How to read the NordDRG definition tables

The NordDRG definition tables control most of the grouping process. Through these tables, one can study the grouping logic in detail. The definition tables for each version of NordDRG are in different formats, currently DBF, Access, and Excel formats. In DBF and Access, each table is a separate file. These tables are hard to read because many of them contain only codes (DRG codes, diagnosis codes and procedure codes) while the code texts are in separate tables. The DBF and Access files are used in the computer-based groupers available on the market. In the Excel format, which is intended for information, all tables are in a single file, and the various tables can be found under the different data sheets. These tables are easier to read because the texts of the DRG codes, diagnosis codes and procedure codes are linked to each code.

This document describes the basics of how to read the definition tables in Excel format. It is recommended that the document is printed on paper so that you can read it while you have the Excel file open on your computer screen and are able to jump between the different data sheets.

The most common reason for studying the definition tables is to see which diagnoses or procedures that are included in a certain DRG or to see what DRGs a certain diagnosis or procedure can be grouped into. These steps are described in the end of the document, but in order to be able to perform those steps, a basic knowledge of the contents of the tables is necessary.

The table "drglogic"

The table has more than 3000 rows and each row is a grouping rule. So there are significantly more rows than the number of DRGs and it depends on that various rules can lead to the one and same DRG. During the grouping process, the health care contact's data are compared with those in the grouping rules, line by line, until the data is consistent. Then the process stops and the grouper delivers the DRG code and the rtc code (see more about rtc code below) that are on the current line.
The grouping rules contain no diagnosis or procedure codes. The rules are instead based on the diagnosis and procedure code´s different grouping properties retrieved from the definition tables "dg1" and "proc1", which are described more below. Since many diagnosis or procedure codes have the same grouping properties, a single grouping rule can handle a larger amount of diagnoses and procedures.
The table "drglogic" has a number of columns with different functions for the grouping process:

- **Column ORD**
  The title stands for "order" and the values in this column indicate the relative order of the grouping rules. The main principle is that the rules for heavy DRGs shall stand before the rules for DRGs with less weight, at least within each MDC (see more about the MDC below). This hierarchical order shall, among other things, prevent that addition of a further

procedure code results in a DRG with lower weight. Since the ord values are unique (there must be no duplicates), they are also used as an ID for each rule.

- **Column DRG**
  This is the grouping result, i.e. the DRG code that the grouping rule leads to.

- **Column RTC**
  The title stands for "return code" and the value is part of the grouping result (along with the DRG code). The number 0 or the letter A means that the input data (diagnosis codes, etc.) are correct while other values indicate various kinds of problems. All return codes are specified in the table "rtc" (see separate sheet).

The columns from **ICD** to **DUR** specify the requirements that must be met for each grouping rule. The relationship between the columns is "and" (not "or"), which means that all the specified requirements must be met.

- **Column ICD**
  The value + (plus) means that there must be a principal diagnosis (= first diagnosis of patient data) with a diagnosis code according to the table "ICD" (see separate sheet). If the field is blank, however, no diagnosis code is needed. By the value – (minus), no diagnosis code is allowed. The latter applies to rules for validation of the patient data, and they lead to a DRG where the code starts with the letter Z (= DRG 470 in the past and other countries' versions of NordDRG).
- **Column MDC**
  MDC stands for Major Diagnostic Category, which is a very rough classification of all existing diagnoses in only 24 groups. In the column "MDC" it is stated what MDC the principal diagnosis must belong to. Note that this is not always the same as the MDC for the actual DRG. If the field is empty, a diagnosis code from any MDC is accepted. The MDCs for all the diagnosis codes are listed in the table "dg1", which is described more below. All existing MDCs and their texts are available in the table "mdc" (see separate sheet).
- **Column PDGPROP**
  The title stands for "principal diagnosis property". If a value is specified, the diagnosis code for the principal diagnosis must have the same value. A diagnosis code in position as secondary diagnosis can never generate any pdgprop value. A common characteristic for the pdgprop values is that they contain the letter P. A list of all pdgprop values (and with explanatory texts) is in the table "princ.dg.prop" (see separate sheet). Many diagnosis codes have no pdgprop value, while others can have several pdgprop values. The pdgprop value(s) for the diagnosis codes, if any, are listed in the table "dg1", which is described more below.
- **Column OR**
  The title stands for "operation room procedure property". Many procedure codes have this grouping property. Codes for major interventions that mostly are performed in the operating room have or value 1. Codes for major actions that typically can be performed

in outpatient care have instead or value 2. Other procedure codes have no or property at all.
The or values, if any, for all procedure codes are listed in the table "proc1", which is described more below.
The requirement of or property in the current grouping rule is specified in column "or" but not with the numbers 1 or 2, but instead by the letters S, P, N or Z and they have the following meaning:
S = or property with the value 1 must be present.
P = or-property with value 1 or 2 must be present.
N = or-property with value 1 must not occur but or property with value 2 is allowed.
Z = or property must not occur, neither with the value 1 nor 2.

- **Column PROCPRO1**
  The title stands for “procedure property" (the number has no functional significance).
  If a value is specified, any of the procedure or diagnosis codes in the patient data must have the same value (there are occasional diagnosis codes with procedure property).
  A common characteristic for the procpro values is that they contain the letters E, S or V where E stands for endoscopic procedures, S for surgical procedures and V for other procedures (other letters may be present in other countries' versions). A list of all procedure properties (and with explanatory text) is in the table "proc prop" (see separate sheet).
  Procpro values for the procedure codes can be seen in the table "proc1", which is described more below. The few procpro values for diagnosis codes can be seen in the table "dg1” that also is described more below.
- **Column DGCAT1**
  The title stands for "diagnosis category" (the number has no functional significance).
  If a value is specified, the diagnosis code for the principal diagnosis must have the same value. A diagnosis code in position as secondary diagnosis can never generate any diagnosis category value. Diagnosis category is used in a similar way as the principal diagnosis property (pdgprop) described above, but there is a significant difference. A diagnosis code can only belong to one single diagnosis category (dgcat) but it can have multiple principal diagnosis properties (pdgprop). Thus, the principal diagnosis properties (pdgprop) can be used to construct grouping rules for only some of the diagnosis codes that belong to a specific diagnostic category.
  A common characteristic for diagnosis category values is that they contain the letter M and the numbers before the letter M is the same as the MDC for the diagnosis code.
  A list of all diagnosis categories (and with explanatory text) is in the table "dg categ" (see separate sheet). Diagnosis category values for the diagnosis codes can be seen in the table "dg1" that is described more below.
- **Column AGELIM**
  The title stands for "age limit". Note that the age is expressed in number of days, and for inpatients it refers to the patient's age at the hospital admission. This is particularly important for the grouping of neonatal patients. Also note that the age limits are not specified in all the rules for DRGs with age division. This is for practical reasons. If a

previous rule handles all cases of one age category, then of course, no age limit is needed in the following rule for the other age category.

- **Column COMPL**
  The title stands for "complication and/or co-morbidity", which usually is abbreviated as "CC". In the rules leading to DRGs of the type “with MCC” (= Major CC) the value in this column is 2 (exists so far only in the Swedish version) and in the rules leading to DRGs of the type “with CC” the value in this column is 1. Otherwise the column is empty. Not all DRGs are divided into the subgroups “with MCC” and “with CC” but if so, the MCC rule is always located above the corresponding CC rule, which in turn always is located above the corresponding rule for the DRG without CC.
  For allocation to a MCC subgroup, the patient data must have CC property = 2 and for allocation to a CC subgroup, the patient data must have CC property = 1, but if there is no previous MCC rule, also the patient data with CC property = 2 will be grouped according the CC rule. Thus, the value 1 in the column “COMPL” can be read as 1 or 2.
  The CC properties 1 and 2 can be generated by some of the diagnosis and procedure codes in somewhat different ways:
  - A relatively small number of procedure codes have CC property = 1 but so far no procedure codes have CC property = 2. The procedure codes that have CC property can be seen in the table "proc1” that is described more below.
  - A larger number of diagnosis codes have the possibility to generate CC property but only in the position as a secondary diagnosis. Thus, the principal diagnosis can never generate CC property. The possibly complicating diagnoses don’t have a direct CC property like the procedure codes. They are instead included in complication categories. Which complication category a diagnosis code belongs to can be seen in the table “dg1” at the variable type (vartype) COMPL. The codes for the complication categories have the letter G, C or I in the middle. A complication category with letter G can generate CC property = 2 and a complication category with the letter C can generate CC property = 1 but there are exceptions to this rule. For each complication category there is a list of principal diagnoses that are excluded from being complicated by a secondary diagnosis with that complication category. These lists of exclusions are in the table "compl excl" that is described more below.
    A complication category with the letter I is inactive. It is then required an additional diagnosis code to activate it to a complication category with the letter C. A list of all the complication categories is in the table "compl cat" (see separate sheet). In that table, in the column "inclprop", one can also see the grouping properties that are needed to activate an inactive complication category.
- **Column SEX**
  From NordDRG version 2016, this column is completely empty and it has no bearing on the grouping, but in earlier versions of the NordDRG there were certain rules that required that the patient must be of a particular sex and then M stood for "male" and F for "female".
  Despite the fact that the column "sex" has lost its meaning, it is still the case that the patient's gender sometimes affects the grouping, but it is a process that is programmed

into the grouper. It is when the principal diagnosis belongs to MDC 98. For more information, see the chapter "MDC 98" later in this document.

- **Columns DGPROP1, DGPROP2, DGPROP3 and DGPROP4**
  The titles of these four columns stand for "diagnosis property". If there is a value, any of the patient's procedure or diagnosis codes must have the same dgprop value. Note that not only diagnosis codes but also procedure codes can have diagnosis properties and the same code can have several different diagnosis properties. Note also that the diagnosis property can be generated by diagnosis codes irrespective of the position as principal or secondary diagnosis. With all these options and with the possibility to combine several requirements in these four columns, it is possible to construct grouping rules that are quite complex.
  A common characteristic for diagnosis property values is that they contain the letter X. A list of all diagnostic properties is in the table "dg prop" (see separate sheet). The procedure and diagnosis codes with diagnosis property are listed in the tables “proc1” and “dg1”, respectively, at the variable type (vartype) DGPROP
- **Column SECPROC1**
  The title stands for "secondary procedure property" (the number has no functional significance). If there is a value in this column, there must be an additional procedure, a secondary procedure, with this property in the patient’s data. If there is a minus sign in front of the property it means that the procedure property is not allowed. An isolated negative sign means that there must be no secondary procedure with or property = 1.
- **Column DISCH**
  The title stands for "discharge". If the grouping rule demands a specific way of discharge it is given with a letter as follows:
  E = discharged deceased
  N = discharged alive
  R = transferred to another hospital
- **Column DUR**
  The title stands for "duration", i.e. the number days for the hospital stay. Note that the number of hospital days is calculated as the discharge date minus the admission date plus one day. Thus, a patient who is admitted and discharged during the same date has one hospital day. Outpatients are never admitted why they always have zero hospital days. A basic DRG principle is that the length of stay should not to affect the grouping so the duration property is used almost only to distinguish between inpatients (dur is then > 0) and outpatients (dur is then < 1). Please note, however, that the duration is not specified in most of the rules for inpatients. This is for practical reasons. If the corresponding contacts in outpatient care already have been grouped to an outpatient-DRG via rules higher up in the drglogic table, it is unnecessary to print > 0 in the inpatient rules.

- **Column LOC_DRG**
  This column has no meaning for the grouping. The values are used only for linkages in the common Nordic version. In the Swedish version of definition tables, the column sometimes is removed.

The table ”dg0”

The table contains diagnosis codes (including code texts) that do not belong to any MDC. It is almost just pharmaceutical codes, ATC codes. The ATC codes must not be used as the principal diagnosis but can be specified as secondary diagnosis in connection with poisonings or adverse reactions to drugs. The diagnoses in this table belong to the diagnosis category (DGCAT) 00M00. There are no grouping rules in the table "drglogic" based on DGCAT 00M00, but it is programmed in the grouper that these codes should not be used as the principal diagnosis. Would any of them be registered as principal diagnosis, there will be an error message.

The table ”dg1”

In older Excel versions, the table is divided into "dg1" and "dg2" because of its size. The table contains all diagnosis codes with grouping properties. The table columns are:

- **code**
  In this column are the diagnosis codes. If there are asterisk-dagger-combinations, the asterisk code is in this column.
- **d_code**
  If there are asterisk-dagger-combinations, the dagger code is in this column.
- **icd_text**
  Here are the code texts that are retrieved from the table "ICD".
- **vartype**
  The title stands for "variable type”. The different variable types have already been mentioned above in the description of the table "drglogic" but here is a summary: *(The abbreviations of the variable types in the dg1 table can differ slightly from those in the column headings in the table "drglogic" but they mean the same thing.)*
    - COMPL = complication category
    - DGCAT = diagnosis category
    - DGPROP = diagnosis property
    - MDC = major diagnostic category
    - OR = or-property *(From version 2017 there are no diagnosis codes with OR property)*
- **varval**
  The title stands for "variable value". Common characteristics for variable values have already been mentioned above in the description of the table "drglogic" but here is a summary:
    - COMPL contains the letter G, C or I
    - DGCAT contains the letter M. Numbers before M = MDC.
    - DGPROP contains the letter X.
    - MDC just numbers, two digits.
    - OR digit 1 or 2 *(From version 2017 there are no diagnosis codes with OR property)*
    - PDGPRO contains the letter P.

    - PROCPR contains the letter E, S or V (other letters than V may be present in other countries' versions).
- **text**
  Here is a very short description text to the variable value. The texts are from the tables ”compl cat”, ”dg categ”, ”dg prop”, ”princ dg prop” and ”proc prop”.

The table ”proc0”

The table contains the procedure codes (including code texts) without any grouping properties. As well as in the table "dg0", most of the ATC codes are included (ATC-code can be used as an additional procedure code in conjunction with drug therapy), but there are also a large amount of procedure codes which do not affect the grouping.

The table ”proc1”

The table contains all the procedure codes with grouping properties. The columns are:

- **code**
  Here are the procedure codes according to the national classification which in Sweden is KVÅ.
- **csp_text**
  Here are the code texts retrieved from the "CSP" table.
- **vartype**
  The title stands for "variable type. The different variable types have already been mentioned above in the description of the table "drglogic" but here is a summary: *(The abbreviations of the variable types in the proc1 table can differ slightly from those in the column headings in the table "drglogic" but they mean the same thing.)*
    - CC = CC property
    - DGPROP = diagnosis property
    - OR = OR property
    - PROCPR = procedure property
- **varval**
  The title stands for "variable value". Common characteristics for variable values have already been mentioned above in the description of the table "drglogic" but here is a summary:
    - CC digit 1 if the code has CC property.
    - DGPROP contains the letter X.
    - OR digit 1 or 2 if the code has OR property.
    - PROCPR contains the letter E, S or V (other letters than V may be present in other countries' versions).
- **text**
  Here is a very short description text to the variable value. The texts are from the tables ”dg prop” and ”proc prop”.

The table ”compl. excl”

The table determines which secondary diagnoses with COMPL that complicate which principal diagnoses. The table is read as follows:

- In the column **compl,** filter out the COMPL value of the secondary diagnosis (which is obtained from the table ”dg1”).
- In the column **code** (and d_code for asterisk-dagger-codes), search for the code(s) for the principal diagnosis. If the current principal diagnosis is there, it is excluded from being complicated by the current secondary diagnosis and no CC property is generated, which means that you don't get any complication DRG. The process must be repeated for each secondary diagnosis with COMPL that occur in the patient data.

Requirements to get a CC-DRG

This is a summary of what is already mentioned in the table descriptions above.

1. A basic requirement is that the patient data leads to a DRG which is divided at CC-levels. About half of the DRG codes (at the three-digit level) have no such division. The four digits DRG code then has the letter N in the end.
2. The patient data must contain a procedure code with CC = 1 according to the table ”proc1” or a secondary diagnosis with COMPL according to the table”dg1”.
3. If the COMPL of the secondary diagnosis contains the letter I (= inactive), there must be another diagnosis code with a DGPROP value that activates the current COMPL according to the table ”compl cat” (column ”inclprop”). Diagnosis codes with this DGPROP value is shown in the table "dg1".
4. The current principal diagnosis must not be present on the exclusion list for the current, activated or primarily active, COMPL as shown in the table "compl.excl".

MDC 98 Diseases of the male or female genitals

ICD-10 includes a number of diagnosis codes that are the same for men and women despite the fact that it's about diseases of the genital tract. These have been collected in the MDC 98 and they all have a diagnostic category (DGCAT) value that begins with 98M. The grouper is it pre-programmed to change 98 to 12 if the patient is a man and to 13 if it is a woman and this is happening before the patient data are compared with those found in the grouping rules in the "drglogic" table. *Example*: Code A630 'Condyloma acuminatum' has DGCAT 98M03 which is change to 12M03 for men and to 13M03 for women.

How to find out the content of a DRG

- Open the table "drglogic" and select the DRG to be studied by using Excel's autofilter in the head of the column **DRG**. *(You should not use the "find and mark" function (binocular icon) because there can be multiple rules (lines) that lead to the same DRG and these lines can be scattered in various places in the table.)*
- See in the columns from **ICD** to **DUR** what the requirements are for the grouping to the current DRG. Keep in mind the meaning of the letters in the column OR that are described in the chapter about the table “drglogic” on page 2.

- Open the table for diagnoses, “dg1”, and/or the table for procedures, “proc1”, and use the Excel's autofilter in the head of the column **VARVAL** to find all the codes with the necessary grouping properties. Keep in mind that there are some (a few) diagnosis odes with procedure property (procpro), and that there are many procedure codes that have diagnosis property (dgprop). (Note that the diagnosis and procedure codes found in this way not always are limited to that specific DRG. With other combinations of diagnosis and procedures they can also be included in other DRGs.)

  Problem with the combination of OR property and procedure property (procpro)

  Many grouping rules demand both OR property and a procedure property (procpro). In the original table "proc1", you cannot see any OR property when you have filtered out a specific procedure property so we usually add a separate column for eventual OR property.

  Sometimes a procedure code meets the requirement of procedure property but it lacks OR property. You should then be aware that the OR property may be added to the patient data through another procedure code.

  Problem with some empty fields in the column dgcat1 in table "drglogic"

  Sometimes the grouping rule requires a diagnostic code in a specified MDC (which appears in the column **MDC**) but the **DGCAT1** field is empty. This could be interpreted as that the rule accepts any diagnosis code in the current MDC but that is seldom true. You then have to check if there are any rules with specified diagnostic category, but otherwise identical, above the current row. If there are such rules, the empty field **DGCAT1** shall be read as "residual diagnosis categories in the current MDC". Often, but not always, it is a diagnostic category that ends with M99.

How to see which DRGs a diagnosis or procedure code can be grouped into

This instruction is valid for principal diagnoses only. Codes for secondary diagnoses can be grouped into any group whatever.

- Open the table ”dg1” or ”proc1”, respectively, and filter out the code to be studied.
- Notice what grouping properties the selected code has.
- Open the table "drglogic" and filter out the current grouping properties in the columns from **MDC** to **SECPROC1**. The DRG, or DRGs, that can be considered is then shown in the column **DRG**.

  The problem with empty fields in the column dgcat1 in table "drglogic" is similar as described above. If the selected diagnosis code has a diagnosis category that doesn’t match any value in the column DGCAT1 you can match on the MDC value instead, but exclude all DRGs that demands a specific diagnosis category.

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Mats Fernström
The National Board of Health and Welfare
Sweden