
National Patient Information Reporting System: National Data Warehouse

Service Level Agreement

HOLLYWD Database and Associated Data Marts

Version 2.0

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Document Information

Revisions/Rescissions

None

Exceptions to Procedure

None

Review

This document will be reviewed annually to maintain its currency and will expire in three years from the date of its approval.

Automatic Rescission Date

This document will be rescinded three years from the date of its approval.

Supersedes

None

Version History

Version	Date	Notes
1.0	May 2007	Final version of SLA for 2006-07 Contract Year Deliverables
2.0	January 2008	Updates for FY08 Bridge Contract. Add Legacy Data Mart; Remove Test environment and Userpop/ Workload data mart, which have separate SLAs. COTR acceptance April 10, 2008

Signature Page

This signature page represents the acceptance of this Service Level Agreement. In signing this document, all parties agree to the Service Level Agreements detailed within this document.

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Date

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1. Overview

The Indian Health Service (IHS) has requested that the National Patient Information Reporting System (NPIRS) Primary Contractor provide a Service Level Agreement (SLA) for those data marts that the NPIRS primary contractor maintains and supports, as well as for those data marts that the NPIRS Primary Contractor “hosts” (other Contractor/Vendor built data marts). This Service Level Agreement sets expectations between the authorized users and the NPIRS Primary Contractor, as agreed to by NPIRS Program Management.

Within the context of this document, a data mart is defined as the end “product” received by the customer; a data mart is *not* interim data extracts provided to external entities/developers that are then used for data mart development.

This Service Level Agreement sets forth the service level expectations for the **HOLLYWD database** and the following production-based **Data Marts**:

- **General Data Mart**
- **Export Tracking Data Mart**
- **Error Reporting Data Mart**
- **Legacy Data Mart**

This Service Level Agreement addresses the following aspects of **service**:

- Availability
- Monitoring
- Status reporting
- Preventative and corrective maintenance
- Infrastructure support and interface management
- User access
- Data mart refreshes
- Change management
- Knowledge management
- Help Desk user support

In addition, this Service Level Agreement addresses the following **management elements**:

- Service tracking & reporting
- Addressing service information
- Resolution of service-related disagreements
- How agreements will be reviewed and revised

This is an “internal” Service Level Agreement (IHS customers of NPIRS, or support provided on behalf of the NPIRS Program Manager) that establishes the service levels that can be expected, as well as the communications and corrective action that will address any interruptions in these service levels, to satisfy the Indian Health Service contract obligations.

2. Design and Operation

2.1 HOLLYWD Database

The production-based HOLLYWD database will contain all data needed for its associated data marts, as outlined in the Overview section of this document. The HOLLYWD database utilizes MQTs (Materialized Query Tables), and views of the data required for its associated data marts. This approach is designed to maximize IHS’s investment in its storage devices.

2.1.1 Contents

The HOLLYWD database will contain all the data, as referenced in the most recent version of the *HOLLYWD Database Technical Guide*, including user-defined views and tables.

2.1.2 Design Parameters

The HOLLYWD database has been created with the following parameters:

- The HOLLYWD database exists on a separate server from the NDW Production Environment (currently, BILBO).
- The representative data in the HOLLYWD database is a copy of live production data. It does not include any scrambling, cleansing, or encryption; or use other methodologies to disguise patient identifiable data.
- The HOLLYWD database is refreshed on both a weekly and daily basis, depending on the type of data. Large volume data refreshes utilize an incremental process.
- The HOLLYWD database uses approximately 450 GB database space and an additional 55 GB processing space.
- The Hollywd database will be backed up routinely during maintenance hours for safekeeping of data.
- NPIRS Program Management, working in collaboration with the NPIRS Primary Contractor, will specify to the contractor those authorized users who will be granted access to this database and/or its associated data marts, and to which data these authorized users will have access, as well as the time period during which they will be granted access.
- Only authorized users will be allowed access to the HOLLYWD database or its associated data marts.
- Security controls commensurate with those in the production NDW database and adhering to IHS standards (as outlined in separate security documents) will be enforced.
- The HOLLYWD database will be enterprise-compliant, to allow various environments to access the database. For example, ODBC, JDBC, OLE, and CLI are some of the environments and protocols that may be used to access the General Data Mart, depending on the user's needs, access protocols, and environments.
- An environment will be provided so that SAS and DB2 software can work together.

2.2 General Data Mart

2.2.1 Contents

The HOLLYWD database will contain all the data, as referenced in the most recent version of the *HOLLYWD Database Technical Guide*.

2.2.2 User Access

Authorized users will be assigned one of the following data access categories:

- (1) **National Level** access - these users will be allowed to see all data in the General Data Mart. National Level users will also be allowed to create views and access data within the Legacy Data Mart
- (2) **Area Level** access - these users will be allowed to see only current Registration, Userpop and Encounter data within their specified Area within the General Data Mart. Area level users will also be able to access the reference and meta tables

2.3 Export Tracking Data Mart

2.3.1 Contents

The Export tracking report is available at the IHS National Data Warehouse Intranet web site:

<http://rohan.d1.na.ihs.gov/>

The report tracks the files processed and loaded into the National Data Warehouse and lists the following details for each file:

- File name
- Source site
- Total records
- RPMS File Create Date
- Integration Engine (IE) Receipt Date
- NDW Receipt Date
- NDW Load Date

This tracking report will be run on a daily basis.

Sending sites also receive an acknowledgement report, confirming that files have been received into NPIRS. NPIRS acknowledgements include the filename, record count, and other identifying information, depending on file type.

2.3.2 User Access

The Export Tracking report will be available from the IHS National Data Warehouse intranet web site. Access to this report requires a user login account.

The NPIRS Primary Contractor will act on a new Export Tracking User request within two (2) workdays, per the approved IHS operating procedures. General system access must already be approved and in place. Data access approval specifying the designation of appropriate National or Local area access from the appropriate IHS management must be provided.

2.4 Error Tracking Data Mart

2.4.1 Contents

Customers will be able to view the rejection records in those data extract files that have been processed into the NDW database via a web application at the IHS National Data Warehouse Intranet web site.

<http://rohan.d1.na.ihs.gov/>

Based on Area and site, the user can view the number of registration and encounter records that have been added, changed, deleted, and rejected per export file sent. Additionally, the user can select the rejected records and view a list of those records and the reason for rejection. A list of the rejected categories, including descriptions and possible actions, is also available.

2.4.2 User Access

The Error Tracking report will be available from the IHS National Data Warehouse intranet web site. General access to this report requires no user login account for those who already have access to the IHS Intranet.

2.5 Legacy Data Mart

2.5.1 Contents

The Legacy Data Mart is provided to enable authorized users the ability to analyze the data previously available in the legacy NPIRS database. The Legacy Data Mart contains all previously loaded data in selected tables. For more information, see *Legacy Data Mart Getting Started Guide*, which is available at the IHS National Data Warehouse Internet web site:

<http://www.ndw.ihs.gov/what-if-I-have-other-questions.asp>

2.5.2 Design Parameters

The Legacy Data Mart is consistent with the General Data Mart parameters. The Legacy Data Mart is static and is not refreshed. For more information, see the *Legacy Data Mart Getting Started Guide*.

2.5.3 User Access

Only users with National level access will have read only access to Legacy data.

3. Service Level Agreement

3.1 Time Period

As of the date of approval, this Service Level Agreement will be reviewed annually, to maintain its currency.

3.2 Services Included

Services include:

- Ensuring availability of the HOLLYWD database and its associated Data Marts as specified in the *HOLLYWD Database Technical Guide*.
- Monitoring the General Data Mart and the Legacy Data Marts for runaway processes/queries, process time limitations, operational issues, and system performance.

To comply with NPIRS Program Management's request to monitor system resource use by individual queries so that if a query exceeds a set, reasonable threshold and can be placed on hold and the user contacted, IBM's DB2 Query Patroller is used to

- Stop runaway processes.
 - Schedule queries (little ones can go before big ones).
 - Track which queries run when.
 - Limit the number of queries that can be run at the same time.
 - Identify need for indexes to assist users in their queries.
- Status reporting, as required, to report service levels for the HOLLYWD database and its associated Data Marts.
 - Performing preventative and corrective maintenance to ensure system and data integrity.
 - Controlling and monitoring user access to ensure privacy, as restricted by National and Area level data access
 - Implementing change management, utilizing industry standards, including System Development Life Cycle (SDLC) processes and user notifications.
 - Knowledge Management (i.e., data-information-knowledge-expertise), will be limited to assisting authorized users in understanding the meta data via database meta tables or additional user documentation.

This service level agreement does not include assisting the authorized user in constructing queries using SAS, SQL, or other database query tools. It is expected that the technical sophistication of authorized HOLLYWD and associated Data Marts users does not require this level of service.

- Help Desk user support will include assisting authorized users with access issues and general system information as required. Additionally, the *General Data Mart Getting Started Guide* (Version 2.2) is available at the IHS National Data Warehouse Intranet web site:

<http://www.ndw.ihs.gov/what-if-I-have-other-questions.asp>

3.3 Availability

The HOLLYWD database and its associated Data Marts will be available to authorized users from 5:00AM MST Monday to 8:00PM MST Friday, except for various and occasional other periods required for maintenance purposes. Should the HOLLYWD database be unavailable during periods of expected availability, the NPIRS Primary Contractor will provide as much notice as possible. A maintenance and operational schedule will also be posted.

3.4 User Group - General Data Mart

The NPIRS Primary Contractor will conduct frequent, periodic user group meetings with interested parties of the user group communities to allow open discussions of concerns, plans, and issues. Meetings notices will be posted and minutes of the meetings will be provided to all users of the General Data Mart.

3.5 User Support

The NPIRS Primary Contractor will provide User support between the hours of 9:00 AM MST and 6:00 PM MST, Monday through Friday.

3.6 Monitoring the General and Legacy Data Marts

IBM's DB2 Query Patroller is used to fully monitor and manage the following:

- Runaway processes
- Query scheduling (little ones can go before big ones)
- Which queries run when
- The number of queries that can be run at the same time

3.7 Status Reporting

Status reporting will be included in the monthly NPIRS System Performance Report. For services stated within this Service Level Agreement, reporting will include:

- System availability (including database space metrics)
- Issues/problems (including resolution and turn around time)
- User access requests (number of requests and turn around time)
- Exceptions to scheduled refresh cycles
- Any system maintenance to optimize performance or prevent potential problems

3.8 Preventative and Corrective Maintenance

Continuous database structure and process improvement occurs as new technology emerges and customer needs are better understood. This agreement between the NPIRS Primary Contractor and authorized HOLLYWD and associated Data Marts users, ensures that any enhancements or corrective activity implemented to processing within NPIRS will be applied to the data mart structure/processing when available and appropriate, along with appropriate documentation and release notes. A Life Cycle Management document will discuss specific technology and processing enhancements in detail.

3.9 User Access

The NPIRS Primary Contractor will act on a new HOLLYWD and associated Data Marts user request within two (2) workdays, per the approved IHS operating procedures. General system access must already be approved and in place. Data access approval specifying the designation of appropriate National or Local area access from the appropriate IHS management must be provided.

Periodic reviews of user access, as required by the *General User Security Handbook SOP 06-11a* (May 2006or as revised) will be conducted as necessary, to ensure that compliance with IHS operating procedures is maintained.

3.10 Data Refresh

The HOLLYWD database and associated Data Marts, except the Legacy Data Mart, are refreshed weekly or daily (Monday through Friday), depending on the tables. The Legacy Data Mart is static and will not be refreshed. Any necessary deviations will be broadcast and also reported in the monthly System Performance report.

3.11 Change Management

Industry-standard System Development Life Cycle (SDLC) methodologies and procedures will be utilized to implement enhancements or corrective application/database changes. This includes appropriate development and test environments, unit and acceptance testing, and change documentation (release notes, white papers, and user guide updates, as appropriate). Documentation will be stored and available on request of NPIRS Program Management.

3.12 Knowledge Management

Authorized HOLLYWD and associated Data Marts users will have access to the data dictionary (meta data) tables within the HOLLYWD and associated Data Marts. The data dictionary and the Logical database diagrams are available at the IHS Meta Data Lookup Internet web site:

<http://www.ihs.gov/CIO/scb/metadata/>

In addition, User and Technical Guides will be made available for the HOLLYWD database and associated Data Marts.

The NPIRS Primary Contractor will not be responsible for developing or manipulating an authorized user's database queries. It is expected that the technical expertise of authorized HOLLYWD and associated Data Marts users does not require this level of service.

3.13 Help Desk User Support

The NPIRS Primary Contractor will acknowledge general requests within one (1) workday of the request from the authorized HOLLYWD and associated Data Marts user. This will include providing status, a tracking number, and at least an initial proposed interim action together with an anticipated plan for how a final resolution will be pursued.

Note: The exception to this agreement would be critical path processing or system outages that would elicit an immediate response.

3.14 Storage and Processing Management

The NPIRS Primary Contractor will make every attempt to ensure that resources are available to achieve user goals. For example, groups of users will be established and assigned discrete storage space for temporary or permanent data sets, based on estimates provided by each group. The designation of these groups will be determined under direction of the Program COTR.

A reasonable storage area is provided to all users to perform typical data queries. Processing capabilities of the server are also adequate for most processes. However, both storage and process capabilities are finite; and as additional users utilize the system, additional management of these resources will be required to ensure optimization of the government's investment.

3.14.1 Storage Needs

The NPIRS Primary Contractor will assist the groups in determining the amount of storage needed, based on

- the number of expected concurrent users,
- the types of queries to be run, and
- expected dataset output size.

3.14.2 Processing Needs

The NPIRS primary Contractor will also determine the estimate of CPU processing impact, based on the information provided. This impact may result in suggested scheduling or other alternatives.

Query Patroller, described previously, assists in monitoring CPU processes. It is possible that as the number of concurrent users grows, the finite resources can become overwhelmed. However, by working with the user groups, specific management of CPU leveling can be incorporated (e.g., throttling, number of simultaneous processes, prioritizing queries, etc.) to help balance growth and manage finite resources.

4. Management Elements

4.1 Service Tracking & Reporting

NPIRS Program Management will be provided with various reports to confirm that service level agreements were met, in addition to having access to internal documentation to confirm that service performance methodologies were utilized.

The **System Performance Report**, provided monthly, outlines system performance activity and includes:

- System availability (including database space metrics)
- Issues/Problems (including resolution and turn around time)
- User access requests (number of requests and turn around time)
- Exceptions to scheduled refresh
- Any system maintenance to optimize performance or prevent potential problems

The NPIRS Primary Contractor will maintain all HOLLYWD and associated Data Marts related program activity on a public directory for access by NPIRS Program Management. This directory will include all System Development Life Cycle (SDLC) documentation to assure adherence to IHS and industry-wide technology standards.

4.2 Addressing Service Information

NPIRS Program Management will be the point of contact for reviewing and addressing service information related to the HOLLYWD database and its associated Data Marts service level agreements. NPIRS Program Management will address any concerns to the NPIRS Primary Contractor for clarification or resolution, if service level performance is in question.

4.3 Resolution of Service-related Disagreements

NPIRS Program Management will be the point-of-contact for resolving any differences that may arise regarding service levels. This should be initiated by the party questioning the service level performance, and include documentation explaining the difference between the service level promised and the service level received.

NPIRS Program Management will review this information and take appropriate action to resolve the difference, including meeting with the parties to facilitate resolution.

4.4 How Agreements will be Reviewed and Revised

This agreement will be formally reviewed and revised annually. Additional review may be required from time to time, and may be required from output from User Group meetings. In addition, the authorized HOLLYWD and associated Data Marts user or the NPIRS Primary Contractor may request this review from NPIRS Program Management. NPIRS Program Management will determine whether additional review is necessary, based on the information provided by the initiating party.

4.5 Change Management

Industry-standard SDLC (System Development Life Cycle) methodologies and procedures will be utilized to implement enhancements or corrective application/database changes. This includes appropriate development and test environments, unit and acceptance testing, and change documentation (release notes, white papers, and user guide updates, as appropriate). Documentation will be stored and available on request of NPIRS Program Management.

4.6 Future Technologies and Directions

As new technologies become available, this SLA does not prevent the NPIRS Primary Contractor from providing these technologies or enhancements. The Primary Contractor will continue to work toward providing and improving overall service and delivery of data. These services may include improved or enhanced interfaces, web access, or user documentation and/or training.