National Data Warehouse Project

The Initial Data Load

IHS Technology Conference
August 2004

Office of Information Technology
Indian Health Service
Albuquerque, NM

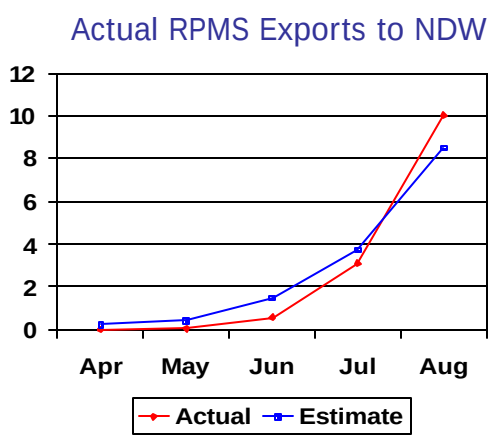
IHS Technology Conference

Synopsis: This session will provide an overview of the NDW upgrade to the National Patient Information Reporting System (NPIRS), replacing the current production NPIRS and IHPES (ORYX) systems, and its relevance to clinicians, clinical and administrative managers at the local, Area, and national levels. **It will also provide technical details on the initial load and implementation of this first iteration of the NDW.**

National Data Warehouse

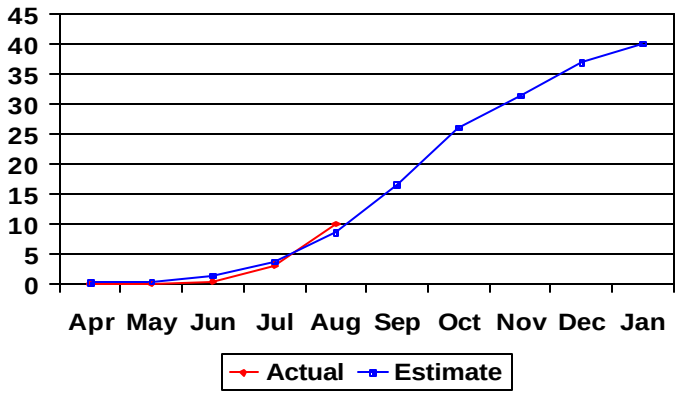
- Status of the load so far
- Preparing for the load
- The Data Load process
- Exception reporting
- Space and Time
- Questions & Answers

RPMS Data Load



RPMS Data Load

Estimated remaining RPMS Exports



RPMS Data Load Schedule

Tucson	4/26 – 8/6
Phoenix	6/3 – 10/7
Billings	7/13 – 10/14
Albuquerque	7/21 – 10/15
Bemidji	7/29 – 10/20
Portland	8/4 – 10/21
Nashville	8/23 – 10/8
California	9/9 – 10/25
Navajo	9/13 – 12/17
Aberdeen	9/20 – 12/10
Oklahoma	9/28 – 1/3
Alaska	10/15 – 1/20

Area Preparatory Guide

The guide outlines the steps needed to prepare for sending data for inclusion in the IHS National Data Warehouse (NDW) repository.

Area Preparatory Guide

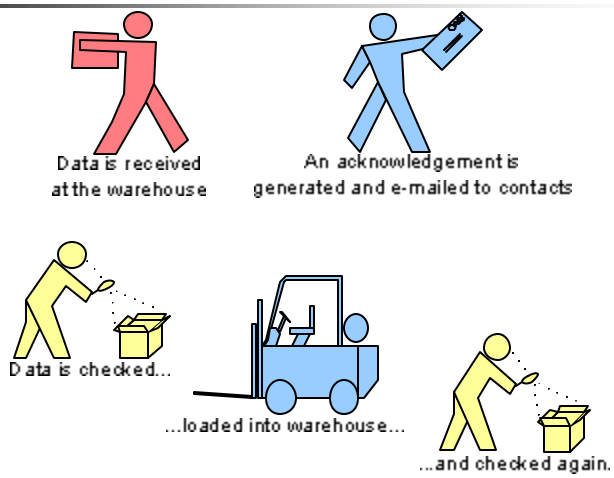
Information we need for scheduling the load:

- A list of the facilities that will be exporting files to the NDW.
- The name and e-mail address of those who would like an acknowledgement of the receipt of data.
- Work together to create load schedule for the Area.

What happens to the data?

- RPMS generates HL7 messages (the generally accepted standard for the exchange of medical information between applications).
- These messages are transmitted to the Integration Engine which translates them to ASCII-formatted files.
- The ASCII files are then transmitted to the NDW for processing.

Data Load Process



Sample Acknowledgement

Sample of NDW Data Transmission Log Report

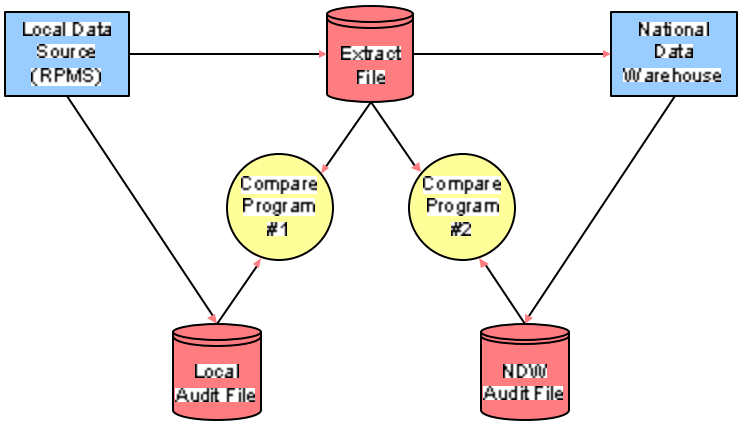
Every file that arrives at the warehouse is assigned a unique Export ID number.

" DATA WAREHOUSE "
NDW Data Transmission Log Report
Data Received Date: Aug 25, 2004

For more information please send an email to: ITSCDataWarehouse@ihs.gov

Export ID: 123
Export file name: 999999041082109084 7.BDW
Static ASU FAC of exporting box: 999999
Beginning Date: Oct 01, 2000
Ending Date: Mar 31, 2001
Run location: FACILITY NAME
Transmission Status: No errors detected
Total Number of Encounter Records Received: 0
Total Number of Registration Records Received: 59,999

Data Load Process



What if discrepancies are found?

- We track and troubleshoot every discrepancy we find
- Three types of errors:
  - Transform Error
  - Fatal Error
  - Serious Error

What if discrepancies are found?

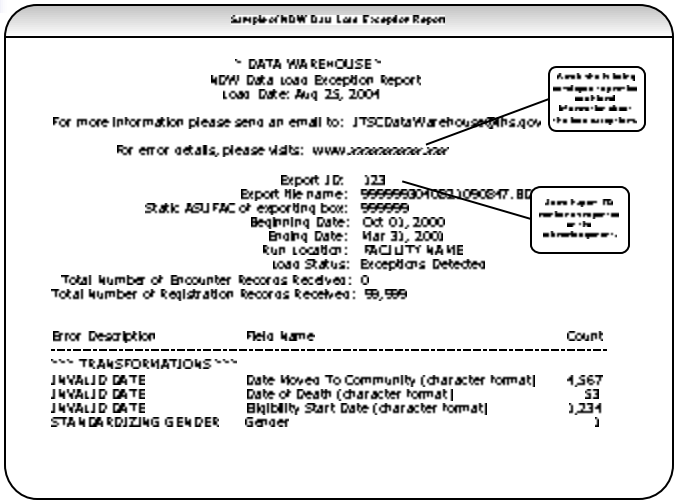
- Most common type is Transform Error
  - for example, dates with month and year but no day can not be stored as a valid date, so must be stored as a character field
- The other types of errors could occur, but none have been discovered to date

Errors? What errors?

- **Fatal Errors** occur when the data that was transmitted has somehow become corrupted, thereby making it impossible to load into the database.
- **Serious Errors** are defined as records that do not contain enough information to determine its relationship to other data in the warehouse. For example, encounter records with no registration links, or chart information for a non-existent patient.

Sample Load Exception Report

(under development)



Sample of NDW Data Load Exception Report

~ DATA WAREHOUSE ~
NDW Data Load Exception Report
Load Date: Aug 25, 2004

For more information please send an email to: JTSCDataWarehouse@hhs.gov

For error details, please visits: www.xxxxxxxxxx.xxx

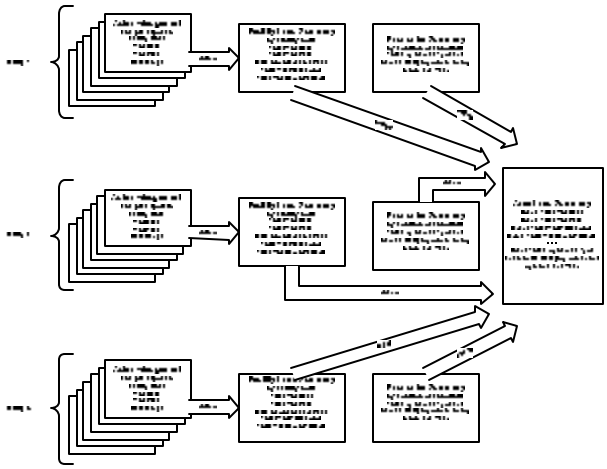
Export ID: 123
Export file name: 999999901089109089 7.BD
Static ASU FAC of exporting box: 999999
Beginning Date: Oct 01, 2000
Ending Date: Mar 31, 2001
Run Location: FACILITY NAME
Load Status: Exceptions Detected
Total Number of Encounter Records Received: 0
Total Number of Registration Records Received: 99,999

Error Description	Field Name	Count
~~ TRANSFORMATIONS ~~~		
INVALID DATE	Date Moved To Community (character format)	4,567
INVALID DATE	Date of Death (character format)	53
INVALID DATE	Eligibility Start Date (character format)	1,234
STANDARDIZING GENDER	Gender	1

Summary Reports

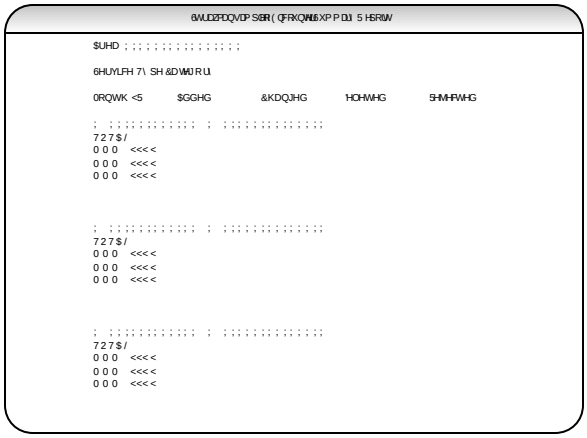
(under development)

- Acknowledgements can “roll up” to facility-level summaries
- Record counts can be reported based on Service Type and Category
- Area level summary can be generated



Summary Reports

(under development)


6WUDWDQVDP S&RR(QFRQWUXXP P DU\ 5 HSRUW
$UHD ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;
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0RQWK <5 $GGHG &KDQJHG HOHWHG 5HMHFWHG
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How much space is needed?

	Registration	Encounter
Export File	8.6 MB	8.4 MB
Audit File	5.9 MB	2.2 MB
Total	14.5 MB	10.6 MB

size ÷ 10,000 * number of transactions to export =
how much space you need
14.5 ÷ 10,000 * 200,000 = 290 MB of space needed

Space is calculated per 10,000 "records"

How long will it take?

It depends on your environment

- type of hardware, processor and throughput speeds
- amount of memory or HD space
- number of applications running on the same server at the same time.

How long will it take?

	Registration (in minutes)	Encounter (in minutes)
Tucson	3	14
Phoenix	4	19
Billings	4	5
Albuquerque	4	17
Average	4	14

minutes ÷ 10,000 * number of transactions to export = how much time you need

4 ÷ 10,000 * 200,000 = 80 minutes needed

Time is calculated per 10,000 "records"

Incremental Exports

- Incremental exports will be sent to the NDW (in addition to the NPIRS Legacy exports)
- This will allow us to parallel test the NDW against Legacy
- Area will be notified when to begin sending Incremental exports

CHS FI and 638 Data Load

- CHS data is being sent to NPIRS Legacy for verification
- We are investigating the possibility of using these files to load the NDW as well

Non-RPMS Sites

- HL7 Data Transmission Guide
- Reference tables available via the web

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