National Casemix Office

NHS Digital

Summary of Enhancements

HRG4+ 2018/19 Payment Grouper
From:
HRG4+ 2017/18 Payment Grouper

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Contents

Version control:

V1.0 Baseline document first published 24th April
V1.1 Document updated following user feedback (AEPATIENTGROUP - clarification)
V1.2 Document updated following user feedback (Input and output changes - clarification)

HRG4+ Summary of Enhancements - Purpose

The purpose of this summary is to provide an overview of the main changes between the HRG4+ 2017/18 Payment Grouper and the HRG4+ 2018/19 Payment Grouper.

The main changes are to the functionality and interface of the Grouper to make it more intuitive and easier for users to navigate and use.

The underlying database has not changed from LP2017/18 so the design is identical, so users may continue to use the previous product or install this updated new version to benefit from the enhancements.

Changes are broken down by:

- **Grouper Input Changes**
- **Grouper Output Changes**
- **Grouper Software Changes**

This document is intended as a high-level summary to be used to form the basis of further analysis and investigation, rather than a comprehensive list of all differences between grouper releases. Further HRG4+ supporting documentation is available from the National Casemix Office website https://digital.nhs.uk/National-Casemix-Office.

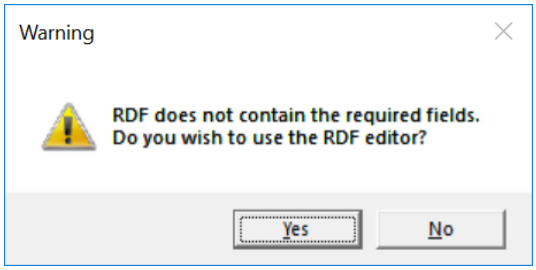
Changes from the HRG4+ 2017/18 Payment Grouper

Grouper Input Changes

There has been an update to the type of input files that can be processed through the Grouper. In HRG4+ 2017/18 Payment Grouper, a file saved as ANSI would be the only file type that would successfully process through the Grouper. In the HRG4+ 2018/19 Payment Grouper, a file saved ANSI, Unicode, Unicode big endian or UFT-8 will process through the Grouper, if the data within the file contains only ASCII characters. If a user tries to process a file which contains non- ASCII characters, then grouping will fail with the message 'Non-ASCII Characters detected'.

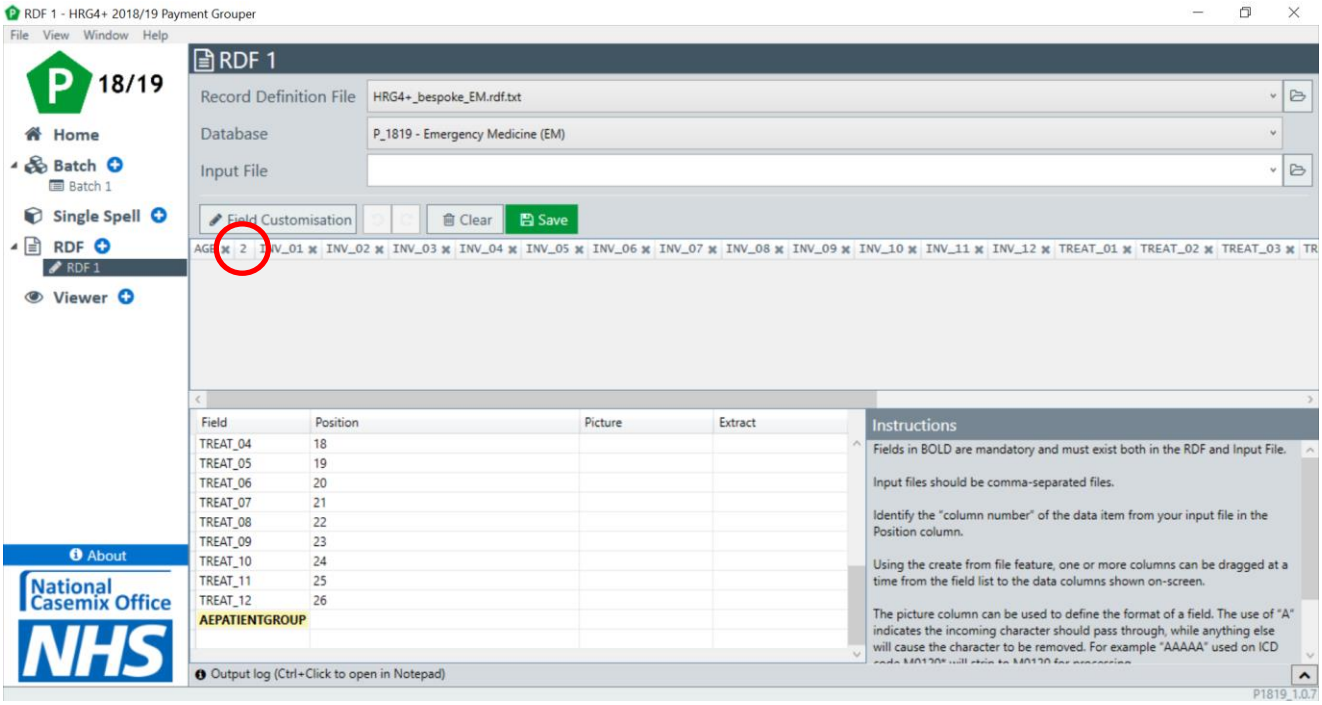
In addition, the field AEPATIENTGROUP using in grouping of Emergency Medicine is now required for grouping purposes, but can be left blank. Users will have to add this to any bespoke RDF's and therefore the field must be included in the input data. This change has been introduced to reflect Data Dictionary requirements and the field is used for tariffing purposes as well as in grouping of VB99Z.

Another new feature is that if an RDF is loaded and it does not contain the required fields necessary for Grouping, users will see the following message.



Users will see this message if a bespoke, i.e. a previously created RDF by a user, so for example one that does not contain AEPATGROUP.

Users are then prompted to use the RDF editing functionality by selecting "Yes" which take you into the RDF editing module, and there you can easily see which fields are missing. These will be highlighted in yellow. This is illustrated in the screen shot below;



The RDF functionality is now quite simple, and in essence all users have to do is “drag” the yellow field up to the preview window to an appropriate location which will then match the data input format.

In this example, the AEPATIENTGROUP can be allocated into field position 2, by dragging up to the circled field, or by simply typing in “2” in the “position” field.

We would suggest to users that the starting point here would be to understand what fields are required, add this into the input data, and then consider creating a new RDF which suits your requirements.

Grouper Output Changes

After publishing the HRG4+ 2017/18 Payment Grouper, it was identified that the output column headers, FCESSCs1-7 in the APC_FCE output file and the output column headers SpellSSCs1-7 in the APC_spell output file, were incorrect.

In the HRG4+ 2018/19 Payment Grouper, these have now been corrected and are now displayed as FCESSC1-7 and SpellSSC1-7 in the APC_FCE and APC_spell output files, respectively.

Trimming of leading and trailing spaces has been introduced into the Grouper, meaning when an input file, containing fields with leading or trailing spaces, is processed via batch or command-line, then these will be removed and the cleaned values will be displayed in the relevant output files.

Grouper Software Changes

Since the publication of the last HRG4+ 2017/18 Payment Grouper, the National Casemix Office (NCO) have been making further enhancements to the Grouper software. The main developments of the HRG4+ 2018/19 Payment Grouper have been to the user interface to make the product easier to use and help users understand how the product can be used in a variety of ways and not simply for batch processing of patient data.

Installation

There have been a number of updates made to the installation wrapper that accompanies the Grouper.

Installation of the Grouper requires Microsoft Windows .NET Framework version 4.5 or above. If .NET 4.5 or newer is not installed, the installer will prompt to download and install it at this stage. If it cannot be downloaded or installed successfully, then the Grouper installation will not proceed. Extra error messages have been introduced to help resolve any issues with the installation process, and we have added a trouble-shooting guide in Appendix A within this document to further assist users who are experiencing problems.

The Sample RDF folder that is installed as part of the installation files has been renamed to Default RDF and the RDF files themselves have been renamed from sample to default i.e. HRG4+_sample_APC.rdf to HRG4+_default_APC.rdf.

The Sample Data file, HRG4+ Admitted Patient Care Sample Test Data.csv, that is installed as part of the installation process has been updated. The file installed in the previous Reference Costs Grouper contained trailing spaces. The updated file has all trailing spaces removed from the diagnosis codes.

Home Page Screen

The Home Page screen has remained largely unchanged from the published HRG4+ 2017/18 Payment Grouper. The only change worth noting is the word (*New..*) next to the Grouper function names have been replaced by hyperlinks.

Batch Processing Screen

There have been a number of updates made to the batch screen to enhance the usability, most notably the introduction of ‘drag-and-drop’ functionality.

The background colour of the Input File and Output File boxes have changed from grey to white and users are now able to drag and drop an RDF or an input file directly into the relevant locations on the Batch Screen. In addition to this, the output file box is now editable allowing users to manual enter the location of where they would like outputs files to be generated.

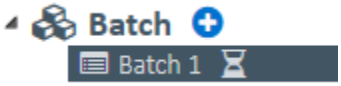
The input and output files boxes now display the full file path locations. This means if a user wishes to generate output files to the same location as the input file, then a user can simply copy the file path location displayed in the input file box and paste into the output box. As the output file box is editable, simply amend the name of the file at the end of the location path to what you want to call your output files.

On the Batch Preview window, where the 'Input data headings' is ticked, RDF headers are now shown as bold and input file headers are surrounded by rounded brackets to help users identify which are RDF headers and which are input file headers.

Where a user tries to process a file, with the file type ANSI but contains non-ASCII characters, then it will fail grouping and state 'Non-ASCII file detected'. If the same file is processed now, then it will still fail grouping but states 'Non-ASCII characters detected'. This provides more clarity to the user that it is an issue with the data in the file and not the file type it is saved as.

A number of icons have been added to the navigation area for Batch, to show users the progress of their batch runs. This is useful when processing a large file and a user navigates away from the Batch Screen, the icons can be used as a guide to say whether the processing has completed, is still running or an issue has been encountered. The icons that are shown are as follows:

When the Batch run is currently processing it shows an egg timer:



When the Batch run has completed processing it shows a tick:

When the Batch run has errored it shows a warning sign:

Record Definition File (RDF): Creation and Editing

The RDF Editor screen has had a number of updates to the screen layout and updates to current functionality to help users create or modify RDFs.

There has been a name change to the file selection function, so it is now called 'Input File' rather than 'Create from file' to align with the naming convention on the Batch screen.

The background colour of the Input File box has changed from grey to white and users are now able to drag and drop an existing RDF or an input file directly into the relevant locations on the RDF Editor Screen, displaying the files full path location.

In the previous Grouper, there was a section called ‘Number of fields’ where a user could amend the number of variable fields for particular databases. This functionality still exists in the Grouper but has been incorporated into the new ‘Field Customisation’ button on the RDF Editor screen.

Undo and Redo buttons have been introduced allowing users to undo a previous action or redo the previous action (up to maximum of 5 changes). In addition to the Undo and Redo buttons a user can use the shortcut combination keys of CTRL+Z (Undo) and CTRL+Y (Redo).

Un-assignment of fields has now been made easier with the addition of functionality in the file preview window so that when a field is dragged into the window, an ‘**x**’ is placed next to each Field name so a user can click on the ‘**x**’ which will un-assign the field.

The yellow highlight that was present on the Position column has been moved over to the Field column to make it clear that it is the field names that need to be dragged up into the file preview window to assign it a position in the RDF.

The application of picture and extract has now been extended to include the PROCODET field and any specification will now be applied to the input file prior to the input file being sorting.

Viewer

The Viewer is now an important module within the Grouper product and as such has had a number of updates to the screen layout and includes new functionality to assist users.

The background colour of the File box has changed from grey to white to indicate to users that they are now able to drag and drop a file directly (in addition to the usual navigation) displaying the files full path location.

Filters have been introduced on the File View window, allowing users to filter on the information displayed. On the top row of the File Viewer window, each column contains a small drop-down arrow, which when clicked, a pop-up box appears allowing users to filter on a particular value. Wildcards of ***** and **?** are supported (multiple and single characters respectively).

A user can filter on blanks by just clicking on the ‘Filter Column’ without entering a value. A user can clear individual filters by clicking on the small drop-down arrow and clicking on the bin icon which resets the column. If a user has multiple filters applied and wants to remove them all, then a user can select the red ‘Clear All Filter’ button, which will remove all filters that are applied to the data.

The Viewer screen now includes a ‘Use file header’ tick box. On first install, this will be defaulted to ticked and will only become visible on screen when a file is selected. When ticked it will display the values from the first row of data from the file and displayed in rounded brackets along with RDF headers in bold (if an RDF is selected). If the file spans over multiple pages in the File View window, then headers will remain visible where this is ticked. If a user unchecks the tick box, then the first line of the file will be treated as a row of data.

A page number box has been introduced allowing users to specify which screen page of data they would like to display rather than having to use the backward and forward buttons.

Cross use of the Viewer and Single Spell

While the use of the viewer has limited values for manipulating large files (due to the display limitations) one specific area of development has been to introduce cross-functionality, whereby a user can now open a file (be it an input or an output grouper file) and they can now double click on a row of data in the File Viewer window which will then open a new Single Spell window with the information populated in the relevant fields.

This is powerful functionality for exploring particular records (or grouper outputs) to understand HRG generation and can be used to manipulate code sequencing or code additions/deletions within the single spell window. It also means that a grouper output can be displayed and any input record can be viewed in single spell very easily. In addition to the existing import into single spell and the new print / export functionality (that is described in the next section) this will enable users to share grouping information much easier and quickly than previously.

We are continuing to develop this functionality and will provide example data that illustrates how all HRG’s within a design can be generated in future releases.

Single Spell Processing

The Single Spell functionality has been the most important area of development since our previous product release, changes to the screen layout and additional functionality have been introduced to help users when grouping individual records and to understand HRG generation.

Screen Layout

The Database and Record Definition File boxes have been switched around, so the logical order is for a user to select a database first which will then automatically populate the Record Definition File box with a default RDF with a defined set of input fields for users to enter data. A user can still choose an RDF first which will automatically detect the relevant Database.

Drag and drop has been introduced to the Record Definition File box allowing users to drag and drop an RDF straight into the single spell screen.

A ‘Field Customisation’ button has been introduced allowing users to change the number of variable fields for certain databases, so the use of a bespoke RDF is no longer required.

Undo and Redo buttons have been introduced allowing users to undo a previous action or redo the previous action (up to a maximum of 5).

The forward button, on the slider bar, has now been moved next to the backward button so users can easily move between episodes.

Exporting and Print Screen

A new function has been added to the ‘Export’ button which allows a user to save the information in the single spell window as a HTML file. The html file displays the information in a format, similar to the single spell window, which users are then able to print off, or ‘save’ and send as required.

In addition, using the right-click button, users can export data into excel in the transposed record format as displayed in the single spell.

Users are still able to use the ‘Export’ button to save the information from single spell as a .CSV file type, by changing the file type from .HTML and this will export the record in the flat file format that is reflective of the input data format as used by the Grouper.

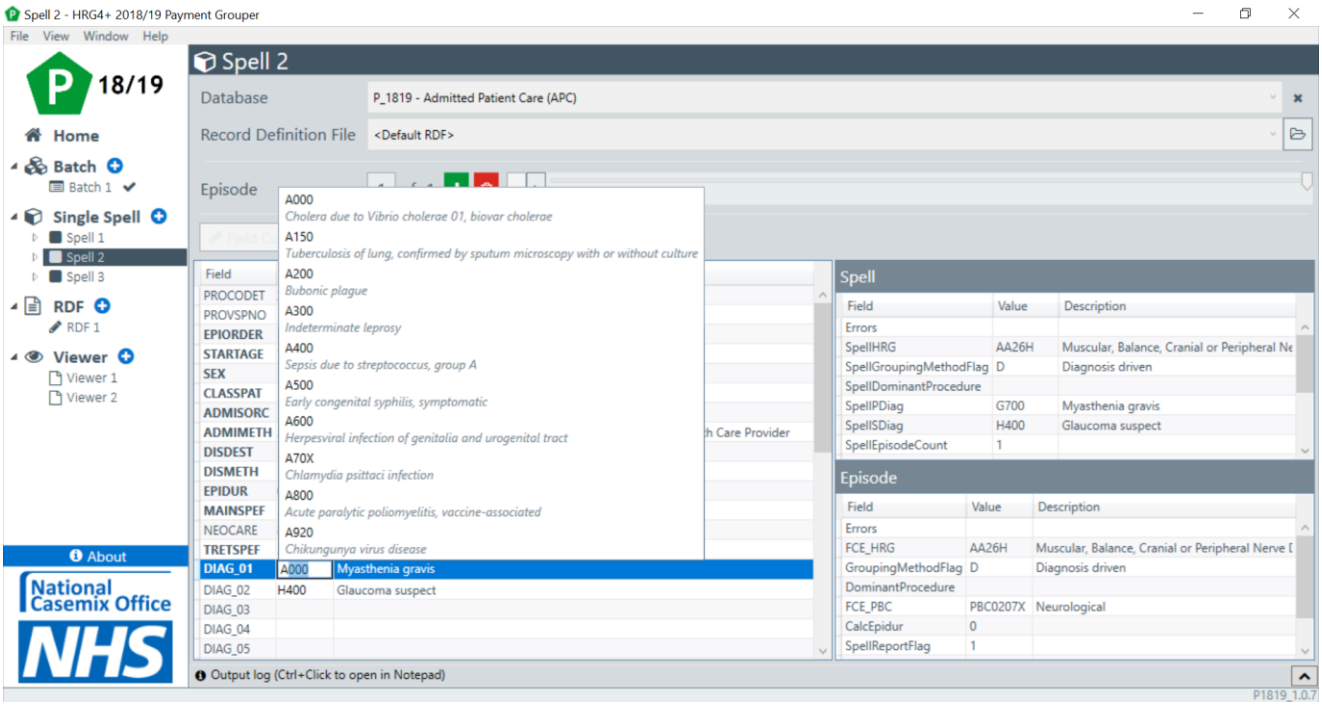
Users already have the facility to be able to copy and paste directly into a single spell window, from Excel for example, and this has now been extended to allow users to Copy and Paste all information within a single spell input or output window, back out. To copy information from a window, highlight all rows using **Ctrl+A**, then either right-click and select ‘Copy (With descriptions)’ or use shortcut keys **Ctrl+Alt+C**. Once copied, a user can then paste the information in another application that supports copy and paste functionality.

Code Auto Complete and Re-sequencing

The single spell input window now contains an auto complete function on certain fields for each of the databases. When a user starts to enter data in one of the value cells where auto complete is applicable, then a list of 10 relevant/matching codes will be displayed along with its description. A user can then select the appropriate code or if they continue typing in the cell, the list of relevant codes will narrow down based on pattern matching.

The Auto-populate function allows users to begin typing and then displays a list of pattern matched values which makes it easier for the users to simply select, or see the options of codes within similar rubrics.

Users can however simply type in (or paste in) values and then press return or click outside the cell to enter the values.



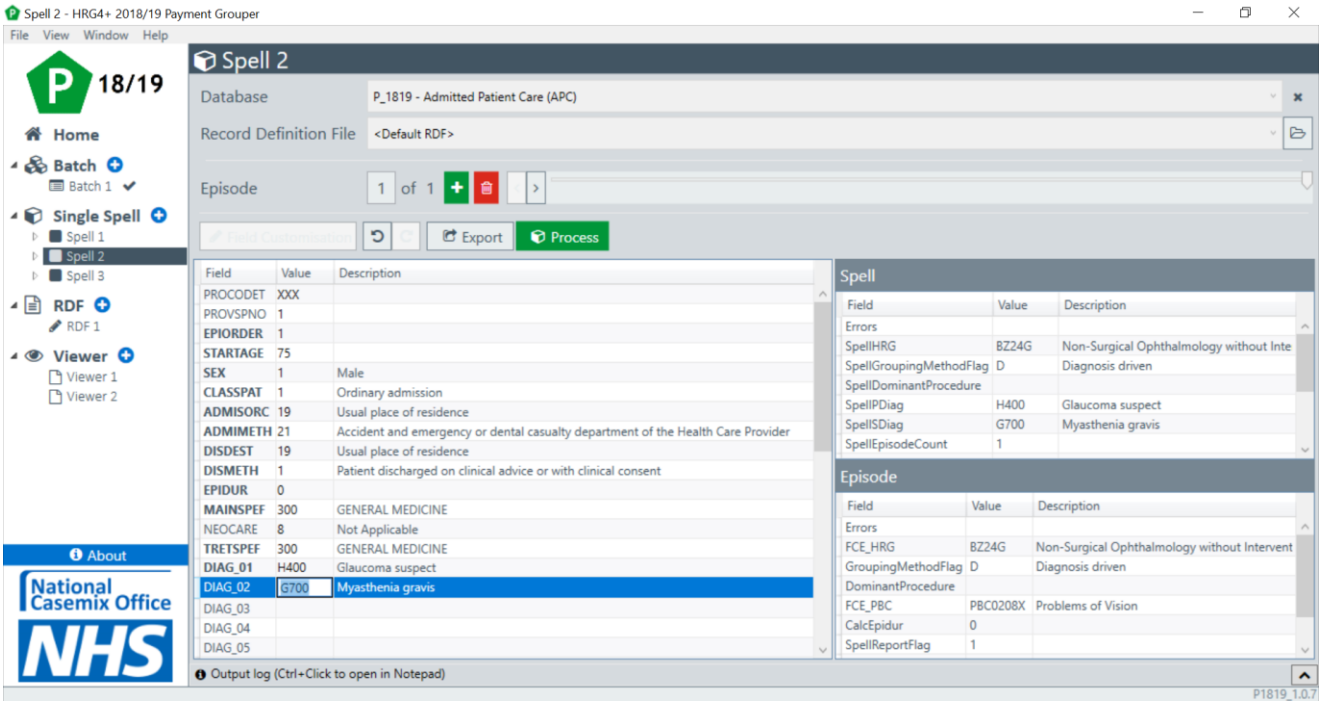
Within the following fields listed below, users can now re-sequence using a ‘Drag and Drop’ facility within single spell.

APC – Diagnosis and Procedure fields
NAC – Procedure fields
EM – Investigation and Treatment fields
PCC – Critical Care Activity Code, Diagnosis and Procedure fields
NCC – Critical Care Activity Code fields

This can be of particular value when considering the coding sequence and its effect upon HRG generation.

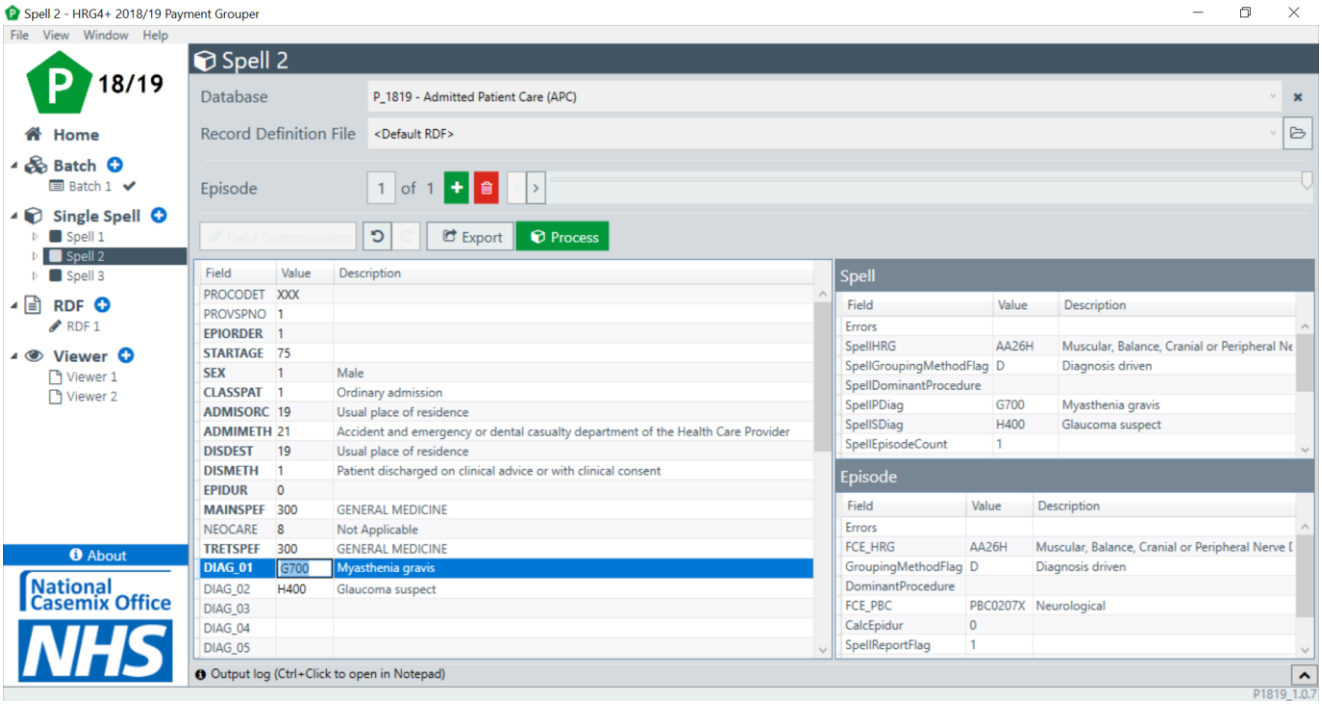
To enable users to simply move codes about from one (same value) field to another, a cell value needs to be highlighted, and then it can be re-sequenced by simply dragging it to another value whose position will then be shifted down.

To drag codes to different positions simply highlight the cell by clicking in the value, it will then be highlighted blue – see G700 below – then drag the cell to the new position.



You can see as the code value is dragged to position to Diag_01 it switches position with H400 which was previously in the position and now the HRG has changed.

This functionality can be used in both the Diagnosis and Procedure fields in APC and well as the customisable fields in the other datasets as listed previously.



Appendix A: Trouble Shooting With Installation

If .NET Framework 4.5 is uninstalled or the Grouper is manually copied to a system without .NET, an error message will appear when attempting to run it: "*To run this application, you must install one of the following version of the .NET Framework: v4*".

If the Grouper is manually copied from a 64 to a 32-bit operating system, the following error message will appear when attempting to run it:
"[*Grouper Path]\MSVCP120.dll is either not designed to run on Windows or it contains an error. Try installing the program again using the original installation media or contact your system administrator or the software vendor for support*" or "*Error: DLL pointer is unloadable: 193*".

If the Grouper is manually copied without including the Microsoft Visual C++ runtime libraries that are installed with the grouper (MSVCP120.DLL and MSVCR120.DLL) an error message will appear when attempting to run it:
"*The program can't start because MSVCP120.dll is missing from your computer. Try reinstalling the program to fix this problem.*" or "*The program can't start because MSVCR120.dll is missing from your computer. Try reinstalling the program to fix this problem.*" or "*Error: DLL pointer is unloadable: 126*"

If the Grouper is manually copied to a system that does not meet the minimum requirements of Vista SP2 the following error message will appear when attempting to run it:
"*[Grouper Path]\GUIShell.exe is not a valid Win32 application*." or "*[Grouper Path]\HRGGrouperc.exe is not a valid Win32 application.*"