
THE ELECTRONIC STAFF RECORD PROGRAMME



NATIONAL HEALTH SERVICE

ESR-NHS0354 - DATA WAREHOUSE OVERVIEW, GUIDANCE AND FAQs

Information Classification: Public

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Creation Date: 06/09/2021

Last Updated:

Version: 1.0

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1. DOCUMENT CONTROL

1.1. CHANGE RECORD

Date	Author	Version	Change Reference
22/07/2021	S.Wright	0.1	First Draft
11/08/2021	S.Wright	0.2	Updated following review
27/08/2021	S.Wright	0.3	Further Updates following wider review
06/09/2021	S.Wright	1.0	Approved and Published.

1.2. REVIEWERS

Name	Position
NHS ESR Development Team	

1.3. DISTRIBUTION

Copy No.	Name	Location
1	Library Master	Programme Library
2		

2. CONTENTS

1. DOCUMENT CONTROL	2
1.1. CHANGE RECORD	2
1.2. REVIEWERS.....	2
1.3. DISTRIBUTION.....	2
2. CONTENTS	3
3. INTRODUCTION	4
3.1. OVERVIEW.....	4
3.2. PURPOSE	4
4. DATA WAREHOUSE ACCESS	5
4.1. ORGANISATIONAL ACCESS	5
4.2. SECURITY PROFILES.....	5
4.3. REQUESTING USER ACCESS	5
4.4. ORGANISATION SUPER USERS.....	5
4.5. FURTHER INFORMATION.....	6
5. TRAINING/GUIDANCE	7
5.1. ADDITIONAL BUSINESS INTELLIGENCE RESOURCES.....	7
6. FREQUENTLY ASKED QUESTIONS	8
6.1. FUNCTIONALITY/LOCAL REPORTING.....	8
6.2. DATA WITHIN THE DATA WAREHOUSE	8
6.3. OTHER.....	10

3. INTRODUCTION

3.1. OVERVIEW

The ESR Data Warehouse (DW) is populated by extracts from ESR. To ensure that the national and supra-trust reporting does not place any extra performance burden on the main ESR database the DW is maintained in a separate database to the main ESR.

The DW is defined as an orderly and accessible repository of known facts and related data that is used as a basis for informing management decisions.

The scope of the DW provides for:

- Full access nationally to agreed key data items within a single logical database with extensive report writing facilities to minimise wherever possible any separate reporting requirements from the Service.
 - Direct national / central access has been enabled for specific sub-sets of the data.
 - National access to the processing functionality (e.g. payroll data) to provide modelling capabilities based on actual data.
-

3.2. PURPOSE

This document is intended to provide high-level guidance, useful information and address frequently asked questions for both new and existing Data Warehouse Users.

In addition, existing Data Warehouse resources and education materials are linked throughout the document.

4. DATA WAREHOUSE ACCESS

4.1. ORGANISATIONAL ACCESS

The following organisations have access to the Data Warehouse:

- Care Quality Commission
- Department of Health and Social Care
- Health Education England (inc. e-LfH)
- IBM ESR Data Warehouse Team
- NHS Business Services Authority (ESE Central Team, Data Analytics Learning Lab)
- NHS Digital
- NHS Employers
- NHS England/NHS Improvement
- NHS Wales (inc. NHS Wales Shared Service Partnership, Health Education and Improvement Wales)

Any new requests should be submitted to the NHSBSA Director of Workforce for consideration and approval/rejection following the agreed process as outlined in the '**ESR-NHS0099 Controlling Access to the ESR Data Warehouse**' document available on the ESR Hub here – [ESR-NHS0099](#)

The NHSBSA's Director of Workforce will only approve access where this is deemed to be in the strategic interests of the NHS under the stewardship of the DHSC and of the ESR Programme.

4.2. SECURITY PROFILES

Several security profiles have been created to enable appropriate access for the organisations and users of the DW. The key distinctions are between those users with access to personal data items, restrictions on staff groups and the distinction between countries.

Each group of users is assigned to an appropriate security profile and each User has a username and password so that access is fully controlled.

Profiles are reviewed periodically and amended so that access remains appropriate.

Full details of the Security Profiles in use in the Data Warehouse are shown in the document **ESR-NHS0131 Data Warehouse Overview and Data Item Description** document.

4.3. REQUESTING USER ACCESS

For those employees whose organisation is listed in section 4.1, you will be able to request access to the Data Warehouse via your organisations Data Warehouse Super User (see section 4.4). If your organisation does not currently have access to the Data Warehouse you will not be able to request a user account.

4.4. ORGANISATION SUPER USERS

Each Organisation with access to the Data Warehouse has a nominated Super User(s). It is the responsibility of the Super User to ensure that users requesting access have a genuine business reason for accessing the Data Warehouse and that they are, or will be, adequately trained to use it appropriately.

A full list of organisational Super Users is available on the ESR Hub here – [DW Super Users](#)

4.5. FURTHER INFORMATION

Further Information on access to the Data Warehouse, the processes for requesting organisational or user access and detailed instructions on how to raise the necessary Service Requests can be found in the 'ESR-NHS0099 Controlling Access to the ESR Data Warehouse' document available on the ESR Hub here – [ESR-NHS0099](#)

5. TRAINING/GUIDANCE

5.1. BUSINESS INTELLIGENCE RESOURCES

There are a number of BI resources available for Data Warehouse Users to access. Whilst the content has been primarily produced for trust-level BI Users, the functionality is largely the same and should therefore be beneficial to new and existing DW users.

Bins – ‘Binning’ enables you to combine values for the column into sets. You can combine multiple values or ranges of values from a given column into bins. When you add and name the bins, all instances of the various values that comprise the bin in the result set are replaced by the bin name. In addition to this, aggregations are performed accordingly.

[ESR Hub Guidance](#)

Conditional Formatting – In tables, pivot tables and graphs, conditional formatting helps direct attention to a data element if it meets a certain condition. The format of items such as cells and text in tables or bars, and pies in graphs, can be changed to highlight data to the user.

[ESR Hub Guidance](#)

Filters – There are a number of ways a filter can be created and applied to an analysis in ESR DW in order to limit the data shown in the results. Filters can be applied directly to columns, created separately within an analysis or even created as stand alone objects to be applied to multiple analyses. This guide will step through each type of filter allowing the user to develop and enhance analyses and dashboards.

[ESR Hub Guidance](#)

Permissions & Archiving – Archiving enables you to export an object or objects to a file format that is downloaded from ESR DW. This file can then be shared (e.g. by e-mail) and imported back in to ESR DW for another user to run.

[ESR Hub Guidance](#)

6. FREQUENTLY ASKED QUESTIONS

6.1. FUNCTIONALITY/LOCAL REPORTING

Q. Why are there national standard reports in the Data Warehouse?

A. The original design for the ESR Data Warehouse did not include any provision for standard reports as the User Community had agreed that each organisation would use the ad hoc reporting tool to produce their own 'Standard Reports'. However, as usage of the Data Warehouse increased during the ESR implementation phase, it became abundantly clear that this approach needed to be revised as the lack of Standard Reports, and perhaps more importantly, the lack of standard definitions, was holding back usage of the Data Warehouse. The ESR NHS Central Team has since engaged with users to determine and maintain a set of standard reports that can be used 'as is' or as templates for local variation.

Q. I need to create a bespoke analysis; what is the best way to approach this?

A. We would advise users to copy one of the existing national analyses that are available within the DW Shared Folder. Whilst the report may not meet your requirements exactly, it's likely to be a good starting point to edit as required to add/remove fields and amend filters to ensure the required data is returned. The national content covers the vast majority of the subject areas.

Q. How can I share reports with colleagues?

A. There are a couple of different ways to share reports with colleagues.

1. You can archive the folder or object from the Data Warehouse and save locally as a file. This allows you to then send to colleagues who can unarchive the file back into the Data Warehouse.

Further information on how to archive/unarchive objects can be found on the ESR Hub here [\(Archiving Guidance\)](#)

2. The alternative option is to utilise the DW Shared Folder in the Data Warehouse. The folder was created specifically to enable users to share objects across the DW user community. The shared folder can be found using the following path:

Shared Folders > DW Shared

Q. I have an issue with a locally created report, who should I contact?

A. In the first instance you should contact the Data Warehouse Super User within your organisation. They may be able to identify the issue and resolve without additional support. If the issue remains unresolved then your Super User can raise it directly with ESR Central Team contacts who will provide support on a best endeavours basis.

Where the issue is particularly complicated or appears to be a functionality issue a Service Request should be raised by your organisations Super User.

6.2. DATA WITHIN THE DATA WAREHOUSE

Q. When is the data refreshed?

A. The weekend in which the load takes place will be prior to the second Monday of the month. Users will be advised in advance of any planned changes to the downtime schedule.

A schedule of the load dates is published regularly as a Data Warehouse User Notice which is e-mailed to Users and made available on the ESR Hub. Note that DW-specific User Notices begin with UNdw...

The data is extracted from ESR on the first of every month and then loaded into the Data Warehouse. A month time-lag is incorporated to allow organisations to validate and update their data where necessary before it is extracted. Therefore March's data, which includes data entered or revised up to and including the last day of the month, is available within the Data Warehouse after the load process is complete in early May.

Q. How are retrospective changes to data handled within the Data Warehouse?

A. Changes applicable to previous periods, but which have occurred after the extraction date will be retrospectively applied within the next extract. For example, after the extract at the start of May (for data up until 31st March) has been taken, Trust 'A' retrospectively enters an absence which pertains to January; this change is picked up in the extract at the start of May (for data up until 30th April) and is made available in June to be reported upon. Changes made in the application will be applied to the period to which they pertain.

Q. What Data Items are held within the Data Warehouse?

A. The design of the Data Warehouse provides appropriate data items organised into the following Subject Areas:

- Absence Rate Subject Area
- Absence Subject Area
- Demonstrated Skills Subject Area
- Generic List of Values Subject Area
- Grade History Lookup
- Learning Subject Area
- Payroll Subject Area
- Position Composition Subject Area
- Position Requirements Subject Area
- Training and Attendance Subject Area
- Turnover Subject Area
- Vacancy Return Subject Area
- Vacancy Subject Area
- Workforce Composition Subject Area
- Workforce Movement Subject Area

There are over 1,000 data items within the Data Warehouse. A full list of the items and descriptions can be found in the '**ESR-NHS0131 Data Warehouse Overview and Data Item Description**' document available on the ESR Hub ([ESR-NHS0131 - ESR Hub](#)).

Q. How is the organisational structure maintained within the Data Warehouse?

A. The organisational structure used to map the Data Warehouse data to Org Name, ODS Code, Region, EA Type etc. is maintained by the ESR Central Team and is reviewed monthly by the Data Warehouse Reference Group.

Proposed changes to the hierarchy are identified from a variety of sources including:

1. NHS Digital Org Data Service – re changes to Org Code, Org Name. (Organisation changes - NHS Digital)
2. ESR Production Mergers (Technical mergers taking place in ESR Production)
3. Organisational name change requests raised via SR and reflected in Production.

If the proposed changes are accepted as part of the review process then the updated org structure is submitted to our suppliers for implementation to the Data Warehouse as part of the next refresh. The changes to the hierarchy are also published via User Notice on a monthly basis (where changes have occurred).

Q. How are the Age related data items calculated in the Data Warehouse?

A. The age-related fields (Age Band, Age in Years, Age in Years and Months) calculate the employees age as at the current date regardless of the date filter used within the report.

If you want to calculate the age of an employee as at a specific point in time (e.g. Tm End Date) then you can apply a formula to the analysis such as the example below:

```
CAST(TIMESTAMPDIFF(SQL_TSI_DAY,"Workforce Composition Subject Area"."Wfc Person Dim"."Date Of Birth","Workforce Composition Subject Area"."Wfc Time Dim"."Tm End Date") AS DOUBLE) / 365 >=25 AND CAST(TIMESTAMPDIFF(SQL_TSI_DAY,"Workforce Composition Subject Area"."Wfc Person Dim"."Date Of Birth","Workforce Composition Subject Area"."Wfc Time Dim"."Tm End Date") AS DOUBLE) / 365 <=29.9 THEN '25-29'
```

The example calculates the age as at the Tm End Date used in the analysis and where the age is between 25 and 29.9 groups them into the relevant age band. This formula would need to be repeated to include all the age bands required.

6.3. OTHER

Q. How can I be added to the distribution list to receive User Notices and Alert Notices related to the Data Warehouse?

A. Your Data Warehouse Super User can raise a Service Request through the ESR Service Desk to request that you are added to the distribution list.

Home > Request a new service > AC > ACDW > Change of Details > Add Email Distribution List to Alert Notice/User Notice

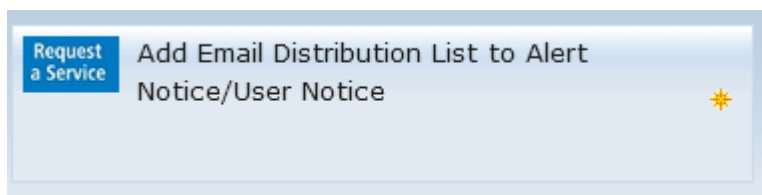


Image – ICD Request a Service

We advise that where possible only one or two users are signed up to the distribution list per organisation. These users can then forward the UN/AN's onto colleagues where relevant.

Q. Is there a user forum for Data Warehouse users?

A. The Data Warehouse Reference Group replaced the Data Warehouse User Group in 2019 and is now the forum used to raise any DW relates issues or proposals.

- Quarterly ESR and ESR Data Warehouse updates are sent via email to those on the DWRG distribution list
- Where necessary, ad-hoc emails are sent to DWRG members where an urgent decision or urgent update is required. e.g. vote on a proposed enhancement request.
- Users are able to raise issues, topics for discussion and enhancement requests by sending an email directly to ESR Central Team contacts.
- Where there is a legitimate need to discuss a specific topic relating to the Data Warehouse (Such as an enhancement request) then an ad-hoc meeting will be arranged.
- The voting arrangements established by the DW User Group remain in place.

If you would like to be added to the DWRG distribution list, then please contact the ESR Central Team. Contact details can be found on the ESR Hub.