
National Patient Information Reporting System: National Data Warehouse

NDW Data Quality Mart

Technical Guide

Version 2.0

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Version Control

Version	Date	Notes
1.0	March 2008	FY08 Bridge Contract Deliverable D1.7.7 Approved April 10, 2008
1.1	November 2010	Updated names of database objects and code location with current information. Added information (view and stored procedure) for the new <i>DQM-UP3 Missing Registrations by Facility</i> report.
2.0	December 2010	Final

Overview

The purpose of National Data Warehouse (NDW) Data Quality Mart (DQM) is to provide feedback to the suppliers of data to the NDW, related to the detection of critical and non-critical errors affecting the quality and completeness of their data.

The NDW Data Quality Mart is a collection of easily accessible web-based reports, which provide the user a quantified picture of problems with their data, as well as enough detail to allow record level identification of problematic data. Note that any detail displayed is within the boundaries of currently required laws and regulations, such as the Health Insurance Portability and Accountability Act (HIPAA).

All Data Quality Mart reporting is limited to data already loaded and stored in the NDW. Reports related to problems loading data into the NDW database are provided by the NDW Export Tracking Mart.

Environment

Reports

Web Server:	ROHAN
Reports Development Tool:	Crystal Reports
Web Application Interface:	Business Objects
Reports Location:	Data Quality Mart folder on IHS NDW intranet web site

Data Source

Database:	WILDHRSE
Database Schema:	DQ_RPT
Database Objects:	Views and Stored Procedures
Language:	SQL

The WILDHRSE database was chosen as the NDW Data Quality Mart data source for performance reasons and to avoid contention with production database processes when running DQM reports.

DQM Reports

The Data Quality Mart reports are developed using Crystal Reports software and posted on the IHS NDW intranet Reports web site (ROHAN) in the Data Quality Mart folder, using Business Objects Web application interface.

Data Quality Mart web reports are organized into two categories:

- Reports related to User Population
- Reports related to Workload

Currently, there are eight DQM reports, three related to User Population (UP) and five related to Workload (WL):

- 1) DQM-UP1 Registrations Not Included on User Population Reports
- 2) DQM-UP2 Registrations Potentially Countable on UP Reports
- 3) DQM-UP3 Missing Registrations by Facility
- 4) DQM-WL1 WL Reportable Visits Not Included on Workload Reports
- 5) DQM-WL2APC Potentially Workload Reportable Ambulatory Visits
- 6) DQM-WL2CON Potentially Workload Reportable Contract Visits
- 7) DQM-WL2DEN Potentially Workload Reportable Dental Visits
- 8) DQM-WL2 INP Potentially Workload Reportable Inpatient Visits

Each of these reports pulls data from a dedicated view, using report-specific parameters (e.g., Region and/or date range) passed to the database by the dedicated stored procedure.

Using Crystal Reports software, the data undergoes further calculations, using formulas for conditional computations of results presented on reports. The data is then grouped, sorted, formatted, and written to a report.

The code for each of these reports is stored on the ROHAN server in the following folder:

`\\NDW reports\04.Data Quality Mart\CrystalSourceCode\DQ_RPT`

For detailed descriptions of the DQM reports, see the *Data Quality Mart User Guide*.

DQM Database Objects

Currently, there are nineteen database objects (11 views and 8 stored procedures) in the DQ_RPT schema on the WILDHRSE database that are used as a data source for the Data Quality Mart reports.

By default, the SQL Code for these database objects is stored by DB2 in the appropriate system tables (views, procedures) in the TEXT field. Additionally, the SQL code is saved in text files and stored on the ROHAN sever in the following folder:

\NDW reports\04.Data Quality Mart\CrystalSourceCode\DQ_RPT\Views_Stored
Procedures

DQM Views

The Data Quality Mart Views (virtual tables) contain columns from several Target and Reference tables. The data is specifically formatted and calculated for the existence of certain conditions required for each report. The views are:

Schema	View Name
DQ_RPT	V_DQ_ADA
DQ_RPT	V_DQ_POV
DQ_RPT	V_DQ_REG_RPT1
DQ_RPT	V_DQ_REG_RPT2
DQ_RPT	V_DQ_REG_RPT3
DQ_RPT	V_DQ_VALID_CHART
DQ_RPT	V_DQ_WL_RPT1
DQ_RPT	V_DQ_WL_RPT2_APC
DQ_RPT	V_DQ_WL_RPT2_CHI_CHO
DQ_RPT	V_DQ_WL_RPT2_DENTAL
DQ_RPT	V_DQ_WL_RPT2_INP

V_DQM_ADA

V_DQ_ADA is a supplementary view used by V_DQ_WL_RPT2_DENTAL view. It selects distinct Encounter IDs (ENCTRSS_ID) that have ADA code(s).

V_DQ_POV

V_DQ_POV is a supplementary view used by V_DQ_WL_RPT2_APC. It selects distinct Encounter IDs (ENCTRSS_ID) that have DX code(s).

V_DQ_REG_RPT1

V_DQ_REG_RPT1 is the primary view for *DQM-UP1 Registrations Not Included on User Population Reports* report. It selects registration data relevant to this report (e.g., unique registration code, region code, or exporting facility). Additionally, it tests five fields (last name, first name, middle name, chart number, chart facility) to verify whether the values are missing, valid, or invalid, and then stores the results in designated new fields.

V_DQ_REG_RPT2

V_DQ_REG_RPT2 is the only view for the *DQM-UP2 Registrations Potentially Countable on UP Reports* report. It selects registration data relevant to this report (e.g., unique registration code, region code, or exporting facility). Also, it tests six fields (community, area, service unit, tribe code, beneficiary code, blood quantum) to verify whether the values in each of these fields are missing, valid, or invalid, and then stores the results in designated new fields.

V_DQ_REG_RPT3

V_DQ_REG_RPT3 is the only view for the *DQM-UP3 Missing Registrations by Facility* report. It selects registration identifiers from workload reportable encounter records that could not be linked to an existing registration record. These workload reportable encounter records with missing registrations are identified by having REG_ID = 0.

V_DQ_VALID_CHART

V_DQ_VALID_CHART is a supplementary view used by V_DQ_REG_RPT1. It selects distinct Registration IDs (REG_ID) that have valid chart records.

V_DQ_WL_RPT1

V_DQ_REG_RPT2 is the only view for the *DQM-WL1 WL Reportable Visits Not Included on Workload Reports* report. It selects workload reportable encounter data relevant to these reports (e.g., unique encounter code, region code, exporting facility). Additionally, it tests the date and facility code fields (specific to encounter type) to verify whether the values in each of these fields are missing, valid, or invalid, and then stores the results in designated new fields.

V_DQ_WL_RPT2_APC

V_DQ_WL_RPT2_APC is the primary view for *DQM-WL2APC Potentially Workload Reportable Ambulatory Visits* report. It selects non-workload reportable direct outpatient encounter data relevant to these reports (e.g., unique encounter code, region code, location of encounter facility). Additionally, it tests six fields (facility designation flag, service type, service category, provider code, clinic code, diagnosis code) to verify whether the values in each of these fields are missing, valid, or invalid, and then stores the results in designated new fields.

V_DQ_WL_RPT2_CHI_CHO

V_DQ_WL_RPT2_CHI_CHO is the only view for *DQM-WL2CON Potentially Workload Reportable Contract Visits* report. It selects non-workload reportable contract (inpatient and outpatient) encounter data relevant to these reports (e.g., unique encounter code, region code, exporting facility). Additionally, it tests values in the provider type field to verify whether they are missing, valid, or invalid, and then stores the results in the designated new field.

V_DQ_WL_RPT2_DENTAL

V_DQ_WL_RPT2_DENTAL is the primary view for *DQM-WL2DEN Potentially Workload Reportable Dental Visits* reports. It selects non-workload reportable dental encounter data relevant to these reports (e.g., unique encounter code, region code, location of encounter facility, authorizing facility). The selected data are limited to dental encounter records with no ADA code(s).

V_DQ_WL_RPT2_INP

V_DQ_WL_RPT2_INP is the only view for *DQM-WL2INP Potentially Workload Reportable Inpatient Visits* reports. It selects non-workload reportable direct inpatient encounter data relevant to these reports (e.g., unique encounter code, region code, location of encounter facility, authorizing facility). The selected data are limited to direct inpatient encounter records with no DX code(s).

DQM Stored Procedures

The following Data Quality Mart Stored Procedures are used for passing implicit “WHERE” statements to the database, allowing the selection of data (from the dedicated view) related only to a specified Region and/or within a specified timeframe.

Schema	Procedure Name
DQ_RPT	S_DQ_REG_RPT1
DQ_RPT	S_DQ_REG_RPT2
DQ_RPT	S_DQ_REG_RPT3
DQ_RPT	S_DQ_WL_RPT1
DQ_RPT	S_DQ_WL_RPT2_APC
DQ_RPT	S_DQ_WL_RPT2_CHI_CHO
DQ_RPT	S_DQ_WL_RPT2_DENTAL
DQ_RPT	S_DQ_WL_RPT2_INP

S_DQ_REG_RPT1

The S_DQ_REG_RPT1 procedure passes the region abbreviation code from DQM-UP1 report to V_DQ_REG_RPT1 view, allowing the selection of data belonging only to one region.

S_DQ_REG_RPT2

The S_DQ_REG_RPT2 procedure passes the region abbreviation code from DQM-UP2 report to V_DQ_REG_RPT2 view, allowing the selection of data belonging only to one region.

S_DQ_REG_RPT3

The S_DQ_REG_RPT3 procedure passes the region abbreviation code and the date range from DQM-UP3 report to V_DQ_REG_RPT3 view, allowing the selection of data belonging only to one region and in specified timeframe (between start and end dates).

S_DQ_WL_RPT1

The S_DQ_WL_RPT1 procedure passes the region abbreviation code from DQM-WL1 report to V_DQ_WL_RPT1 view, allowing the selection of data belonging only to one region.

S_DQ_WL_RPT2_APC

The S_DQ_WL_RPT2_APC procedure passes the region abbreviation code and the date range from DQM-WL2APC report to V_DQ_WL_RPT2_APC view, allowing the selection of data belonging only to one region and in specified timeframe (beginning, ending dates).

S_DQ_WL_RPT2_CHI_CHO

The S_DQ_WL_RPT2_CHI_CHO procedure passes the region abbreviation code and the date range from DQM-WL2CON report to V_DQ_WL_RPT2_CHI_CHO view, allowing the selection of data belonging only to one region and in specified timeframe (beginning, ending dates).

S_DQ_WL_RPT2_DENTAL

The S_DQ_WL_RPT2_CHI_CHO procedure passes the region abbreviation code and the date range from DQM-WL2DEN report to V_DQ_WL_RPT2_DENTAL view, allowing the selection of data belonging only to one region and in specified timeframe (beginning, ending dates).

S_DQ_WL_RPT2_INP

The S_DQ_WL_RPT2_INP procedure passes the region abbreviation code and the date range from DQM-WL2INP report to V_DQ_WL_RPT2_INP view, allowing the selection of data belonging only to one region and in specified timeframe (beginning, ending dates).