     set compl ;
324     if compl in ('IStr','HStr') then compl = "Str" ;

```

```

325         if compl in ('Keto','HpoG','Str','MI') ;
326         format doC ddmmyy10. ;
327         run ;

```

NOTE: There were 24122064 observations read from the data set WORK.COMPL.

NOTE: The data set DMDAT.RCOMPL has 2389593 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```

real time      2.44 seconds
cpu time       2.32 seconds

```

```

328
329         *-----;
330         * Check how many persons ;
331         proc sort  data = DMdat.wcompl  nodupkey  out = x ; by pnr ; run ;

```

NOTE: There were 1961504 observations read from the data set DMDAT.WCOMPL.

NOTE: 0 observations with duplicate key values were deleted.

NOTE: The data set WORK.X has 1961504 observations and 35 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time      2.60 seconds
cpu time       1.59 seconds

```

```

332         proc sort  data = DMdat.rcompl  nodupkey  out = x ; by pnr ; run ;

```

NOTE: There were 2389593 observations read from the data set DMDAT.RCOMPL.

NOTE: 1666205 observations with duplicate key values were deleted.

NOTE: The data set WORK.X has 723388 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

```

real time      0.49 seconds
cpu time       0.79 seconds

```

```

333
334         *-----;
335         * Show the contents of the datasets ;
336         proc contents data = DMdat.wcompl  varnum ; run ;

```

NOTE: PROCEDURE CONTENTS used (Total process time):

```

real time      0.01 seconds
cpu time       0.00 seconds

```

NOTE: The PROCEDURE CONTENTS printed page 2.

```

337         proc contents data = DMdat.rcompl  varnum ; run ;

```

NOTE: PROCEDURE CONTENTS used (Total process time):

```

real time      0.00 seconds
cpu time       0.01 seconds

```

NOTE: The PROCEDURE CONTENTS printed page 3.

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414

NOTE: The SAS System used:

```

real time      11:48.50
cpu time       8:48.46

```

4.16.1 10-compl.lst

	first	later
	N	N
All	6,211,286	17,910,778
ESRL: End-stage CKD (lab)	2,233	11,071
MacA: Macro-abuminuria	23,462	21,565
MicA: Micro-abuminuria	186,862	.
ModL: Moderate CKD (lab)	271,106	84,907
SevL: Severe CKD (lab)	6,418	42,339
Amp: Amputation		
MedA: Medium amputation		
DZ895 Erhvervet mangel af ben i højde med eller under knæet	2,158	3,139
DZ895A Amputatio cruris facta	401	410
DZ895B Exarticulatio genus facta	40	24
KNHQ09 Eksartikulation i knæled	2,851	3,194
KNHQ19 Amputation på underben	11,671	16,267
KNHQ99 Anden amputationsoperation på knæ/underben	88	113
MinA: Minor amputation		
DZ894 Erhvervet mangel af fod og ankel	466	1,539
DZ894A Amputatio pedis facta	163	590
KNHQ00 Eksartikulation i talokruralled	32	24
KNHQ01 Exarticulation, Syme	21	17
KNHQ02 Intertarsal eksartikulation	168	286
KNHQ03 Tarsometatarsal eksartikulation	530	761
KNHQ05 Metatarsofalangeal eksartikulation	2,468	3,225
KNHQ06 Exarticulation, dig. pedis totalis	497	317
KNHQ07 Eksartikulation af tå i interfalangealled	1,154	1,285
KNHQ08 Exarticulation uden specifikation	10	5
KNHQ10 Amputation, art. talocruralis	20	9
KNHQ11 Amputation i ankelled a.m. Syme	91	73
KNHQ12 Amputation, intertarsal	92	75
KNHQ13 Amputation, tarsometatarsal	279	178
KNHQ14 Transmetatarsal amputation	8,853	13,980
KNHQ15 Amputation, metatarsophalangeal	403	297
KNHQ16 Amputation, digiti pedis totalis	1,640	1,262
KNHQ17 Partiel amputation af tå	6,216	7,401
KNHQ99 An. amputations- el. eksartikulationsoperation på ankel/fod	390	453
UppA: Upper amputation		
DZ896 Erhvervet mangel af underekstremitet oven for knæet	1,943	2,754
DZ896A Amputatio femoris facta	336	251
DZ897 Erhvervet mangel af begge underekstremiteter	441	442
KNFQ09 Eksartikulation i hofteled	532	541
KNFQ19 Amputation på lårben	16,809	26,452
KNFQ99 Anden amputationsoperation på hofte/lår	238	229
CVD: Cardiovascular Disease		
AFib: Atrial fibrillation		
DI48 Atrieflagren og atrieflimren	658	51
DI480 Paroksysmatisk atrieflimren	62,821	137,222
DI481 Persisterende atrieflimren	21,046	39,352
DI482 Kronisk atrieflimren	31,033	47,522
DI483 Typisk atrieflagren	8,064	13,514
DI484 Atypisk atrieflagren	2,658	5,733
DI489 Atrieflagren eller atrieflimren UNS	392,429	1,245,087
DI489A Atrieflagren	13,087	8,555
DI489AA Almindelig typisk atrieflagren	206	97
DI489AB Reverse typisk atrieflagren	55	17
DI489AC Lower loop-atrieflagren	*	.
DI489AD Venstre atrie makro-reentry atrieflagren	14	4
DI489AE Postoperativ (ar) makro-reentry atrieflagren	10	*
DI489B Atrieflimren	85,624	87,760
DI489BA Atrieflimren, første anfald	1,754	964
DI489BB Paroksysmatisk atrieflimren	18,315	14,414
DI489BC Persisterende atrieflimren	2,599	1,584
DI489BD Permanent atrieflimren	3,605	1,659
KFPD00 Labyrintoperation for atrieflimmer	764	168
KFPD96 Anden operation for atrieflimmer	1,902	396
HF: Heart failure		

DI110	Hypertensiv hjertesygdom med inkompen­seret hjertesvigt	16,335	9,790
DI50	Hjertesvigt	950	121
DI500	Kronisk hjerteinsufficiens	99,397	111,903
DI500A	Højresidig hjerteinsufficiens	2,886	4,766
DI501	Venstresidig hjerteinsufficiens	62,259	103,981
DI501A	Asthma cardiale	360	124
DI501B	Kardielt lungeødem	6,439	3,013
DI501C	Kardiel lungestase	8,135	3,317
DI501D	Biventrikulær hjerteinsufficiens	921	1,433
DI502	Højresidig inkompen­seret hjertein­fufficiens	186	61
DI503	Biventrikulær inkompen­seret hjerteinsufficiens	165	83
DI508	Hjerteinsufficiens, andre former	278	91
DI508A	Kompen­seret hjerteinsufficiens	332	99
DI509	Hjertesvigt UNS	257,730	572,990
DI509A	Incompensatio cordis biventricularis	519	215
DI509B	Biventrikulær hjerteinsufficiens	294	121
HypD: Hypertensive disease			
DI10	Blodtryksforhøjelse af ukendt årsag	1,260	70
DI109	Essentiel hypertension	880,845	2,000,542
DI11	Hypertensiv hjertesygdom	36	.
DI119	Hypertensiv hjertesygdom uden inkompen­station	17,269	8,587
DI119A	Hypertensiv hjertesygdom UNS	2,017	1,329
DI12	Hypertensiv nyresygdom	7	.
DI120	Hypertensiv nyresygdom med nyresvigt	5,724	16,951
DI129	Hypertensiv nyresygdom uden nyresvigt	4,386	4,571
DI129A	Hypertensiv nyresygdom UNS	486	1,532
DI130	Hypertensiv hjertesygdom og nyresygdom med hjertesvigt	1,042	745
DI131	Hypertensiv hjertesygdom og nyresygdom med nyresvigt	623	575
DI132	Hypertensiv hjertesygdom og nyresygdom m. hjerte- og nyresvigt	829	515
DI139	Hypertensiv hjertesygdom og nyresygdom UNS	932	604
DI15	Blodtryksforhøjelse med kendt årsag	49	*
DI150	Renovaskulær hypertension	4,833	9,615
DI151	Hypertension sekundært til anden nyresygdom	6,689	21,369
DI152	Hypertension sekundært til endokrin sygdom	1,818	2,126
DI158	Anden form for sekundær hypertension	2,855	2,385
DI159	Sekundær hypertension UNS	17,564	15,321
IHDx: non-MI Ischeamic heart disease			
DI20	Angina pectoris	3,759	923
DI200	Ustabil angina pectoris	78,569	73,225
DI200A	Praeinfarkt syndrom	268	35
DI200B	Klinisk vurderet ustabil angina pectoris	2,886	2,006
DI200C	Ustabil angina pectoris med dokumenteret iskæmi	1,208	942
DI201	Prinzmetals angina pectoris	9,717	7,166
DI201A	Angina pectoris, variant	40	12
DI201B	Angina pectoris, Prinzmetal	18	5
DI208	Anden form for angina pectoris	32,326	20,230
DI208A	Angina pectoris, anstrengelsesudløst	3,409	926
DI208B	Stenocardia	71	12
DI208D	Mikrovaskulær angina	613	683
DI208E	Stabil angina pectoris	8,820	14,878
DI208E1	Klinisk vurderet angina pectoris	796	923
DI208E2	Angina pectoris med dokumenteret iskæmi	400	701
DI209	Angina pectoris UNS	299,542	545,504
DI25	Kronisk iskæmisk hjertesygdom	329	19
DI250	Arteriosclerosis cardiovascularis	7,713	3,757
DI251	Arteriosklerotisk hjertesygdom	208,743	323,251
DI251A	Ateriosclerosis arteriae coronariae	127	39
DI251B	Klinisk vurderet angina pectoris	2,279	1,044
DI251C	Angina pectoris med dokumenteret iskæmi	1,079	644
DI252	Gammelt myokardieinfarkt	111,373	158,100
DI252A	Tidligere myokardieinfarkt (non-Q-tak)	2,342	1,495
DI252B	Tidligere myokardieinfarkt (Q-tak, anteriort)	1,046	836
DI252C	Tidligere myokardieinfarkt (Q-tak, inferiort/posteriort)	735	483
DI253	Hjerteaneurisme	1,027	959
DI254	Koronararterieaneurisme og -dissektion	403	196
DI254A	Fistula arteriovenosa coronaria acquisita	7	5
DI254B	Spontan Koronararteriedissektion (SKAD)	36	54
DI255	Iskæmisk kardiomyopati	8,272	9,530

DI256	Stum myokardieiskæmi	1,613	516
DI256A	Søvnrelateret iskæmisk hjertesygdom	*	.
DI258	Anden form for kronisk iskæmisk hjertesygdom	15,901	9,599
DI259	Kronisk iskæmisk hjertesygdom UNS	213,875	480,490
MI: Myocardial Infarction			
DI21	Akut myokardieinfarkt	7,623	812
DI210	Anteriort akut myokardieinfarkt med Q-taksudvikling	25,395	11,811
DI210A	Anteriort non-ST-elevations AMI med Q-taksudvikling	1,354	895
DI210B	Anteriort ST-elevations akut myokardieinfarkt med Q-taksudv.	6,488	4,530
DI211	Inferiort/posteriort akut myokardieinfarkt med Q-taksudv.	19,012	10,461
DI211A	Inferiort el posteriort non-ST-elevations AMI m Q-taksudvikl	1,210	805
DI211B	Inferiort el posteriort ST-elevations AMI m Q-taksudvikling	6,656	4,722
DI212	Infarctus myocardi acutus transmuralis m anden lokalisation	2,533	786
DI212A	Infarctus myocardi acutus transmuralis posterolateralis	12	8
DI212B	Infarctus myocardi acutus transmuralis septalis	18	5
DI212C	Infarctus myocardi acutus transmuralis posterobasalis	7	.
DI212E	Infarctus myocardi acutus transmuralis apicolateralis	4	.
DI212G	Infarctus myocardi acutus transmuralis lateralis	10	*
DI212H	Infarctus myocardi acutus transmuralis posterioris	22	4
DI213	ST-elevations akut myokardieinfarkt	38,107	30,537
DI213A	ST-elevations akut myokardieinfarkt, anterior	384	685
DI213B	ST-elevations akut myokardieinfarkt, inferiort/posteriort	457	710
DI213C	ST-elevations akut myokardieinfarkt, grenblok	10	*
DI214	Non-ST-elevations akut myokardieinfarkt	96,609	121,924
DI219	Akut myokardieinfarkt UNS	142,259	95,856
DI219A	Type * myokardieinfarkt	189	99
DI23	Komplikationer i efterforløbet af akut myokardieinfarkt	9	.
DI230	Hæmoperikardium efter akut myokardieinfarkt	398	116
DI231	Atrioseptumruptur efter akut myokardieinfarkt	110	44
DI232	Ventrikelseptumruptur efter akut myokardieinfarkt	482	481
DI233	Ruptur i hjertevæg u hæmoperikardium eft AMI	107	30
DI234	Ruptur af chordae tendineae efter akut myokardieinfarkt	64	30
DI235	Papillærmuskelruptur efter akut myokardieinfarkt	123	70
DI236	Trombose i atrie eller ventrikel efter akut myokardieinfarkt	404	489
DI236A	Trombose i atrieaurikel efter akut myokardieinfarkt	18	106
DI236B	Trombose i ventrikel akut myokardieinfarkt	71	165
DI238	An. akut kompl. i efterforløbet af AMI	643	143
DI238A	Perikardieansamling efter akut myokardieinfarkt	141	120
DI24	Andre former for akut iskæmisk hjertesygdom	252	6
DI240	Koronartrombose uden infarkt	1,015	258
DI240A	Arteriel eller venøs koronaremboli uden infarkt	27	8
DI241	Postmyokardieinfarktsyndrom	979	431
DI241A	Dressler's syndrom	13	6
DI248	Anden form for akut iskæmisk hjertesygdom	2,727	760
DI248A	Insufficiencia coronaria	266	87
DI249	Akut iskæmisk hjertesygdom UNS	12,026	4,391
KFNA00	Anastom. mellem a. mammaria interna og kor-a.	50,729	2,900
KFNA10	Sekventielle anastomoser mellem a. mamm. interna og kor-a.	2,954	142
KFNA20	Anastomoser mellem bilat. aa. mamm. internae og kor-a.	2,768	281
KFNA96	An. anastomoseoperation mellem a. mammaria interna og kor-a.	350	29
KFNB00	Anastom. mellem a. gastroepiploica og kor-a.	27	15
KFNB20	Sekventielle anastomoser mellem a. gastroepiploica og kor-a.	4	*
KFNB96	An. anastomoseoperation mellem a. gastroepiploica og kor.ea.	6	.
KFNC10	Aortokoronar byp. m. enkelt distal anastom.	14,504	3,823
KFNC20	Aortokoronar byp. m. to distale anastomoser	19,722	5,201
KFNC30	Aortokoronar byp. m. tre distale anastomoser	12,624	2,617
KFNC40	Aortokoronar byp. m. fire distale anastomoser	3,654	673
KFNC50	Aortokoronar byp. m. fem distale anastomoser	502	96

KFNC60	Aortokoronar byp. m. seks distale anastomoser	56	8
KFNC96	Anden aortokoronar bypass-operation	68	11
KFND10	Aortokoronar bypass med enkelt protese	37	17
KFND20	Aortokoronar bypass med to proteser	4	*
KFND96	Anden aortokoronar bypass-operation m. protese	*	.
KFNE00	Kor. byp. m. anv. af frit a.transpl. fra a. mamma- interna	677	48
KFNE10	Kor. byp. m. anv. af frit a.transpl. fra a. gastroepiploica	24	12
KFNE20	Kor. byp. m. anv. af frit a.transpl. fra a. radialis	227	4
KFNE96	An. kor. byp. m. anv. af frit a.transpl.	4,213	734
KFNF00	Trombendarterektomi i h�. kor-a.	80	.
KFNF10	Trombendarterektomi i ramus desc. ant. fra h�. kor-a.	64	.
KFNF20	Trombendarterektomi i ramus circumflexus fra h�. kor- a.	19	.
KFNF30	Trombendarterektomi i ve. koronararteries hovedstamme	*	.
KFNF96	Anden koronar trombendarterektomi	40	*
KFNG00	Udvidelse af koronararterie	5,934	2,333
KFNG00A	Dilatation af koronararterie (PTCA)	980	78
KFNG00B	Dilatation af koronararterie (PTCA) m. stent	3,320	325
KFNG00C	Dilatation af koronararterie (PTCA) med rotablator	24	.
KFNG02	Perkut. translum. plastik p� kor-a. (PTCA)	24,484	10,817
KFNG02A	Prim. perkut. translum. plastik p� kor-a. (PTCA)	6,851	3,507
KFNG05	Perkut. translum. plastik p� kor-a. (PTCA) m. stent	97,704	109,497
KFNG05A	Prim. perkut. translum. plastik p� kor-a. (PTCA) m. stent	42,124	39,078
KFNG10	Embolektomi p� koronararterie	72	16
KFNG12	Perkut. translum. embolektomi p� kor-a.	165	70
KFNG30	Udvidelse af kor-a. m. anvendelse af patch	508	81
KFNG40	Laserbehandling af koronararterie	40	6
KFNG96	Anden udvidelse el. rekanalisering af kor-a.	2,262	2,180
CbVD: Cerebrovascular disease			
HStr: Haemmoragic stroke			
DI60	Subaraknoidalbl�dning	136	5
DI600	Subaraknoidalbl�dning fra karotissifonen eller bifurkaturen	1,962	1,554
DI601	Subaraknoidalbl�dning fra arteria cerebri media	2,555	3,158
DI602	Subaraknoidalbl�dning fra arteria communicans anterior	3,125	5,107
DI603	Subaraknoidalbl�dning fra arteria communicans posterior	819	1,253
DI604	Subaraknoidalbl�dning fra arteria basilaris	888	1,215
DI605	Subaraknoidalbl�dning fra arteria vertebralis	318	417
DI606	Subaraknoidalbl�dning fra anden intrakraniell arterie	844	695
DI606A	Subaraknoidalbl�dning fra arteria cerebri posterior	59	71
DI606B	Subaraknoidalbl�dning fra arteria cerebri anterior	130	193
DI606C	Subaraknoidalbl�dning fra flere intrakranielle arterier	28	21
DI606D	Haemorrhagia subarachnoidalis, anden arterie	98	35
DI607	Subaraknoidalbl�dning fra intrakraniell arterie UNS	3,482	1,690
DI607A	Bristet medf�dt intrakranielt sakkul�rt aneurisme	10	10
DI608	Anden form for subaraknoidalbl�dning	1,939	1,017
DI609	Subaraknoidalbl�dning UNS	15,836	10,655
DI609A	Bristet (medf�dt) intrakranielt aneurisme UNS	46	55
DI61	Hjernebl�dning	223	5
DI610	Subkortikal bl�dning i hjernehemisf�re	5,128	3,386
DI610A	Dybtliggende bl�dning i hjernehemisf�re	1,718	2,305
DI611	Kortikal bl�dning i hjernehemisf�re	2,120	1,467
DI611A	Bl�dning i hjernens overflade	185	146
DI611B	Haemorrhagia lobi cerebri	460	322
DI612	Intracerebral bl�dning i hjernehemisf�re UNS	12,927	9,928
DI613	Bl�dning i hjernestammen	1,955	1,338
DI614	Bl�dning i lillehjernen	2,807	2,553
DI615	Bl�dning i hjerneventrikel	2,219	1,207
DI616	Bl�dning flere steder i hjernen	1,161	538
DI618	Anden form for hjernebl�dning	1,526	612
DI619	Hjernebl�dning UNS	37,309	28,891
IStr: Ischaemic stroke			
DI63	Hjerneinfarkt	174	7
DI630	Hjerneinfarkt for�rsaget af trombose i pr�cerebral arterie	2,025	1,185
DI631	Hjerneinfarkt for�rsaget af emboli i pr�cerebral		

arterie	1,020	701
DI632 Hjerneinfarkt f.a. tilluk./stenose i præcerebral arterie UNS	7,014	8,277
DI633 Hjerneinfarkt forårsaget af trombose i cerebral arterie	20,508	15,273
DI634 Hjerneinfarkt forårsaget af emboli i cerebral arterie	7,652	7,410
DI634A Embolia cerebri	116	24
DI635 Hjerneinfarkt f.a. tillukning/stenose i cerebral arterie UNS	7,475	8,375
DI636 Hjerneinfarkt f.a. ikke-pyogen cerebral venøs trombose	377	445
DI638 Anden form for hjerneinfarkt	3,291	2,311
DI639 Hjerneinfarkt UNS	188,099	214,830
DI64 Slagtilfælde uden oplysning om blødning eller infarkt	1,935	126
DI649 Apoplexia cerebri UNS	211,758	180,565
TCI: Transient cerebral ischaemia		
DG45 Transitorisk cerebral iskæmi og beslægtede syndromer	134	10
DG450 Vertebrobasilært syndrom	1,971	631
DG450A Arteria vertebralis-syndrom	111	43
DG450B Arteria basilaris-syndrom	172	48
DG451 Arteria carotis-syndrom	3,846	1,581
DG452 Insufficiens af fl. el. dobbeltsidige præcerebrale arterier	57	16
DG452A Insufficiens af dobbeltsidige præcerebrale arterier	9	4
DG458 Anden transitorisk cerebral iskæmi eller beslægtet syndrom	4,301	1,772
DG459 Transitorisk anfald af cerebral iskæmi UNS	131,005	112,930
DG459A Spasme i cerebral arterie	179	75
HpoG: Hypoglycaemia		
HpoG: Hypoglycaemia		
DE100 Type 1-diabetes med koma	4,434	2,167
DE110 Type 2-diabetes med koma	7,677	3,118
DE120 Diabetes forårsaget af underernæring med koma	368	156
DE130 Anden diabetes med koma	143	85
DE140 Diabetes UNS med koma	1,007	345
DE160 Hypoglykæmi uden koma forårsaget af lægemiddel	5,813	8,597
DE161 Anden form for hypoglykæmi	3,101	1,992
DE161B Encefalopati efter hypoglykæmisk koma	61	56
DE162 Hypoglykæmi UNS	37,196	45,781
DT38 Forgift. m. hormoner og syntetiske substit. og antagon. IKA	29	8
DT380 Forgift. m. hormon/synt-substitut/antagon. af kendt art IKA	1,211	1,929
DT383 Forgiftning med insulin eller andet antidiabetika	544	548
DT383A Insulin-shock	173	70
DT389 Forgift.med hormon, syntetisk substitut el. antagonist UNS	529	256
Keto: Ketoacidosis		
Keto: Ketoacidosis		
DE101 Type 1-diabetes med ketoacidose	10,974	22,361
DE111 Type 2-diabetes med ketoacidose	3,378	2,328
DE121 Diabetes forårsaget af underernæring med ketoacidose	166	66
DE131 Anden diabetes med ketoacidose	683	470
DE141 Diabetes UNS med ketoacidose	3,001	2,877
MatD: Macrovascular atherosclerotic dis		
MatD: Macrovascular atherosclerotic dis		
DI70 Åreforkalkning	41	5
DI700 Aterosklerose i aorta	5,177	2,605
DI701 Aterosklerose i nyrearterie	1,499	1,426
DI702 Aterosklerose i arterie i underekstremitet	109,341	245,764
DI702A Aterosklerotisk gangræn	23,957	54,733
DI702B Mönckebergs mediasklerose	47	36
DI708 Aterosklerose i anden arterie	7,891	6,178
DI708A Aterosklerotisk retinopati	12	27
DI709 Aterosklerose UNS	33,327	25,111
DI71 Aorta-aneurisme og aortadissektion	205	4
DI710 Aortadissektion UNS	4,624	5,251
DI710A Aortadissektion, type A	1,765	4,189
DI710B Aortadissektion, type B	1,415	4,193
DI711 Rumperet torakalt aorta-aneurisme	1,465	720
DI712 Torakalt aorta-aneurisme uden ruptur	8,092	9,796
DI713 Rumperet abdominalt aorta-aneurisme	9,789	9,369

DI714	Abdominalt aorta-aneurisme uden ruptur	39,281	77,528
DI715	Rumperet torakoabdominalt aorta-aneurisme	893	304
DI716	Torakoabdominalt aorta-aneurisme uden ruptur	2,973	4,089
DI718	Rumperet aorta-aneurisme UNS	1,267	475
DI719	Aorta-aneurisme UNS uden ruptur	12,716	9,620
DI719A	Dilateret aorta	7,906	9,047
DI719B	Hyalin nekrose i aorta	5	*
DI739A	Claudicatio intermittens	70,189	125,190
DI739C	Iskæmiske hvilesmerter i underekstremitet	25,289	45,782
Nefr: Nephropathy			
ESRD: End-stage CKD			
BJFD	Dialysebehandling	828	16,879
BJFD0	Akut dialyse	359	2,607
BJFD00	Akut hæmodialyse	26,831	230,014
BJFD01	Akut peritonealdialyse	936	12,240
BJFD02	Kontinuerlig vene-vene-diahemofiltration (CVVDHF)	20,932	41,098
BJFD2	Dialyse ved kronisk nyresygdom	369	191
BJFD20	Hæmodialyse ved kronisk nyresygdom	19,524	5,639,452
BJFD21	Kontinuerlig ambulant peritonealdialyse, CAPD	5,666	112,343
BJFD22	Intermitterende peritonealdialyse, IPD	787	7,876
BJFD23	Natlig peritonealdialyse, NPD	186	468
BJFD24	Kontinuerlig cyklisk peritonealdialyse, CCPD	*	.
BJFD25	Daglig ambulant peritonealdialyse, DAPD	220	1,915
BJFD26	Hæmodiafiltration	921	164,930
BJFD27	Automatisk peritonealdialyse, APD	1,702	20,520
BJFZ	Delprocedurer ved dialysebehandling	89	53
BJFZ0	Tilslutning af dialyseapparat til patient	297	18
BJFZ00	Tilslutning af hæmodialyseapparat til patient	242	190
BJFZ01	Tilslutning af peritonealdialyseapparat til patient	296	276
BJFZ1	Fjernelse af dialyseapparat fra patient	300	12
BJFZ10	Fjernelse af hæmodialyseapparat fra patient	394	217
BJFZ11	Fjernelse af peritonealdialyseapparat fra patient	83	58
BJFZ4	Delprocedure vedrørende dialysekateter	1,347	346
BJFZ40	Anlæggelse af hæmodialysekateter	13,654	5,086
BJFZ40A	Anlæggelse af tunnelleret hæmodialysekateter	1,631	990
BJFZ40B	Anlæggelse af permanent hæmodialysekateter	480	108
BJFZ41	Skift af hæmodialysekateter	684	238
BJFZ41A	Skiftning af tunnelleret hæmodialysekateter	24	9
BJFZ42	Skylning af hæmodialysekateter	1,272	2,576
BJFZ43	Fjernelse af hæmodialysekateter	1,654	303
BJFZ43A	Fjernelse af tunnelleret hæmodialysekateter	1,512	372
BJFZ44	Omlægning af hæmodialysekateter	55	5
BJFZ45	Anlæggelse af peritonealdialysekateter	2,458	743
BJFZ46	Skift af peritonealdialysekateter	114	41
BJFZ47	Skylning af peritonealdialysekateter	1,601	5,436
BJFZ48	Fjernelse af peritonealdialysekateter	2,511	570
BJFZ49	Omlægning af peritonealdialysekateter	285	87
BJFZ4A	Tætning af peritoneal dialysekateter uden omlægning	13	*
BJFZ5	Procedure vedrørende dialysekateter	7	.
BJFZ50	Skift af hæmodialysekateter	5	.
BJFZ51	Skylning af hæmodialysekateter	*	.
BJFZ52	Skift af peritonealdialysekateter	34	22
BJFZ53	Skylning af peritonealdialysekateter	49	58
BJFZ6	Slangeskift ved dialysebehandling	121	45
BJFZ60	Slangeskift ved peritonealdialysekateter	2,035	4,744
BJFZ9	Tilpasning af dialyseapparat til patient	185	166
BJFZ90	Programmering af kort til individuel dialysebehandling	371	454
BJFZ91	Justering af individuel dialysebehandling	781	4,956
DN185	Kronisk nyreinsufficiens, terminalt stadium 5	10,157	271,332
KJAK10	Laparotomi m. indl. af kateter til peritonealdialyse	2,354	1,019
KJAK11	Laparoskopisk indl. af kateter til peritonealdialyse	1,029	499
KJAK13	Laparotomi m. omlejring af peritonealt dialysekateter	157	68
KJAK14	Laparoskopisk omlejring af peritonealt dialysekateter	409	108
KKAS00	Autolog nyretransplantation	42	9
KKAS10	Allogen nyretransplantation m. nyre fra kadaverdonor	3,017	937
KKAS20	Allogen nyretransplantation m. nyre fra levende donor	1,638	553
KKAS40	Excision af transplanteret nyre	629	232
KKAS41	Perkut. endoskopisk excision af transplanteret nyre	*	*
KKAS50	Pyelocystotomi på transplanteret nyre	8	*
KKAS60	Operation for lymfocele v. transplanteret nyre	61	12

KKAS61	Perkut. endoskop. op. for lymfocele v. transplanteret nyre	21	*
KKAS70	Uretertransposition til transplanteret urinleder/nyrebækken	48	20
KKAS96	Anden operation i forbindelse m. nyretransplantation	135	30
KKAS97	An. perkut. endoskop. op. i forb. m. nyretransplant.	*	.
KPBL10	Anlæggelse af av-fistel fra a. axillaris	36	26
KPBL10A	Anlæggelse af av-fistel fra a. axillaris m. protese	6	7
KPBL20	Anlæggelse af av-fistel fra a. brachialis	3,866	4,390
KPBL20A	Anlæggelse af av-fistel fra a. brachialis m. protese	249	320
KPBL30	Anlæggelse af av-fistel fra a. radialis el. a. ulnaris	8,361	8,741
KPBL30A	Anlæggelse af av-fistel fra a. radialis/ulnaris m. protese	258	276
KPBL30B	Perkutan anlæg. af av-fistel fra a. radialis el. a. ulnaris	5	.
KPBL99	Anlæggelse af av-fistel fra an. a. i overekstremitet.	112	68
ModC: Moderate CKD			
DN183	Kronisk nyreinsufficiens, stadie 3	12,282	28,894
DN189	Kronisk nyreinsufficiens UNS	83,840	546,015
SevC: Severe CKD			
DN184	Kronisk nyreinsufficiens, stadie 4	9,704	35,465
Neur: Neuropathy			
Neur: Neuropathy			
DE104	Type 1-diabetes med neurologisk komplikation	11,495	30,449
DE114	Type 2-diabetes med neurologisk komplikation	28,032	65,653
DE124	Diabetes f.a. underernæring med neurologisk komplikation	152	37
DE134	Anden diabetes med neurologisk komplikation	502	1,632
DG590	Diabetisk mononeuropati	393	637
DG632	Diabetisk polyneuropati	7,864	17,914
DG990	Autonom neuropati ved endokrin eller metabolisk sygdom		
KA		226	257
Reti: Retinopathy			
Reti: Retinopathy			
BCDE	Behandling med øjenprotese	1,346	8,307
BCHY8A	Oftalmologisk behandling med VEGF-hæmmer	*	.
DH33	Nethindeløsning	662	147
DH330	Nethindeløsning med ruptur	22,948	80,865
DH330A	Nethindeløsning med ruptur, uden PVR	3,365	8,009
DH330A0	Nethindeløsning med ruptur, uden PVR, tilliggende makula	713	2,285
DH330A1	Nethindeløsning med ruptur, uden PVR, afløst makula	585	1,758
DH330B	Nethindeløsning med ruptur, med PVR	140	471
DH330B0	Nethindeløsning med ruptur, med PVR, tilliggende makula	178	661
DH330B1	Nethindeløsning med ruptur, med PVR, afløst makula	493	2,112
DH331	Retinoskise eller cyste i retina	1,962	2,288
DH331A	Cystis retinae	263	930
DH331B	Cystis orae serratae	*	*
DH331C	Cystis retinae e parasitica UNS	14	19
DH331D	Pseudocystis retinae	193	250
DH331E	Retinoschisis	1,240	1,771
DH332	Amotio retinae serosa	3,710	7,086
DH332A	Nethindeløsning uden ruptur	695	1,193
DH332B	Nethindeløsning UNS	1,583	1,636
DH333	Ruptur af retina uden løsning	13,553	18,272
DH333A	Foramen retinae sine amotione	7,679	9,041
DH333B	Operculum retinae sine amotione	631	638
DH334	Amotio retinae tractionis	4,471	13,272
DH334A	Proliferativ vitreoretinopati med amotio retinae	338	1,038
DH334B	Diabetisk retinal traktionsamotio	326	2,119
DH335	Anden form for nethindeløsning	1,729	1,951
DH352	Anden proliferativ retinopati	2,640	4,331
DH360B	Retinopathia proliferativa IDDM	2,321	3,411
DH360D	Retinopathia proliferativa NIDDM	1,107	1,181
DH360E	Maculopathia diabetica IDDM	1,078	958
DH360F	Maculopathia diabetica NIDDM	1,900	1,688
DH360J	Proliferativ diabetisk retinopati	4,544	23,652
DH360K	Diabetisk makulopati	7,113	36,827
DH368D1	Retinal dystrofi ved anden sygdom klassificeret		

andetsteds	60	105
DH368D2 Proliferativ retinopati ved anden sygdom klas.		
andetsteds	65	166
DH420 Glaukom v. endokrin, ernæringsbet. el. metabolisk sygdom KA	209	264
DH43 Forandringer i øjets glaslegeme	153	34
DH430 Prolapsus corporis vitrei	7,646	6,520
DH431 Blødning i øjets glaslegeme	18,364	51,146
DH432 Krystallinske aflejringer i øjets glaslegeme	1,904	3,252
DH433 Anden opacitet i øjets glaslegeme	9,728	11,778
DH433A Membrani corpus vitreum	877	603
DH438 Anden forandring i øjets glaslegeme	6,570	9,646
DH438A Ablatio corporis vitrei	487	286
DH438B Amotio corporis vitrei	174	115
DH438C Degeneratio corporis vitrei	4,753	3,790
DH438D Kollaps af øjets glaslegeme	6,329	5,904
DH439 Forandring i øjets glaslegeme UNS	2,053	1,631
KCKB00 Punktur og udtømning af suprakoroidal væske	139	60
KCKB10 Punkt/udtømm. af suprakoroid.væske/injekt. af væskesubstitut	58	54
KCKB99 Anden operation ved choroidealøsning	11	9
KCKC00 Fotoruptur i corpus vitreum	130	124
KCKC10 Lokal fotokoagulation af nethinde	41,054	107,846
KCKC10A Photocoagulatio retinae (lokal), argonlaser	608	1,049
KCKC10B Photocoagulatio retinae (lokal), diodelaser	91	68
KCKC15 Panretinal fotokoagulation af nethinde	22,474	167,709
KCKC15A Photocoagulatio retinae (panretinal), argonlaser	324	1,590
KCKC15B Photocoagulatio retinae (panretinal), diodelaser	14	8
KCKC20 Kryopeksi på tiliggende nethinde	1,841	1,782
KCKC30 Kryopeksi på afløst nethinde	7,066	6,760
KCKC40 Elektrokoagulation af nethinde	171	158
KCKC50 Transskleral laserterapi af nethinde	264	273
KCKC60 Skleraimpression med implantat	6,365	7,267
KCKC65 Fjernelse af impressionsimplantat fra sklera	917	1,063
KCKC70 Sklerainvagination med cerklage	11,158	13,616
KCKC75 Fjernelse af invaginationscerklage fra sklera	603	695
KCKC99 Anden ekstraokulær operation på corpus vitreum og nethinde	123	124
KCKD00 Dekompressionpunktur af corpus vitreum	123	143
KCKD05 Punktur af corpus vitreum m. injektion af lægemiddel	15,673	242,775
KCKD05A Punktur af corpus vitreum m. injektion af ranibizumab	531	1,613
KCKD05B Punktur af corpus vitreum m. inj. af angiostatisk lægemiddel	43,782	1,246,978
KCKD05C Pkt. af corpus vitreum m inj af implantat indh. dexamethason	1,948	7,816
KCKD10 Injektion af luft i corpus vitreum	26,161	22,700
KCKD15 Injektion af væskesubstitut i corpus vitreum	11,424	15,193
KCKD20 Fjernelse af corpus vitreum-substitut	9,986	16,227
KCKD25 Ekstern drænage af subretinal væske	4,830	4,628
KCKD30 Intern drænage af subretinal væske	4,341	2,934
KCKD40 Intrabulbær fotokoagulation af nethinde	25,393	28,150
KCKD45 Intrabulbær kryobehandling af nethinde	74	55
KCKD50 Intrabulbær diatermi af nethinde	5,373	4,998
KCKD60 Forreste vitrektomi	6,512	5,962
KCKD65 Vitrektomi genn. pars plana el. pars plicata	48,658	85,560
KCKD70 Excision af præretinal el. epiretinal membran	18,660	15,687
KCKD75 Retinotomi	2,222	1,252
KCKD80 Retinektomi	1,895	1,988
KCKD84 Subretinal injektion af genmodulerende lægemiddel	10	6
KCKD85 Fjernelse af subretinal membran el. streng	451	354
KCKD90 Fjernelse af subretinal blødning	94	78
KCKD99 Anden intrabulbær operation på corpus vitreum el. nethinde	807	1,399
KCKD99A Intrabulbær fakoemulsifikation	145	110
KCKE00 Excision af patologisk væv i choroidea	26	28
KCKE10 Transpupillær fotokoagulation af patologisk væv i choroidea	1,181	3,918
KCKE15 Intrabulbær fotokoagulation af patologisk væv i choroidea	25	28
KCKE20 Kryobehandling af patologisk væv i choroidea	47	48

KCKE30	Excision af patologisk væv i nethinde	63	55
KCKE40	Transpupillær fotokoagulation af patologisk væv i nethinde	296	1,010
KCKE45	Intrabulbær fotokoagulation af patologisk væv i nethinde	7	4
KCKE50	Kryobehandling af patologisk væv i nethinde	43	113
KCKE60	Implant. af strålekilde i el. v. øje	1,018	1,913
KCKE65	Fjernelse af strålekilde i el. ved øje	989	1,601
KCKE99	An. op. v. vævsforandring i choroidea el. nethinde	368	817
KCKW99	An. op. v. sygdomme i choroidea, corp. vitreum el. nethinde	408	800

The SAS System

05:19 Tuesday, January 4, 2022 2

The CONTENTS Procedure

Data Set Name	DMDAT.WCOMPL	Observations	1961504
Member Type	DATA	Variables	35
Engine	V9	Indexes	0
Created	04/01/2022 05:31:34	Observation Length	288
Last Modified	04/01/2022 05:31:34	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label	Dates of first complications for entire DKpop		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	8642
First Data Page	*
Max Obs per Page	227
Obs in First Data Page	208
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\wcompl.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	540MB
File Size (bytes)	566427648

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
*	PNR	Char	12	\$12.	\$10.	Personnummer
*	doESRD	Num	8	DDMMYY10.		End-stage CKD
*	doHypD	Num	8	DDMMYY10.		Hypertensive disease
4	doMI	Num	8	DDMMYY10.		Myocardial Infarction
5	doMedA	Num	8	DDMMYY10.		Medium amputation
6	doMinA	Num	8	DDMMYY10.		Minor amputation
7	doReti	Num	8	DDMMYY10.		Retinopathy
8	doTCI	Num	8	DDMMYY10.		Transient cerebral ischaemia
9	doUppA	Num	8	DDMMYY10.		Upper amputation
10	doAFib	Num	8	DDMMYY10.		Atrial fibrillation
11	doIHDx	Num	8	DDMMYY10.		non-MI Ischaemic heart disease
12	doIStr	Num	8	DDMMYY10.		Ischaemic stroke
13	doMicA	Num	8	DDMMYY10.		Micro-abuminuria
14	doModL	Num	8	DDMMYY10.		Moderate CKD (lab)
15	doMAtd	Num	8	DDMMYY10.		Macrovascular atherosclerotic disease
16	doModC	Num	8	DDMMYY10.		Moderate CKD
17	doHF	Num	8	DDMMYY10.		Heart failure
18	doHpoG	Num	8	DDMMYY10.		Hypoglycaemia
19	doHStr	Num	8	DDMMYY10.		Haemorrhagic stroke

20	doSevL	Num	8	DDMMYY10.	Severe CKD (lab)
21	doNeur	Num	8	DDMMYY10.	Neuropathy
22	doMacA	Num	8	DDMMYY10.	Macro-abuminuria
23	doKeto	Num	8	DDMMYY10.	Ketoacidosis
24	doESRL	Num	8	DDMMYY10.	End-stage CKD (lab)
25	doSevC	Num	8	DDMMYY10.	Severe CKD
26	doAmp	Num	8	DDMMYY10.	Amputation
27	doCVD	Num	8	DDMMYY10.	Cardiovascular Disease
28	doCbVD	Num	8	DDMMYY10.	Cerebrovascular disease
29	doNefr	Num	8	DDMMYY10.	Nephropathy
30	doNef	Num	8	DDMMYY10.	Diabetic nephropathy
31	doNefL	Num	8	DDMMYY10.	Nephropathy (lab)
32	doIHD	Num	8	DDMMYY10.	Ischeamic heart disease
33	doStr	Num	8	DDMMYY10.	Stroke
34	doACD	Num	8	DDMMYY10.	Atherosclerotic cardiovascular disease
35	doMaja	Num	8	DDMMYY10.	Major amputation

The SAS System 05:19 Tuesday, January 4, 2022 3

The CONTENTS Procedure

Data Set Name	DMDAT.RCOMPL	Observations	2389593
Member Type	DATA	Variables	*
Engine	V9	Indexes	0
Created	04/01/2022 05:31:36	Observation Length	32
Last Modified	04/01/2022 05:31:36	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label	Dates of *all* recurrent complications in DKpop		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	1172
First Data Page	*
Max Obs per Page	2039
Obs in First Data Page	1995
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\rcompl.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	73MB
File Size (bytes)	76873728

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	pnr	Char	12	\$12.	\$10.	Person id
2	compl	Char	5			Complication group
3	doC	Num	8	DDMMYY10.		Date of complication

4.17 00-labka

Reads the LABKA file lab_forsker and splits it in different files according to the values of the analysiscode after formatting by \$npue. The purpose is mainly to make it easier to access the LABKA measurements without necessarily reading the entire file.

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NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)
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NOTE: This session is executing on the X64_SR12R2 platform.

NOTE: Updated analytical products:

SAS/STAT 14.3

NOTE: Additional host information:

X64_SR12R2 WIN 6.3.9600 Server

NOTE: SAS initialization used:

real time 0.10 seconds
cpu time 0.15 seconds

NOTE: AUTOEXEC processing beginning; file is
E:\workdata\707655\DMreg2020\sas\optslibs.sas.

NOTE: AUTOEXEC processing completed.

```

1          *-----
2          nydat is the folder with the 2020 update of data from SDS
3          The file nydat.lab_forsker is an update of the >entire< LABKA
4          -----;
5          proc contents data = nydat.lab_forsker varnum ; run ;

```

NOTE: PROCEDURE CONTENTS used (Total process time):

real time 0.05 seconds
cpu time 0.04 seconds

NOTE: The PROCEDURE CONTENTS printed page 1.

```

6
7          * To avoid print of error lines in log with potential microdata (LDIA/PFR);
8          * options errors = 0 ;
9          data
10         lbdат.HbA1 ( label = 'Hbа1c' )
11         lbdат.Gluc ( label = 'Glukose' )
12         lbdат.Glu0 ( label = 'Glukose 0' )
13         lbdат.Gl30 ( label = 'Glukose 30' )
14         lbdат.G120 ( label = 'Glukose 120' )
15         lbdат.TChl ( label = 'Total kolesterol' )
16         lbdат.LDL ( label = 'LDL kolesterol' )
17         lbdат.HDL ( label = 'HDL kolesterol' )
18         lbdат.VLDL ( label = 'VLDL kolesterol' )
19         lbdат.Trig ( label = 'Triglycerid' )
20         lbdат.PlCr ( label = 'Plasma Kreatinin' )
21         lbdат.Uacr ( label = 'Ualbcrea' )
22         lbdат.Pota ( label = 'Kalium' )
23         lbdат.Sodi ( label = 'Natrium' )
24         lbdат.TSH ( label = 'TSH' )
25         lbdат.Cpep ( label = 'C-peptid/Proinsulin' )
26         lbdат.CRP ( label = 'CRP' )
27         lbdат.GAD ( label = 'GAD65' )
28         lbdат.eGFR ( label = 'eGFR' )
29         lbdат.GFR ( label = 'GFR' )
30         lbdат.ALAT ( label = 'ALAT' )
31         lbdат.AlcP ( label = 'Basisk fosfatase' )
32         lbdат.Cobl ( label = 'Cobalamin' )
33         lbdат.Trmb ( label = 'Trombocytter' )
34         lbdат.Leuc ( label = 'Leucocytter' )
35         lbdат.Hmgb ( label = 'Hæmoglobin' ) ;
36         set nydat.lab_forsker ( obs = max

```



```

37          keep = patient_cpr
38             SAMPLINGDATE
39             SAMPLINGTIME
40             ANALYSISCODE
41             LABORATORIUM_IDCODE
42             VALUE
43             UNIT
44             rename = ( patient_cpr = pnr ) ) ;
45     if put( analysiscode, $npue. ) eq "HbA1" then output lbdат.HbA1 ;
46     if put( analysiscode, $npue. ) eq "Gluc" then output lbdат.Gluc ;
47     if put( analysiscode, $npue. ) eq "Glu0" then output lbdат.Glu0 ;
48     if put( analysiscode, $npue. ) eq "Gl30" then output lbdат.Gl30 ;
49     if put( analysiscode, $npue. ) eq "G120" then output lbdат.G120 ;
50     if put( analysiscode, $npue. ) eq "Tchl" then output lbdат.Tchl ;
51     if put( analysiscode, $npue. ) eq "LDL" then output lbdат.LDL ;
52     if put( analysiscode, $npue. ) eq "HDL" then output lbdат.HDL ;
53     if put( analysiscode, $npue. ) eq "VLDL" then output lbdат.VLDL ;
54     if put( analysiscode, $npue. ) eq "Trig" then output lbdат.Trig ;
55     if put( analysiscode, $npue. ) eq "PlCr" then output lbdат.PlCr ;
56     if put( analysiscode, $npue. ) eq "Uacr" then output lbdат.Uacr ;
57     if put( analysiscode, $npue. ) eq "Pota" then output lbdат.Pota ;
58     if put( analysiscode, $npue. ) eq "Sodi" then output lbdат.Sodi ;
59     if put( analysiscode, $npue. ) eq "TSH" then output lbdат.TSH ;
60     if put( analysiscode, $npue. ) eq "Cpep" then output lbdат.Cpep ;
61     if put( analysiscode, $npue. ) eq "CRP" then output lbdат.CRP ;
62     if put( analysiscode, $npue. ) eq "GAD" then output lbdат.GAD ;
63     if put( analysiscode, $npue. ) eq "eGFR" then output lbdат.eGFR ;
64     if put( analysiscode, $npue. ) eq "GFR" then output lbdат.GFR ;
65     if put( analysiscode, $npue. ) eq "ALAT" then output lbdат.ALAT ;
66     if put( analysiscode, $npue. ) eq "AlcP" then output lbdат.AlcP ;
67     if put( analysiscode, $npue. ) eq "Cobl" then output lbdат.Cobl ;
68     if put( analysiscode, $npue. ) eq "Trmb" then output lbdат.Trmb ;
69     if put( analysiscode, $npue. ) eq "Leuc" then output lbdат.Leuc ;
70     if put( analysiscode, $npue. ) eq "Hmgb" then output lbdат.Hmgb ;
71 run ;

```

NOTE: There were 361663472 observations read from the data set NYDAT.LAB_FORSKER.

NOTE: The data set LBDAT.HBA1 has 11944532 observations and 7 variables.

NOTE: The data set LBDAT.GLUC has 8299695 observations and 7 variables.

NOTE: The data set LBDAT.GLU0 has 755395 observations and 7 variables.

NOTE: The data set LBDAT.GL30 has 10117 observations and 7 variables.

NOTE: The data set LBDAT.G120 has 68027 observations and 7 variables.

NOTE: The data set LBDAT.TCHL has 11553805 observations and 7 variables.

NOTE: The data set LBDAT.LDL has 10943118 observations and 7 variables.

NOTE: The data set LBDAT.HDL has 11169095 observations and 7 variables.

NOTE: The data set LBDAT.VLDL has 1799649 observations and 7 variables.

NOTE: The data set LBDAT.TRIG has 11486195 observations and 7 variables.

NOTE: The data set LBDAT.PLCR has 31203065 observations and 7 variables.

NOTE: The data set LBDAT.UACR has 2468127 observations and 7 variables.

NOTE: The data set LBDAT.POTA has 29228335 observations and 7 variables.

NOTE: The data set LBDAT.SODI has 29211285 observations and 7 variables.

NOTE: The data set LBDAT.TSH has 12638509 observations and 7 variables.

NOTE: The data set LBDAT.CPEP has 175615 observations and 7 variables.

NOTE: The data set LBDAT.CRP has 19725052 observations and 7 variables.

NOTE: The data set LBDAT.GAD has 34598 observations and 7 variables.

NOTE: The data set LBDAT.EGFR has 28886389 observations and 7 variables.

NOTE: The data set LBDAT.GFR has 1991 observations and 7 variables.

NOTE: The data set LBDAT.ALAT has 21494445 observations and 7 variables.

NOTE: The data set LBDAT.ALCP has 15829034 observations and 7 variables.

NOTE: The data set LBDAT.COBL has 5914858 observations and 7 variables.

NOTE: The data set LBDAT.TRMB has 20616979 observations and 7 variables.

NOTE: The data set LBDAT.LEUC has 24539594 observations and 7 variables.

NOTE: The data set LBDAT.HMGB has 29581634 observations and 7 variables.

NOTE: DATA statement used (Total process time):

real time 21:09.93

cpu time 17:17.40

72

73 proc contents data = lbdат.HbA1 varnum ; run ;

NOTE: PROCEDURE CONTENTS used (Total process time):
 real time 0.16 seconds
 cpu time 0.01 seconds

NOTE: The PROCEDURE CONTENTS printed page 2.

```

74
75      %macro units( dsn ) ;
76      proc tabulate data = lbdат.&dsn. missing noseps ;
77          class unit analysiscode ;
78          table all unit,
79              ( all analysiscode ) * f=comma10.
80              / rts = 20 box = "&dsn." ;
81      run ;
82      %mend ;
83
84      %units(HbA1) ;

```

NOTE: There were 11944532 observations read from the data set LBDAT.HBA1.

NOTE: The PROCEDURE TABULATE printed page 3.

NOTE: PROCEDURE TABULATE used (Total process time):
 real time 15.41 seconds
 cpu time 2.14 seconds

```

85      %units(Gluc) ;

```

NOTE: There were 8299695 observations read from the data set LBDAT.GLUC.

NOTE: The PROCEDURE TABULATE printed pages 4-5.

NOTE: PROCEDURE TABULATE used (Total process time):
 real time 9.10 seconds
 cpu time 1.25 seconds

```

86      %units(Glu0) ;

```

NOTE: There were 755395 observations read from the data set LBDAT.GLU0.

NOTE: The PROCEDURE TABULATE printed pages 6-7.

NOTE: PROCEDURE TABULATE used (Total process time):
 real time 1.31 seconds
 cpu time 0.09 seconds

```

87      %units(Gl30) ;

```

NOTE: There were 10117 observations read from the data set LBDAT.GL30.

NOTE: The PROCEDURE TABULATE printed page 8.

NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.06 seconds
 cpu time 0.00 seconds

```

88      %units(G120) ;

```

NOTE: There were 68027 observations read from the data set LBDAT.G120.

NOTE: The PROCEDURE TABULATE printed page 9.

NOTE: PROCEDURE TABULATE used (Total process time):
 real time 0.14 seconds
 cpu time 0.03 seconds

```

89      %units(TCh1) ;

```

NOTE: There were 11553805 observations read from the data set LBDAT.TCHL.

NOTE: The PROCEDURE TABULATE printed page 10.

NOTE: PROCEDURE TABULATE used (Total process time):
 real time 11.61 seconds
 cpu time 1.95 seconds

90 %units(LDL) ;

NOTE: There were 10943118 observations read from the data set LBDAT.LDL.

NOTE: The PROCEDURE TABULATE printed page 11.

NOTE: PROCEDURE TABULATE used (Total process time):

real time	10.57 seconds
cpu time	1.75 seconds

91 %units(HDL) ;

NOTE: There were 11169095 observations read from the data set LBDAT.HDL.

NOTE: The PROCEDURE TABULATE printed page 12.

NOTE: PROCEDURE TABULATE used (Total process time):

real time	8.07 seconds
cpu time	1.85 seconds

92 %units(VLDL) ;

NOTE: There were 1799649 observations read from the data set LBDAT.VLDL.

NOTE: The PROCEDURE TABULATE printed page 13.

NOTE: PROCEDURE TABULATE used (Total process time):

real time	1.56 seconds
cpu time	0.09 seconds

93 %units(Trig) ;

NOTE: There were 11486195 observations read from the data set LBDAT.TRIG.

NOTE: The PROCEDURE TABULATE printed page 14.

NOTE: PROCEDURE TABULATE used (Total process time):

real time	7.65 seconds
cpu time	1.82 seconds

94 %units(PlCr) ;

NOTE: There were 31203065 observations read from the data set LBDAT.PLCR.

NOTE: The PROCEDURE TABULATE printed page 15.

NOTE: PROCEDURE TABULATE used (Total process time):

real time	19.05 seconds
cpu time	6.59 seconds

95 %units(Uacr) ;

NOTE: There were 2468127 observations read from the data set LBDAT.UACR.

NOTE: The PROCEDURE TABULATE printed page 16.

NOTE: PROCEDURE TABULATE used (Total process time):

real time	1.90 seconds
cpu time	0.53 seconds

96 %units(Pota) ;

NOTE: There were 29228335 observations read from the data set LBDAT.POTA.

NOTE: The PROCEDURE TABULATE printed page 17.

NOTE: PROCEDURE TABULATE used (Total process time):

real time	15.06 seconds
cpu time	5.14 seconds

97 %units(Sodi) ;

NOTE: There were 29211285 observations read from the data set LBDAT.SODI.

NOTE: The PROCEDURE TABULATE printed page 18.

NOTE: PROCEDURE TABULATE used (Total process time):

real time	17.81 seconds
-----------	---------------

cpu time 5.51 seconds

98 %units(TSH) ;

NOTE: There were 12638509 observations read from the data set LBDAT.TSH.

NOTE: The PROCEDURE TABULATE printed page 19.

NOTE: PROCEDURE TABULATE used (Total process time):

real time 7.57 seconds
cpu time 2.23 seconds

99 %units(Cpep) ;

NOTE: There were 175615 observations read from the data set LBDAT.CPEP.

NOTE: The PROCEDURE TABULATE printed pages 20-21.

NOTE: PROCEDURE TABULATE used (Total process time):

real time 0.11 seconds
cpu time 0.09 seconds

100 %units(CRP) ;

NOTE: There were 19725052 observations read from the data set LBDAT.CRP.

NOTE: The PROCEDURE TABULATE printed page 22.

NOTE: PROCEDURE TABULATE used (Total process time):

real time 8.98 seconds
cpu time 2.07 seconds

101 %units(GAD) ;

NOTE: There were 34598 observations read from the data set LBDAT.GAD.

NOTE: The PROCEDURE TABULATE printed page 23.

NOTE: PROCEDURE TABULATE used (Total process time):

real time 0.03 seconds
cpu time 0.01 seconds

102 %units(eGFR) ;

NOTE: There were 28886389 observations read from the data set LBDAT.EGFR.

NOTE: The PROCEDURE TABULATE printed page 24.

NOTE: PROCEDURE TABULATE used (Total process time):

real time 12.63 seconds
cpu time 4.68 seconds

103 %units(GFR) ;

NOTE: There were 1991 observations read from the data set LBDAT.GFR.

NOTE: The PROCEDURE TABULATE printed page 25.

NOTE: PROCEDURE TABULATE used (Total process time):

real time 0.01 seconds
cpu time 0.00 seconds

104 %units(ALAT) ;

NOTE: There were 21494445 observations read from the data set LBDAT.ALAT.

NOTE: The PROCEDURE TABULATE printed page 26.

NOTE: PROCEDURE TABULATE used (Total process time):

real time 9.82 seconds
cpu time 2.67 seconds

105 %units(AlcP) ;

NOTE: There were 15829034 observations read from the data set LBDAT.ALCP.

NOTE: The PROCEDURE TABULATE printed page 27.

NOTE: PROCEDURE TABULATE used (Total process time):
 real time 7.71 seconds
 cpu time 2.43 seconds

106 %units(Cobl) ;

NOTE: There were 5914858 observations read from the data set LBDAT.COBL.
 NOTE: The PROCEDURE TABULATE printed page 28.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 3.75 seconds
 cpu time 0.73 seconds

107 %units(Trmb) ;

NOTE: There were 20616979 observations read from the data set LBDAT.TRMB.
 NOTE: The PROCEDURE TABULATE printed page 29.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 11.74 seconds
 cpu time 3.21 seconds

108 %units(Leuc) ;

NOTE: There were 24539594 observations read from the data set LBDAT.LEUC.
 NOTE: The PROCEDURE TABULATE printed page 30.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 16.41 seconds
 cpu time 4.31 seconds

109 %units(Hmgb) ;

NOTE: There were 29581634 observations read from the data set LBDAT.HMGB.
 NOTE: The PROCEDURE TABULATE printed page 31.
 NOTE: PROCEDURE TABULATE used (Total process time):
 real time 12.01 seconds
 cpu time 4.71 seconds

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414
 NOTE: The SAS System used:
 real time 24:40.70
 cpu time 18:13.60

4.17.1 00-labka.lst

The SAS System

10:15 Monday, January 31, 2022 1

The CONTENTS Procedure

Data Set Name	NYDAT.LAB_FORSKER	Observations	361663472
Member Type	DATA	Variables	10
Engine	V9	Indexes	0
Created	30/11/2021 15:36:55	Observation Length	272
Last Modified	30/11/2021 15:36:55	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

```

Data Set Page Size          32768
Number of Data Set Pages   3013863
First Data Page            1
Max Obs per Page           120
Obs in First Data Page     112
Number of Data Set Repairs 0
Filename                    E:\rawdata\707655\Eksterne
                             data\SDS_17122020\lab_forsker.sas7bdat
Release Created             9.0401M7
Host Created                X64_SRV19
Owner Name                  DSTFSE\MMK
File Size                   92GB
File Size (bytes)          98758295552

```

Variables in Creation Order

#	Variable	Type	Len	Format	Informat
1	rekvirent_id	Char	36	\$36.	
2	PATIENT_CPR	Char	12	\$12.	
3	SAMPLINGDATE	Num	8	DATE9.	DATE9.
4	SAMPLINGTIME	Num	8	TIME8.	TIME8.
5	ANALYSISCODE	Char	17	\$17.	\$17.
6	LABORATORIUM_IDCODE	Char	3	\$3.	\$3.
7	VALUE	Char	12	\$12.	\$12.
8	UNIT	Char	16	\$16.	\$16.
9	RESULTTYPE	Char	80	\$80.	\$80.
10	REKVIRENT_IDTYPE	Char	80	\$80.	\$80.

The SAS System

10:15 Monday, January 31, 2022 2

The CONTENTS Procedure

Data Set Name	Member Type	Engine	Created	Last Modified	Protection	Data Set Type	Label	Data Representation	Encoding	Observations	Variables	Indexes	Observation Length	Deleted Observations	Compressed	Sorted
LBDAT.HBA1	DATA	V9	31/01/2022 10:15:13	31/01/2022 10:15:13			Hba1c	WINDOWS_64	wlatin1 Western (Windows)	11944532	7	0	80	0	NO	NO

Engine/Host Dependent Information

```

Data Set Page Size          65536
Number of Data Set Pages   14621
First Data Page            1
Max Obs per Page           817
Obs in First Data Page     795
Number of Data Set Repairs 0
ExtendObsCounter           YES
Filename                    E:\workdata\707655\DMreg2020\data\labka\hba1.sas7bdat
Release Created             9.0401M5
Host Created                X64_SR12R2
Owner Name                  DSTFSE\FDIY7655
File Size                   914MB
File Size (bytes)          958267392

```

Variables in Creation Order

#	Variable	Type	Len	Format	Informat
---	----------	------	-----	--------	----------

1	pnr	Char	12	\$12.	
2	SAMPLINGDATE	Num	8	DATE9.	DATE9.
3	SAMPLINGTIME	Num	8	TIME8.	TIME8.
4	ANALYSISCODE	Char	17	\$17.	\$17.
5	LABORATORIUM_IDCODE	Char	3	\$3.	\$3.
6	VALUE	Char	12	\$12.	\$12.
7	UNIT	Char	16	\$16.	\$16.

The SAS System 10:15 Monday, January 31, 2022 3

HbA1	ANALYSISCODE		
	All	NPU03835	NPU27300
	N	N	N
All	11,944,532	104,581	11,839,951
UNIT			
mmol/mol	104,581	104,581	.
	11,839,951	.	11,839,951

The SAS System 10:15 Monday, January 31, 2022 4

Gluc	ANALYSISCODE					
	All	NPU02187	NPU02192	NPU04173	NPU04177	NPU21531
	N	N	N	N	N	N
All	8,299,695	229,851	5,474,033	18,857	78,220	270,030
UNIT						
mmol/L	7,542,087	229,851	4,901,933	13,557	72,913	135,751
mmol/l	757,608	.	572,100	5,300	5,307	134,279

(Continued)

The SAS System 10:15 Monday, January 31, 2022 5

Gluc	ANALYSISC-
	ODE
	NPU22089
	N
All	2,228,704
UNIT	
mmol/L	2,188,082
mmol/l	40,622

The SAS System 10:15 Monday, January 31, 2022 6

Glu0	ANALYSISCODE					
	All	DNK35842	NPU02193	NPU02195	NPU21532	NPU22069
	N	N	N	N	N	N
All	755,395	332,993	3,533	382,218	2,231	5,706
UNIT						
mmol/L	557,157	279,294	784	246,979	2,231	2,065
mmol/l	198,238	53,699	2,749	135,239	.	3,641

(Continued)

The SAS System 10:15 Monday, January 31, 2022 7

Glu0	ANALYSISC- ODE

	NPU22127

	N

All	28,714
UNIT	
mmol/L	25,804
mmol/l	2,910

The SAS System 10:15 Monday, January 31, 2022 8

G130	ANALYSISCODE		

All	NPU04174	NPU22129	

N	N	N	

All	10,117	1,881	8,236
UNIT			
mmol/L	7,665	1,331	6,334
mmol/l	2,452	550	1,902

The SAS System 10:15 Monday, January 31, 2022 9

G120	ANALYSISCODE		

All	NPU21530	NPU22134	

N	N	N	

All	68,027	42,788	25,239
UNIT			
mmol/L	53,609	28,370	25,239
mmol/l	14,418	14,418	.

The SAS System 10:15 Monday, January 31, 2022 10

TCh1	ANALYSISCODE			

All	NPU01566	NPU10033	NPU18412	

N	N	N	N	

All	11,553,805	11,422,635	45	131,125
UNIT				
mmol/L	9,425,270	9,302,895	.	122,375
mmol/l	2,128,535	2,119,740	45	8,750

The SAS System 10:15 Monday, January 31, 2022 11

LDL	ANALYSISCODE		

All	DNK35308	NPU01568	NPU10171

	N	N	N	N
All	10,943,118	1,599,897	8,433,086	910,135
UNIT				
mmol/L	8,058,829	1,599,897	5,929,259	529,673
mmol/l	2,884,289	.	2,503,827	380,462

The SAS System

10:15 Monday, January 31, 2022 12

HDL	ANALYSISCODE		
	All	NPU01567	NPU10157
	N	N	N
All	11,169,095	11,038,696	130,399
UNIT			
mmol/L	9,084,392	8,962,746	121,646
mmol/l	2,084,703	2,075,950	8,753

The SAS System

10:15 Monday, January 31, 2022 13

VLDL	ANALYSISCODE		
	All	NPU01569	NPU09256
	N	N	N
All	1,799,649	1,771,938	27,711
UNIT			
mmol/L	1,766,969	1,747,811	19,158
mmol/l	32,680	24,127	8,553

The SAS System

10:15 Monday, January 31, 2022 14

Trig	ANALYSISCODE			
	All	NPU03620	NPU04094	NPU18106
	N	N	N	N
All	11,486,195	2,146,917	9,339,230	48
UNIT				
mmol/L	9,300,426	624,631	8,675,795	.
mmol/l	2,185,769	1,522,286	663,435	48

The SAS System

10:15 Monday, January 31, 2022 15

PlCr	ANALYSISCODE		
	All	NPU04998	NPU18016
	N	N	N
All	31,203,065	15,122,566	16,080,499
UNIT			
?mol/L	176,256	.	176,256
μ mol/L	22,756,839	13,261,293	9,495,546
μ mol/l	4,672,679	36,591	4,636,088
$\hat{A}\mu$ mol/L	7,996	.	7,996
$i; \frac{1}{2}$ mol/L	3,191,097	1,824,679	1,366,418

i, 1/2 mol/l 398,198 3 398,195

The SAS System 10:15 Monday, January 31, 2022 16

Uacr	ANALYSISCODE			
	All	NPU03918	NPU19661	NPU28842
	N	N	N	N
All	2,468,127	6,389	2,438,834	22,904
UNIT				
10E-3	253,827	.	253,827	.
10^-3	658,274	6,389	651,885	.
g/mol	22,904	.	.	22,904
mg/g	775,198	.	775,198	.
x 10E-3	240,201	.	240,201	.
x 10 < sup > -3 < /sup	290,757	.	290,757	.
x 10^-3	226,966	.	226,966	.

The SAS System 10:15 Monday, January 31, 2022 17

Pota	ANALYSISC-ODE	
	All	NPU03230
	N	N
All	29,228,335	29,228,335
UNIT		
mmol/L	24,820,733	24,820,733
mmol/l	4,407,602	4,407,602

The SAS System 10:15 Monday, January 31, 2022 18

Sodi	ANALYSISC-ODE	
	All	NPU03429
	N	N
All	29,211,285	29,211,285
UNIT		
mmol/L	24,817,882	24,817,882
mmol/l	4,393,403	4,393,403

The SAS System 10:15 Monday, January 31, 2022 19

TSH	ANALYSISCODE		
	All	NPU03577	NPU27547
	N	N	N
All	12,638,509	11,570,244	1,068,265
UNIT			
10E-3 IU/L	881,866	881,866	.
10E-3IU/L	2,498,189	2,498,189	.
10E-3IU/l	6	6	.
10^-3 IU/L	4,800,015	3,733,592	1,066,423

```

mIU/L          2,239,426  2,239,378      48
miu/l          2,146,021  2,146,021      .
× 10 < sup > -3 < /sup  72,986    71,192    1,794
-----

```

The SAS System 10:15 Monday, January 31, 2022 20

```

-----
Cpep
-----
ANALYSISCODE
-----
All      NPU03247  NPU04020  NPU04149  NPU04154  NPU10390
-----
N        N        N        N        N        N
-----
All      175,61*   2,151     3,964     12,056     2,849     11*
UNIT
nmol/L   14,318    2,151     .          12,056     .          111
nmol/l   95*       .          .          .          .          *
pmol/L   141,071   .          2,621     .          2,098     .
pmol/l   19,276    .          1,343     .          751       .
-----

```

(Continued)

The SAS System 10:15 Monday, January 31, 2022 21

```

-----
Cpep
-----
ANALYSISCODE
-----
NPU18004  NPU18005  NPU18007
-----
N        N        N
-----
All      57,314    96,517    651
UNIT
nmol/L   .          .          .
nmol/l   .          948       .
pmol/L   52,377    83,447    528
pmol/l   4,937     12,122    123
-----

```

The SAS System 10:15 Monday, January 31, 2022 22

```

-----
CRP
-----
ANALYSISC-
ODE
-----
All      NPU19748
-----
N        N
-----
All      19,725,052  19,725,052
UNIT
mg/L     16,903,633  16,903,633
mg/l     2,821,419   2,821,419
-----

```

The SAS System 10:15 Monday, January 31, 2022 23

```

-----
GAD
-----
ANALYSISCODE
-----
All      NPU12544  NPU26737  NPU29550  NPU54726  NPU54727
-----
N        N        N        N        N        N
-----
All      34,598    4,345     24,437    1,592     1,028     3,196
UNIT
(p.d.e.) 7,062     4,345     .          1,592     592       533
          169       .          .          .          83       86
-----

```

10E3 IU/L	377	.	377	.	.	.
10E3 int.enh/l	484	.	484	.	.	.
10E3IU/L	5,207	.	5,207	.	.	.
10 ³ IU/L	599	.	599	.	.	.
AU	313	.	.	.	123	190
U/mL	2,813	.	2,813	.	.	.
int. enh/mL	38	.	.	.	.	38
int.enh./mL	2,139	.	.	.	208	1,931
int.enh./ml	365	.	.	.	.	365
kIU/L	9,999	.	9,924	.	22	53
kIU/l	285	.	285	.	.	.
× 10 < sup > 3 < /sup >	4,748	.	4,748	.	.	.

The SAS System 10:15 Monday, January 31, 2022 24

eGFR	ANALYSISCODE				
	All	DNK35131	DNK35301	DNK35302	DNK35303
	N	N	N	N	N
All	28,886,389	8,257,812	747	20,623,617	4,213
UNIT					
mL/min	18,631,468	4,549,743	747	14,076,765	4,213
mL/min1.73m2	5,350,626	1,527,560	.	3,823,066	.
ml/min	4,800,178	2,076,392	.	2,723,786	.
ml/min1.73m2	104,117	104,117	.	.	.

The SAS System 10:15 Monday, January 31, 2022 25

GFR	ANALYSISC-ODE	
	All	NPU19597
	N	N
All	1,991	1,991
UNIT		
mL/min	291	291
ml/min	1,700	1,700

The SAS System 10:15 Monday, January 31, 2022 26

ALAT	ANALYSISC-ODE	
	All	NPU19651
	N	N
All	21,494,445	21,494,445
UNIT		
U/L	17,814,699	17,814,699
U/l	3,679,746	3,679,746

The SAS System 10:15 Monday, January 31, 2022 27

AlcP	ANALYSISC-ODE	
	All	NPU27783

	N	N
All	15,829,034	15,829,034
UNIT		
U/L	14,228,135	14,228,135
U/l	1,600,899	1,600,899

The SAS System

10:15 Monday, January 31, 2022 28

	ANALYSISCODE	
	All	NPU01700
	N	N
All	5,914,858	5,914,858
UNIT		
pmol/L	4,712,002	4,712,002
pmol/l	1,202,856	1,202,856

The SAS System

10:15 Monday, January 31, 2022 29

	ANALYSISCODE		
	All	NPU03568	NPU26813
	N	N	N
All	20,616,979	20,603,716	13,263
UNIT			
	13,263	.	13,263
10E9/L	5,063,369	5,063,369	.
10E9/l	3,342,629	3,342,629	.
10^9/L	8,887,987	8,887,987	.
x 10E9/L	1,607,142	1,607,142	.
× 10 < sup > 9 < /sup >	229,892	229,892	.
× 10^9/L	1,472,656	1,472,656	.
× 10^9/l	41	41	.

The SAS System

10:15 Monday, January 31, 2022 30

	ANALYSISCODE		
	All	NPU02593	NPU17580
	N	N	N
All	24,539,594	24,539,577	17
UNIT			
	17	.	17
10E9/L	6,312,149	6,312,149	.
10E9/l	3,941,424	3,941,424	.
10^9/L	10,184,069	10,184,069	.
x 10E9/L	1,995,830	1,995,830	.
× 10 < sup > 9 < /sup >	118,996	118,996	.
× 10^9/L	1,987,109	1,987,109	.

The SAS System

10:15 Monday, January 31, 2022 31

	ANALYSISCODE	
Hmgb		


```

18         if substr(atc, 1, 3) in ("C09" ) then output renal ;
19         if substr(atc, 1, 3) in ("C10" ) then output lipid ;
20         run ;
21         %mend ;
22         %getmed ;

```

NOTE: Missing values were generated as a result of performing an operation on missing values.

Each place is given by: (Number of times) at (Line):(Column).

949 at 22:19

```

NOTE: There were 13552545 observations read from the data set GRUND.LMDB1995.
NOTE: There were 3568979 observations read from the data set GRUND.LMDB1995_BRUTTO.
NOTE: There were 13987953 observations read from the data set GRUND.LMDB1996.
NOTE: There were 3784012 observations read from the data set GRUND.LMDB1996_BRUTTO.
NOTE: There were 14470331 observations read from the data set GRUND.LMDB1997.
NOTE: There were 3973525 observations read from the data set GRUND.LMDB1997_BRUTTO.
NOTE: There were 15235400 observations read from the data set GRUND.LMDB1998.
NOTE: There were 4248450 observations read from the data set GRUND.LMDB1998_BRUTTO.
NOTE: There were 15540101 observations read from the data set GRUND.LMDB1999.
NOTE: There were 4483510 observations read from the data set GRUND.LMDB1999_BRUTTO.
NOTE: There were 15733948 observations read from the data set GRUND.LMDB2000.
NOTE: There were 4653099 observations read from the data set GRUND.LMDB2000_BRUTTO.
NOTE: There were 16595791 observations read from the data set GRUND.LMDB2001.
NOTE: There were 5022086 observations read from the data set GRUND.LMDB2001_BRUTTO.
NOTE: There were 17666883 observations read from the data set GRUND.LMDB2002.
NOTE: There were 5459492 observations read from the data set GRUND.LMDB2002_BRUTTO.
NOTE: There were 18878804 observations read from the data set GRUND.LMDB2003.
NOTE: There were 6000805 observations read from the data set GRUND.LMDB2003_BRUTTO.
NOTE: There were 20449486 observations read from the data set GRUND.LMDB2004.
NOTE: There were 6588662 observations read from the data set GRUND.LMDB2004_BRUTTO.
NOTE: There were 21663811 observations read from the data set GRUND.LMDB2005.
NOTE: There were 7075022 observations read from the data set GRUND.LMDB2005_BRUTTO.
NOTE: There were 23033327 observations read from the data set GRUND.LMDB2006.
NOTE: There were 7567168 observations read from the data set GRUND.LMDB2006_BRUTTO.
NOTE: There were 24324181 observations read from the data set GRUND.LMDB2007.
NOTE: There were 8030396 observations read from the data set GRUND.LMDB2007_BRUTTO.
NOTE: There were 25484004 observations read from the data set GRUND.LMDB2008.
NOTE: There were 8533368 observations read from the data set GRUND.LMDB2008_BRUTTO.
NOTE: There were 26040637 observations read from the data set GRUND.LMDB2009.
NOTE: There were 8758122 observations read from the data set GRUND.LMDB2009_BRUTTO.
NOTE: There were 26874842 observations read from the data set GRUND.LMDB2010.
NOTE: There were 9053925 observations read from the data set GRUND.LMDB2010_BRUTTO.
NOTE: There were 27476210 observations read from the data set GRUND.LMDB2011.
NOTE: There were 9309185 observations read from the data set GRUND.LMDB2011_BRUTTO.
NOTE: There were 27720576 observations read from the data set GRUND.LMDB2012.
NOTE: There were 9463003 observations read from the data set GRUND.LMDB2012_BRUTTO.
NOTE: There were 27670851 observations read from the data set GRUND.LMDB2013.
NOTE: There were 9401555 observations read from the data set GRUND.LMDB2013_BRUTTO.
NOTE: There were 27612777 observations read from the data set GRUND.LMDB2014.
NOTE: There were 9292871 observations read from the data set GRUND.LMDB2014_BRUTTO.
NOTE: There were 27468960 observations read from the data set GRUND.LMDB2015.
NOTE: There were 9137469 observations read from the data set GRUND.LMDB2015_BRUTTO.
NOTE: There were 27365352 observations read from the data set GRUND.LMDB2016.
NOTE: There were 9011666 observations read from the data set GRUND.LMDB2016_BRUTTO.
NOTE: There were 27161833 observations read from the data set GRUND.LMDB2017.
NOTE: There were 8836650 observations read from the data set GRUND.LMDB2017_BRUTTO.
NOTE: There were 26976587 observations read from the data set GRUND.LMDB2018.
NOTE: There were 8643481 observations read from the data set GRUND.LMDB2018_BRUTTO.
NOTE: The data set WORK.LIPID has 46244379 observations and 7 variables.
NOTE: The data set WORK.RENAL has 65137177 observations and 7 variables.
NOTE: The data set WORK.CARD has 9842275 observations and 7 variables.
NOTE: The data set WORK.BLPR has 136823058 observations and 7 variables.
NOTE: The data set WORK.PLATE has 49783592 observations and 7 variables.
NOTE: The data set WORK.OAD has 46815809 observations and 7 variables.
NOTE: The data set WORK.INS has 23863468 observations and 7 variables.
NOTE: DATA statement used (Total process time):
      real time          15:23.55
      cpu time           4:10.68

```

```

23
24 *-----;
25 data lipid2 renal2 card2 blpr2 plate2 oad2 ins2 ;
26 set nydat.epikur ( keep = cpr atc eksd doso apk volapk
27                  rename = ( cpr = pnr
28                            volapk = volume ) ) ;
29 if substr(atc, 1, 4) in ("A10A" ) then output ins2 ;
30 if substr(atc, 1, 4) in ("A10B" ) then output oad2 ;
31 if substr(atc, 1, 5) in ("B01AC") then output plate2 ;
32 if substr(atc, 1, 4) in ("C01D" ) then output card2 ;
33 if substr(atc, 1, 3) in ("C02","C03","C07","C08")
34                        then output blpr2 ;
35 if substr(atc, 1, 3) in ("C09" ) then output renal2 ;
36 if substr(atc, 1, 3) in ("C10" ) then output lipid2 ;
37 run ;

```

NOTE: There were 83681272 observations read from the data set NYDAT.EPIKUR.
NOTE: The data set WORK.LIPID2 has 4763587 observations and 6 variables.
NOTE: The data set WORK.RENAL2 has 5541374 observations and 6 variables.
NOTE: The data set WORK.CARD2 has 355149 observations and 6 variables.
NOTE: The data set WORK.BLPR2 has 9449824 observations and 6 variables.
NOTE: The data set WORK.PLATE2 has 2824234 observations and 6 variables.
NOTE: The data set WORK.OAD2 has 3407992 observations and 6 variables.
NOTE: The data set WORK.INS2 has 1253550 observations and 6 variables.
NOTE: DATA statement used (Total process time):
real time 33.99 seconds
cpu time 20.78 seconds

```

38
39 %macro sortmed( dsn, lab ) ;
40 data &dsn. ; set &dsn. &dsn.2 ; run ;
41
42 proc sort data = &dsn.
43         out = drdat.&dsn. (label = "&lab.")
44         nodupkey ;
45         by pnr atc eksd doso apk ;
46 run ;
47
48 title1 "Dataset &dsn. with &lab." ;
49 proc contents data = drdat.&dsn. varnum ; run ;
50 proc tabulate data = drdat.&dsn. missing noseps ;
51     class atc ;
52     table all atc, n * f=comma10.
53           / rts = 60 box = "&lab." ;
54     format atc $ATC_L1L1_KT. ;
55 run ;
56 %mend ;
57
58 %sortmed( ins , %str(Insulines) ) ;

```

WARNING: Multiple lengths were specified for the variable eksd by input data set(s). This can cause truncation of data.

NOTE: There were 23863468 observations read from the data set WORK.INS.
NOTE: There were 1253550 observations read from the data set WORK.INS2.
NOTE: The data set WORK.INS has 25117018 observations and 7 variables.
NOTE: DATA statement used (Total process time):
real time 7.13 seconds
cpu time 3.61 seconds

NOTE: There were 25117018 observations read from the data set WORK.INS.
NOTE: 12141240 observations with duplicate key values were deleted.
NOTE: The data set DRDAT.INS has 12975778 observations and 7 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 8.93 seconds
cpu time 13.17 seconds

NOTE: PROCEDURE CONTENTS used (Total process time):
real time 0.04 seconds
cpu time 0.04 seconds

NOTE: The PROCEDURE CONTENTS printed page 1.

NOTE: There were 12975778 observations read from the data set DRDAT.INS.
NOTE: The PROCEDURE TABULATE printed page 2.
NOTE: PROCEDURE TABULATE used (Total process time):
real time 2.54 seconds
cpu time 1.40 seconds

59 %sortmed(oad , %str(Oral antidiabetic drugs)) ;

WARNING: Multiple lengths were specified for the variable eksd by input data set(s). This can cause truncation of data.

NOTE: There were 46815809 observations read from the data set WORK.OAD.
NOTE: There were 3407992 observations read from the data set WORK.OAD2.
NOTE: The data set WORK.OAD has 50223801 observations and 7 variables.
NOTE: DATA statement used (Total process time):
real time 12.13 seconds
cpu time 6.35 seconds

NOTE: There were 50223801 observations read from the data set WORK.OAD.
NOTE: 23803474 observations with duplicate key values were deleted.
NOTE: The data set DRDAT.OAD has 26420327 observations and 7 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 16.36 seconds
cpu time 26.01 seconds

NOTE: PROCEDURE CONTENTS used (Total process time):
real time 0.00 seconds
cpu time 0.00 seconds

NOTE: The PROCEDURE CONTENTS printed page 3.

NOTE: There were 26420327 observations read from the data set DRDAT.OAD.
NOTE: The PROCEDURE TABULATE printed page 4.
NOTE: PROCEDURE TABULATE used (Total process time):
real time 4.73 seconds
cpu time 2.76 seconds

60 %sortmed(plate, %str(Platelets)) ;

WARNING: Multiple lengths were specified for the variable eksd by input data set(s). This can cause truncation of data.

NOTE: There were 49783592 observations read from the data set WORK.PLATE.
NOTE: There were 2824234 observations read from the data set WORK.PLATE2.
NOTE: The data set WORK.PLATE has 52607826 observations and 7 variables.
NOTE: DATA statement used (Total process time):
real time 11.63 seconds
cpu time 5.54 seconds

NOTE: There were 52607826 observations read from the data set WORK.PLATE.
NOTE: 11308235 observations with duplicate key values were deleted.
NOTE: The data set DRDAT.PLATE has 41299591 observations and 7 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 18.13 seconds
cpu time 28.20 seconds

NOTE: PROCEDURE CONTENTS used (Total process time):
real time 0.01 seconds
cpu time 0.00 seconds

NOTE: The PROCEDURE CONTENTS printed page 5.

NOTE: There were 41299591 observations read from the data set DRDAT.PLATE.
NOTE: The PROCEDURE TABULATE printed page 6.
NOTE: PROCEDURE TABULATE used (Total process time):
real time 7.22 seconds
cpu time 3.43 seconds

61 %sortmed(card , %str(Cardiac stimulus)) ;

WARNING: Multiple lengths were specified for the variable eksd by input data set(s). This can cause truncation of data.

NOTE: There were 9842275 observations read from the data set WORK.CARD.
NOTE: There were 355149 observations read from the data set WORK.CARD2.
NOTE: The data set WORK.CARD has 10197424 observations and 7 variables.
NOTE: DATA statement used (Total process time):
real time 2.19 seconds
cpu time 1.04 seconds

NOTE: There were 10197424 observations read from the data set WORK.CARD.
NOTE: 2311142 observations with duplicate key values were deleted.
NOTE: The data set DRDAT.CARD has 7886282 observations and 7 variables.
NOTE: PROCEDURE SORT used (Total process time):
real time 3.55 seconds
cpu time 5.28 seconds

NOTE: PROCEDURE CONTENTS used (Total process time):
real time 0.00 seconds
cpu time 0.01 seconds

NOTE: The PROCEDURE CONTENTS printed page 7.

NOTE: There were 7886282 observations read from the data set DRDAT.CARD.
NOTE: The PROCEDURE TABULATE printed page 8.
NOTE: PROCEDURE TABULATE used (Total process time):
real time 1.45 seconds
cpu time 0.73 seconds

62 %sortmed(blpr , %str(Blood pressure lowering)) ;

WARNING: Multiple lengths were specified for the variable eksd by input data set(s). This can cause truncation of data.

NOTE: There were 136823058 observations read from the data set WORK.BLPR.
NOTE: There were 9449824 observations read from the data set WORK.BLPR2.
NOTE: The data set WORK.BLPR has 146272882 observations and 7 variables.
NOTE: DATA statement used (Total process time):
real time 32.31 seconds
cpu time 15.40 seconds

NOTE: There were 146272882 observations read from the data set WORK.BLPR.
NOTE: 30750587 observations with duplicate key values were deleted.
NOTE: The data set DRDAT.BLPR has 115522295 observations and 7 variables.
NOTE: PROCEDURE SORT used (Total process time):

```
real time      1:06.02
cpu time       1:35.90
```

NOTE: PROCEDURE CONTENTS used (Total process time):

```
real time      0.01 seconds
cpu time       0.00 seconds
```

NOTE: The PROCEDURE CONTENTS printed page 9.

NOTE: There were 115522295 observations read from the data set DRDAT.BLPR.

NOTE: The PROCEDURE TABULATE printed page 10.

NOTE: PROCEDURE TABULATE used (Total process time):

```
real time      19.90 seconds
cpu time       11.92 seconds
```

```
63          %sortmed( renal, %str(Renal related drugs) ) ;
```

WARNING: Multiple lengths were specified for the variable eksd by input data set(s). This can cause truncation of data.

NOTE: There were 65137177 observations read from the data set WORK.RENAL.

NOTE: There were 5541374 observations read from the data set WORK.RENAL2.

NOTE: The data set WORK.RENAL has 70678551 observations and 7 variables.

NOTE: DATA statement used (Total process time):

```
real time      15.25 seconds
cpu time       7.48 seconds
```

NOTE: There were 70678551 observations read from the data set WORK.RENAL.

NOTE: 16363266 observations with duplicate key values were deleted.

NOTE: The data set DRDAT.RENAL has 54315285 observations and 7 variables.

NOTE: PROCEDURE SORT used (Total process time):

```
real time      23.76 seconds
cpu time       38.32 seconds
```

NOTE: PROCEDURE CONTENTS used (Total process time):

```
real time      0.01 seconds
cpu time       0.01 seconds
```

NOTE: The PROCEDURE CONTENTS printed page 11.

NOTE: There were 54315285 observations read from the data set DRDAT.RENAL.

NOTE: The PROCEDURE TABULATE printed page 12.

NOTE: PROCEDURE TABULATE used (Total process time):

```
real time      9.55 seconds
cpu time       5.43 seconds
```

```
64          %sortmed( lipid, %str(Lipid lowering drugs) ) ;
```

WARNING: Multiple lengths were specified for the variable eksd by input data set(s). This can cause truncation of data.

NOTE: There were 46244379 observations read from the data set WORK.LIPID.

NOTE: There were 4763587 observations read from the data set WORK.LIPID2.

NOTE: The data set WORK.LIPID has 51007966 observations and 7 variables.

NOTE: DATA statement used (Total process time):

```
real time      11.16 seconds
cpu time       5.70 seconds
```

NOTE: There were 51007966 observations read from the data set WORK.LIPID.

NOTE: 12614755 observations with duplicate key values were deleted.

NOTE: The data set DRDAT.LIPID has 38393211 observations and 7 variables.

NOTE: PROCEDURE SORT used (Total process time):

```
real time      16.15 seconds
cpu time       26.89 seconds
```

NOTE: PROCEDURE CONTENTS used (Total process time):

```
real time      0.01 seconds
cpu time       0.00 seconds
```

NOTE: The PROCEDURE CONTENTS printed page 13.

NOTE: There were 38393211 observations read from the data set DRDAT.LIPID.

NOTE: The PROCEDURE TABULATE printed page 14.

NOTE: PROCEDURE TABULATE used (Total process time):

```
real time      6.72 seconds
cpu time       3.37 seconds
```

```
65
66      * A data frame with all ATC codes ;
67      proc format library = dsfmt.sundhed
68          cntlout = drdat.atcnam ( keep = fmtname start label type ) ;
69      select $ATC_L1L1_KT ;
70      run ;
```

NOTE: PROCEDURE FORMAT used (Total process time):

```
real time      0.03 seconds
cpu time       0.01 seconds
```

NOTE: The data set DRDAT.ATCNAM has 6756 observations and 4 variables.

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414

NOTE: The SAS System used:

```
real time      20:54.91
cpu time       9:39.78
```

4.18.1 00-rmps.lst

!Dataset ins with Insulines

20:01 Saturday, January 22, 2022 1

The CONTENTS Procedure

Data Set Name	DRDAT.INS	Observations	12975778
Member Type	DATA	Variables	7
Engine	V9	Indexes	0
Created	22/01/2022 20:17:58	Observation Length	56
Last Modified	22/01/2022 20:17:58	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	YES
Label	Insulines		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

```
Data Set Page Size      65536
Number of Data Set Pages 11119
First Data Page        *
Max Obs per Page       1167
Obs in First Data Page 1135
```

```

Number of Data Set Repairs 0
ExtendObsCounter          YES
Filename                  E:\workdata\707655\DMreg2020\data\rmps\ins.sas7bdat
Release Created           9.0401M5
Host Created              X64_SR12R2
Owner Name                DSTFSE\FDIY7655
File Size                 695MB
File Size (bytes)        728760320
    
```

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	PNR	Char	12	\$12.		
2	eksd	Num	4	YYMMDDN8.	DATE9.	Ekspeditionsdato
3	apk	Num	8	BEST12.		Antal pakninger
4	doso	Char	7	\$7.	\$7.	Dosering for ordination
5	ATC	Char	8	\$8.	\$16.	ATC-kode 5. niveau
6	Volume	Num	8	13.3	13.3	Måltype
7	volapk	Num	8			

Sort Information

```

Sortedby      PNR ATC eksd doso apk
Validated     YES
Character Set  ANSI
Sort Option   NODUPKEY
    
```

Dataset ins with Insulines 20:01 Saturday, January 22, 2022 2

```

-----
Insulines                                     N
-----
All                                           12,975,778
ATC-kode 5. niveau
A10AB01 insulin (human)                      1,566,324
A10AB04 insulin lispro                       133,300
A10AB05 insulin aspart                       2,315,408
A10AB06 insulin glulisin                     36,834
A10AC01 insulin (human)                      3,328,285
A10AD01 insulin (human)                      1,014,185
A10AD04 insulin lispro                       20,547
A10AD05 insulin aspart                       1,397,187
A10AD06 insulin degludec og insulin aspart   723
A10AE01 insulin (human)                      186
A10AE04 insulin glargin                      1,604,904
A10AE05 insulin detemir                      991,378
A10AE06 insulin degludec                     536,802
A10AE54 insulin glargin og lixisenatid      188
A10AE56 insulin degludec og liraglutid      29,527
-----
    
```

Dataset oad with Oral antidiabetic drugs 20:01 Saturday, January 22, 2022 3

The CONTENTS Procedure

Data Set Name	DRDAT.OAD	Observations	26420327
Member Type	DATA	Variables	7
Engine	V9	Indexes	0
Created	22/01/2022 20:18:21	Observation Length	56
Last Modified	22/01/2022 20:18:21	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	YES
Label	Oral antidiabetic drugs		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

```

Data Set Page Size      65536
Number of Data Set Pages 22640
First Data Page        *
Max Obs per Page       1167
Obs in First Data Page 1135
Number of Data Set Repairs 0
ExtendObsCounter       YES
Filename               E:\workdata\707655\DMreg2020\data\rmps\oad.sas7bdat
Release Created        9.0401M5
Host Created           X64_SR12R2
Owner Name             DSTFSE\FDIY7655
File Size              1GB
File Size (bytes)     1483800576

```

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	PNR	Char	12	\$12.		
2	eksd	Num	4	YYMMDDN8.	DATE9.	Ekspeditionsdato
3	apk	Num	8	BEST12.		Antal pakninger
4	doso	Char	7	\$7.	\$7.	Dosering for ordination
5	ATC	Char	8	\$8.	\$16.	ATC-kode 5. niveau
6	Volume	Num	8	13.3	13.3	Måltype
7	volapk	Num	8			

Sort Information

```

Sortedby      PNR ATC eksd doso apk
Validated     YES
Character Set  ANSI
Sort Option    NODUPKEY

```

Dataset oad with Oral antidiabetic drugs

20:01 Saturday, January 22, 2022 4

Oral antidiabetic drugs	N
All	26,420,327
ATC-kode 5. niveau	
A10BA02 metformin	15,212,104
A10BB01 glibenclamid	1,298,487
A10BB03 tolbutamid	428,308
A10BB04 glibornurid	117
A10BB07 glipizid	676,523
A10BB09 gliclazid	608,828
A10BB12 glimepirid	3,132,822
A10BD03 metformin og rosiglitazon	115,270
A10BD04 glimepirid og rosiglitazon	282
A10BD07 metformin og sitagliptin	463,355
A10BD08 metformin og vildagliptin	400,093
A10BD09 pioglitazon og alogliptin	69
A10BD10 metformin og saxagliptin	669
A10BD11 metformin og linagliptin	3,981
A10BD13 metformin og alogliptin	16,822
A10BD15 metformin og dapagliflozin	26,496
A10BD16 metformin og canagliflozin	694
A10BD19 linagliptin og empagliflozin	307
A10BD20 metformin og empagliflozin	54,166
A10BD21 saxagliptin og dapagliflozin	1,076
A10BD23 metformin og ertugliflozin	82
A10BD24 sitagliptin og ertugliflozin	120
A10BF01 acarbose	112,753
A10BG02 rosiglitazon	41,560
A10BG03 pioglitazon	21,648
A10BH01 sitagliptin	607,901

A10BH02	vildagliptin	116,271
A10BH03	saxagliptin	47,726
A10BH04	alogliptin	17,629
A10BH05	linagliptin	179,837
A10BJ01	exenatid	47,574
A10BJ02	liraglutid	1,490,359
A10BJ03	lixisenatid	3,627
A10BJ05	dulaglutid	52,492
A10BJ06	semaglutid	367,327
A10BK01	dapagliflozin	268,353
A10BK02	canagliflozin	22,905
A10BK03	empagliflozin	351,631
A10BK04	ertugliflozin	307
A10BX02	repaglinid	229,665
A10BX03	nateglinid	91

Dataset plate with Platelets 20:01 Saturday, January 22, 2022 5

The CONTENTS Procedure

Data Set Name	DRDAT.PLATE	Observations	41299591
Member Type	DATA	Variables	7
Engine	V9	Indexes	0
Created	22/01/2022 20:18:54	Observation Length	56
Last Modified	22/01/2022 20:18:54	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	YES
Label	Platelets		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	35390
First Data Page	*
Max Obs per Page	1167
Obs in First Data Page	1135
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\rmps\plate.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	2GB
File Size (bytes)	2319384576

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	PNR	Char	12	\$12.		
2	eksd	Num	4	YYMMDDN8.	DATE9.	Ekspeditionsdato
3	apk	Num	8	BEST12.		Antal pakninger
4	doso	Char	7	\$7.	\$7.	Dosering for ordination
5	ATC	Char	8	\$8.	\$16.	ATC-kode 5. niveau
6	Volume	Num	8	13.3	13.3	Måltype
7	volapk	Num	8			

Sort Information

Sortedby	PNR ATC eksd doso apk
Validated	YES
Character Set	ANSI
Sort Option	NODUPKEY

Dataset plate with Platelets

20:01 Saturday, January 22, 2022 6

```

-----
Platelets                                     N
-----
All                                           41,299,591
ATC-kode 5. niveau
B01AC04 clopidogrel                          5,045,362
B01AC06 acetylsalicylsyre                   29,876,832
B01AC07 dipyridamol                        4,926,849
B01AC11 iloprost                            *
B01AC13 abciximab                           *
B01AC22 prasugrel                          43,876
B01AC24 ticagrelor                         264,868
B01AC30 kombinationer                      1,141,793
-----

```

Dataset card with Cardiac stimulus

20:01 Saturday, January 22, 2022 7

The CONTENTS Procedure

Data Set Name	DRDAT.CARD	Observations	7886282
Member Type	DATA	Variables	7
Engine	V9	Indexes	0
Created	22/01/2022 20:19:22	Observation Length	56
Last Modified	22/01/2022 20:19:22	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	YES
Label	Cardiac stimulus		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	6758
First Data Page	*
Max Obs per Page	1167
Obs in First Data Page	1135
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\rmps\card.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	422MB
File Size (bytes)	442957824

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	PNR	Char	12	\$12.		
2	eksd	Num	4	YYMMDDN8.	DATE9.	Ekspeditionsdato
3	apk	Num	8	BEST12.		Antal pakninger
4	doso	Char	7	\$7.	\$7.	Dosering for ordination
5	ATC	Char	8	\$8.	\$16.	ATC-kode 5. niveau
6	Volume	Num	8	13.3	13.3	Måltype
7	volapk	Num	8			

Sort Information

Sortedby	PNR ATC eksd doso apk
Validated	YES
Character Set	ANSI
Sort Option	NODUPKEY

Dataset card with Cardiac stimulus 20:01 Saturday, January 22, 2022 8

```

-----
Cardiac stimulus                                N
-----
All                                             7,886,282
ATC-kode 5. niveau
C01DA02 glyceryltrinitrat                    2,508,482
C01DA08 isosorbiddinitrat                    1,800,430
C01DA14 isosorbidmononitrat                 3,370,900
C01DX16 nicorandil                           206,470
-----
    
```

Dataset blpr with Blood pressure lowering 20:01 Saturday, January 22, 2022 9

The CONTENTS Procedure

Data Set Name	DRDAT.BLPR	Observations	115522295
Member Type	DATA	Variables	7
Engine	V9	Indexes	0
Created	22/01/2022 20:19:59	Observation Length	56
Last Modified	22/01/2022 20:19:59	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	YES
Label	Blood pressure lowering		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	98991
First Data Page	*
Max Obs per Page	1167
Obs in First Data Page	1135
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\rmps\blpr.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	6GB
File Size (bytes)	6487539712

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	PNR	Char	12	\$12.		
2	eksd	Num	4	YYMMDDN8.	DATE9.	Ekspeditionsdato
3	apk	Num	8	BEST12.		Antal pakninger
4	doso	Char	7	\$7.	\$7.	Dosering for ordination
5	ATC	Char	8	\$8.	\$16.	ATC-kode 5. niveau
6	Volume	Num	8	13.3	13.3	Måltype
7	volapk	Num	8			

Sort Information

Sortedby	PNR ATC eksd doso apk
Validated	YES
Character Set	ANSI
Sort Option	NODUPKEY

Dataset blpr with Blood pressure lowering 20:01 Saturday, January 22, 2022 10

```

-----
Blood pressure lowering                                N
-----
    
```

All	115522295
ATC-kode 5. niveau	
C02AB01 methyldopa (L-form)	78,782
C02AC01 clonidin	15,387
C02AC02 guanfacin	12,342
C02AC05 moxonidin	552,574
C02CA01 prazosin	171,743
C02CA04 doxazosin	925,237
C02CA06 urapidil	228
C02DB02 hydralazin	21,260
C02DG01 pinacidil	13,460
C02KX01 bosentan	9
C03AA01 bendroflumethiazid	389,460
C03AA02 hydroflumethiazid	2,728
C03AA03 hydrochlorthiazid	40,361
C03AA04 chlorthiazid	705
C03AA05 polythiazid	653
C03AB01 bendroflumethiazid og kalium	20,160,600
C03AB02 hydroflumethiazid og kalium	76,876
C03BA02 quinethazon	5
C03BA03 clopamid	78,018
C03BA04 chlortalidon	15,957
C03BA05 mefrusid	15,114
C03BA08 metolazon	79
C03BA11 indapamid	448,937
C03BB03 clopamid og kalium	20,769
C03CA01 furosemid	19,492,530
C03CA02 bumetanid	552,479
C03CB02 bumetanid og kalium	163,788
C03DA01 spironolacton	4,222,439
C03DA02 kaliumcanrenoat	23
C03DA04 eplerenon	112,124
C03DB01 amilorid	75,666
C03EA01 hydrochlorthiazid og kaliumbesparende midler	2,656,043
C03EB01 furosemid og kaliumbesparende midler	164,943
C03EB02 bumetanid og kaliumbesparende midler	24,067
C03XA01 tolvaptan	334
C07AA01 alprenolol	10,363
C07AA02 oxprenolol	9,280
C07AA03 pindolol	266,693
C07AA05 propranolol	3,015,618
C07AA06 timolol	41,138
C07AA07 sotalol	987,377
C07AA16 tertatolol	261
C07AB02 metoprolol	20,796,059
C07AB03 atenolol	2,837,214
C07AB04 acebutolol	38,062
C07AB05 betaxolol	34,949
C07AB07 bisoprolol	1,993,659
C07AB12 nebivolol	173,400
C07AG01 labetalol	173,422
C07AG02 carvedilol	3,122,148
C07BA06 timolol og thiazider	4,281
C07BB02 metoprolol og thiazider	191,685
C07BB12 nebivolol og thiazider	293
C07CA03 pindolol og andre diuretica	12,050
C07CB03 atenolol og andre diuretica	278,888
C07FB02 metoprolol og felodipin	84,825
C08CA01 amlodipin	19,351,278
C08CA02 felodipin	2,814,323
C08CA03 isradipin	231,268
C08CA04 nicardipin	3,199
C08CA05 nifedipin	1,060,674
C08CA06 nimodipin	1,640
C08CA08 nitrendipin	79,457
C08CA09 lacidipin	137,392
C08CA10 nilvadipin	4,612
C08CA13 lercanidipin	1,628,898
C08CX01 mibefradil	2,800

```

C08DA01 verapamil          3,026,825
C08DA51 verapamil, kombinationer    20,658
C08DB01 diltiazem          2,581,886
-----

```

Dataset renal with Renal related drugs 20:01 Saturday, January 22, 2022 11

The CONTENTS Procedure

```

Data Set Name      DRDAT.RENAL          Observations      54315285
Member Type       DATA              Variables         7
Engine            V9                Indexes          0
Created           22/01/2022 20:21:40  Observation Length 56
Last Modified     22/01/2022 20:21:40  Deleted Observations 0
Protection
Data Set Type
Label              Renal related drugs
Data Representation WINDOWS_64
Encoding           wlatin1 Western (Windows)
Compressed        NO
Sorted            YES

```

Engine/Host Dependent Information

```

Data Set Page Size      65536
Number of Data Set Pages 46543
First Data Page        *
Max Obs per Page       1167
Obs in First Data Page 1135
Number of Data Set Repairs 0
ExtendObsCounter      YES
Filename               E:\workdata\707655\DMreg2020\data\rmps\renal.sas7bdat
Release Created        9.0401M5
Host Created           X64_SR12R2
Owner Name             DSTFSE\FDIY7655
File Size              3GB
File Size (bytes)     3050307584

```

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	PNR	Char	12	\$12.		
2	eksd	Num	4	YYMMDDN8.	DATE9.	Ekspeditionsdato
3	apk	Num	8	BEST12.		Antal pakninger
4	doso	Char	7	\$7.	\$7.	Dosering for ordination
5	ATC	Char	8	\$8.	\$16.	ATC-kode 5. niveau
6	Volume	Num	8	13.3	13.3	Måltype
7	volapk	Num	8			

Sort Information

```

Sortedby          PNR ATC eksd doso apk
Validated         YES
Character Set     ANSI
Sort Option       NODUPKEY

```

Dataset renal with Renal related drugs 20:01 Saturday, January 22, 2022 12

```

-----
Renal related drugs          N
-----
All                          54,315,285
ATC-kode 5. niveau
C09AA01 captopril           1,064,796
C09AA02 enalapril          12,344,386
C09AA03 lisinopril         1,345,729
C09AA04 perindopril        1,553,092
C09AA05 ramipril           7,541,692

```

C09AA06	quinapril	147,955
C09AA07	benazepril	41,480
C09AA09	fosinopril	67,706
C09AA10	trandolapril	2,109,950
C09AA13	moexipril	4,478
C09AA15	zofenopril	9
C09BA01	captopril og diuretica	21,535
C09BA02	enalapril og diuretica	3,502,485
C09BA03	lisinopril og diuretica	654,469
C09BA04	perindopril og diuretica	217,794
C09BA05	ramipril og diuretica	1,021,665
C09BA07	benazepril og diuretica	1,458
C09BA15	zofenopril og diuretica	*
C09BB02	enalapril og lercanidipin	144
C09BB04	perindopril og amlodipin	1,083
C09CA01	losartan	10,951,981
C09CA02	eprosartan	106,462
C09CA03	valsartan	535,351
C09CA04	irbesartan	636,247
C09CA06	candesartan	1,971,856
C09CA07	telmisartan	355,332
C09CA08	olmesartanmedoxomil	64,885
C09DA01	losartan og diuretica	6,100,039
C09DA02	eprosartan og diuretica	38,061
C09DA03	valsartan og diuretica	520,336
C09DA04	irbesartan og diuretica	368,190
C09DA06	candesartan og diuretica	571,726
C09DA07	telmisartan og diuretica	202,328
C09DA08	olmesartanmedoxomil og diuretica	29,728
C09DB01	valsartan og amlodipin	92,615
C09DX01	valsartan, amlodipin og hydrochlorthiazid	7,642
C09DX04	valsartan og sacubitril	36,989
C09XA02	aliskiren	79,962
C09XA52	aliskiren og hydrochlorthiazid	3,647

Dataset lipid with Lipid lowering drugs

20:01 Saturday, January 22, 2022 13

The CONTENTS Procedure

Data Set Name	DRDAT.LIPID	Observations	38393211
Member Type	DATA	Variables	7
Engine	V9	Indexes	0
Created	22/01/2022 20:22:25	Observation Length	56
Last Modified	22/01/2022 20:22:25	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	YES
Label	Lipid lowering drugs		
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information

Data Set Page Size	65536
Number of Data Set Pages	32900
First Data Page	*
Max Obs per Page	1167
Obs in First Data Page	1135
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	E:\workdata\707655\DMreg2020\data\rmps\lipid.sas7bdat
Release Created	9.0401M5
Host Created	X64_SR12R2
Owner Name	DSTFSE\FDIY7655
File Size	2GB
File Size (bytes)	2156199936

Variables in Creation Order

#	Variable	Type	Len	Format	Informat	Label
1	PNR	Char	12	\$12.		
2	eksd	Num	4	YYMMDDN8.	DATE9.	Ekspeditionsdato
3	apk	Num	8	BEST12.		Antal pakninger
4	doso	Char	7	\$7.	\$7.	Dosering for ordination
5	ATC	Char	8	\$8.	\$16.	ATC-kode 5. niveau
6	Volume	Num	8	13.3	13.3	Måltype
7	volapk	Num	8			

Sort Information

Sortedby PNR ATC eksd doso apk
 Validated YES
 Character Set ANSI
 Sort Option NODUPKEY

Dataset lipid with Lipid lowering drugs

20:01 Saturday, January 22, 2022 14

```
-----
Lipid lowering drugs                                N
-----
All                                                38,393,211
ATC-kode 5. niveau
C10AA01 simvastatin                               24,553,309
C10AA02 lovastatin                                267,562
C10AA03 pravastatin                               814,887
C10AA04 fluvastatin                               215,550
C10AA05 atorvastatin                              8,599,412
C10AA06 cerivastatin                              28,651
C10AA07 rosuvastatin                              2,152,115
C10AB01 clofibrat                                  2,504
C10AB02 bezafibrat                                 66,157
C10AB04 gemfibrozil                               457,747
C10AC01 colestyramin                              256,383
C10AC02 colestipol                                33,726
C10AC04 colesevelam                               19,689
C10AD06 acipimox                                  59,837
C10AD52 nicotinsyre, kombinationer                11,373
C10AX09 ezetimib                                  803,225
C10AX13 evolocumab                                393
C10AX14 alirocumab                                257
C10BA02 simvastatin og ezetimib                   36,692
C10BA05 atorvastatin og ezetimibe                 13,742
-----
```

4.19 00-fmts

This is the log for the format definitions used in the project. The corresponding .lst file is not listed as it is *very* long and contains very little additional information relative to the .log file here.

1 "Program: 00-fmts.sas" 08:00 Tuesday, January 18, 2022

NOTE: Copyright (c) 2016 by SAS Institute Inc., Cary, NC, USA.

NOTE: SAS (r) Proprietary Software 9.4 (TS1M5)

Licensed to FORSKNING 2, Site 50800723.

NOTE: This session is executing on the X64_SR12R2 platform.

NOTE: Updated analytical products:

SAS/STAT 14.3

NOTE: Additional host information:

X64_SR12R2 WIN 6.3.9600 Server

NOTE: SAS initialization used:

real time 0.10 seconds
cpu time 0.07 seconds

NOTE: AUTOEXEC processing beginning; file is
E:\workdata\707655\DMreg2020\sas\optslibs.sas.

NOTE: AUTOEXEC processing completed.

```

1      title1 'Complications groupings' ;
2      * Input of the classification of diagnosis / surgery / procedure codes
3      in form of a file used as input to proc format via cntlin=
4      The formats created are classifying diagnosis, surgery and procedure
5      codes:
6      compsub - codes translated to 16 complication groups (4 characters)
7      cmp4sub - same, uses only 4 first digits of codes - wildcarding
8      sub2grp - grouping of 16 groups to 8 (4 of which are the same)
9      abb2txt - translate group-codes (4 char) to human readable text ;
10     data compfmt ;
11     * Note we read from the OLD version to avoid copying complications def. ;
12     * OBS! Should we copy compfmt to DMreg2020 folder;
13     infile '..\..\DMreg2020\fmts\compfmt.csv'
14           delimiter = ','
15           missover dsd lrecl=32767 firstobs=2 ;
16     informat fmtname $10. ;
17     informat start $9. ;
18     informat label $39. ;
19     informat hlo $3. ;
20     input fmtname $
21           start $
22           label $
23           hlo $ ;
24     run;
```

NOTE: The infile '..\..\DMreg2020\fmts\compfmt.csv' is:
Filename=E:\workdata\707655\DMreg2020\fmts\compfmt.csv,
RECFM=V,LRECL=32767,File Size (bytes)=8367,
Last Modified=20. februar 2021 11:56:09,
Create Time=31. december 2021 14:07:35

NOTE: 244 records were read from the infile '..\..\DMreg2020\fmts\compfmt.csv'.
The minimum record length was 25.
The maximum record length was 67.

NOTE: The data set WORK.COMPFMT has 244 observations and 4 variables.

NOTE: DATA statement used (Total process time):

real time 0.02 seconds
cpu time 0.01 seconds

```

25
26     proc print data = compfmt ; run ;
```

NOTE: There were 244 observations read from the data set WORK.COMPFMT.

NOTE: The PROCEDURE PRINT printed page 1.

NOTE: PROCEDURE PRINT used (Total process time):

real time 0.02 seconds
cpu time 0.01 seconds

```

27     * create the formats ;
28     proc format library = DMfmt.DMreg
29           cntlin = compfmt ;
```

NOTE: Format \$COMPSUB is already on the library DMFMT.DMREG.
 NOTE: Format \$COMPSUB has been written to DMFMT.DMREG.
 NOTE: Format \$CMP4SUB is already on the library DMFMT.DMREG.
 NOTE: Format \$CMP4SUB has been written to DMFMT.DMREG.
 NOTE: Format \$SUB2GRP is already on the library DMFMT.DMREG.
 NOTE: Format \$SUB2GRP has been written to DMFMT.DMREG.
 NOTE: Format \$ABB2TXT is already on the library DMFMT.DMREG.
 NOTE: Format \$ABB2TXT has been written to DMFMT.DMREG.
 NOTE: Format \$AB2ABTX is already on the library DMFMT.DMREG.
 NOTE: Format \$AB2ABTX has been written to DMFMT.DMREG.

30 run ;

NOTE: PROCEDURE FORMAT used (Total process time):
 real time 0.02 seconds
 cpu time 0.00 seconds

NOTE: There were 244 observations read from the data set WORK.COMPFMT.

```
31
32 title1 'Format with names of diagnoses, operations and behandlinger' ;
33 *-----;
34 * FORMATS used for grouping and labeling ;
35 * A collected format with Diagnoses (ICD 8 & 10, Handling and Operation) ;
36 proc format library = dsfmt.sundhed
37     cntlout = dob ( keep = fmtname start label type ) ;
38     select $ICD8_L1L1_KT
39            $ICD10_L1L1_KT
40            $OPR_L1L1_KT
41            $BEH_L1L1_KT ;
42 run ;
```

NOTE: PROCEDURE FORMAT used (Total process time):
 real time 0.16 seconds
 cpu time 0.04 seconds

NOTE: The data set WORK.DOB has 50653 observations and 4 variables.

```
43
44 data dob ;
45     set dob ;
46     fmtname = 'dob_L1L1_KT' ;
47 run ;
```

NOTE: There were 50653 observations read from the data set WORK.DOB.
 NOTE: The data set WORK.DOB has 50653 observations and 4 variables.
 NOTE: DATA statement used (Total process time):
 real time 0.01 seconds
 cpu time 0.01 seconds

```
48
49 options source2 ;
50 proc format library = DMfmt.DMreg
51     cntlin = dob ;
NOTE: Format $DOB_L1L1_KT is already on the library DMFMT.DMREG.
NOTE: Format $DOB_L1L1_KT has been written to DMFMT.DMREG.
NOTE: A byte-order mark in the file "E:\workdata\707655\DMreg2020\fmts\NPUfmt.sas" (for
fileref "#LN00066") indicates that the data is encoded in "utf-8". This encoding
will be used to process the file.
51 ! * Diagnosis/Operation/Behandling ;
52 * Formats (NPu / NPu - Danish English) grouping lab-measurements ;
53 %inc '../DMreg2020/fmts/NPUfmt.sas' ;
NOTE: %INCLUDE (level 1) file ../DMreg2020/fmts/NPUfmt.sas is file
E:\workdata\707655\DMreg2020\fmts\NPUfmt.sas.
54 +* proc format ;
55 +
56 +* Defines two formats:
57 + one with Danish long texts ($NPu) and
58 + one with English short texts ($NPu) - max 4 characters ;
59 +
```

```
60      +value $NPUd
61      +
62      +' NPU29748' ,
63      +' NPU28969' ,
64      +' NPU28586' ,
65      +' NPU19763' ,
66      +' NPU03899' ,
67      +' DNK05012' = "Ferritin"
68      +
69      +' NPU19111' ,
70      +' NPU19275' ,
71      +' NPU19276' ,
72      +' NPU20192' ,
73      +' NPU33952' = 'HFE-gen'
74      +
75      +' NPU27300' ,
76      +' DNK35249' ,
77      +' NPU29296' ,
78      +' NPU03835' ,
79      +' NPU02307' = 'Hba1c'
80      +
81      +' NPU02187' ,
82      +' NPU04173' ,
83      +' NPU04177' ,
84      +' NPU08572' ,
85      +' NPU08571' ,
86      +' NPU02192' ,
87      +' NPU21531' ,
88      +' NPU22089' = 'Glukose'
89      +
90      +' DNK35842' ,
91      +' NPU10047' ,
92      +' NPU08503' ,
93      +' NPU22127' ,
94      +' NPU21532' ,
95      +' NPU02193' ,
96      +' NPU02195' ,
97      +' NPU08972' ,
98      +' NPU02188' ,
99      +' NPU22069' = 'Glukose 0'
100     +
101     +' NPU10048' ,
102     +' NPU08504' ,
103     +' NPU22129' ,
104     +' NPU04174' = 'Glukose 30'
105     +
106     +' NPU10051' ,
107     +' NPU08507' ,
108     +' NPU22134' ,
109     +' NPU21530' = 'Glukose 120'
110     +
111     +' NPU18412' ,
112     +' NPU01566' ,
113     +' NPU01549' ,
114     +' NPU17029' ,
115     +' NPU10033' ,
116     +' NPU18411' = 'Total kolesterol'
117     +
118     +' NPU10171' ,
119     +' NPU01568' ,
120     +' DNK35308' = 'LDL kolesterol'
121     +
122     +' NPU10157' ,
123     +' NPU01567' ,
124     +' NPU18107' = 'HDL kolesterol'
125     +
126     +' NPU09256' ,
127     +' NPU01569' = 'VLDL kolesterol'
128     +
129     +' NPU03620' ,
```



```
130      +' NPU04094' ,
131      +' NPU18413' ,
132      +' NPU18106'='Triglycerid'
133      +
134      +' NPU01807' ,
135      +' NPU04998' ,
136      +' NPU09101' ,
137      +' NPU18016'='Plasma Kreatinin'
138      +
139      +' NPU19661' ,
140      +' NPU28842' ,
141      +' DNK05289' ,
142      +' NPU03918'='Ualbcrea'
143      +
144      +' NPU03230'='Kalium'
145      +
146      +' NPU03429'='Natrium'
147      +
148      +' NPU03577' ,
149      +' NPU27547'='TSH'
150      +
151      +' NPU03246' ,
152      +' NPU03247' ,
153      +' NPU03248' ,
154      +' NPU04149' ,
155      +' NPU18004' ,
156      +' NPU18005' ,
157      +' NPU04154' ,
158      +' NPU04020' ,
159      +' NPU10390' ,
160      +' NPU18007' ,
161      +' NPU08978'='C-peptid/Proinsulin'
162      +
163      +' NPU01422' ,
164      +' DNK05027' ,
165      +' NPU19748' ,
166      +' NPU01423'='CRP'
167      +
168      +' NPU26737' ,
169      +' NPU14507' ,
170      +' NPU29550' ,
171      +' NPU12544' ,
172      +' NPU12546' ,
173      +' NPU28627' ,
174      +' NPU28628' ,
175      +' NPU54726' ,
176      +' NPU54727' ,
177      +' NPU28103'='GAD65'
178      +
179      +' DNK35131' ,
180      +' NPU28811' ,
181      +' DNK35301' ,
182      +' DNK35302' ,
183      +' DNK35303' ,
184      +' DNK35304'='eGFR'
185      +
186      +' NPU19597' ,
187      +' NPU28271' ,
188      +' NPU10295'='GFR'
189      +
190      +' NPU01121' ,
191      +' NPU19981' ,
192      +' NPU19651' ,
193      +' DNK05051'='ALAT'
194      +
195      +' DNK05098' ,
196      +' NPU27783' ,
197      +' DNK05431' ,
198      +' NPU57047' ,
199      +' DNK05050'='Basisk fosfatase'
```

```

200      +
201      +'NPU01700'='Cobalamin'
202      +
203      +'NPU03568',
204      +'NPU26813'='Trombocytter'
205      +
206      +'NPU02593',
207      +'NPU04851',
208      +'NPU02596',
209      +'NPU17027',
210      +'NPU18245',
211      +'NPU18156',
212      +'NPU17580',
213      +'NPU04100'='Leucocytter'
214      +
215      +'NPU02319'='Hæmoglobin' ;
NOTE: Format $NPUD is already on the library DMFMT.DMREG.
NOTE: Format $NPUD has been written to DMFMT.DMREG.
216      +
217      +value $NPUE
218      +
219      +'NPU29748',
220      +'NPU28969',
221      +'NPU28586',
222      +'NPU19763',
223      +'NPU03899',
224      +'DNK05012' = "Ferritin"
225      +
226      +'NPU19111',
227      +'NPU19275',
228      +'NPU19276',
229      +'NPU20192',
230      +'NPU33952' = 'HFE-gene'
231      +
232      +'NPU27300',
233      +'DNK35249',
234      +'NPU29296',
235      +'NPU03835',
236      +'NPU02307'='HbA1'
237      +
238      +'NPU02187',
239      +'NPU04173',
240      +'NPU04177',
241      +'NPU08572',
242      +'NPU08571',
243      +'NPU02192',
244      +'NPU21531',
245      +'NPU22089'='Gluc'
246      +
247      +'DNK35842',
248      +'NPU10047',
249      +'NPU08503',
250      +'NPU22127',
251      +'NPU21532',
252      +'NPU02193',
253      +'NPU02195',
254      +'NPU08972',
255      +'NPU02188',
256      +'NPU22069'='Glu0'
257      +
258      +'NPU10048',
259      +'NPU08504',
260      +'NPU22129',
261      +'NPU04174'='G130'
262      +
263      +'NPU10051',
264      +'NPU08507',
265      +'NPU22134',
266      +'NPU21530'='G120'
267      +

```

```
268     +' NPU18412' ,
269     +' NPU01566' ,
270     +' NPU01549' ,
271     +' NPU17029' ,
272     +' NPU10033' ,
273     +' NPU18411'=' TCh1'
274     +
275     +' NPU10171' ,
276     +' NPU01568' ,
277     +' DNK35308'=' LDL'
278     +
279     +' NPU10157' ,
280     +' NPU01567' ,
281     +' NPU18107'=' HDL'
282     +
283     +' NPU09256' ,
284     +' NPU01569'=' VLDL'
285     +
286     +' NPU03620' ,
287     +' NPU04094' ,
288     +' NPU18413' ,
289     +' NPU18106'=' Trig'
290     +
291     +' NPU01807' ,
292     +' NPU04998' ,
293     +' NPU09101' ,
294     +' NPU18016'=' PlCr'
295     +
296     +' NPU19661' ,
297     +' NPU28842' ,
298     +' DNK05289' ,
299     +' NPU03918'=' Uacr'
300     +
301     +' NPU03230'=' Pota'
302     +
303     +' NPU03429'=' Sodi'
304     +
305     +' NPU03577' ,
306     +' NPU27547'=' TSH'
307     +
308     +' NPU03246' ,
309     +' NPU03247' ,
310     +' NPU03248' ,
311     +' NPU04149' ,
312     +' NPU18004' ,
313     +' NPU18005' ,
314     +' NPU04154' ,
315     +' NPU04020' ,
316     +' NPU10390' ,
317     +' NPU18007' ,
318     +' NPU08978'=' Cpep'
319     +
320     +' NPU01422' ,
321     +' DNK05027' ,
322     +' NPU19748' ,
323     +' NPU01423'=' CRP'
324     +
325     +' NPU26737' ,
326     +' NPU14507' ,
327     +' NPU29550' ,
328     +' NPU12544' ,
329     +' NPU12546' ,
330     +' NPU28627' ,
331     +' NPU28628' ,
332     +' NPU54726' ,
333     +' NPU54727' ,
334     +' NPU28103'=' GAD'
335     +
336     +' DNK35131' ,
337     +' NPU28811' ,
```

```

338     +'DNK35301',
339     +'DNK35302',
340     +'DNK35303',
341     +'DNK35304'='eGFR'
342     +
343     +'NPU19597',
344     +'NPU28271',
345     +'NPU10295'='GFR'
346     +
347     +'NPU01121',
348     +'NPU19981',
349     +'NPU19651',
350     +'DNK05051'='ALAT'
351     +
352     +'DNK05098',
353     +'NPU27783',
354     +'DNK05431',
355     +'NPU57047',
356     +'DNK05050'='AlcP'
357     +
358     +'NPU01700'='Cobl'
359     +
360     +'NPU03568',
361     +'NPU26813'='Trmb'
362     +
363     +'NPU02593',
364     +'NPU04851',
365     +'NPU02596',
366     +'NPU17027',
367     +'NPU18245',
368     +'NPU18156',
369     +'NPU17580',
370     +'NPU04100'='Leuc'
371     +
372     +'NPU02319'='Hmgb' ;
NOTE: Format $NPUE is already on the library DMFMT.DMREG.
NOTE: Format $NPUE has been written to DMFMT.DMREG.
373     +
374     ** run ;
375     +
376     +
NOTE: %INCLUDE (level 1) ending.
377
378     /*
379     *-----;
380     * Formats for grouping of complications / comorbidities (Daffodil - history) ;
381     value $icd8gr
382     '41090'-'41099' = 'MI'
383     '41930'-'41939',
384     '41390'-'41399' = 'Angina'
385     '42599',
386     '42709'-'42719',
387     '42799',
388     '42899' = 'HF'
389     '42793',
390     '42794' = 'AtrFib'
391     '43000'-'43099',
392     '43100',
393     '43108'-'43190',
394     '43198'-'43199' = 'HmStr'
395     '43200'-'43299',
396     '43309'-'43399',
397     '43409'-'43499' = 'IscStr'
398     '43509'-'43599' = 'TIA'
399     '44020'-'44030' = 'PAD'
400     '78410'-'78419',
401     '78470'-'78479' = 'Bleed'
402     '58100'-'58209' = 'CKD'
403     '35500'-'35799' = 'Neuro'
404     '25001'-'25002',

```

```

405     '37400'-'37499',
406     '37700'-'37719',
407     '37790'-'37799',
408     '37890'-'37899',
409     '45690'-'45699' = 'DiaEye'
410     '25003'-'25099' = 'PeriAng'
411     '58300'-'58399' = 'DKD'
412     '25100'-'25199',
413     '96230'-'96239' = 'Hypo'
414     '14000'-'20449' = 'Cancer'
415     '49100'-'49200' = 'COPD'
416     other='Other' ;
417
418     value $icd10gr
419     'I210'-'I229' = 'MI'
420     'I200' = 'UnstAng'
421     'I201', 'I208', 'I209' = 'Angina'
422     'I500'-'I509' = 'HF'
423     'I480'-'I489' = 'AtrFib'
424     'I600'-'I629' = 'HmStr'
425     'I630'-'I649' = 'IscStr'
426     'G450'-'G459' = 'TIA'
427     'I700'-'I799' = 'PAD'
428     'D629', 'I850', 'K226', 'K250', 'K252', 'K254', 'K256', 'K260',
429     'K262', 'K264', 'K266', 'K270', 'K272', 'K274', 'K276', 'K280',
430     'K282', 'K284', 'K286', 'K290', 'K625', 'K920', 'K921', 'K922' = 'Bleed'
431     'N180'-'N189' = 'CKD'
432     'Z490'-'Z499' = 'Dial'
433     'G990', 'G590', 'G632', 'E104', 'E114', 'E124', 'E134', 'E144' = 'Neuro'
434     'H280', 'H358', 'H360', 'E103', 'E113', 'E123', 'E133', 'E143' = 'DiaEye'
435     'M142', 'M146', 'M908', 'L984' = 'DiaFoot'
436     'E105', 'E115', 'E125', 'E135', 'E145' = 'PeriAng'
437     'N083', 'E102', 'E112', 'E122', 'E132', 'E142' = 'DKD'
438     'E107', 'E117', 'E127', 'E137', 'E147', 'E108', 'E118', 'E128', 'E138', 'E148'
438     ! = 'DMcompl'
439     'E100', 'E110', 'E120', 'E130', 'E140', 'E116', 'E106', 'E136', 'E146',
439     ! 'E160'-'E162' = 'Hypo'
440     'E101', 'E111', 'E121', 'E131', 'E141', 'E872' = 'Keto'
441     'C000'-'C999' = 'Cancer'
442     'J440'-'J449' = 'COPD'
443     other='Other' ;
444
445     value $icd5opr
446     'FNA00'-'FNE99' = 'CABG'
447     'FNG00'-'FNG99' = 'PCIsten'
448     'JDF10', 'JDF11', 'JDF20', 'JDF21' = 'Bari'
449     'JAK10', 'TJA20', 'TJA33', 'DJ008', 'DR015'-'DR024', 'QF006' = 'Dial'
450     'CKC12', 'CKD65' = 'DiaEye'
451     'QDGX10' = 'DiaFoot'
452     'NGQ00'-'NGQ99', 'NHQ00'-'NHQ99' = 'Amp'
453     other='Other' ;
454
455     value $icd4opr
456     'BJFD' = 'Dial'
457     other='Other' ;
458
459     value $icd3opr
460     'FNA', 'FNB', 'FNC', 'FND', 'FNE' = 'CABG'
461     'FNG' = 'PCIsten'
462     'NGQ', 'NHQ' = 'Amp'
463     other='Other' ;
464
465     value $icdabbr
466         MI = 'Myocardial infarction'
467         CABG = 'CABG'
468         PCIsten = 'PCI with stent'
469         UnstAng = 'Unstable angina'
470         Angina = 'Angina pectoris'
471         HF = 'Heart failure'
472         AtrFib = 'Atrial fibrillation'

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```

473     Stroke = 'Stroke'
474     HmStr = 'Hemorrhagic stroke'
475     IscStr = 'Ischemic stroke'
476     TIA = 'Transitory ischemic attack'
477     PAD = 'Peripheral artery disease'
478     Bleed = 'Major organ specific bleeding'
479     Bari = 'Bariatric surgery'
480     CKD = 'Chronic kidney disease'
481     Dial = 'Dialysis'
482     Neuro = 'Diabetic mono-/polyneuropathy'
483     DiaEye = 'Diabetic eye complications'
484     DiaFoot = 'Diabetic foot'
485     PeriAng = 'Peripheral angiopathy '
486     DKD = 'Diabetic kidney disease'
487     DMcompl = 'Diabetes with several-/unspecified complications'
488     Hypo = 'Severe hypoglycemia'
489     Keto = 'Keto-/lactate acidosis'
490     Cancer = 'Cancer'
491     COPD = 'COPD'
492     Amp = 'Lower limb amputations'
493     other = 'Other';
494 */
495
496     run ;

```

NOTE: PROCEDURE FORMAT used (Total process time):

```

real time      0.18 seconds
cpu time       0.11 seconds

```

NOTE: There were 50653 observations read from the data set WORK.DOB.

```

497
498     *-----;
499     * Formats used for the diabase and for grouping drugs and
500       socio-economic variables ;
501     proc format lib = DMfmt.DMreg
502     /*
503         cntlin = ekstn.s125_format ; * Formats for the diabase ;
504     exclude dwh_afdeling
505             dwh_hospital
506             $dwh_shak ; * Very long formats we are not using ;
507     */ ;
508
509     * For convenience ;
510     value yesno
511     0 = 'No'
512     1 = 'Yes'
513     ;
514
515     NOTE: Format YESNO is already on the library DMFMT.DMREG.
516     NOTE: Format YESNO has been written to DMFMT.DMREG.
517
518     * regions ;
519     value region
520     81 = "Nord"
521     82 = "Midt"
522     83 = "Syd"
523     84 = "Hov"
524     85 = "Sjll"
525     ;
526
527     NOTE: Format REGION is already on the library DMFMT.DMREG.
528     NOTE: Format REGION has been written to DMFMT.DMREG.
529
530     * income groups ;
531     value $indk
532     "< = 0,00" = "000"
533     "0,01 - 50.000,00" = "001"
534     "50.000,01 - 100.000,00" = "050"
535     "100.000,01 - 150.000,00" = "100"
536     "150.000,01 - 200.000,00" = "150"
537     "200.000,01 - 250.000,00" = "200"

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```

532     "250.000,01 - 300.000,00" = "250"
533     "300.000,01 - 350.000,00" = "300"
534     "350.000,01 - 400.000,00" = "350"
535     "400.000,01 - 450.000,00" = "400"
536     "450.000,01 - 500.000,00" = "450"
537     "500.000,01 - 550.000,00" = "500"
538     "550.000,01 - 600.000,00" = "550"
539     "600.000,01 - 650.000,00" = "600"
540     " >= 650.000,01"          = "650"
541     other                      = "oth"
542 ;
NOTE: Format $INDK is already on the library DMFMT.DMREG.
NOTE: Format $INDK has been written to DMFMT.DMREG.
543
544     value $indgr
545     "< = 0,00",
546     "0,01 - 50.000,00",
547     "50.000,01 - 100.000,00" = "000"
548     "100.000,01 - 150.000,00",
549     "150.000,01 - 200.000,00" = "100"
550     "200.000,01 - 250.000,00",
551     "250.000,01 - 300.000,00" = "200"
552     "300.000,01 - 350.000,00",
553     "350.000,01 - 400.000,00" = "300"
554     "400.000,01 - 450.000,00",
555     "450.000,01 - 500.000,00" = "400"
556     "500.000,01 - 550.000,00",
557     "550.000,01 - 600.000,00",
558     "600.000,01 - 650.000,00",
559     " >= 650.000,01"          = "500"
560     other                      = "oth"
561 ;
NOTE: Format $INDGR is already on the library DMFMT.DMREG.
NOTE: Format $INDGR has been written to DMFMT.DMREG.
562
563     * texts for socio_13
564     value $soclong
565     "100" = "Self-employed"
566     "200" = "Top manager"
567     "300" = "Wage-earner"
568     "400" = "Trainee"
569     "500" = "Unemployed 6mth+"
570     "600" = "Sick leave, mat leave, activation"
571     "700" = "Social welfare"
572     "800" = "Early pension"
573     "900" = "Retired"
574     "950" = "Other, children"
575     "999" = "Unknown"
576 ;
577     value $socshort
578     "100" = "s-Emp"
579     "200" = "TopMn"
580     "300" = "WageE"
581     "400" = "Train"
582     "500" = "Unemp"
583     "600" = "Leave"
584     "700" = "SWelf"
585     "800" = "e-Pen"
586     "900" = "Retir"
587     "950" = "Other"
588     "999" = "Unkn"
589 ;
NOTE: Format $SOCSHORT is already on the library DMFMT.DMREG.
NOTE: Format $SOCSHORT has been written to DMFMT.DMREG.
590     value $socshortlong
591     "s-Emp" = "Self-employed"
592     "TopMn" = "Top manager"
593     "WageE" = "Wage-earner"
594     "Train" = "Trainee"
595     "Unemp" = "Unemployed 6mth+"

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596      "Leave" = "Sick leave, maternal leave, activation"
597      "Swelf" = "Social welfare"
598      "e-Pen" = "Early pension"
599      "Retir" = "Retired"
600      "Other" = "Other, children"
601      "Unkn" = "Unknown"
602      ;
NOTE: Format $SOCSHORTLONG is already on the library DMFMT.DMREG.
NOTE: Format $SOCSHORTLONG has been written to DMFMT.DMREG.
603
604      * Classifies from the variable 'afdeling' in DVDD to the 5 SDC,
605      based on reporting clinic ;
606      value $sdc
607      "1507010",
608      "1507019",
609      "150701R" = "SDCC"
610      "3800DOE",
611      "3800HOE",
612      "3800LOE",
613      "3800NOE",
614      "3800ROE",
615      "3800VOE",
616      "3800VOQ" = "SDCS"
617      "4202080",
618      "4202089" = "SDCO"
619      "6620076",
620      "6620079",
621      "7003079",
622      "7003279",
623      "7004069" = "SDCA"
624      "8001099" = "SDCN"
625      other = "notSDC"
626      ;
NOTE: Format $SDC is already on the library DMFMT.DMREG.
NOTE: Format $SDC has been written to DMFMT.DMREG.
627
628      * Classifies from the variable 'afdeling' in DVDD to amb1/prak ;
629      value $amb
630      "8001099", "800109" , "8001329", "665033C", "665033B", "5003037",
631      "1330559", "1330550", "133032E", "1351309", "1309539", "663030C",
632      "663004C", "550155E", "700505B", "8003207", "200027E", "200076A",
633      "8001609", "8005039", "7005059", "200027B", "8003209", "8003201",
634      "200054A", "3800HOE", "3800HOQ", "1401297", "800159H", "800503H",
635      "1351110", "3800LOE", "3800LOD", "3800DOE", "3800DOD", "1401069",
636      "1516435", "130185F", "6501044", "6502066", "7003279", "7004069",
637      "6006049", "665033T", "1309699", "7003079", "6620076", "6620079",
638      "4212031", "6504020", "6007200", "2501059", "5002035", "4212039",
639      "4001039", "5004039", "6504029", "5001059", "1502069", "1351119",
640      "6007209", "6007059", "7601047", "7601049", "7002056", "1516339",
641      "1301719", "1501099", "3800NOE", "3800NOD", "3800P9D", "3800VOE",
642      "3800VOQ", "4202739", "4202080", "4202089", "3800C2D", "200027G",
643      "5000649", "5000409", "5000407", "5000637", "3800ROE", "600705E",
644      "6008056", "6008059", "550105E", "550145E", "150701R", "1507019",
645      "1507010", "7603049", "7603041"
646      = "Ambu"
647      other = "Prak"
648      ;
NOTE: Format $AMB is already on the library DMFMT.DMREG.
NOTE: Format $AMB has been written to DMFMT.DMREG.
649
650      * English sex ;
651      value sex
652      1 = 'M'
653      2 = 'F' ;
NOTE: Format SEX is already on the library DMFMT.DMREG.
NOTE: Format SEX has been written to DMFMT.DMREG.
654
655      * 5-year age-groups for tabulation ;
656      value agr ( fuzz=0)
657      0-<5 = ' 0 '

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658      5-<10 = ' 5 '
659     10-<15 = '10 '
660     15-<20 = '15 '
661     20-<25 = '20 '
662     25-<30 = '25 '
663     30-<35 = '30 '
664     35-<40 = '35 '
665     40-<45 = '40 '
666     45-<50 = '45 '
667     50-<55 = '50 '
668     55-<60 = '55 '
669     60-<65 = '60 '
670     65-<70 = '65 '
671     70-<75 = '70 '
672     75-<80 = '75 '
673     80-<85 = '80 '
674     85-<90 = '85 '
675     90-<95 = '90 '
676     95-high= '95+' ;
NOTE: Format AGR is already on the library DMFMT.DMREG.
NOTE: Format AGR has been written to DMFMT.DMREG.
677
678     * formats to group ATC codes for diabetes drugs at different levels ;
679     value $atc4grp
680     'A10AB' = 'fastIns'
681     'A10AC' = 'intIns'
682     'A10AD' = 'mixIns'
683     'A10AE' = 'longIns'
684     'A10BA' = 11
685     'A10BB' = 12
686     'A10BG' = 13
687     'A10BH' = 14
688     'A10BF' = 18
689     'A10BC' = 'Other'
690     other   = 'Other'
691     ;
NOTE: Format $ATC4GRP is already on the library DMFMT.DMREG.
NOTE: Format $ATC4GRP has been written to DMFMT.DMREG.
692     value $atc5grp
693     'A10BD02' = 212
694     'A10BD03', 'A10BD05' = 213
695     'A10BD07', 'A10BD08', 'A10BD10', 'A10BD11', 'A10BD13' = 214
696     'A10BD17' = 218
697     'A10BD04', 'A10BD06' = 223
698     'A10BD09', 'A10BD12' = 234
699     'A10BD19', 'A10BD21' = 246
700     'A10BD15', 'A10BD16', 'A10BD20' = 216
701     'A10BX02', 'A10BX03' = 12
702     'A10BJ01', 'A10BJ02', 'A10BJ03', 'A10BJ04', 'A10BJ05' = 15
703     'A10BK01', 'A10BK02', 'A10BK03' = 16
704     'A10AE56' = 257
705     other = 'Other'
706     ;
NOTE: Format $ATC5GRP is already on the library DMFMT.DMREG.
NOTE: Format $ATC5GRP has been written to DMFMT.DMREG.
707
708     * Names of the groupings incl. combinations
709     - note there are no other groups here ;
710     value $druggr ( notsorted )
711     '11' = 'Metformin'
712     '12' = 'SU'
713     '13' = 'TZD'
714     '14' = 'DPP4'
715     '15' = 'GLP1'
716     '16' = 'SGLT2'
717     '17' = 'Insulin'
718     '18' = 'Acarbose'
719     '19' = 'Meglitinid'
720     '212' = 'MetxSU'
721     '213' = 'MetxTZD'

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722      '214' = 'MetxDPP4'
723      '216' = 'MetxSGLT2'
724      '218' = 'MetxAcar'
725      '223' = 'SUxTZD'
726      '234' = 'TZDxDPP4'
727      '246' = 'DPP4xSGLT2'
728      '257' = 'InsxGLP1'
729      ;
NOTE: Format $DRUGGR is already on the library DMFMT.DMREG.
NOTE: Format $DRUGGR has been written to DMFMT.DMREG.
730
731      * A format that identifies usable dose-codes ;
732      value $dosogrp
733      '0000003'-'0000005','0000015'-'0000017','0000024'-'0000028',
734      '0000034','0000038'-'0000039','0000044'-'0000046','0000050',
735      '0000059'-'0000060','0000079'-'0000083','0000092'-'0000093',
736      '0000098'-'0000099','0000101','0000105'-'0000106','0000114',
737      '0000130','0000133','0000158','0000178','0000244','0000246',
738      '0000247','0000259'-'0000262','0000266','0000289'-'0000292',
739      '0000313','0000362','0000369','0000370','0000387','0000447',
740      '0000468'-'0000469','0000482','0000492','0000511','0000540',
741      '0000555','0000589','0000613','0000631','0000637',
742      '0000655'-'0000656','0000675','0000805','0000838'-'0000840',
743      '0000864'-'0000865','0000967','0000995'-'0000996','0001000',
744      '0001019','0001036','0001048','0001050','0001059','0001061',
745      '0001112','0001116','0001145' = '01'
746      other = '00';
NOTE: Format $DOSOGRP is already on the library DMFMT.DMREG.
NOTE: Format $DOSOGRP has been written to DMFMT.DMREG.
747
748      value $dosotxt ( notsorted )
749      '01' = 'Dose kn'
750      '00' = 'Unkn'
751      '99' = 'Blank/Tom'
752      ;
NOTE: Format $DOSOTXT is already on the library DMFMT.DMREG.
NOTE: Format $DOSOTXT has been written to DMFMT.DMREG.
753
754      * Values from WHO website: DDDs for combined products 2009 ;
755      * no. tablets for combos ;
756      value $DDDCombprod
757      'A10BD02' = 2 /* er rettet op fra 1 til 2 pr. 13.7.2010 */
758      'A10BD03' = 2
759      'A10BD04' = 1
760      'A10BD05' = 2
761      'A10BD06' = 1
762      'A10BD07' = 2
763      'A10BD08' = 2
764      'A10BD09' = 1
765      'A10BD11' = 2
766      'A10BD13' = 2
767      'A10BD15' = 2
768      ;
NOTE: Format $DDDCOMBPROD is already on the library DMFMT.DMREG.
NOTE: Format $DDDCOMBPROD has been written to DMFMT.DMREG.
769
770      *-----;
771      * Grouping of other (non OAD) drugs (Daffodil) ;
772      value $med3oth
773      'CO7' = 'BB1'
774      'HO2' = 'Ccs'
775      other = 'Other'
776      ;
NOTE: Format $MED30TH is already on the library DMFMT.DMREG.
NOTE: Format $MED30TH has been written to DMFMT.DMREG.
777      value $med4oth
778      'AO8A' = 'WtL'
779      'A10A' = 'Ins'
780      'A10B' = 'OAD'
781      'CO9A','CO9B' = 'ACE'

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782      'C09C', 'C09D' = 'ARB' /* (exclude C09DX04) */
783      'C08C' = 'DHP'
784      'C03A' = 'THZ'
785      'C08D' = 'NHP'
786      'C03C' = 'HCD'
787      other = 'Other'
788      ;
NOTE: Format $MED40TH is already on the library DMFMT.DMREG.
NOTE: Format $MED40TH has been written to DMFMT.DMREG.
789      value $med50th
790      'B01AF' = 'DXI'
791      'C10AA' = 'Sta'
792      'C03DA' = 'ALA'
793      other = 'Other'
794      ;
NOTE: Format $MED50TH is already on the library DMFMT.DMREG.
NOTE: Format $MED50TH has been written to DMFMT.DMREG.
795      value $med70th
796      'B01AC06' = 'Asp'
797      'B01AE07' = 'DTI'
798      'C09DX04' = 'NpI'
799      'C01AA04' = 'Dgt'
800      'C01AA05' = 'Dgo'
801      'C01BC04' = 'Fla'
802      'C01BD01' = 'Ami'
803      'B01AA03' = 'Wrf'
804      'B01AC04', 'B01AC22', 'B01AC24' = 'RPA'
805      'B01AC07', 'B01AC09', 'B01AC11',
806      'B01AC13', 'B01AC16', 'B01AC17', 'B01AC21' = 'AP1'
807      other = 'Other'
808      ;
NOTE: Format $MED70TH is already on the library DMFMT.DMREG.
NOTE: Format $MED70TH has been written to DMFMT.DMREG.
809
810      value $medgr
811      'Ins' = 'Insulin'
812      'OAD' = 'Oral AntiDiabetics'
813      'BBl' = 'Beta blockers'
814      'Ccs' = 'Corticosteroids'
815      'WtL' = 'Weight loss drugs'
816      'ACE' = 'ACE inhibitors'
817      'ARB' = 'ARB'
818      'DHP' = 'Dihydropyridines (calcium channel blockers)'
819      'THZ' = 'Low ceiling diuretics (thiazides)'
820      'NHP' = 'Non-hydropyridines (calcium channel blockers)'
821      'HCD' = 'High ceiling diuretics (loop-diuretics)'
822      'DXI' = 'Direct factor Xa inhibitors'
823      'Sta' = 'Statins'
824      'ALA' = 'Aldosterone antagonists'
825      'Asp' = 'Low dose aspirin'
826      'DTI' = 'Direct thrombin inhibitor'
827      'NpI' = 'Nepriylsine inhibitor'
828      'Dgt' = 'Digitoxin'
829      'Dgo' = 'Digoxin'
830      'Fla' = 'Flekanide'
831      'Ami' = 'Amiodarone'
832      'Wrf' = 'Warfarin'
833      'RPA' = 'Receptor P2Y12 antagonists'
834      'AP1' = 'Other antiplatelets'
835      ;
NOTE: Format $MEDGR is already on the library DMFMT.DMREG.
NOTE: Format $MEDGR has been written to DMFMT.DMREG.
836
837      value $lmedgr
838      'Ins' = 'Ins: Insulin'
839      'OAD' = 'OAD: Oral AntiDiabetics'
840      'BBl' = 'BBl: Beta blockers'
841      'Ccs' = 'Ccs: Corticosteroids'
842      'WtL' = 'WtL: Weight loss drugs'
843      'ACE' = 'ACE: ACE inhibitors'

```

```

844      'ARB' = 'ARB: ARB'
845      'DHP' = 'DHP: Dihydropyridines (calcium channel blockers)'
846      'THZ' = 'THZ: Low ceiling diuretics (thiazides)'
847      'NHP' = 'NHP: Non-hydropyridines (calcium channel blockers)'
848      'HCD' = 'HCD: High ceiling diuretics (loop-diuretics)'
849      'DXI' = 'DXI: Direct factor Xa inhibitors'
850      'Sta' = 'Sta: Statins'
851      'AlA' = 'AlA: Aldosterone antagonists'
852      'Asp' = 'Asp: Low dose aspirin'
853      'DTI' = 'DTI: Direct thrombin inhibitor'
854      'NpI' = 'NpI: Neprilysine inhibitor'
855      'Dgt' = 'Dgt: Digitoxin'
856      'Dgo' = 'Dgo: Digoxin'
857      'Fla' = 'Fla: Flekanide'
858      'Ami' = 'Ami: Amiodarone'
859      'Wrf' = 'Wrf: Warfarin'
860      'RPA' = 'RPA: Receptor P2Y12 antagonists'
861      'APl' = 'APl: Other antiplatelets'
862      ;

```

NOTE: Format \$LMEDGR is already on the library DMFMT.DMREG.

NOTE: Format \$LMEDGR has been written to DMFMT.DMREG.

863

```
864      run ;
```

NOTE: PROCEDURE FORMAT used (Total process time):

```

real time      0.00 seconds
cpu time       0.01 seconds

```

```
865      title1 ;
```

866

```
867      *-----:

```

```
868      * Now list all the formts in the catalogs ;
```

```
869      proc catalog catalog = DMfmt.DMreg ;
```

```
870      contents catalog = DMfmt.DMreg ; run ;
```

871

NOTE: The PROCEDURE CATALOG printed page 2.

NOTE: PROCEDURE CATALOG used (Total process time):

```

real time      0.01 seconds
cpu time       0.00 seconds

```

```
872      proc format fmtlib library=DMfmt.DMreg ;
```

```
873      select $npu ;
```

```
874      run ;
```

NOTE: PROCEDURE FORMAT used (Total process time):

```

real time      0.00 seconds
cpu time       0.00 seconds

```

NOTE: The PROCEDURE FORMAT printed page 3.

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA 27513-2414

NOTE: The SAS System used:

```

real time      0.70 seconds
cpu time       0.34 seconds

```