National Patient Information Reporting System: National Data Warehouse

NDW Non-HL7 Standards Format

Data Transmission Guide

Version 4.1

October 2010

Department of Health and Human Services

Indian Health Service

Office of Information Technology (OIT)

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Version Control

Version	Date	Notes
1.0	January 2005	Initial version.
1.1	February 2005	Reformat, reorganize text; remove original appendixes C, D, change appendix E to C, F to D, include appendixes C, D in document; create tables of patient registration and encounter fields that are required to process and create reports.
2.0	May 2005	Reformat for NDW: Reorganize, rename sections; rewrite/update text; clarify fields required for processing and reporting with Note in Appendix A, B; updates to notes in Registration, Encounter export file format spreadsheets.
2.1	May 2005	Update Overview and Required Fields table.
2.2	June 2005	Clarified required fields in appendixes; re-formatted Encounter Export Required Export Required Fields and Registration Export Required Fields tables to clarify.
3.0	July 2005	Rename subtitle to “Using Non-HL7 Structured File”; use Documatron-generated registration and encounter field tables and create web links to PDF versions in corresponding document appendixes.
4.0	April 2008	Re-title, re-format. Added “Batch Header and Trailer Records” section; updated required fields to conform to agreed definition; updated descriptions and normalized the Lookup column in the appendices; added conditional descriptions as appropriate. Accepted by COTR April 10, 2008
4.1	October 2010	Updated links to NDW and SCB websites.

Contact Information

For any questions related to implementing the non-HL7 structured format files, call or email the OIT Help Desk.

Phone: 1-888-830-7280

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Overview

Although OIT/NPIRS has accepted data in many different formats in the past, requirements have been developed to help standardize data submission and processing procedures among the non-RPMS sites and the National Patient Information Reporting System (NPIRS), and its new, enhanced system, the National Data Warehouse (NDW).

Health Level 7 (HL7), the industry-wide standard format for healthcare information, is the preferred method for data submission to the NDW. HL7 was chosen because it is an industry standard for interoperability of clinical and patient information.

Besides the minimum elements required for basic reporting, such as User Population and Workload, the HL7 export format includes data elements that can be used to provide expanded reporting capabilities and analyses related to other health status needs and performance measurement activities, such as Diabetes Management, Epidemiology, GPRA, and JCAHO's ORYX.

An HL7 Guide that specifies the IHS requirements is available on the "Submitting Data" web page of the IHS National Data Warehouse website:

http://www.ihs.gov/NDW/

For those IHS sites that are currently unable to implement the HL7 standard, this document provides information that will enable you to send your data in a format that can be understood and loaded into the NDW. While this structured format allows basic reporting, such as your User Population and Workload reports, it cannot provide the expanded reporting capabilities and analyses that are possible with HL7.

Structured Format File Requirements

OIT/NPIRS requires separate export files for the following data:

- Patient **registration** data
- Patient **encounter** (visit) data

Both data export files use a fixed-length, flat file format.

The **initial** registration and encounter data exports include

- all encounters, from 10/01/2000 forward, if available
- all registrations associated with these encounters

NPIRS can accept the initial encounters in a single file, or broken into separate files by year or other methods.

For subsequent **incremental** encounter and registration data exports, include all new and/or modified encounters and registrations, where the begin date is the day following the previous export end date (export end date + 1) and the end date is the creation date of the next data export file.

File Name Convention

The following file naming convention is used to identify non-HL7 structured format files of registration and encounter data:

SF[R,E]*xxxxxxyyyyjjj*

where

SF	= File identification – Structured File
[R,E]	= R(egistration) or E(ncounter)
xxxxxx	= 6-character Area – Service Unit – Facility code (ASUFAC) for your site
yyyyjjj	= Date of transmission in year (*yyyy*) and Julian date (*jjj*) format

For example:

SFE1234562004005

indicates a Structured File (SF), containing Encounter data (E) from ASUFAC 123456, transmitted on January 5, 2004 (2004005).

To eliminate the possibility of a transmitted file being overwritten when more than one file is transmitted on a given date, we recommend appending a number, starting with _02, to any additional files transmitted on the same day. For example:

SFE1234562004005	1st file transmission on January 5, 2004
SFE1234562004005_02	2nd file transmission on January 5, 2004
SFE1234562004005_03	3rd file transmission on January 5, 2004

Record Formats

The physical layouts of the registration and encounter export data files are described in:

- Appendix A - Structured Format File: Registration
- Appendix B - Structured Format File: Encounter

Both appendixes contain tables that list the data fields, in sequence, including logical name, data type and length, description, and reference to standard code (lookup) tables.

The non-HL7 structured format files of registration and encounter data use a fixed-length flat file format, where all fields are left-justified, space-filled character fields. For data samples, see Appendix D - File Samples.

Batch Header and Trailer Records

The batch header and trailer are special records that provide information about all the data messages between them. The batch header will always be the first record of the file and the trailer the last record. Together, these two records provide administrative information needed to interpret the file, present information on the Acknowledgement and Post Load reports, and verify that the NDW received all the records sent by the source.

Each field of the header and trailer records is delimited by the pipe character '|'. For example, the header record for an 'initial' encounter export file from Acme Hospital in California Area would look like the following:

```
PHDR|NSFF|||CAO|20080402|669999|ACME HOSPITAL|20001001|20080331|000001|2.0.0|SFE|EXO^EBL|2.0
```

The following tables describe the layout of the fields in the header and trailer records.

Batch Header Record Fields

Element Name	Type	Length	Description	Required ?
Record Code	Character	4	Value is "PHDR"	Y
Source System Code	Character	4	Default value is "NSFF" for both SFR (registrations) and SFE (encounters).	Y
Process Code	Character	2	No value required	N
Export ID	Character	8	No value required	N
IHS Area Code	Character	3	3-character region designator, for example, "CAO" (see Appendix C - Other IHS-Specific Code Sets).	Y
Source File Export Date	Date, format CCYYMMDD	8	The date the source file was exported (beginning date, if run overnight)	Y
Export Box ASUFAC	Character	6	ASUFAC of the exporting system computer, for example, "669999"	Y
Source Box Site	Character	30	Name of the site, for example, "ACME HOSPITAL" (see the Facility SCB Table at the IHS Standard Code Book Tables web site, http://www.ihs.gov/scb/index.cfm.)	Y
First Modified Date	Date, format CCYYMMDD	8	This date identifies the earliest date a record was modified in this file and is the begin date parameter for identifying the time period.	Y
Last Modified Date	Date, format CCYYMMDD	8	This date identifies the latest date a record was modified in this file and is the end date parameter for identifying the time period.	Y

Element Name	Type	Length	Description	Required ?
Export Log Number	Character	6	The site may use this field as an internal identifier to count exports.	N
IE Header Version Number	Character	10	The value is '2.0.0'	Y
Source File Type Code	Character	3	The value is "SFR" for registration files or "SFE" for encounter files.	Y
Export Options	Character	30	This field is not required for SFF files, but the initial export runs would have the default values of 'EXO^RBL' for registrations and 'EXO^EBL' for encounters. The value for incremental exports is 'EXO^GDW' for both record type exports.	N
File Format Version	Character	10	The value is '2.0' for the SFF format version.	Y

Batch Trailer Record Fields

Element Name	Type	Length	Description	Required ?
Record Code	Character	4	Value is "PTRL"	Y
Process Code	Character	2	No value required	N
Export ID	Character	8	No value required	N
IHS Area Code	Character	3	(Same as header information)	Y
Source File Name	Character	30	Source file name as sent	Y
Source File Record Quantity	Character	8	Number of records, including the header & trailer.	Y
IE File Name	Character	30	No value required	N
IE Record Count	Character	8	No value required	N
IE File Export Date	Date, format CCYYMMDD	8	No value required	N
Number of PCC Visits	Character	8	No value required	N
PCC Visits Skipped	Character	8	No value required	N
PCC Visit Errors	Character	8	No value required	N
Skipped Demo Patients	Character	8	No value required	N

Required Registration and Encounter Fields

The following tables list the required patient registration and encounter fields. Here, "required" is defined as critical to processing and loading the data into the NDW database and producing the standard User Population and Workload verification reports.

Required Registration Fields

Patient Registration Logical Field Name
Unique Registration Code
Date of Last Update
Chart Facility Code
Chart Number
First Name
Last Name
Date of Birth
Gender
Social Security Number
Pseudo SSN Flag
Beneficiary Classification Code
Tribe Code
Blood Quantum Code
Community of Residence Code

Required Encounter Fields

Encounter/Visit Logical Field Name	Notes
Unique Encounter Code	
Chart Facility Code	
Chart Number	
Date of Birth	Required for Dental encounter
Gender	Registration only
Social Security Number	
Pseudo SSN Flag	Required only if SSN = pseudo SSN
Tribe Code	Registration only
Community of Residence Code	Registration only
Beneficiary Classification Code	Registration only
Service/Admission Date	
Location of Encounter	
Service Type Code	
Service Category Code	
Clinic Code	Direct Outpatient, Direct Dental
Provider Discipline Code (1)	Direct Outpatient, Direct Dental

Encounter/Visit Logical Field Name	Notes
Unique Registration ID	
Date of Last Update	
Diagnosis Code (1)	Primary
Admission Service	Required for Direct Inpatient
Discharge Date	Required for inpatient
ADA Code (1)	Required for dental encounter
Vendor Type Code	Required for Contract Health Services
Authorizing Facility	Required for Contract Health Services

For the complete list of encounter data export fields, see Appendix B - Structured Format File: Encounter.

Valid Values

There are four categories of valid data field values:

(1) Literal values, such as last name.

(2) IHS Standard Code Book values

(3) IHS-specific code set values not included in the online IHS Standard Code Book

(4) National Standard Code sets, such as ADA and CPT

Accessing Standard Codes

Standard codes are uniform listings of descriptive terms and identifying codes. These codes can be IHS-specific or national standard code sets (e.g., ICD9, ADA), that are generally accepted in the medical information community.

Accessing IHS Standard Code Sets

The Standard Code Book (SCB) tables contain approved code sets from the Indian Health Service (IHS) Standard Code Book. For access to the online IHS SCB tables, go to

http://www.ihs.gov/scb/index.cfm

Standard code sets (SCS) approved by the Division of Information Resources (DIR) that are used are also listed at this website under DIR SCS tables.

Additionally, the NDW uses other IHS-specific code sets, which are listed in Appendix C - Other IHS-Specific Code Sets.

In cases where IHS or NPIRS does not maintain or control the lookups or code sets, or tables are not available on the web site or in this guide, email the NPIRS Helpdesk for guidance at

NPIRSHD@ihs.gov

Accessing National Standard Code Sets

The NDW uses the following national standard codes sets.

ICD9 – International Classification of Diseases

These codes are used to classify and categorize diagnoses and procedures. Many online sources of information exist, including

http://www.cdc.gov/nchs/icd.htm

HCPCS/CPT

Healthcare Common Procedure Coding System (HCPCS) is a medical code set created in 1983 by the Center for Medicare and Medicaid Services (CMS), and is used to identify health care procedures, equipment, and supplies. It was primarily designed for claims submission. There are three levels:

- **Level I** contains AMA-maintained Common Procedure Terminology (CPT) codes.
- **Level II** contains items and services not included in the CPT medical code set, and is maintained by the Centers for Medicaid and Medicare Services (CMS), Blue Cross Blue Shield Association (BCBSA), and Health Insurance Association of America (HIAA).
- **Level III** contains codes assigned by Medicaid agencies for additional items not included in Level I or Level II

NOTE Level III Local codes have been eliminated as of 12-31-2003, replaced by S or C code sections of HCPCS Level II.

Your facility may already be set up to update HCPCS and CPT codes. If needed, the following sites can be used as a starting point or a source of clarification on these code sets:

- For HCPCS codes, go to http://www.cms.hhs.gov/hcpcsreleasecodesets/anhcpcs/list.asp
- For CPT codes, go to http://www.ama-assn.org/ama/pub/category/3113.html.

ADA/CDT

The American Dental Association (ADA) is the source for ADA diagnosis/procedure codes, also know as CDT codes. HIPAA requires use of the current version of CDT-4 for electronic transmission dental information. For more information go to

http://www.ada.org

Other Industry Standard Code Sets

The IHS Standard Code Book web site includes links to industry standard code sets, including HL7 Immunization CVX and MVX codes, VA Drug Class codes, and X23 Provider Class, Specialty, and Type codes.

To access these codes, go to http://www.ihs.gov/scb/index.cfm, and click the **Industry SCS Access Tables** menu option on the left pane.

Testing and Transmitting Export Files

Before data can be accepted into NPIRS/NDW, it must be tested for validity and adherence to the file structure. Before production processing of your data exports can begin, you must send to us an initial “test” version of the Patient Registration and Encounter data export files.

When we receive your test Patient Registration data export file, we will process the file, note any problems, and work with you to resolve those problems. We will repeat the testing procedure with your test Encounter data export file. When all processing issues for both export files are resolved and testing results are satisfactory, production processing of your data exports can begin.

OIT/NPIRS will work with you to determine the best way to transmit your files, including where and how to send them.

Appendix A - Structured Format File: Registration

The non-HL7 structured format file uses a fixed-length, flat file format, where all fields are left-justified, space-filled character fields.

This appendix refers to an NDW database-generated report. This report specifies the physical layout of the registration data, where patient registration fields are listed in sequential order by

- Logical name, where those names displayed in **bold** font are required data fields
- Data type and field length
- Description, including specific formatting and any conditional requirements
- Reference to standard code (lookup) tables, as appropriate

To download the most recent version of the **Structured File Format: Registration** report:

1. CLICK HERE ***OR***
   a. Go to the IHS National Data Warehouse website:

      http://www.ihs.gov/NDW/

   b. In the left panel, click the heading "**Submitting Data**"

   c. In the right panel, locate and click the link, **IHS's NPIRS/NDW Data Transmission Guide Using Non-HL7 Structured File**.

2. Click the link, **Structured File: Registration – Appendix A**.

Appendix B - Structured Format File: Encounter

The non-HL7 structured format file uses a fixed-length, flat file format, where all fields are left-justified, space-filled character fields.

This appendix refers to an NDW database-generated report. This report specifies the physical layout of the encounter data, where patient encounter fields are listed in sequential order by

- Logical name, where those names displayed in **bold** font are required data fields
- Data type and field length
- Description, including specific formatting and any conditional requirements
- Reference to standard code (lookup) tables, as appropriate

To download the most recent version of the **Structured File Format: Encounter** report:

1. CLICK HERE ***OR***
   a. Go to the IHS National Data Warehouse website:

      http://www.ihs.gov/NDW/

   b. In the left panel, click the heading "**Submitting Data**"

   c. In the right panel, locate and click the link, **IHS's NPIRS/NDW Data Transmission Guide Using Non-HL7 Structured File**.

2. Click the link, **Structured File: Encounter – Appendix B**.

Appendix C - Other IHS-Specific Code Sets

IHS Area Codes

Code	Service Type Description
ABR	Aberdeen
AKA	Alaska
ALB	Albuquerque
BJI	Bemidji
BIL	Billings
CAO	California
NSA	Nashville
NAV	Navajo
OKC	Oklahoma
PHX	Phoenix
POR	Portland
TUC	Tucson

Appendix D - File Samples

All fields[1], including numerics, are treated as left-justified, space-filled character fields. For easier readability of these examples, bold dots (**.**) represent empty fields or unused bytes within fields.

Registration Data Example

```
12345000000000320001201200402 20I661810123456DR........ABLE..........
................BAKER........................CHARLIE...............
........JR........1935011620040220187.8.M123456789.01024204120951975
02011234.S..MAIN....................................PHOENIX.......
................AZ123451234ABLE.........................BAKER......
...................CHARLIE.......................LIDA...............
...........ROSE..........................DELTA......................
...CYMCRA.............................20000201200402201234567 89A....
.................................................................
.........................................ABLE......................
....BAKER.........................CHARLIE........................SELF
.............MCRB............................200002012004022012345 6
789A.............................................................
...................................................ABLE.............
............BAKER..........................CHARLIE...................
....SELF.............PVTPRIVATE.INSURANCE.............19750201200402
20996375...........................DELTA.DENTAL......................
.................001020003...............................ABLE......
....................BAKER.........................CHARLIE...........
............SELF.................................................
.................................................................
.................................................................
.................................................................
.................................................................
.................................................................
.................................................................
.................................................................
.........................................
```

[1] Except Chart Number, which is right-justified and left zero-filled.

Encounter Data Example

```
12345644445555740410112345619950412F23456789002240415370120040415404
101IA.06100603........345678901234567N2004042020040420801...2E881.0
B.......................................................................
.......................................................................
.......................................................................
...............044......2..20040422..13.............1...............
........N........150110NY.210......N98.............N...............N
...............N...............N...............N...............N1.22
.......................................................................
.......................................................................
.......................................................................
.......................................................................
.............................................................I.........
....................................90655...........................
.......................................................................
...........................
```