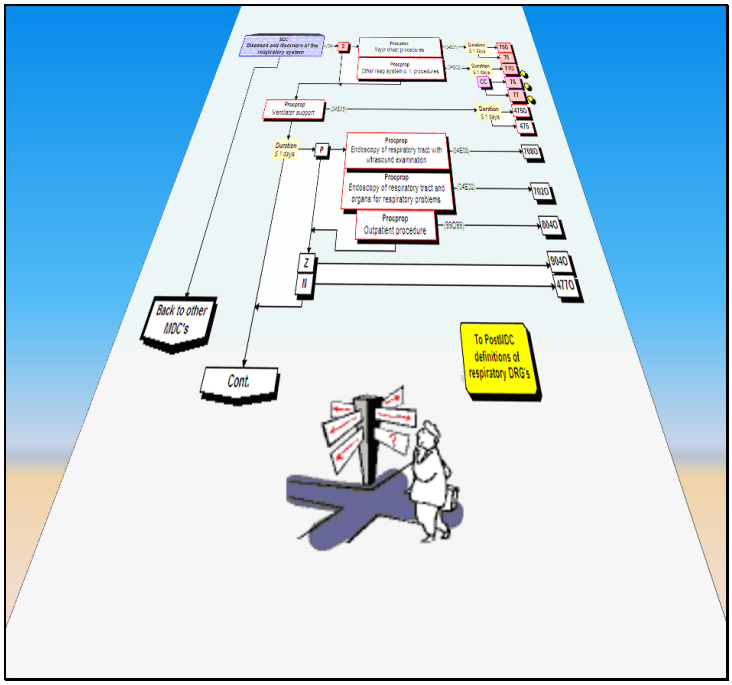
Prodacapo Groupers - User's Guide

Prodacapo VisualDRG



Version 7.18

NordDRG 2018

PRODACAPO

Prodacapo Groupers

Prodacapo VisualDRG version 7.18

User's Guide

This manual has been updated for supporting version 7.18 of VisualDRG. Please refer also to the readme file installed with the application for information about important changes after this manual has been created.

FCG Prodacapo Finland Oy

Osmontie 24
00610 Helsinki
Finland
Tel +358 10 4090
www.prodacapo.com

Contents

Overview of NordDRG

DRG overview

Diagnosis Related Groups (DRG) is a system classifying in-hospital patient cases into *iso-resource categories*, based on diagnoses, procedures performed, age, status at discharge, and in certain cases, some additional rules, e.g. concerning whether a delivery took place or not.

The history, design and classification rules of the DRG system as well as its application on patient discharge data and updating procedures are presented in the DRG Definitions Manual (Health Care Financing Administration, US Department of Health and Human Services). DRGs are used for reimbursement in the prospective payment system of US Medicare and Medicaid healthcare benefits coverage systems. DRG definitions are issued and updated by the Health Care Financing Administration (HCFA) annually.

Several refinements of DRGs have been published. In order to distinguish those from the DRG system, issued by federal authorities, the latter will be referred to by the acronym HCFA-DRG.

The first HCFA-DRG version was published in 1983. The revision published in 1995 is, consequently, version 12.

As a US based system, DRGs are defined by diagnosis and procedure labels used in the US. The 9th revision of the International Classification of Diseases (ICD-9) has been edited and published under the title of International Classification of Diseases-Clinical Modification (ICD-9-CM). Included in the ICD-9-CM is a classification of surgical procedures, the ICD-9-CSP.

NordDRG in the Nordic Countries

The Nordic countries use national modifications of the ICD and national procedure classification schemes. Previously, those countries have classified hospital stays by converting their national diagnosis and procedure codes to ICD-9-CM and ICD-9-CSP codes and using grouping software designed for US patient data.

There are several differences between the Nordic classifications and the ICD-9-CM and ICD-9-CSP. It is not always possible to find a direct code conversion, in which the original meaning of the diagnosis or procedure rubric is preserved. The ICD-9-CM includes additions, lacking in the ICD and thus in Nordic national classifications. The procedure classifications differ even more radically.

The problem with the lack of correspondence, both as to structure and content, between classifications schemes has been greatly increased with the introduction

of the 10th revision of the International Classification of Diseases (ICD-10) and the new Nordic Classification of Surgical Procedures (NCSP). Conversion tables for diagnoses and procedures need to be designed including special rules in instances where direct code translations are impossible. In many cases arbitrary translations have to be made. Those must be chosen in a way which supports an assignment of the patient case to a DRG, best representing the content of the rubric and the intent of the original DRG allocation logic. Experience shows that it is impossible to design a system of code conversions without ambiguities and potential sources of misclassification.

NordDRG Project

The Nordic Medico-Statistical Committee (NOMESCO) of the Nordic Council of Ministers charged in 1995 the WHO Collaborating Centre for the Classification of Diseases in the Nordic countries with the task of designing a DRG system, possible to use after the introduction of ICD-10 and NCSP. The task was two-fold: First, to design conversion tables between ICD-10 and ICD-9-CM and NSCP and ICD-9-CSP, respectively. Second, to produce DRG definitions, based on the ICD-10 and NCSP as well as a grouper program, using those definitions. In both tasks, the aim is to emulate *HCFA-DRG version 12* as completely as possible.

The objective of NOMESCO is, first, to provide healthcare organizations in the Nordic countries with a possibility to continue using existing (HCFA-) DRG routines after the new classification schemes have been implemented (conversion tables) (Project phase 1). A second objective is to create a standardized HCFA-like DRG Definitions Manual based on ICD-10 and NCSP, by publishing the definitions (Project phase 2) and acquiring the ownership of corresponding grouping software for national health authorities in the Nordic countries (Project phase 3). NOMESCO and the national health authorities will decide on procedures for updating the definitions. By issuing the DRG definitions with rubrics and codes of Nordic classification schemes NOMESCO also creates the possibility to revise the definitions according to national and Nordic needs, and eventually, to design a truly Nordic iso-resource grouping scheme of in-hospital patient cases.

NordDRG Definition Manual

The NordDRG Definition Manual includes the following information tables:

1. Basic rules for the assignment of in-hospital patient cases to DRGs
2. Properties and categories of diagnoses
3. Properties of surgical procedures
4. Complication categories
5. Exclusions of complication categories
6. DRG codes, rubrics and corresponding MDC
7. Diagnosis category names per MDC
8. Diagnosis property names and codes
9. Principal diagnosis property names and codes
10. Procedure property names and codes

Table 1 includes the assignment logic. Tables 2-5 consist of information, necessary for the assignment process, and organized according to the assignment

rules of the HCFA-DRG Definitions Manual. Tables 6-10 provide a systematic listing of rubrics and codes used.

The NordDRG Definition Manual is available separately and these tables are not included in NordDRG application or in NordDRG manual.

The NordDRG Grouping Process

The original DRG assignment process proceeds in the following order:

1. first, special “pre-MDC” DRGs are interpreted as specified in §3
2. the principal diagnosis indicates the Main Diagnostic Category (MDC)
3. for each MDC a decision tree is designed with branching nodes, requiring information on surgical procedure, comorbidities and complications diagnoses, age, status at discharge, where the patient is discharged to his or her home or to another institution and whether the patient left against medical advice
4. at each branching node, the condition at the node is processed by identifying the information needed and comparing it to lists of codes or rules, determining which of alternative routes to follow
5. the process is continued until the patient case has ended up in a DRG, including groups for erroneous cases.

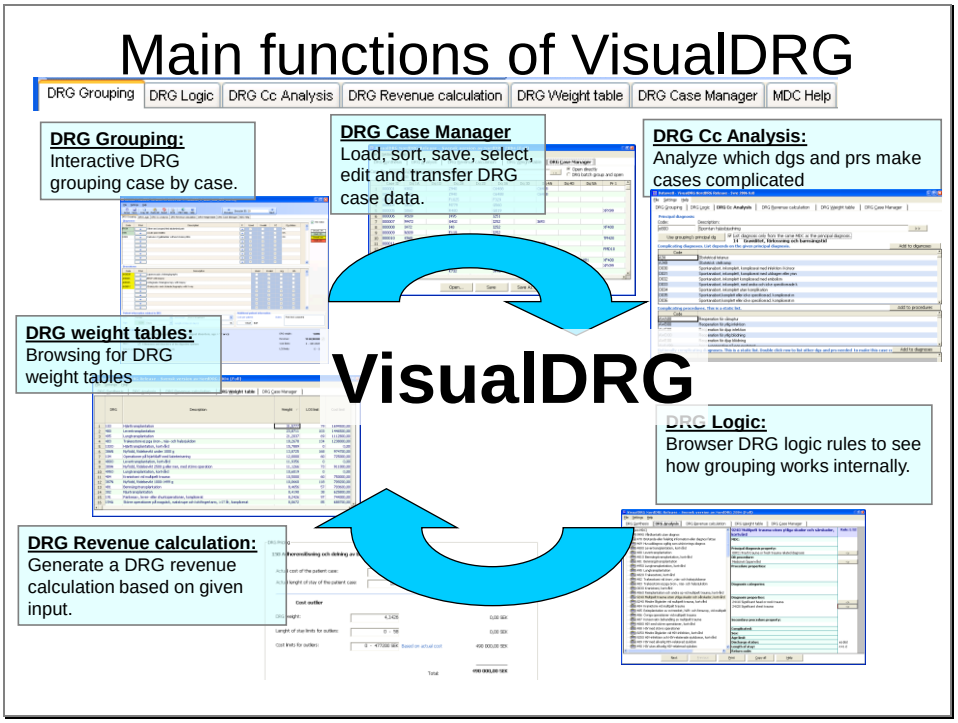
Overview of Prodacapo VisualDRG

What Prodacapo VisualDRG offers?

Prodacapo VisualDRG is a Windows based application for DRG grouping.

VisualDRG is targeted mainly for two user groups or roles.

- For DRG controllers VisualDRG offers interactive data validation and re-grouping tools.
- For anyone needing a tool for studying and examining the internals of DRG VisualDRG offers interactive grouping and logic browsing tools.



Certification

NordDRG grouper used in Prodacapo VisualDRG is officially accepted and certified by the Nordic Centre for the Classification of Diseases.

Details of certification can be found in About box in the application and in readme file.

Prodacapo VisualDRG Features

There are two versions of VisualDRG. **Professional version** is targeted to DRG controllers and it includes features for data file import, batch grouping and export. **Standard version** is targeted for DRG studying. The following table sums up the features of Prodacapo VisualDRG.

Feature	**Std. version**	**Prof. Version**
Interactive DRG patient grouping, one case at a time	Yes	Yes
Browsing the DRG grouping rules database	Yes	Yes
Fully integrated DRG Grouper created with FCG Prodacapo NORDDRG technology, VisualDRG uses OLE 2 version of NORDDRG Grouper Engine	Yes	Yes
Search for diagnoses and procedures codes including full text search and hierarchical selection of the codes.	Yes	Yes
Printer report of the current grouped form	Yes	Yes
Standard Windows features including printed reports and printer setup, native Windows style on-line help, all information can be transferred to other Windows programs with Copy/Paste, standard Windows controls.	Yes	Yes
All of the registers (diagnoses, procedures etc.) are upgradeable by the user to enable localized and hospital specific versions	Yes	Yes
Available in English, Swedish, Finnish and Norwegian languages.	Yes	Yes
Direct interactive link to NordDRG definition manual (HTML), if available.	Yes	Yes
View diagnosis and procedure status for evaluating clinical coding, whether codes are used in appropriate way and whether they have affected the DRG.	No	Yes
DRG revenue calculation with outlier limits and equivalence point price. Import of actual weights and utilization of multiple optional DRG weight tables.	No (*1	Yes
Import actual patient data from files.	No (*1	Yes
Batch group patient data from files.	No (*1	Yes
Save changed patient data in files.	No (*1	Yes
Log changes made to patient data.	No (*1	Yes
DRG CC analyses (complications and comorbidities)	No	Yes

*1) These features are available with demo data and DRG demo weight table only.

NordDRG versions VisualDRG supports

Prodacapo VisualDRG version 7 supports all NordDRG versions 2011-2018 and the application itself is available in English, Finnish and Swedish.

There is common Nordic NordDRG version and local national versions derived from this for Finland, Sweden, Latvia, Iceland and Estonia.

DRG, MDG, ICD-10 diagnose and NCSP procedure names follow the National version.

Note that this VisualDRG user's manual is not targeted to any specific grouper version but is a common general manual for all English language releases of Prodacapo VisualDRG.

Your local setup may have significantly different DRGs, diagnosis etc. than displayed in the sample figures in this manual, for example DRGs and ICDs in Estonian, Latvian or Icelandic language.

Getting Started

Prodacapo VisualDRG Setup Kit

The following items are included in the VisualDRG Setup Kit, delivered either electronically or as a CD-ROM.

1. Prodacapo VisualDRG software User's Manual (this document)
2. Installation application (setup.exe).

Hardware and software Requirements

Software and hardware requirements for running the Prodacapo VisualDRG program are the following.

1. Microsoft Windows Vista, Windows 7 or Windows 8.
2. 1024 MB memory.
3. 50 MB free disk space on hard disk.
4. Screen resolution 1024 x 768 or more.
5. .NET Framework version 4.0 or higher
6. Display text size should be Windows default (100%)

Installation

Installing VisualDRG software is easy: just insert the VisualDRG Installation CD-ROM and run **SETUP** in the Windows Program Manager's File | Run dialog box in VisualDRG folder or extract and start **setup.exe** from the downloaded version.

During the installation there are several prompts which guide the installation; the target disk drive and directory may be selected but defaults are suggested. Default installation directory is under "Program files".

If *"Microsoft .Net Framework version 4.5"* is not installed in your machine, setup will not succeed. VisualDRG does not work without Framework version 4.5 or higher. Framework can be obtained from www.microsoft.com and it is also in Windows Update Custom updates under section "Software Optional". If you follow the link from the setup to download the .NET Framework, there are different downloads for different processor architectures. The processor architecture of a typical workstation is "x86". The easiest way to download .NET Framework is to use Windows Update.

Installation program will create the directory for VisualDRG and copy the program and necessary definition files into the directory. Demo data files are located into the common application data folder, which path depends on operating system (typically like C:\ProgramData\FCG Prodacapo\Prodacapo VisualDRG\...). Check accurate path from the properties of the "*VisualDRG with demo data*" start-up link. All users must have read and write permission to the demo data folder and folder must not be as read only. After successful installation check and add permissions if needed.

After successfully running the installation program the VisualDRG software is ready to be used. See next chapter in this manual on how to use the software.

In addition to VisualDRG start-up icon the following is installed in VisualDRG's program group.

- VisualDRG User's Guide as a PDF file;
- FCG Prodacapo Software Terms and Conditions;
- A direct link for launching VisualDRG with demo data set loaded;
- Readme file. Please read readme as it includes important last minute information about the program.

Removing VisualDRG

Use Add/Remove Programs in Control panel for uninstalling VisualDRG.

Starting VisualDRG

After a successful installation you can start VisualDRG by clicking the VisualDRG icon in the VisualDRG program group.

After clicking the VisualDRG icon the program will start the Grouper and load the associated database. This phase can last for some tens of seconds.

Using VisualDRG

Basic Operation

VisualDRG contains the following functional groups.

- **DRG Grouping** provides interactive grouping. You enter the basic input information: diagnosis, procedures and other patient's information and VisualDRG returns the DRG. You have helper functions for selecting diagnoses and procedures and you can also see an analysis of the validity of input data and the relative weight and revenue of the resulting DRG-
- **DRG Logic** provides a full documentation of DRG grouping rules for browsing in tree and tabular format.
- **DRG Cc Analysis** is used for examining what diagnoses and procedures makes the case complicated (CC).
- **DRG Revenue calculation** display the revenue figures and details of the outlier limits for the actual DRG.
- **DRG Weight table** provides browsing for all DRG weight information.
- **DRG Case Manager** includes user data. You can load, save and edit patient case data and select cases for DRG grouping.
- **MDC Help** is used for browsing DRG definitions manual in flowchart format by MDC.

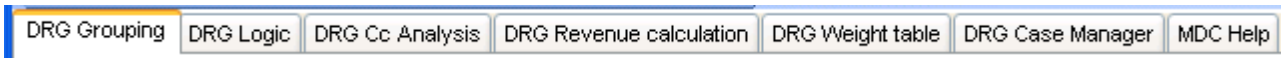


Figure: You switch between functions by selecting the appropriate tab page in the user interface by clicking its caption. In addition, some functions are accessible via the main menu.

The details of these functions and other functions accessed via the main menu are documented in the following chapters.

DRG Grouping

In this form you enter data and the application returns the corresponding DRG. This form is always first activated by default when the application is started.

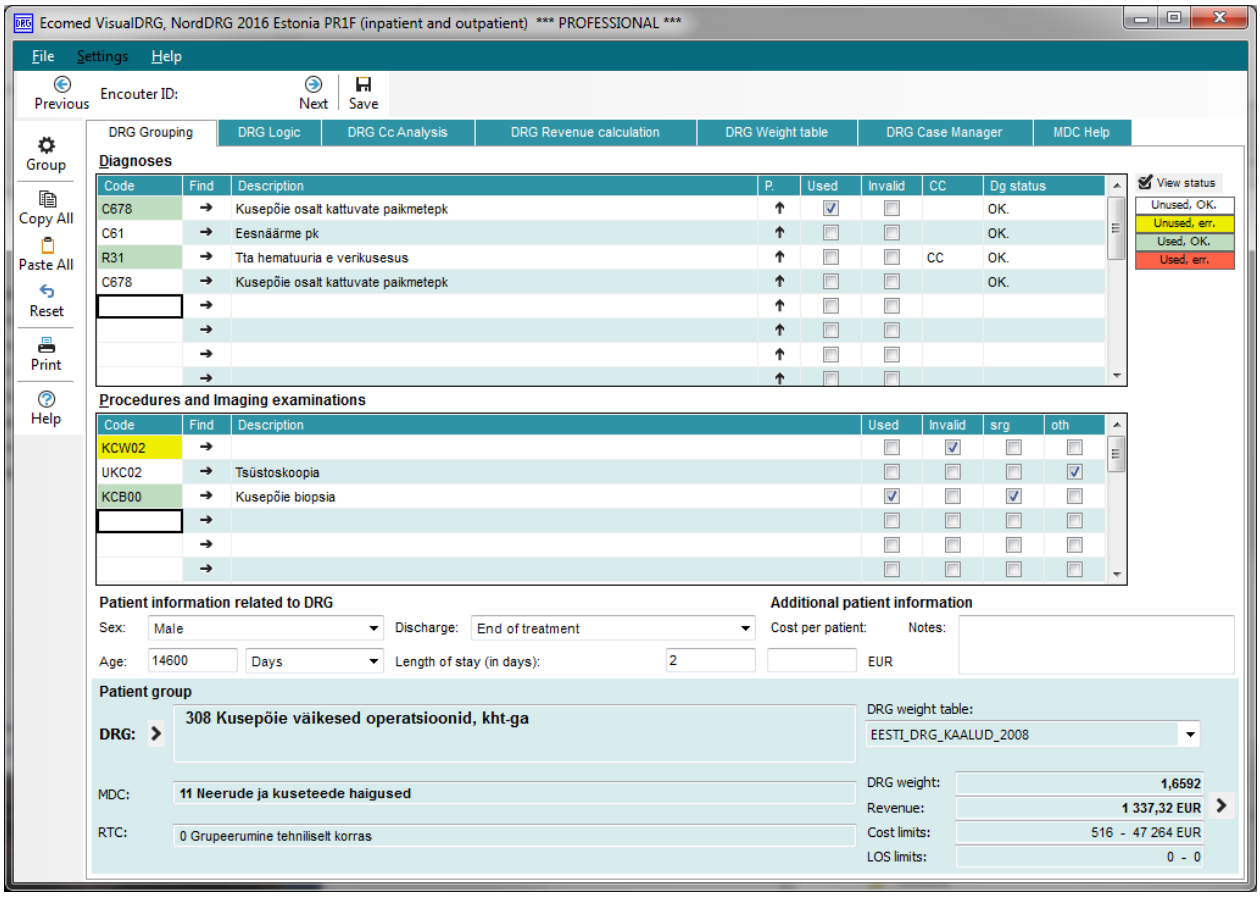


Figure: In DRG grouping You enter input information and VisualDRG returns actual DRG, input status and DRG revenues.

How DRG grouping window works

For grouping one patient case, please do the following:

1. Enter one or more diagnosis codes into the diagnosis fields. You can use the Find functionality described later in this document by pressing the Find button in each row.
2. You can enter one or more procedure codes into the procedure fields. You can use the find functionality described later in this document by pressing the Find button in each row. Procedures are not compulsory if you are examining conservative treatments.
3. Enter the values of the **Sex**, **Age, Discharge** and **Length of stay** input data fields.
4. DRG and other output data are updated immediately as you enter data. (You need to press Group button only if you have denied immediate automatic grouping in VisualDRG settings.)

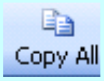
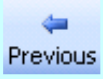
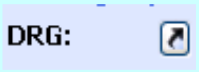
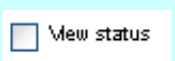
Input fields

Here are the input fields you can use and their associated functionality.

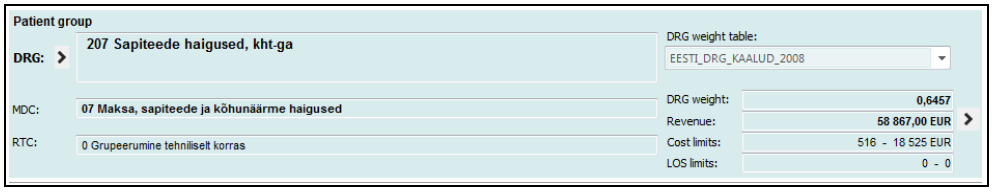
Input Field	Description
Diagnoses	Up to 20 diagnoses may be entered. Try entering a code (for example O800) into the code field one letter at a time. And you will notice that VisualDRG will find the descriptive name for the code as you type. Experiment with removing letters and adding them to get familiar with the functionality of this diagnosis code field. You can also press find (right arrow) button to enter into the Find window to use the different search features of the program. If you click up arrow button then the selected secondary diagnosis and the principal diagnosis are swapped and the case is re-grouped immediately. At least principal diagnosis must be entered. You can delete all the diagnosis by first clicking on the upper left corner of the grid and then by pressing the Delete key on the keyboard.
Procedures	Up to 20 procedures may be entered. These fields work exactly the same way as the diagnosis fields. Procedures are not compulsory. You can delete all the procedures by first clicking on the upper left corner of the grid and then by pressing the Delete key on the keyboard.
Sex	Sex may have one of the three values presented in the Sex input section: male, female or missing data (meaning unknown or erroneous data).
Age	Enter the patient's age in days or in years or select missing data if this information is not available.
Discharge	The value for the Discharge field can be selected using the drop down list.
Length of stay	Enter the length of stay in days.
Encounter ID	This field doesn’t affect the grouping result but it acts as an unique key for the case when reading and updating information from files.
Notes	This field doesn’t affect the grouping results but it can be used for both entering relevant information and retrieving additional information about the case. Depending on Your data feeder system implementation this field can be used for flagging for example the cases that need to be checked by the DRG controller. On the other hand, changes made to patient input data can be entered in this field.
Actual cost per patient case	This field doesn’t affect the grouping results but it is used in DRG revenue calculation.
View status	If you have this option checked then input data validation results are displayed, otherwise they are hidden. Input data validation is described in more detail later in this chapter in “Grouping results”.

Functions

Here are the functions and how they are used in this window.

Button	Description
	After all of the selected input fields are filled you can press this button to group the patient record. If you have automatic grouping option set (default = Yes) then the DRG group is updated immediately as you enter or edit input information and You do not need to click Group.
	Save the changed case data, DRG and comments in **DRG Case manager** from where you can finally save the data in actual file. Encounter ID is used as a master key in updates. If there already exists a case in DRG Case Manager with the equal encounter ID then it's overwritten with new data, otherwise a new record (row) is added at the end of the cases. Also, all updates are written in a changes log file. You specify the file name of this file in Settings. Note that You must separately save all cases to file by using File / Save.
	By pressing this button you can quickly transfer the contents of all of the fields into the Windows' clipboard. Use the paste command in another application to retrieve the copied information in a spread sheet or text document.
	Paste special data containing all fields in one operation. You can copy this data from **Ecomed Analyzer** by using Copy To VisualDRG command.
	Pressing this button will clear all of the fields in the main window.
	You can use this button to get a printed report on the data currently in the form. The report will include both input fields and DRG data.
	Go to **MDC Help** page (HTML documentation) and browse to the active result MDC.
	Pressing this button will activate the context sensitive help.
	Move to the next case in DRG Case Manager if you have an opened patient case file.
	Move to the previous case in DRG Case Manager if you have an opened patient case file.
	Go to **DRG logic** page and activate the resulting DRG.
	Go to **DRG Revenue** page and activate the resulting DRG.
	If this is checked then input data validation is displayed.

Grouping results



Grouping results are viewed at the bottom of the page.

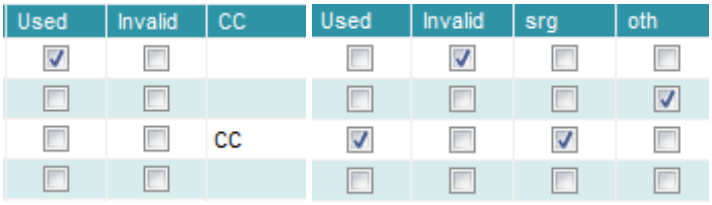
Field	Description
DRG	This is the main result from the grouping process, the DRG code for the current patient data. By using the small arrow button next to the DRG field you can activate the **DRG Logic** page in such a way that the rules for the active DRG will automatically searched for.
DRG weight	This field contains the relative DRG weight for the resulting DRG derived from the active DRG weight table. Relative weight measures the relative average actual cost. Weight 1,0 stands for an average patient what comes to expenses and weight 1,500 means a 50% more expensive patient cases on the average based on the selected weight table.
LOS limits	Min – Max [days] Some DRG weight tables or DRG revenue systems may include limiting values for the actual length of stay of the patient. If the length of stay is less than the lower limit specified or greater than the upper limit specified the case is interpreted as a DRG outlier case and charged based on actual cost. Depending on Your DRG weight table you may have either LOS limits or cost limits with either just upper limits or they may include both upper and lower limits.
Cost limits	Min – Max [money] Outlier limits for the actual cost of the patient cases interpreted in the same way as LOS limits.
MDC	MDC is the Main Diagnosis Category which can usually be calculated if the principal diagnosis code is provided in the patient record data. Even if MDC can be calculated the DRG can still be undetermined.
return code	The Return Code includes information on how the grouping process was executed and will also reveal possible errors during the process. The possible codes are: 0 = OK, no errors 1 = Missing principal diagnose 2 = Missing sex 3 = Sex mismatch (male has been given a female's diagnose or vice-versa) 4 = Erroneous age (adult has been given a child diagnose or vice-versa or age out of range 0-120) 5 = Unrelated procedure to principal diagnosis 6 = Invalid principal diagnosis 9 = Ungroupable, usually due to erroneous diagnosis code, heading level diagnosis for example.

If you have checked "View status" option then also the status of all input fields is presented. For each input field the status can be one of the following,

Status and highlight	Description

color	
Unused, OK: white	The value of this variable is valid but it doesn't affect the actual DRG.
Used, OK: light green	The value of this variable is valid and it has affected the actual DRG.
Unused, Err: yellow	The value of this variable is invalid but it doesn't affect the actual DRG.
Unused, Err: light red	The value of this variable is invalid and it has affected the actual DRG.

In addition to these status values you'll have more detailed information about diagnoses and procedures. This information is displayed in the columns right to the codes and texts. The meanings of these are described in the following.



Status field	Description if there is a check mark in the column.
Diagnoses: **Used**	This diagnosis code has affected the resulted DRG.
Diagnoses: **Invalid**	This diagnosis code is invalid.
Diagnoses: **CC/MCC**	This diagnosis code is a complicating or a severe complicating diagnosis code in this case.
Procedures: **Used**	This procedure code has affected the resulted DRG.
Procedures: **Invalid**	This procedure code is invalid.
Procedures: **srg**	This procedure code is an surgical O.R. procedure code.
Procedures: **oth**	This procedure code is other than surgical O.R. procedure or ambulatory O.R procedure code.

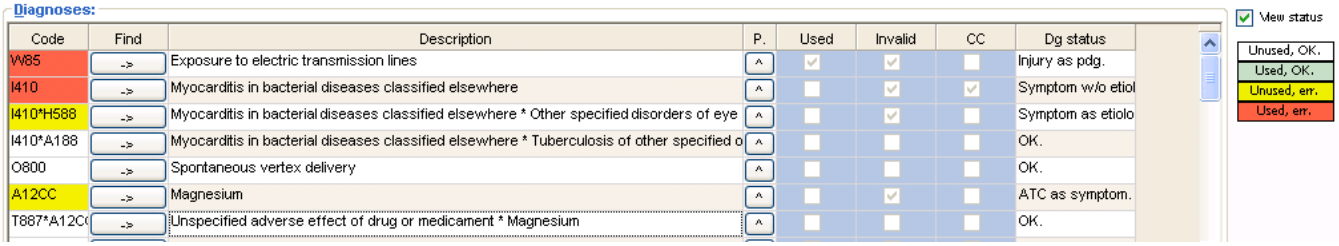
Analyzing clinical ICD-10 coding and validity of diagnosis pairs

When using the Professional version of VisualDRG you'll have also more detailed status information for each diagnosis entered. VisualDRG passes the information entered exactly as given to the grouper engine. It's important to distinguish between two separately given diagnoses (principal diagnosis and secondary diagnosis) and one diagnosis pair that contains two codes: symptom and etiology.

The fact that the ICD-10 uses extensively a dual coding system to indicate both the etiology and manifestations of a disease (the so called dagger-asterisk system) is a special challenge for ICD-10 based DRG definitions. A code marked with an asterisk (*) represents the symptoms or manifestations of a disease. These codes are not used alone when classifying according to the ICD. A second code, marked with a dagger (+) indicating the etiology of the disease is needed. The two codes define one diagnosis.

When entering pairs the codes must be given by using format: *symptom code*etiology code*.

VisualDRG analyzes whether the dg code is applicable and if not then a reason for error is displayed as demonstrated in the figure below (you must have "View status" option set).



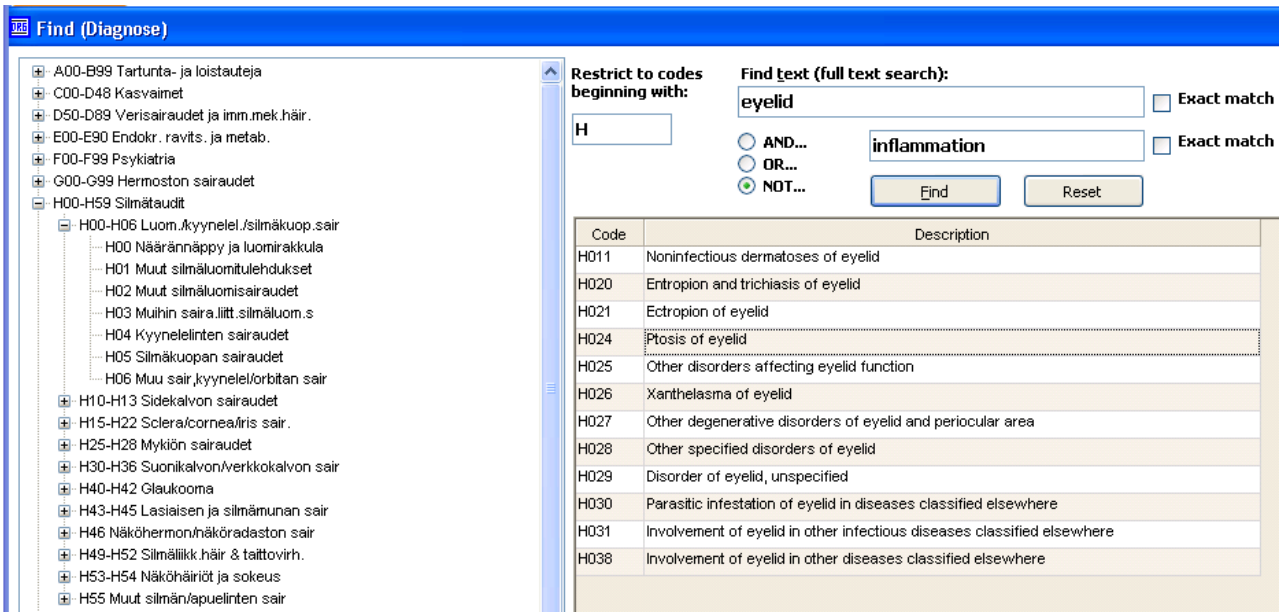
The possible diagnosis status information is described by the following examples.

Sample code	Error description
W85	This is an external cause for injury and it cannot be used as principal diagnosis but as secondary diagnosis only.
I410	You have entered a symptom code w/o entering an etiological code, which is incorrect. Certain diagnosis ("asterisk codes") must always be linked with another, etiological code.
I410*H588	You have entered a diagnosis pair but the etiological code used is erroneous, it's symptom code.
I410*A188	A correctly entered diagnosis pair.
O800	A correct diagnosis consisting of a single code.
A12CC	If you enter an ATC code (a classification of drugs) alone you'll have an error message. ATC codes can be used only in conjunction with other codes in diagnosis pairs.
T887*A12CC	ATC code used correctly in a diagnosis pair as etiology code.

Using the Find function

Find function makes it easy to select diagnoses and procedures codes instead of keying the codes directly in.

You can activate the Find window by clicking on the small right arrow button in the diagnoses or procedures table.



On the left hand side of the window there is the classification hierarchy. You can browse and select the main groups and sub groups or diagnoses or procedures. By clicking the plus sign (+) you can open groups and you can close the open groups by clicking the minus sign (-). When you are at the bottom level of the hierarchy and click on the group then the diagnoses or procedures of this group are displayed in the actual selection grid on the right hand side of the window.

It's not necessary to use the hierarchical selection always but You can enter directly codes and /or texts in search criteria.

To find a diagnose or procedure do the following:

1. Enter either a beginning of a diagnosis or a procedure code or a text string to be found in the descriptive name
2. Press the Find button to query the database
3. After the results appear in the result window select one row by clicking it with the mouse
4. Press Select or double click the row to transfer the code into the main input window

Here are the input fields you can use and their associated functionality:

Input Field	Description
Restrict to codes beginning with:	Enter the beginning of diagnosis or procedure code into this window. You can just enter a few letters from the beginning of the code and press Find to see a list of actual complete codes with their descriptive names. For example “B2”.
	When browsing in the hierarchical tree this field is updated when you have selected an item at the lowest level of the classification hierarchy.
Find text (full text search)	Enter the word(s) you like to match from the diagnosis or procedures codes. Only one phrase can be entered simultaneously. For example: “heart”. If you enter both code and text only diagnoses or procedures than begin with the given code AND contain the given text are retrieved.
	You can alternatively enter two different texts. In this case enter the other text in the text entry field below the primary text entry filed. When using two texts you must further select how to interpret the search criteria. The alternatives are: AND = both given texts must be found (in the same description), OR = one or both given texts must be found and NOT = the first but not the second text must be found.
Exact match whole word	This option can be set independently for the texts to be searched for. If this is set then only whole words and considered, not fractions inside other words.

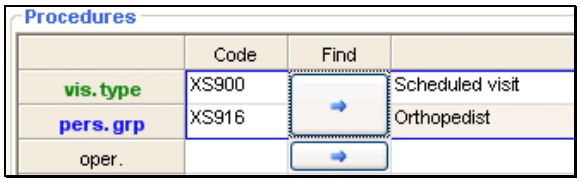
Here are the buttons and how they are used in this window:

Button	Description
Reset	Clear all search criteria and collapse the hierarchical tree to top level.
Find	Performs the query for the codes or names currently entered into the 'Find code' and 'Find text' criteria fields. This operation is usually very quick and takes some seconds to complete.
Select	Press Select button after selecting a row (a diagnose or procedure) in the Search results window. This will automatically transfer the code into the VisualDRG main input form.
Print	Print the results of the search to the default printer.
Help	Display help information describing the functionality of this window.
Close	Pressing this button will close the Find window and return you into the main input window.

Primary care DRG grouping mode

If you have activated Primary care grouping mode in VisualDRG settings then procedure data entry works differently because then always specific fixed codes must be used for the 1st and for the 2nd procedure indicating ***visit type*** and ***personnel group*** involved.

This function is specifically tailored to be used with so called SK-OP Swedish DRG version (*Sekundär klassificering i öppenvård, Secondary classification in primary health care*) but it's applicable to any similar DRG version.



When using this mode the find function for the first two procedures doesn't open normal Find windows as described before but a special windows where only few fixed codes can be selected. Select values and click OK.

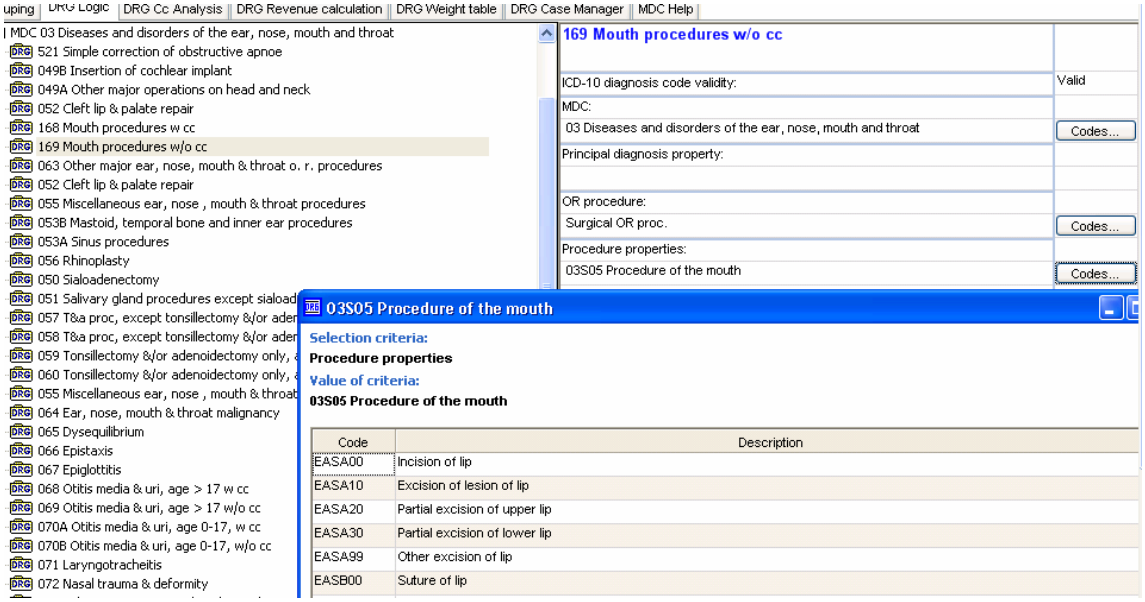
The grouping result is not affected by primary care DRG grouping mode but this mode is just a convenience feature for easily entering the right codes.

In addition to these two codes with fixed meaning you can enter also further procedure codes (#3…).

DRG Logic

In this page you first select a MDC and DRG from the DRG derivation rules database and then you can examine the grouping rules that lead to the selected group. You can activate this window also by clicking small arrow button next to DRG output field in the **DRG Grouping** window. By using this button the DRG rule database is automatically searched for the first occurrence of the DRG that is active in the synthesis window.

Note that for some cases the actual derivation "path" may differ from this as some DRGs may exist in many locations in the logic tree.



How the DRG Logic window works:

1. First, select the MDC and click once the MDC folder left to the MDC description. DRG level will be expanded for this MDC. Note that the DRGs are in the order of their appearance in the logic table which may be different from the order defined by DRG number.
2. Then, select the DRG under the selected MDC and double click on it. You see one or more rules that can lead to this DRG.

   Alternatively you can search DRG with search function above MDC tree. Select the DRG from the drop-down list or enter a DRG code or part of DRG name and click **Find** button. You can see rules that can lead to the first matching DRG.
3. If there is more than one rule associated with this DRG then you can move between the rules by using **Next** and **Previous** buttons. In this case text "Rule: X/Y" is displayed at the upper right corner of the window where X=number of this rule and Y=total number of rules (for this DRG in this MDC).
4. Rule details are displayed on the right side of the window. Please note that the some DRGs may exist under many MDCs (such as 470 "Ungroupable") and there may be several rules for one DRG.
5. Click on ">" on the right side of the window in order to see listing of all the diagnosis or procedures that have the specified property or belong to the specified category.
6. You can collapse MDCs by clicking on the folder sign again. You can have simultaneously open one or many MDCs.

Here are the buttons and how they are used in this window:

Button	Description
Print	You can use this button to get a printed report on the data currently in the form. The report will include all of the fields. If there are more than one Rule associated for this DRG (in this MDC) then you can select whether to print the active rule only or all rules (one per page).
Copy All	By pressing this button you can quickly transfer the contents of all of the fields into the Windows system clipboard.
Next	Move to the next rule within the selected DRG.
Previous	Move to the previous rule within the selected DRG.
Help	Pressing this button will activate the context sensitive help.

Properties and categories window

You can activate this window by pressing ">" buttons right to the properties and categories in the DRG logic window. All the diagnosis or procedures that have the specified property or that belong to the specified category are retrieved and listed. If you click on the "Operating room procedure" and the selection criterion is "must be" then all the operating room procedures are retrieved. If the criterion is "must not be" then all the procedures that are not operating room procedures are retrieved.

At the top of the window you can see selection criteria and value which is searched for, for example procedures that have procedure property "Pacemaker (cable) implant or replacement." You can browse the listing or print it out by clicking on **Print** button. Use **Close** button to return to the DRG logic window.

About NordDRG grouping rules interpretation

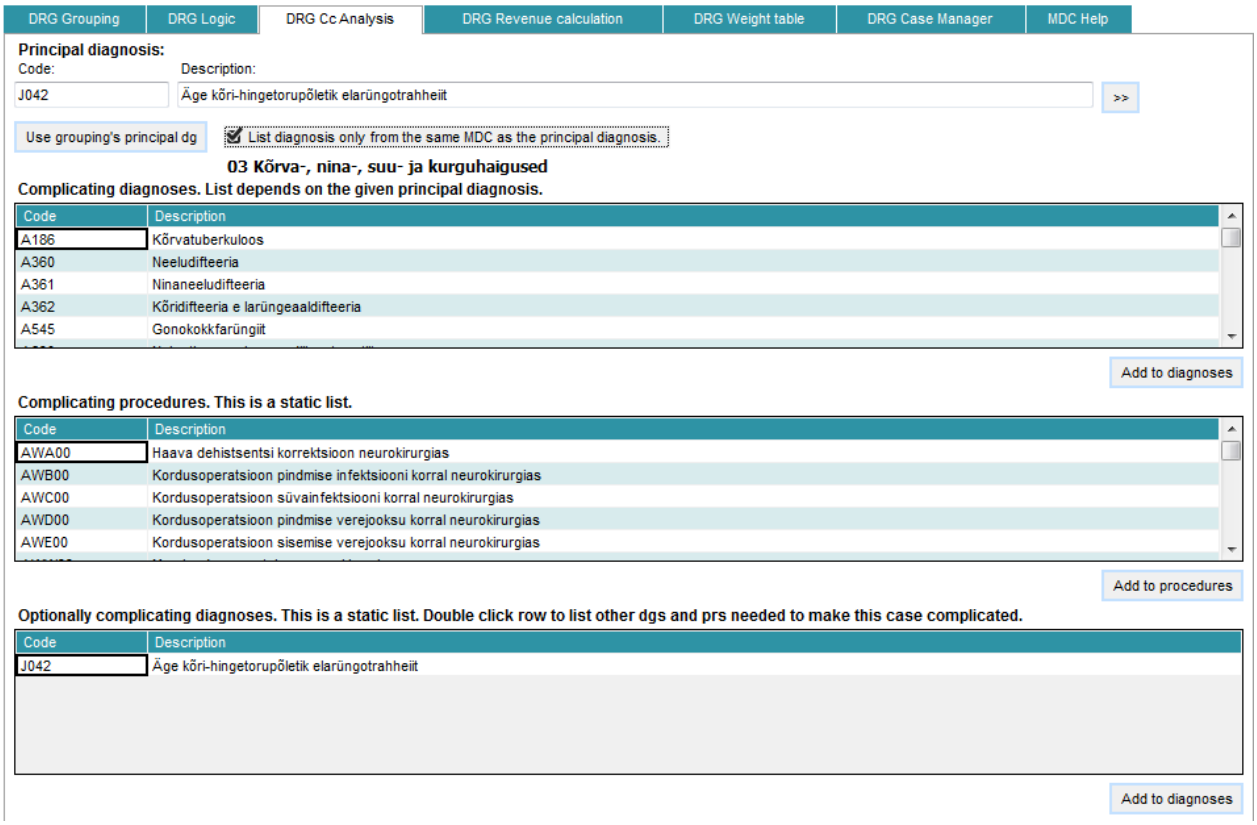
NordDRG grouping rules are interpreted, roughly speaking, as follows. For further details please refer to NordDRG manual.

1. NordDRG is determined based on diagnosis, procedures, age, sex and discharge code. Diagnosis codes and procedure codes are not used directly but indirectly by using diagnosis' categories, diagnosis' properties and procedures properties'.
2. Pre-MDC groups are matched first. If there is no match then the actual MDCs are examined by first determining the actual MDC based on the principal diagnosis and then branching to the right MDC in the decision logic tree. If there are no matches in the actual MDCs then post-MDC rules are examined.
3. The first match determines the DRG. The order of rules in the logic definition table differs from the order of DRG numbers. Where there are rules for several variables (such as for diagnosis category and diagnosis properties) then all the rules must match. Diagnosis category is determined based on principal diagnosis only.
4. A minus sign (-) before a property or category means that the property or category must not match.
5. There are three possible values for OR-property: 1=OR-room procedure, 2=Procedure that is significant in ambulatory care of patients and 3=Procedure that can be performed in casual settings. The last code indicates that the procedure does not affect DRG assignment in the absence of other procedures with either OR=1 or OR=2. Independently of this property the procedure may still have procedure properties and even procedures in 0 groups may therefore affect the assignment. In the logic table this is reflected in the OR-variable that now needs to have 4 defined levels: S = Surgery - The patient has to have at least one procedure with OR=1, N = Non-surgical inpatient - The patient may have one or more procedures with OR=2 but none with OR=1, P = Ambulatory procedure patient - The patient has to have at least one procedure with OR=2 or OR=1, Z = Conservative outpatient - The patient may not have any procedures with OR=1 or OR=2. Empty means as always that the value of OR is not tested.
6. In sex, age and complicated fields if there is no value then these variables are totally ignored.
7. Secondary procedure property: The procedure properties are equal to the procedures properties. In addition to that a special rule applies: if there is a plus sign (+) in this field then the patient must have a secondary procedure. In practice the requirement is that patient has at least two operating room procedures. If there is a minus sign (-) in this field then the patient must not have more than one operating room procedure. If secondary procedure property and the first procedure property contain the same property then the patient must have two procedures, which contain the specified property.
8. A case is complicated, if at least one diagnosis code indicates complication. However, this diagnosis code may not be the principal diagnosis. There are also exceptions for this rule: Every complicating diagnosis has an exclusion list, and if the principal diagnosis is a member of the list, the case is not complicated. Some diagnosis codes do not complicate the case by themselves; they need another specified diagnosis code to complicate. Again, this diagnosis may not be the principal diagnosis. Note: you cannot examine complication rules in VisualDRG.

It's very important to note that when browsing the DRG rules database the rules are interpreted in the order of their appearance. Thus, it's not just enough to examine one particular DRG but keep also in mind that in order to enter in this DRG the input data should not have lead to any previous DRG in the order they are listed in the rules database.

DRG Cc analysis

This function is used for examining which diagnosis or procedure codes cause the case to be complicated (CC = complications and commodibities) or severe complicated (MCC). Complication levels are available only in MCC mode. For many DRG groups there is normal group and complicated group and this complicated group is then more expensive in DRG revenue calculation.



Complication can be caused by secondary diagnosis or by any procedure. Note that even if the diagnoses or procedures cause complication (CC property) there may not be the corresponding complicated DRG group. This depends on the DRG version in hand.

Secondary diagnosis may cause complication. List of complicating secondary diagnosis depend on the selected principal diagnosis.

Procedures may cause complication. List of complicating procedures is static and doesn't depend on the selected principal diagnosis.

In addition to these, there are optionally complicating secondary diagnoses and procedures. These are codes that alone do not make the case to be complicated but they require in addition another diagnosis or procedure code to become complicated.

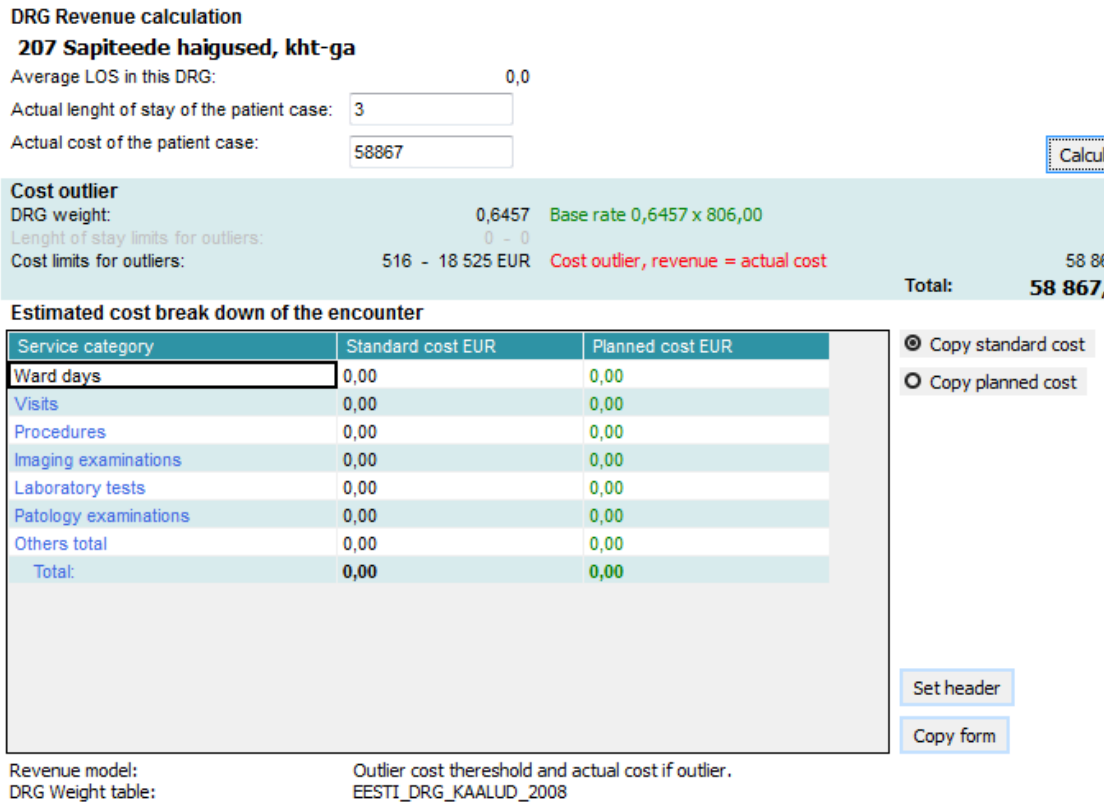
Function of DRG Cc analysis is very simple: enter principal diagnosis and VisualDRG displays then codes that make the case complicated. You can enter the dg code manually, select it by using find function equal to find function in DRG Grouping or you may click a button for copying the principal diagnosis from DRG grouping page automatically.

DRG Cc analysis works only in Prodacapo VisualDRG Professional version.

DRG Revenue calculation

In this page you'll have a simple revenue calculation for the resulted DRG based on actual LOS and actual cost of the patient, current price of DRG equivalence point and the outlier limits for the DRG.

You can set your local DRG equivalence point price and your local DRG weights and outlier limits in settings. **DRG weights and limits included by default should be seen merely as a demo material and they are NOT a part of the certified DRG grouper.**



This simple DRG revenue model works as follows. Please note that your actual DRG revenue calculation and reimbursement may differ from this.

- If actual cost and actual LOS are both inside the outlier limits then DRG revenue = DRG weight x point price.
- If actual cost is greater than outlier limit then DRG revenue = DRG weight x point price + actual cost exceeding the outlier limit.
- If actual LOS is greater than outlier limit then DRG revenue = DRG weight x point price + daily rate x outlier days.
- You may have outlier limits defined for both cost and LOS and they may include or exclude lower limits.

In the settings you can select between common Finnish or Swedish model. The Finnish model includes also lower outlier limits for length of stay and actual cost and also estimated cost break down with a print-out option is included only in the Finnish model.

You can update the figures by entering the actual cost and actual LOS in the input fields at the top of the page and then pressing Calculate price. DRG is selected based on the DRG resulted from the previous grouping and it cannot be

changed here. LOS is initialized based on the LOS entered in **DRG grouping** but you can edit it freely here.

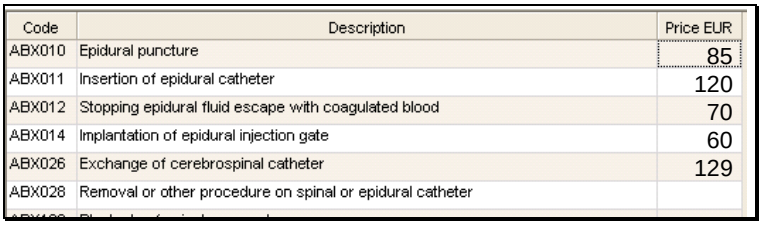
Using procedure based DRG pricing

In addition to DRG weight table based revenue calculation procedures can be priced directly. This requires the following.

- You have loaded You procedure price list in VisualDRG's database by using function found in Tools menu. This price list contains an absolute price for each procedure code.
- You must activate price setting per procedure in settings.

When these conditions are met then VisualDRG works as follows:

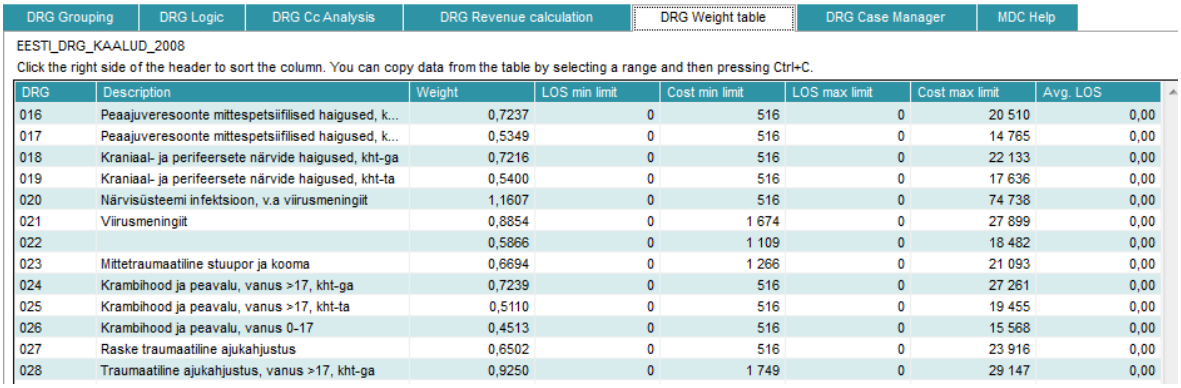
- Price for each procedure is displayed in Find function after procedure's name in a new column.
- Price for each procedure is displayed in DRG Grouping after procedure's name in parenthesis.
- Sum of the prices of the selected procedures is displayed in DRG Revenue calculation in planned cost column in procedures row and user can select whether to use this cost or DRG standard cost in this case.



Code	Description	Price EUR
ABX010	Epidural puncture	85
ABX011	Insertion of epidural catheter	120
ABX012	Stopping epidural fluid escape with coagulated blood	70
ABX014	Implantation of epidural injection gate	60
ABX026	Exchange of cerebrospinal catheter	129
ABX028	Removal or other procedure on spinal or epidural catheter	

DRG Weight table

In this page you can browse you current active DRG weight table.



DRG	Description	Weight	LOS min limit	Cost min limit	LOS max limit	Cost max limit	Avg. LOS
016	Peaajuveresoonte mittespetsiifilised haigused, k...	0,7237	0	516	0	20 510	0,00
017	Peaajuveresoonte mittespetsiifilised haigused, k...	0,5349	0	516	0	14 765	0,00
018	Kraniaal- ja perifeersete närvide haigused, kht-ga	0,7216	0	516	0	22 133	0,00
019	Kraniaal- ja perifeersete närvide haigused, kht-ta	0,5400	0	516	0	17 636	0,00
020	Närvisüsteemi infektsioon, v.a viirusmeningiit	1,1607	0	516	0	74 738	0,00
021	Viirusmeningiit	0,8854	0	1 674	0	27 899	0,00
022		0,5866	0	1 109	0	18 482	0,00
023	Mittetraumaatiline stuupor ja kooma	0,6694	0	1 266	0	21 093	0,00
024	Krambihood ja peavalu, vanus >17, kht-ga	0,7239	0	516	0	27 261	0,00
025	Krambihood ja peavalu, vanus >17, kht-ta	0,5110	0	516	0	19 455	0,00
026	Krambihood ja peavalu, vanus 0-17	0,4513	0	516	0	15 568	0,00
027	Raske traumaatiline ajukahjustus	0,6502	0	516	0	23 916	0,00
028	Traumaatiline ajukahjustus, vanus >17, kht-ga	0,9250	0	1 749	0	29 147	0,00

The fields displayed are:

- DRG code
- DRG description
- Relative weight of the DRG
- Outlier limits for LOS and actual cost in revenue calculation.
- Average length of stay in days (for information)
- Average cost break down in this DRG, fraction (%) of costs: ward stay, outpatient visits, procedures, imaging examinations, laboratory tests, pathological tests and other services and costs total.

You can sort the table by clicking on the header of the table. If you sort by description alphabetical ordering is used.

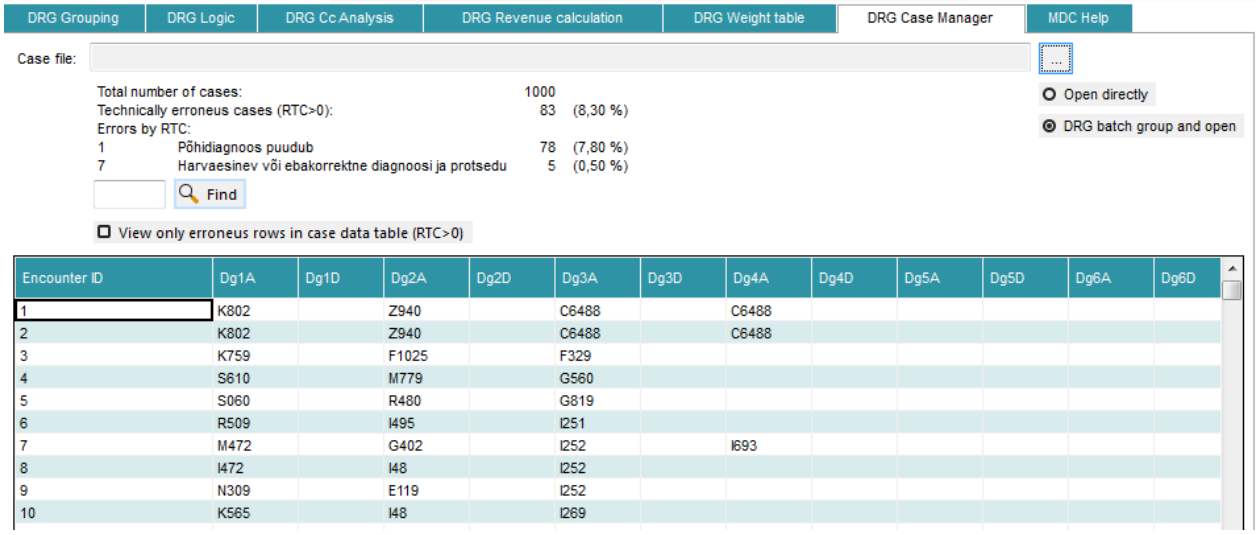
You can update your DRG weight table and outlier limits. **DRG weights and limits included by default should be seen merely as a demo material and they are NOT a part of the certified DRG grouper.**

When using the Professional version of VisualDRG You can import and use your own actual DRG weight tables instead of the demo table.

DRG Case Manager

DRG case manager is used to handle actual patient data files. You can open and save (edited) patient case files by using this function. Furthermore, you can batch group the whole input file prior to opening the data in VisualDRG.

Professional edition of VisualDRG allows all file operations (open, save) with any data file. Standard edition allows only file operation with the demonstration file supplied. You must have VisualDRG Professional edition for grouping and using actual DRG data files.



Control	Description
Case file:	Enter or select (by pressing […] button) the file name containing the DRG data.
Open directly	Use this option if the file selected already includes DRG (and MDC, RTC) fields. The suggested file extension for such files is *.DRG but the file extension doesn't affect the functionality.
DRG batch group and open	Use this option if the file selected doesn't included DRG (and MDC, RTC) fields. The suggested file extension for such files is *.TXT but the file extension doesn't affect the functionality.
View only erroneous rows in case data table (RTC>0)	Filter erroneous cases. Counts and percent proportions of erroneous cases by RTC are told above the control. Note that scrolling in filtered case table works best with mouse wheel.
Open…	Select and open the DRG case file. The function is equal to pressing […] right to the file name.
Save	Save the (edited) cases in the same file from which they were opened or most recently saved to.
Sava As…	Save the (edited) cased in another file by using another file name.
Select case	Select the case (row) where the current table cursor is and copy its information to DRG grouping page and activate that page. You may also double click on the row for the same function.
Key F2 or any key	You can edit directly the data in this page. When table is active pressing any key overwrites the current cell. Pressing F2 goes to cell edit mode. Press then TAB or ENTER to move to the next cell on the right.
Click table header	You can click the table header for sorting the table in any format. It's easy to find for example cases where RTC > 0 or cases with a specific diagnosis or free text comment for further

processing.

Diagnoses are parsed in two different fields: dg#A (“asterisk”) and dg#D (“dagger”). Use these if you have diagnosis pairs. Use field dg#A if you have only one diagnosis code.

Input and output file format for DRG Case Manager is specified in Appendix C of this document.

MDC Help

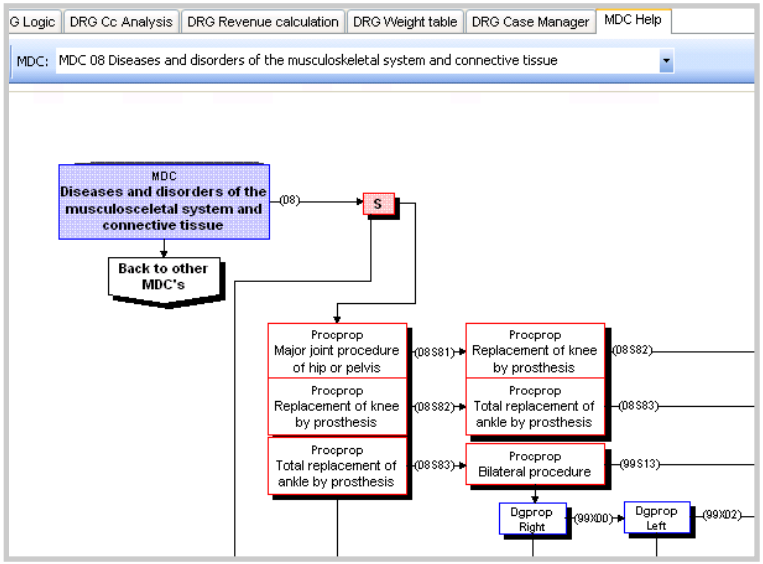
MDC Help is an alternative way for examining DRG rules in VisualDRG in addition to DRG logic. DRG analysis builds directly on technical DRG logic definition table while DRG manual presents the logic as separate flowcharts.

You can browse DRG definitions manual by selecting Help / MDC help and then selecting MDC or starting page (contents). Alternatively you can click small arrow button next to MDC result field in DRG Grouping page to jump directly to the resulting MDC.

Also directly in the browsing page you can change MDC from the drop-down list.

DRG definitions manual is partially interactive and you can for example list all diagnoses belonging to the category in question by clicking on the category label.

Please note that all versions of VisualDRG or NordDRG do not necessarily have or do not contain DRG definitions manual. Also, you need to have Internet Explorer installed in your work station when using this function and also a working network connection because manuals are accessed from Web (for example via NordDRG Web pages of Nordic Centre for the classification of the diseases or elsewhere, depending on DRG version).



Main menu functions

File menu

File menu contains the following standard commands.

Command	Description
Open…	Select and open a DRG case file to DRG Case Manger.

Save	Save the current contents of DRG Case Manager.
Save As…	Save the current contents of DRG Case Manager in another file.
Print…	Print the current contents of DRG grouping or DRG logic page depending which of these pages is active.
Print Setup…	Open standard Windows Printer setup.
Exit	Close and exit from VisualDRG

Settings menu

Update descriptions

Under this menu you'll have sub menu items for all descriptions registers in VisualDRG's local database. Note that all the descriptions are not used in all DRG versions.

You can for example replace the DRG names included with your own DRG names. After you have selected the register you must select the name of the file, that contains the codes and the corresponding descriptive names.

VisualDRG contains very flexible functionality to update the registers in the VisualDRG database. The registers contain codes and descriptive names for the input data fields such as diagnoses and procedures.

File format for registers is specified in Appendix A of this manual.

Manage DRG weight tables

Importing own DRG weight tables is possible only in the Professional version of VisualDRG.

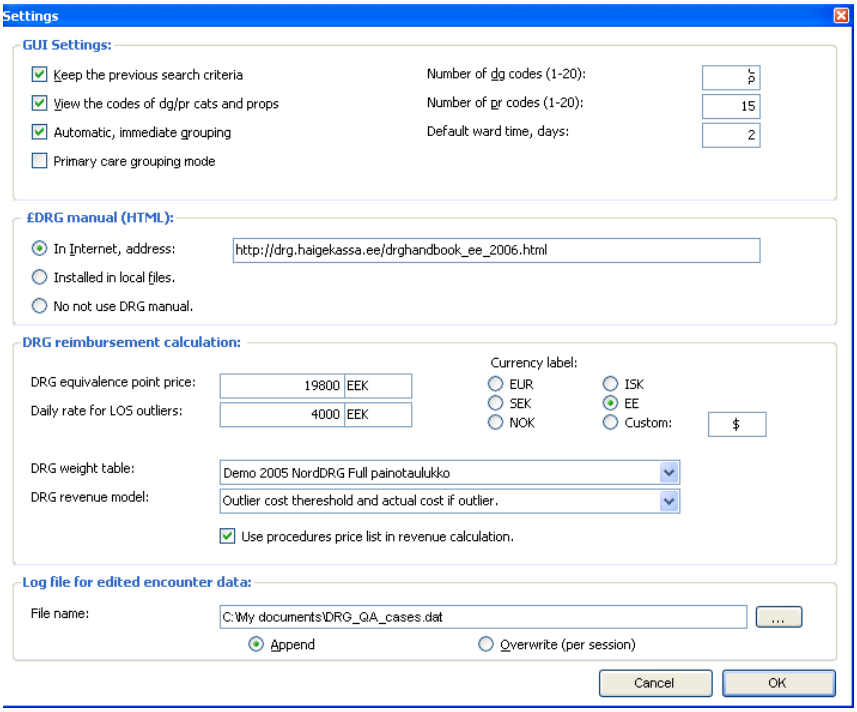
By using the sub menu items under this menu you can import new weight tables from text files or delete weight tables. The functions are:

Command	Description
Import DRG Weight table…	First, you'll be prompted for a text file name containing the weight table information. If the file format is valid then it's imported in VisualDRG and you can enter a descriptive name for the table. It's suggested to include the origin and annual version of the table in the description. You can have multiple weight tables imported. You select the actual, active weight table used in settings.
Delete DRG Weight table…	You'll be prompted to select some of the imported weight tables and it will be deleted. Do not delete the current, active, weight table.

File format for weight tables is specified in Appendix B of this manual.

Settings

You can change the parameters of the VisualDRG in the Settings menu. All changes are saved for further usage.



Here are the settings and their descriptions.

Setting	Description
Keep the previous search criteria.	If this setting is selected VisualDRG will remember code and full text search criteria from the previous searches. For example if you have limited the diagnoses to some cardiac diagnoses then these are retrieved automatically when you next time open find window for diagnoses.
View the codes of dg/pr cats and props.	View diagnosis/procedures category/property codes in analysis window. Codes are not very relevant outside DRG grouper but they can be useful if you are referencing to the DRG Definitions Manual. On the other hand codes reserve room and thus there will be a little less room for the descriptive texts.
Automatic, immediate grouping.	If this option is selected the DRG grouping takes place immediately as You enter or edit input data without the need for clicking Group button.
Primary care grouping mode	Set a special mode for activating a helper function for entering standard codes required in some primary case DRG groupings.
NordDRG CC mode (MCC/CC)	If this option is selected program is in MCC mode and two level of complicating diagnosis is in use (complicated CC and major complicated MCC). If Your NordDRG version in hand doesn't include MCC groups then this function has no effect in practice.
Number of dg codes	Enter how many diagnosis codes (at most) you need. This setting affects the user interface but not the input/output file formats.
Number of pr codes	Enter how many procedures codes (at most) you need. This setting affects the user interface but not the input/output file formats.

Setting	Description
Default values for DRG related patient information	You can change the default values to better reflect Your patient cases, for example by setting the default sex to female.
DRG manual in Internet, address.	If You select this option VisualDRG retrieves HTML DRG manual from the Internet from the address specified.
DRG manual installed in local files.	This option causes VisualDRG to use locally installed DRG manual files. You must have selected to install local DRG manual files during setup in order to use this alternative. Not all DRG versions include HTML manual files.
Do not use DRG manual.	This option inactivates VisualDRG's DRG manual functions.
DRG equivalence point price:	Enter the price for DRG revenue for weight 1,000. The point price is presented with four decimals.
Daily rate for LOS outliers	Enter the amount of extra revenue for each day exceeding the outlier limit.
Currency label:	Select your currency or enter a custom value. There are no currency conversions but this setting affects only the GUI.
DRG weight table	Select which DRG weight and outlier limits table you are using. You can import custom tables in addition to table(s) already included in VisualDRG.
DRG Revenue mode	Select the Finnish or Swedish revenue calculation type.
Use procedures price list in revenue calculation.	If this is selected then each procedure is attached to a price and this price (sum of prices) is used in DRG revenue calculation instead of RVUs for procedures.
Log file for edited encounter data, file name:	Enter the file name that contains the changes made to cases.
Append / Overwrite	Select whether the changes are appended (added) at the end of the selected file or is the selected file overwritten (all old contents are deleted) during this VisualDRG session.

Create VisualDRG database

This function is used for importing DRG definition tables during technical maintenance of VisualDRG. You cannot upgrade VisualDRG for supporting a new DRG version by using this function.

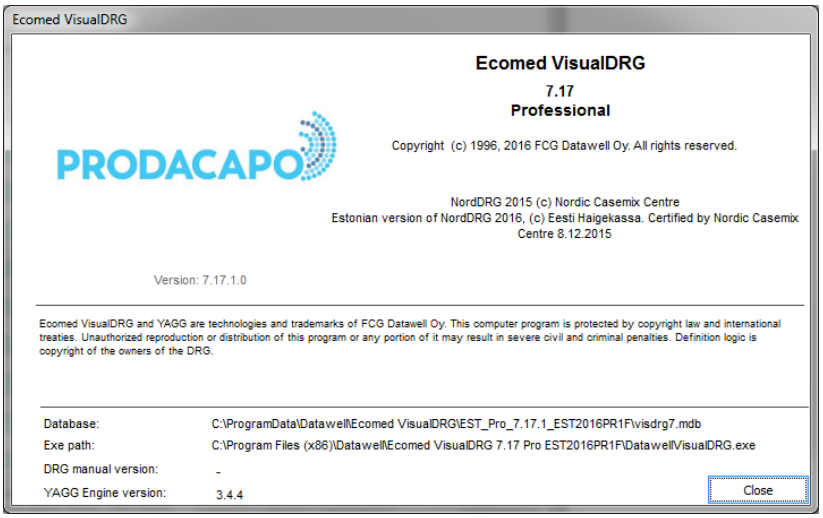
Help

VisualDRG offers extensive on-line help. In fact, the complete text of this user's manual is available just a mouse click away. Here's the summary of the different ways of accessing the help in the Help menu:

Menu Choice	Description
VisualDRG User's Manual	Browse VisualDRG User's manual in PDF format.
MDC Help	Select MDC from sub menu and then the DRG documentation is opened for browsing for this MDC.
About...	Display information about the application.
Prodacapo Web site	Open Prodacapo Web pages

About…

The last choice in this menu displays the About window which will show the program version.



You can check version information in About box:

- VisualDRG application version
- Whether you have the Professional edition or standard edition of VisualDRG
- DRG definition version and HTML manual version (if any)
- NORDDRG OLE API version
- Full paths to the database and application.
- Status of FCG Prodacapo grouper certification.

Prodacapo Web site

You are welcome to visit FCG Prodacapo's web pages. From these you'll find relevant information about FCG Prodacapo's products and lists of frequently asked questions (FAQ).

Command-line options

You can use the following command line options in VisualDRG by adding them to the VisualDRG short-cut on your desktop or by using Windows command prompt and by launching `ProdacapoVisualDRG.exe` with these options.

Command line option	Description	Example
`-lang` <*xxx*>	Select a different user interface language xxx, where xxx is the language abbreviation: ENG=English, FIN=Finnish and SWE=Swedish. Default language (w/o this option) is determined by your DRG version (Finnish for Finnish NordDRG versions etc.). Note that only menu texts etc. are affected and DRG and diagnosis names etc. are always based on the current DRG version.	`ProdacapoVisualDRG -lang fin` Launch VisualDRG in Finnish.
`-autoimport` <souredir> [<targetfile>]	Import DRG definitions from definition tables in <sourcedir> to VisualDRG database in <targetfile>. Without <targetfile> definition VD's default database file is used.	`ProdacapoVisualDRG -autoimport X:\DRGDefTablesFin2011 C:\VD75\visualdrg7.mdb` Import DRG definition tables from the given path to the given VD database.

Appendices

Appendix A: File format for register files

You can update any register containing descriptive names any codes used in the DRG version on hand for both input fields and output DRG fields.

Go to Settings / Update registers for accessing this function.

The file format must be a comma separated text file where the fields code and text are surrounded by double quotation marks as follows:

```
"code","text"
```

Notes:

- Each line must contain one code-text pair.
- The codes must match exactly to the actual codes in use, including possible leading zeroes.
- The codes and descriptive names must be surrounded with double quotes and the fields must be separated with comma.
- Double quotation cannot exist inside descriptions and they must be replaced with single quotations, if necessary, by using a text editor for example.
- File must contain ISO-8851 coded characters.
- Lines must be separated by a CR+LF pair.
- Codes must match exactly with possible leading zeros, spaces and other punctuation.
- Furthermore, codes must be unique and an error message indicating the erroneous line number and code will be displayed if there are duplicate codes in the import file.
- The internal technical maximum legth for names is 80 characters but in practice it's advised not to use descriptions longer than 50 characters because long descriptions get cut on low resolution screens.
- Please examine carefully the existing diagnosis register by using Find window for details on how to present diagnosis codes and pairs.

Sample of a register import file (few lines, DRG in Finnish in this example):

```
"001A","Kallonsisäisen kasvaimen leikkaus"
"001B","Kallonsisäinen muu verisuonileikkaus"
"001C","Kallonsisäisen verisuonimuutoksen leikkaus"
```

Appendix B: File format for DRG weights and outliers limits

You can import DRG weights by using menu command Settings / Manage DRG weight tables / Import DRG weights.

Weights can be imported in the Professional version of VisualDRG only.

The file format must be a tab separated text file where the fields drg code, weight, lower LOS limit, lower cost limit, upper LOS limit and upper cost limit are formatted as follows:

```
DRG \t weight \t lowloslim \t lowcostlim \t
hiloslim \t hicostlim \t alos \t wardcost \t
outpatcost \t imgcost \t labcost \t pathcost \t
otherstotalcost
```

Marking " \t " stands for a TAB character in the format above.

Notes:

- Each line in the file must contain information for one DRG.
- Weigth must use a period (.) as a decimal separator and no negative weights are allowed.
- For weight the number of decimals must be at most four.
- Range for LOS limits is 0…9999.
- Range for cost limits is 0…99999999.
- Use zero if some limit is unused. Use zeroes for all values if you do not use lower limits or LOS limits at all for example.
- Costs are fractions of total cost. If imaging cost is 18% of the total cost in this DRG, then enter 0.18.

Sample of a weight table import file (few lines):

001	4,5450	0	0	34	531900
002	2,9732	0	0	30	456700
003	4,1741	0	0	32	499100
004	3,4824	0	0	41	470400
005	2,4332	0	0	14	175600

Appendix C: File format for DRG case data

Own DRG patient case data can be imported and grouped in the Professional version of VisualDRG. Standard version allows you only to open the demo data file provided with the application. Files used when opening data in DRG Case Manager must obey the file format specified here. Also output is saved in the same format when the user selects Save or Save As. Independently how number of diagnosis and procedures are set in settings the number of diagnosis and procedures must always be 20 in the files. DRG case data files are TAB separated text files containing the following fields.

- **Encounter ID** is the unique case identifier in this file. Updates are performed by this key only and uniqueness violation results in erroneous updates. The length of this field must be at most 20 characters. You can use both numbers and text.
- 20 x 2 **diagnoses** fields: use diagnosis codes excluding any punctuation (+,*,.,&,#). So called *diagnosis pairs* are stored as asterisk-dagger pairs where the first code is the asterisk code and the second is the dagger code.
- 20 **procedures** codes: use procedures codes excluding any punctuation.
- **Sex** of the patient: 1=male, 2=female, 3=unknown.
- **Age** of the patient in days: integer value.
- **Discharge** type of the patient: 2=transferred to another hospital, 3=left against medical advice (patient escaped), 4=dead, 1=any other including normal discharge to home or unknown.
- **Length of stay**, integer value, in "gross days", for example 1.1.2006-1.1.2006 = 1 day, 1.1.2006-2.1.2006 = 2 days, etc.
- **Free text comments**, at most 200 characters, reserved for own use, can be viewed and edited in VisualDRG but doesn't affect DRG. You can store for example real patient number, ward unit's organization code and/or doctor's id or name here.
- Actual patient case **cost**, integer value. Use 0, if this in unknown.

The following fields are included always in **output file** when saving case data from VisualDRG. The following fields must be included in input data file only if you use option "Open directly" in VisualDRG. If you use option "Batch group and open" then these fields **must not** exist in the file and thus the number of fields is thus less.

- DRG (DRG code)
- MDC (MDC code)
- RTC (grouping error code)

Sample DRG case data file including fields DRG, MDC and RTC with just two sample lines from the beginning of the file. Lines are wrapped in this sample but in actual file each record must be in one line. Tab characters are presented as one white space in this example.

```
304 K572  C1879    C1871                                                  1 12243 1 2 Free
text comment 189 6 0

305 N40                                    XKD00 XKW99                  1 27324 1 4 Free
text comment 349 12 0
```

Appendix D: File format for hierarchies

For diagnosis and procedures one is able the make code selection by using a hierarchical tree view. For supporting this feature also group titles and sub-titles are required. Current hierarchies are included in VisualDRG for the DRG version in question but there is a file interface for updating these if necessary.

File must be a tab separated text file containing the following fields:

- Code: at most 20 char long unique identifier, also concatenated to text when displaying to the user.
- Text: actual text, at most 100 characters, visible to the user.
- Level: level in hierarchy: 1=top,2=below top etc.
- Leaf: 1 if this is a leaf, from which actual code search takes place by using the code of the actual item, otherwise 0.

Note that actual diagnosis or procedures codes at the lowest level used in actual DRG grouping are NOT included in this file but group labels only. Actual diagnosis and procedures codes and texts are imported by using general register import files as specified in appendix A.

Lines must be sorted such that all children of a code are immediately below parent and the order is thus equal to the ordering in the fully expanded tree. Note that this sorting may be different from strict sorting by code alphabetically.

Sample file with just a few lines from the beginning of the file. Lines are wrapped in this sample but in actual file each record must be in one line.

```
A00-B99  Vissa infektionssjukdomar och
parasitsjukdomar     1     0

A00-A09  Infektionssjukdomar utgående från mag-
tarmkanalen    2     0

A01      Tyfoidfeber och paratyfoidfeber     3
   1

A02      Andra salmonellainfektioner   3     1

A03      Shigellos (bakteriell dysenteri, rödsot)
   3     1

A04      Andra bakteriella tarminfektioner   3
   1

A05      Annan matförgiftning orsakad av bakterier
   3     1
```

Glossary of Terms

NordDRG-O

A NordDRG version which has been extended to cover outpatients.

FCG Prodacapo Finland Oy

FCG Prodacapo Finland Oy is a Finnish software technology company specialized in healthcare applications. FCG Prodacapo is the original manufacturer of the **Prodacapo Groupers** and YAGG technology used in producing this release of the grouping software. Prodacapo can be contacted at Prodacapo web site www.prodacapo.com

DRG

Diagnosis Related Group, the primary result from the grouping process of each record.

MDC

Main Diagnosis Category, the major category derived from the primary diagnosis.

RTC

On unsuccessfully grouped records the Return Code gives additional information on why the grouping failed.

YAGG

Yet Another Generic Grouper. A runtime engine and language framework developed by FCG Prodacapo Finland Oy to easily produce very efficiently running portable DRG groupers. Grouper provides several APIs and interfaces for integration.