



National Respiratory Audit Programme (NRAP)

Importing technical guidance for the NRAP audits

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Introduction

Data may be imported into the NRAP audits provided it meets the relevant dataset rules. Data that does not meet the rules may be rejected or may be partially accepted and added to the database. This guide sets out to outline the technical requirements for successful imports.

Importing - checklist

Importing data requires some careful planning and implementation. Please review the following points before attempting imports:

- Decide if you really need to do import:
 - *They are only suitable for units/services with a high number of cases to import (>50 per month)*
 - *Units with fewer cases will find it easier to enter data directly online with fewer errors*
 - *Typing data into a spreadsheet is not any quicker than entering it directly online*
 - *There are technicalities and details you will need to deal with which can be challenging*
 - *You may need assistance from your IT support service or technical colleagues*
- Review the import dataset specifications and guidance
- Make sure your import data file and data matches the specifications
- Make sure your import data file uses the supplied column headings/labels
- Always review the import results and correct any errors reported
- You should aim to import your data monthly so the audit is up to date

Importing – An overview

To import your audit data:

- Create an import data file with your data according to the import specifications for the audit
- Submit your import data file for processing
- Review the results.

The first step is to create/maintain a suitable import data file containing the data you wish to import. You can import from a text-based 'Comma Separated Value' data file (called a 'CSV' file). These files can be created by external software, such as MS Excel, as a standard data-file. The data must be formatted according to a set of rules, for both the data-file itself and the data within the file:



- A data import file must be of type 'CSV' (Comma Separated Values) 'text' file.
 - The file should contain plain 'text' data, according to the dataset specifications.
 - The filename must have an 'extension' value of '.CSV'
 - Use a comma between fields and a line-feed at the end of each row.
 - If the data value contains a comma, then the data must have quotes around the value
- Your data file must comply with the dataset import specifications for the audit. Please ensure:
 - There is a header/labels row at the top of your spreadsheet. Use the labels we supply.
 - The data columns are supplied in the correct order, ie: 1.1, then 1.2, 1.3 etc.
 - The data matches the column heading/label
 - There are no missing columns or extra columns in the data file
 - The data file does not contain blank lines or blank columns
- Any value you supply must match the import dataset
 - A value matches an acceptable answer or coded value listed in the dataset
 - A date should be a valid date, in the correct format, and be consistent with other dates.
 - A date cannot usually be in the future - all the audit dates should have passed already.
 - A number is between an upper and lower limit

Import data file details

Import file type / import dataset

Be sure that your import data matches the import dataset required for the audit period. Attempting to import data for the wrong dataset will generate many errors and the import will be abandoned.

Import Files

A data import file must be of type 'CSV' (Comma Separated Variable) type 'text' file. You cannot import any other type of file, including Excel 'XLS' or 'XLSX' type files, but you can usually convert files from these formats into CSV files. The file should contain plain 'text' data, according to the dataset import specifications for the relevant audit.

Column headers/headings/labels

The CSV import file must contain a 'header row' - a set of descriptive labels at the top of each data field column usually on the first line or row of the data file above the data values. We supply a file of



headings/labels that you should use in your own files. Either copy/paste the data to your own import spreadsheets or start your import spreadsheet from a copy of the headings/labels data file.

Note: It is important that the column order follows the dataset order given in the import specifications. No columns can be left out, even if the value is not available or missing. If the order is not followed or a column missed, the import will fail. The heading labels row we supply will help you avoid this problem.

Checking your file

A 'CSV' type data file can be checked using either a **spreadsheet** (like Excel) or using a **plain text editor**, (such as Windows Notepad).

When looking at the data in a spreadsheet (Excel):

The data for a single record should be in one 'row' and each field value in a single 'cell'.

When looking at the data in a text editor (Notepad):

The data for a single record should be in one 'line' and each field value should have a comma between each value. Note that editors may wrap long-lines of data on multiple rows on screen and sometimes some or all data may have double quotes around the data like this:

"Smith, John"

Other import data file rules/notes

1. You can choose your own filename, but the file must have an 'extension' value of '.csv' (for example, "Ward2 Nov 2018.csv").
2. Each record in the data must belong to your hospital/service. Usually this means that the first value on any row is your '3-letter organisational code', for example: 'ADD' for 'Addenbrooke's Hospital'.
3. Each record will typically be identified by the patient identity (NHS number) and an important date, such as an 'admission' date. Refer to the audit specification for the details of the relevant audit. Any existing records with the same details in the import will be overwritten by the import process when the data is different. If no record is found, a new one will be created.
4. If a record already exists in the audit system, that matches an import record, then the import record will update (overwrite) the data in the audit. Usually, this is assumed to be your intention and no warning is given. The record will be listed in the import results as being updated.



5. If an imported record is identical to the audit record and no changes are found, then the original record is not updated and the imported record is ignored. If a record is not imported, it is not listed in the imported records list.
6. If a record is entered twice in the same import file, the second entry will overwrite the first one, if it is different. Usually, this is assumed to be your intention; even so, a warning is given.
7. If a record is imported twice, it will be reallocated to the last import that updated the record. This means it will not be included in the imported records list for the first import, but will be included in the second import.

Collecting data

To obtain data for importing, you can either collect the data using some other system or enter the data in a spreadsheet. If you are going to type the data into a spreadsheet, you will find it easier to just type it into the webtool directly and ignore imports. When using the webtool the data will be carefully checked and you will get much fewer errors and problems. However, if you decide to use the import facility, then we suggest you ask for help from your IT team, technical colleagues or support services to set this up.

Data entry

There are several types of value you can enter:

1. A 'coded' value - an item from the list of choices for a single dataset field
2. A simple text value, like the patient's post code
3. A date - the format of the date must be correct (dd/mm/yyyy) and valid
4. A time - the format of the time must be correct (hh:mm) and valid
5. A date and time - the format of the date and time must be correct (dd/mm/yyyy hh:mm)
6. A numeric value

General rules

1. Text values should not contain certain characters, so a name would not contain a digit like '4'.
2. A date should be a valid date, in the correct format and be consistent with other dates.



3. A date cannot usually be in the future - all the audit dates should have passed already.
4. The time should be in 24-hour format (00:00 - 23:59).
5. A number usually falls within a maximum or minimum value.
6. If a value needs special care, a note in the relevant audit dataset should explain what is required.

List values (coded value options)

Many dataset items require you to choose a valid value from a list of choices. The list choices are given in the relevant audit dataset specifications. Each option has a short code or longer descriptive answer you can use to indicate the selected value. There are usually 3 types of answer you can supply:

1. The full 'official' list value, exactly as listed in the specifications, so for gender, 'Female' is acceptable.
2. The short code value, so, 'F' is acceptable as the short code for 'Female'.
3. Some other special 'import only codes' can be accepted, so '2' is an alternative code for 'Female'.

Additional rules for coded values

When data is being checked, we usually ignore upper and lowercase characters, all spaces and other punctuation marks, so 'FEMALE' or 'female' or 'f' or 'feMale' or 'fe male?' are all accepted as 'Female'. Data is usually accepted if it contains any reliably recognised element or phrase, so 'F. CAT' will match on 'F'. If there is no match of any kind the data will be refused, a warning given and the value in the database unchanged. If a data value/answer is accepted, it will be translated to the correct dataset value.

Date and time values

It is important to get audit dates and times correct to measure metrics such as length of stay and time to treatment. To make sure the date and time are correct, we check them carefully to meet certain rules:

1. They must be in the correct format. Dates should be fully specified as "dd/mm/yyyy", for example: "05/02/2019".
2. If the item includes a time component, then the format would be: "hh:mm", where the time is specified using the 24 hour clock, where 00:00 is midnight and the last minute of the day before midnight is 23:59. Only these formats are valid, but we do accept seconds as part of the date/time value, but seconds are ignored. (Seconds are specified as hh:mm:ss, so 00:00:00 to 23:59:59).



3. It must be a valid date, according to the calendar.
4. A date must be consistent with other dates, for example, a discharge date must come after an admission or arrival date in the secondary care audits.

Number values

Typically, number values are positive whole numbers, but occasionally may be decimal numbers. Number will be checked against a lower and upper limit. Number values near upper or lower limits may be accepted, but generate warnings. Check the import dataset specifications for guidance for each numeric answer value.

Additional or special data rules

Certain types of data may have special additional validation applied to them, such as post codes and NHS numbers. The validation checks will indicate if there is a problem with a value. Several tests may be applied to the data for characters, format and validity. The relevant audit dataset specification will note any additional validation checks.

Data checking

Data is accepted if a value passes all validation rules for that field, section or dataset - but if not, the data will be refused, a warning given and the original field value will remain unchanged in the database record.

Mandatory checks and draft / complete status

If a field is deemed 'mandatory' then the data for that field will be checked. If it passes and all other fields pass their data checks, then the record is deemed complete. If one or more fields fail their checks, then the record is considered incomplete and the record is marked as 'draft'. These records will be excluded from the audit reports if not completed in full by the appropriate deadlines.

Data import processing

After submitting your request, your data will be processed and valid records imported into the database.

Submitting your data for import

Once you have completed all fields and all rows, you should submit your data file for processing:

1. If you are collecting data in a spreadsheet, you must save the spreadsheet as a 'CSV' file-type



2. Next, login to the audit and choose 'import' from the menu
3. Select the correct dataset version, header type and submit your file for processing
4. Wait for the import to be processed (this should take less than a minute or so)
5. The results of the import are summarised and any import errors will be displayed

Import results

After your data has been processed, the system will provide a status report with details of how the data has been processed. The status report will indicate:

1. How many records have been created or updated in the database.
2. Details of which records have failed and why they have failed.
3. Using the information from the status reports, please correct your data and resubmit your data file if necessary.

Import errors

After processing, some records may be rejected as invalid or accepted with errors. You should review these errors and adjust your data to clear these errors where possible. There are two ways to accomplish this:

1. Adjust the data in your external data source, rebuild your import file and resubmit if re-processing.
2. Locate your records in the database and make your corrections using the online web-tool

Note: if you edit your data online, you could overwrite your corrections if you re-import the same data file. For this reason, we recommend that you edit the data in your external system and then re-import your corrected data into the system.

Export for import

You can create an import file by using the audit 'export to import' option. This will create an import data file using your current audit data, in the correct 'import' format. You can use this to create a sample file based on your data. To create this file, start a new export, select the dataset and then choose the 'For Import' option on the options tab. Note: if you import 'draft' data, it will generate data errors/warnings.



Troubleshooting / Getting help

You may need help from either your IT/computer support team or the supplier of your external data system to correct issues in your data files. We can help identify import problems, but we can't support third-party systems or the files they generate.

- Always review the relevant audit dataset specifications for the version you are importing.
- Open your data files in MS Excel and check the data is clear, legible and entered in the correct columns according to the dataset specification.
- Use a sample import file and compare the data in this sample with your data file (best using a spreadsheet tool, like MS Excel).
- Check all the columns line up correctly under the same heading.
- Check that the values supplied match the specifications for that dataset question for the audit.
- You should share import warnings generated with your data system support team. Together with the dataset specification, this should help them correct any problems.

If you need further help with importing, your IT or computer support team can usually help with setting up and running imports for you.

If you need technical help with imports, contact the Crown Audit helpdesk at helpdesk@crownaudit.org

If you need further assistance, please contact the NRAP team at NRAPinbox@rcp.ac.uk.

Please do not send any audit data by email to either the NRAP team or Crown Audit.