

## IRF-PAI Data Specifications Overview

### Version 1.10.1

### *Introduction*

Version 1.10.1 of the Inpatient Rehabilitation Facility-Patient Assessment Instrument (IRF-PAI) is scheduled for implementation on October 1, 2012. This version of the IRF-PAI contains new pressure ulcer items for the Quality Reporting Program discussed in the FY 2012 Proposed Rule for Inpatient Rehabilitation Facilities PPS (CMS 1349-P).

New data submission specifications have been developed to support the new version of the IRF-PAI. This document and a set of supporting files and documents detail these new data submission requirements.

Previous users of the IRF-PAI data specifications should note that the structure of the data specification reports and of the data submission files themselves have changed substantially. All users of the specifications are strongly urged to read through this document carefully.

### *Replacement of IRF-PAI Version 1.01A Revision 7 with Version 1.10.1*

A comparison of the IRF-PAI 1.10 with the IRF-PAI 1.01A Revision 7 will reveal that the quality items on version 1.01A have been replaced. In addition, a number of structural changes have been made to the item set and the data specifications, as described below:

- **Submission to the Quality Improvement and Evaluation System (QIES) Assessment Submission and Processing (ASAP) System.** As of the effective date of this version of the specifications (October 1, 2012) **all** IRF-PAI records will be submitted to the QIES ASAP system. This includes new, modified, and inactivated records with discharge dates prior to October 1, 2012 as well as all records with a discharge date on or after October 1, 2012.
- **Records covered under the IRF-PAI 1.01A Rev. 7 (discharge date prior to October 1, 2012).** For records with a discharge date **prior** to the IRF-PAI 1.10 (October 1, 2012) version of the data specifications, quality data will **not** be collected by the ASAP system. The quality items 48 – 54 listed in the IRF-PAI 1.01A Rev. 7 will not be collected on records submitted to the ASAP system with a discharge prior to October 1, 2012.
- **Added Items.** New quality items have been added to the IRF-PAI. Some of these items have item numbers that duplicate the removed items; however, they are totally new items, not revisions of the removed items. The new items are 48A – 50D. These items are active on all assessments with a discharge date on or after October 1, 2012 covered under the IRF-PAI Data Specifications Version 1.10 (October 1, 2012).
- **Quality Items.** The optional quality items 48 – 54 from version 1.01A have been removed. IRF-PAI records with a discharge date on or after October 1, 2012 must conform to the October 1, 2012 version 1.10 of the data specifications which includes submitting the new quality items 48A through 50D. IRF-PAI records with a discharge date prior to October 1, 2012 submitted to the revised CMS system must conform to the 1.10 data specifications with the exception that old quality items should not be submitted. If quality items are submitted on records with a discharge date prior to October 1, 2012, they will be ignored and not processed. No messages will be generated. Only quality items for assessments with a discharge date on or after October 1, 2012 are listed in these data specifications.
- **Submission file format.** There is a major change in the submission file format. IRF-PAI 1.10 will use files in Extensible Markup Language (XML). Each XML file must contain data for one and only one assessment. The XML tag that is used to identify the data for each item will correspond to the label for that item. Numeric item IDs will be prefixed by the letter “R” to form the XML tag. Thus, if an assessment had a value of “2” ( Married) for item 10 (Marital Status), the tag would look like this:

<R10>2</R10>

The XML file structure will be described in more detail in a later section of this document.

- **Modifications:** Modifications will continue to be accepted. All modifications must obey the submission file formatting for version 1.10 data specifications. The active items are those items (with the exception of the V1.01A quality items) defined in the data specifications for the discharge date of the assessment. As with new records, for modifications of records with a discharge date prior to October 1, 2012, the old quality items should not be submitted.
- **Inactivations:** Inactivations will continue to be accepted. All inactivations must obey the submission file formatting for version 1.10 data specifications. The active items are those items needed to identify the assessment to be inactivated.
- **Items to be submitted in the XML record.** There are three types of submitted records which are identified by the item TRANS\_TYPE\_CD in the Control Section of the record. The three records are Add new record (TRANS\_TYPE\_CD = 1), Modify existing record (TRANS\_TYPE\_CD = 2) and Inactivate existing record (TRANS\_TYPE\_CD = 3). Fewer items are active for the TRANS\_TYPE\_CD Inactivate existing record. When an item is active, the tags for the item and a value for the item must be submitted in the XML record. Any items submitted in the XML file that are not active are ignored (not edited and not stored).

When an Add new record (TRANS\_TYPE\_CD = 1) or a Modify existing record (TRANS\_TYPE\_CD = 2) with a discharge date on or after October 1, 2012 is submitted, all defined items are active. When an Add new record (TRANS\_TYPE\_CD = 1) or a Modify existing record (TRANS\_TYPE\_CD = 2) with a discharge date prior to October 1, 2012 is submitted, all defined items 1 – 47F are active (old quality items 48 – 54 are not active).

When an Inactivate existing record (TRANS\_TYPE\_CD = 3) is submitted, all items are not active. Only the items in the Control Section and selected items from the Identification and Discharge Sections are active and required to be submitted in the XML record. The following items are active on an inactivation:

- Control Section
  - ASMT\_SYS\_CD
  - TRANS\_TYPE\_CD
  - FAC\_ID
  - STATE\_CD
  - SFTWR\_VNDR\_ID
  - SFTWR\_VNDR\_NAME
  - SFTWR\_VNDR\_EMAIL\_ADR
  - CORRECTION\_NUM
- Identification Section
  - Patient First Name (4)
  - Patient Last Name (5A)
  - Patient Date of Birth (6)
  - Patient SSN (7)
  - Patient Gender (8)
- Discharge Section
  - Discharge Date (40)
- **Fixed file format.** As noted above, inpatient rehabilitation facilities will use XML files to submit data to CMS. However, the data specs also define a fixed format file layout which will be used in other

circumstances. For example, CMS will use the fixed file format for data extracts, such as those that will be used to periodically extract data which is sent to researchers. The fixed-format file layout will also be used to pass data to utilities (e.g., CMG groupers) that are provided by CMS.

- Control vs. assessment items.** These data specifications contain the concept of “item group”. Items related to the assessment are categorized into three groups: “control”, “assessment” and “calculated”. Assessment items are those items contained in the published item set. Control items are the items that previously would have been on the IRF-PAI 1.01A Revision 7 header record as well as those items that preceded and followed the assessment items in the IRF-PAI 1.01A Revision 7 body record (e.g., submitted CMG code, software vendor’s tax ID, software vendor’s name, etc.). Assessment and control items are submitted in the XML file. Calculated items are those items produced by the ASAP system for the submitted assessment. This includes recalculated CMG codes and version, identifiers for the resident, assessment, submission, and other information needed for processing and identification. Calculated items should **never** be submitted.
- IDs assigned to edits.** The data specifications have been completely rewritten. The biggest improvement is that each edit (formatting, consistency, skip pattern, etc.) has been assigned a unique ID in the data specifications. If an edit applies to more than one item, the detailed data specifications report lists the edit ID along with the text of the edit so that it is clear that the same edit applies to a set of items. In addition, each edit is systematically listed with every item that is included in the edit. A new report has been developed that contains an unduplicated list of edits along with a list of the items to which each edit applies. This report should assist developers in creating and validating their software. Finally, the edit IDs that are used in the data specifications will be used on the IRF-PAI Final Validation Reports to assist those who wish to reconcile errors and warnings from the two sources.
- Submitted CMG value.** The appropriate CMG value should be submitted based on the discharge date of the assessment. If the submitted CMG value does not match the ASAP calculated CMG value, a warning message will be issued. If the submitted CMG version does not match the ASAP version used, a warning message will be issued.

| Release Date    | Version          | Description                                      |
|-----------------|------------------|--|
| October 1, 2012 | 1.10.1final      | Grouper 2.60 effective beginning October 1, 2011 |
| October 1, 2012 | 1.10.0 draft     | Grouper 2.60 effective beginning October 1, 2011 |
| October 1, 2011 | 1.01A Revision 7 | Grouper 2.60 effective beginning October 1, 2011 |
| October 1, 2010 | 1.01A Revision 6 | Grouper 2.50 effective beginning October 1, 2010 |
| October 1, 2009 | 1.01A Revision 5 | Grouper 2.40 effective beginning October 1, 2009 |
| October 1, 2008 | 1.01A Revision 4 | Grouper 2.30 effective beginning October 1, 2008 |
| October 1, 2007 | 1.01A Revision 3 | Grouper 2.20 effective beginning October 1, 2007 |
| October 1, 2006 | 1.01A Revision 2 | Grouper 2.10 effective beginning October 1, 2006 |
| October 1, 2005 | 1.01A Revision 1 | Grouper 2.00 effective beginning October 1, 2005 |
| October 1, 2002 | 1.01A            | Grouper 1.00                                     |
| January 1, 2002 | 1.00A            | Grouper 1.00                                     |

Note: The ASAP system will recalculate the CMG on assessments with a target date within 27 months of the submission date.

## Data Specifications Files

Two sets of files are included in the data specifications. The first set consists of reports and documentation that describe the data specifications. The second set is based upon the data dictionary that was used to generate the data specifications. This latter set of files will be useful to software developers. Note that in the file names below, **vn.nn.r** stands for the version and revision number associated with the data specifications. The **vn.nn** portion represents the version number, while **.r** represents the revision number. For example, **1.10.0** would be the initial release of Version 1.10. The first revision would be 1.10.1; the second would be 1.10.2, etc. In addition, the file names for draft versions of the documents will contain the word “draft” after the version number.

### Reports and Documentation

- **IRF-PAI 1.10.1 data specs overview (vn.nn.r).pdf** The current document.
- **Data specs report (vn.nn.r).pdf** This report contains detailed data specifications for every item in the data set.
- **Undup edits report by ID (vn.nn.r).pdf** This report contains an unduplicated list of all edits (formatting rules, consistency checks, etc.) that apply to the item set. It is sorted by the edit ID number.
- **Item change report (vn.nn.r).pdf** This report lists changes that have been made to items or item responses since the previous release of the data specs. This report will not be produced for the initial release of the data specs, but will be included in subsequent releases.
- **Edit change report (vn.nn.r).pdf** This report lists changes that have been made to edits since the previous release of the data specs. This report will not be produced for the initial release of the data specs, but will be included in subsequent releases.
- **HTML data specs (vn.nn.r).zip** This zip file contains a set of HTML files that display the same information as is in the detailed data specs document. To use these files, unzip them to an empty folder and use a browser to open the file called INDEX.HTML. This will open a two-panel window. The left-hand panel can be used to navigate a list of the IRF-PAI items or of the IRF-PAI edits. When an item or edit is selected, the right-hand panel presents detailed information about the entity that was selected. Hyperlinks allow easy navigation among items and edits. This provides a convenient alternative to the PDF version of the data specs.

### Data Dictionary Files

- **IRF-PAI data dictionary tables (vn.nn.r).accdb** This is the Microsoft Access database that contains all of the IRF-PAI data dictionary tables that were used to generate the reports listed above. Additional reports are also available in the database.
- **Itm\_mstr (vn.nn.r).csv** A comma-separated value file containing data from the itm\_mstr table in the data dictionary. This is the master item table that contains one record for each IRF-PAI item. This table could be useful for programmers who wish to build their own IRF-PAI 1.10.1 data dictionary.
- **Itm\_val (vn.nn.r).csv** A comma-separated value file containing data from the itm\_val table in the data dictionary. This table contains one record for every response option for each IRF-PAI item. This table can also be used in a data dictionary when linked with the item master table described above. It could also be used to generate reports or screens containing the text of each item’s response options.

The fields within each of these tables are described in Appendix A of this document.

### Microsoft Access Reports

As noted above, one of the files that is distributed with the data specifications is the Microsoft Access database that contains the IRF-PAI data dictionary. This database can be used to generate additional reports that are not distributed with the data specifications. The following is a brief description of these reports:

- **Public: data dictionary report.** This report contains a description of each table and field that is part of the data specs data dictionary.
- **Public: data specs report.** This is the same as the data specs report that is part of the distribution package.
- **Public: edit change.** This is the same as the edit change report that is part of the distribution package.
- **Public: item change report.** This is the same as the item change report that is part of the distribution package.
- **Public: item list by item.** This report is a simple list of all IRF-PAI items, sorted in logical order.
- **Public: item list by type.** This report is a simple list of all IRF-PAI items, sorted by type (code, checklist, number, text, etc.).
- **Public: item-response report.** This report lists each IRF-PAI item along with its corresponding response options.
- **Public: undup edits by ID.** This is the same as the edit change report that is part of the distribution package.
- **Public: undup edits by type.** This is an unduplicated list of edits, sorted by type (none-of-the-above, skip pattern, format, consistency, etc.).

## Detailed Data Specifications Report

The Detailed Data Specifications Report contains at least one page for every item in the IRF-PAI item set. Each item begins on a new page. The report is divided into five major sections:

1. Basic information.
2. Allowable responses or values for the item
3. Fatal and warning edits associated with the item.
4. Supplemental information about the item (this section appears only for certain items).
5. Version notes describing changes to the item and the edits that apply to it.

The sections are described below.

### Basic Item Information

The top section presents basic information about the item under the following headings:

- **Item.** The item identifier (e.g., 25 Is patient comatose at admission?).
- **XML Tag.** The XML tag used to identify the item in the submission file (e.g. <R25> for item 25).
- **Description.** A brief description of the item (e.g., 33A Tub Transfer: Admission).
- **Item Group.** There are four groups of items:
  - **Control items.** Control items are supplemental items that are included in the submission file and are used to control processing or for other purposes (e.g., the vendor information of the software that was used to produce the record, etc.).
  - **Assessment items (abbreviated “asmt” on the report).** Assessment items are items defined by CMS in the complete IRF-PAI Item Set.

- **Calculated items (abbreviated “calc” on the report).** These items are calculated by the Submission System, stored in CMS’s national database, and will be included in fixed-format files that are produced by CMS. *These items are not submitted and are not to be included in the XML submission files.* If included, they will be ignored.
- **Filler items.** Filler is reserved for future use on fixed-format files containing IRF-PAI data. *These items are not submitted and are not to be included on the XML submission files.* The structure and use of the fixed-format file layout is described in a later section of this document.
- **Item Type.** Items are classified into the following types:
  - **Text.** Items are those that contain text (e.g., 5A, Patient Last Name).
  - **Code.** Coded items are those that have a limited number of response options (e.g., 25, Comatose: Admission has three valid response options).
  - **Checklist.** Checklist items are a subset of coded items that have the following characteristics: (a) each component item in the checklist has response options of 0 (no-unchecked), or 1 (yes-checked).
  - **Number.** Numeric items can contain a range of numeric values (e.g., 48AA, Number of Stage 2 pressure ulcers at admission).
  - **Date.** Examples of date items include 12, Admission Date.
  - **ICD.** The ICD items (e.g., 22, 47A- 47F) contain diagnosis codes. Currently the QIES ASAP system accepts only ICD-9 codes, but in the future ICD-10 codes will be accepted. ICD items must conform to a specific format that is defined in the data specifications.
  - **RIC.** The RIC items (e.g., 21A, 21D) contain Rehabilitation Impairment Category (RIC) codes. RIC items must conform to a specific format that is defined in the data specifications.
- **Max Length.** This property shows the maximum number of characters or bytes that the submitted item may contain.
- **Fixed Format Start-End Bytes.** This column displays the start and end bytes that will be used to store the item on fixed-format files. The structure and use of the fixed-format file layout is described in a later section of this document.

## Item Values

The table in the third section of the page lists the allowable values that may be submitted for the item. For example, three values are listed for item 25: 0, 1, and space. The text associated with each item value is taken directly from the IRF-PAI item set, where available. Some values and their associated text are not listed on the item set itself (like space) and will be discussed in more detail in a later section.

When the text for a response option contains directions for a skip pattern, that text is omitted from the item value listed. The reason for this is that the skip text sometimes changes depending upon the type of assessment and the items included on that assessment.

## Item Edits

The table in the fourth section of the page lists the fatal and warning edits that are associated with the item. This table contains the following four columns:

- **Edit ID.** Each edit has been assigned an edit ID code. These codes begin with the number -1001 and increase sequentially in absolute value. The order of the edit IDs is arbitrary. These edit ID codes will be used on the IRF-PAI Final Validation Reports that are produced by the ASAP Submission System for IRF-PAI. This will make it possible to directly relate an error or warning on the feedback reports with a specific edit in the data specifications. There are also system generated warnings and errors with numbers between



-1 and -999. System errors that occur when reading or processing the submission file (.zip file) or any included submission record (.xml file) will result in a fatal error. These system errors are listed in the Error Message section of the IRF-PAI Provider Submission User's Guide, but are not included in the data specifications reports nor database.

Please note that *in the Detailed Data Specifications Report, edits are listed under every item that they apply to*. Thus, a given skip pattern edit, for example, will be listed under the item that triggers the skip pattern as well as under every item that may be skipped according to the value of the trigger item. The unique edit IDs unambiguously identify these edits that apply to more than one item.

A second report, described below (the Unduplicated Edit Report), lists each edit only once and references all of the items that each edit applies to. This system of uniquely and unambiguously identifying edits is intended to assist developers in insuring that all required edits are incorporated in their software.

- **Edit Type.** There are various types of edits which are described below:
  - **Format.** Format edits specify special rules for formatting item values.
  - **Consistency.** Consistency edits define logical constraints among multiple items.
  - **Skip pattern (consistency).** A special type of consistency edit is the skip pattern which always involves two or more items. The first item in the group is designated the trigger (or gatekeeper) item. The value of the trigger item determines whether the remaining items are answered by the assessor or are skipped. If an item is skipped, it will not be answered by the assessor. If an item is not answered due to a skip pattern, a special character will be submitted in the submission file to indicate that it was not answered due to a skip pattern. Item 50B, for example, contains skip pattern edits -5001 and -5002. These edits are related to a trigger item (50A) and to a set of dependent items (50B through 50D). The edit -5001 requires that if 50A is equal to one (yes), the dependent items must not be skipped (must be answered). The edit -5002 requires that if 50A is equal to zero (no), the dependent items (50B through 50D) must be skipped (must not be answered). All skip patterns follow a similar pattern. Skip pattern edits are listed for every item involved, including both the trigger item and all dependent items.
- **Severity.** The severity column describes the impact of violating the edit. There are two possible values:
  - **Fatal.** Violation of a fatal edit will result in rejection of the record with the error. Format, none-of-the-above, and skip pattern edits are always fatal. Most consistency edits are fatal, but some are warnings.
  - **Warning.** Violation of a warning edit will result in a warning message on the final validation report. However, a warning will not prevent the submitted assessment data from being accepted and stored in the ASAP system. An example of a warning message is that the submitted CMG code does not match the calculated CMG code.
- **Edit Text.** This column contains the text of the edit.

## Supplemental Information

The fifth section of the report is a Supplemental Information table. This section only appears if supplemental information is available for the item. It contains a list of one or more informative messages that provide background information or additional instructions that are related to the item. At this time, there are no IRF-PAI items with supplemental information. This table contains the following columns:

- **Info ID.** This is a unique ID that is assigned to the message. Info IDs begin with the number -9001 and increase sequentially in absolute value. The order of the edit IDs is arbitrary.
- **Type.** The type of message is always "Information" for information messages.
- **Text.** This column contains the text of the message.

## Version Changes

The final section of the report lists any changes that were made to the item or the edit since the previous version of the data specs was released. This section will appear only for items where a change has been made. This section will not appear in the initial release of the data specifications version 1.10, but will be included in subsequent releases.

## Unduplicated Edit Report

The Detailed Data Specifications Report lists all of the edits that are associated with each item in the IRF-PAI data set. Because most edits apply to multiple items, there is a great deal of duplication on this report. For this reason, a second report is provided which lists each edit only once. The Unduplicated Edit Report lists each edit as well as the items that it applies to.

For each edit listed, the edit ID, type, and text of the edit are displayed. After this, the items to which the edit applies are listed.

This report should serve as a resource for developers who wish to insure that their software incorporates all required edits and that each of those edits is applied to the proper set of items.

## Conventions Used in the Data Specification Reports

Certain conventions have been adopted in the data specification reports in order to make them clear and unambiguous. These conventions are described below: On the Detailed Data Specifications report, the “Item Values” table lists all allowable values for each item. If an XML file contains any values other than those listed in this table, a fatal error will occur and the file will be rejected. For example, for item 8 (Gender) the values 1 and 2 are listed in the “Item Values” table. If any other value is submitted for item 8, a fatal error will occur. Note that edits may constrain the list of allowable values based upon specific logical conditions (e.g., if Item A has certain values, then only a subset of Item B’s values may be allowed); however, it is never allowable to submit a value that is not listed in the “Item Values” table.

- If the item is a numeric item, then the “Item Values” table will not list every individual value (because enumerating all possible values is not practical). Instead, the first two rows of the “Item Values” table will list the minimum and maximum allowable values. Restrictions on the values between the minimum and maximum values are listed in the edits for the item. Any additional rows will list special values that may be submitted. For example, the “Item Values” table for CORRECTION\_NUM (correction number) has three rows. The first row lists a value of “00” which is labeled “Not a correction record”, the second row lists a value of “01”, which is labeled “Minimum correction record number”, and the third row lists a value of “99”, which is labeled “Maximum correction record number”. CORRECTION\_NUM also has an edit with a format restriction that requires that the numbers be integers. Decimal points are not allowed.
- Spaces ( ) are used to indicate that an item was not assessed. IRF-PAI uses a space for a provider to indicate that a non-quality item was not assessed or they had no information. When a space is allowed for an item, it will be listed in the “Item Values” table. A space must not be submitted for items where the “Item Value” table does not list it as an allowable value; submitting spaces for such items will result in a fatal error. When a space is allowed for an item, a single space should be submitted for the item regardless of the item’s normal length.
- Dashes (-) are used to indicate that an item was not assessed. IRF-PAI uses dashes for a provider to indicate that they are not answering the quality questions. When a dash is allowed for an item, it will be listed in the “Item Values” table. A dash must not be submitted for items where the “Item Value” table does not list it as an allowable value; submitting dashes for such items will result in a fatal error. When a dash is allowed for an item, a single dash should be submitted for the item regardless of the item’s normal length.
- Carets (^) are used to indicate that an item was not answered due to a skip pattern that requires the item to be skipped. IRF-PAI uses carets in items 50B, 50C and 50D (number of ulcers at each stage) for a provider



to indicate that they have not answered these items because 50A “Were pressure ulcers present on admission?” was answered “0 – No” causing items 50B, 50C and 50D to be skipped. When a caret is allowed for an item, it will be listed in the “Item Values” table. A caret must not be submitted for items where the “Item Value” table does not list it as an allowable value; submitting carets for such items will result in a fatal error. When a caret is allowed for an item, a single caret should be submitted for the item regardless of the item’s normal length.

- Where edits refer to values of an item, those values are always enclosed in brackets. The values contained within brackets should be understood to be character literals even though quotation marks have been omitted. Furthermore, when more than one value is listed, they are implicitly connected by a logical “OR”. The following summarizes the conventions that are used when specifying values:
  - [1,2,3] means “1” or “2” or “3”.
  - [00-15] means “00” through “15” (inclusive).
  - [-] refers to a dash (which indicates that an active item was not assessed).

## ***XML File Structure***

As noted above, IRF-PAI data will be submitted using XML files. Figure 1, below, illustrates the structure of an IRF-PAI XML submission record.

```

<?xml version="1.0" standalone="yes"?>
<ASSESSMENT>
  <TRANS_TYPE_CD>1</TRANS_TYPE_CD>
  <FAC_ID>1234123</FAC_ID>
  <STATE_CD>IA</STATE_CD>
  <FAC_DOC_CD>123432123</FAC_DOC_CD>
  <ITM_SET_VRSN_CD>1.10</ITM_SET_VRSN_CD>
  <SPEC_VRSN_CD>1.10</SPEC_VRSN_CD>
  <SFTWR_VNDR_ID>12321345</SFTWR_VNDR_ID>
  <SFTWR_VNDR_NAME>SOME VENDOR</SFTWR_VNDR_NAME>
  <SFTWR_VNDR_EMAIL_ADR>SUPPORT@VENDOR.COM</SFTWR_VNDR_EMAIL_ADR>
  <SFTWR_PROD_NAME>IRF-PAI ENTRY SYSTEM</SFTWR_PROD_NAME>
  <SFTWR_PROD_VRSN_CD>V2.44</SFTWR_PROD_VRSN_CD>
  <CORRECTION_NUM>00</CORRECTION_NUM>
  <R1A>FACILITY NAME HERE</R1A>
  <R1B>123456</R1B>
  .
  .
  .
  <R8>1</R8>
  <R9A>1</R9A>
  <R9B>0</R9B>
  .
  .
  .
  <R12>20111205</R12>
  .
  .
  .
  <R27A>02</R27A>
  <R27D>03</R27D>
  .
  .
  .
  <R39OD>04</R39OD>
  <R39ODD>V</R39ODD>
  .
  .
  .
  <R50D>-</R50D>
</ASSESSMENT>

```

Figure 1: Example IRF-PAI 1.10.1XML File

The example above begins with the standard XML header line which is followed by the <ASSESSMENT> element that contains the data for a single assessment. Only a single assessment may be included in an XML file. Each assessment must be in an uncompressed XML file with an extension of .xml. If a facility wishes to submit multiple assessments at one time, a separate XML file must be created for each assessment. The file submitted to the submission system must be a standard compression file with the extension .zip (not zipx). To submit a single assessment, the XML file must then be compressed using standard compression into a zipped file. To submit two or more XML files at the same time, they should be zipped together into a single zipped file rather than sending each

XML file in a separate zip file. As the Submission System will only process zip files, any submitted file that is not a zip file will be rejected. When the file is unzipped, all files in this file must end in the extension .XML. All zipped submission files must be 5 MB or less in size. Any submission file exceeding this size limitation will be rejected by the system.

The <ASSESSMENT> beginning tag and the </ASSESSMENT> ending tag are used to enclose the elements for individual items that belong to the assessment. The file must include elements for every item that is active for the type of assessment that is being submitted. Any other elements that are included in the XML record will be ignored by the QIES ASAP Submission System for IRF-PAI and any data contained in those elements will not be stored in CMS's database.

The tag for each item corresponds to the item IDs. Numeric assessment item IDs must be prefixed with an "R". The XML tags are listed in the Detailed Data Specifications Report. For example, the beginning tag for item 20A is <R20A> and the ending tag is </R20A>. The submitted value for each item is included within that item's tags. For example, in Figure 1 the value of 8 (tag R8) is "1". The <ASSESSMENT> beginning tag, the </ASSESSMENT> ending tag, and all intervening tags must be upper case. Tags are required for all items.

For numeric items, leading and trailing zeroes may be omitted. For items that can contain a decimal value, the decimal point must be included if fractional amounts are included, but may be omitted if an integer value is being submitted.

For items that can contain only an integer value, no decimal point is allowed in the submitted value. For example, item 48AA is used to report the number of stage 2 pressure ulcers at admission. This is an integer item so will only accept the following integer values:

```
<R48AA>0</R48AA>
<R48AA>1</R48AA>
<R48AA>2</R48AA>
<R48AA>3</R48AA>
<R48AA>4</R48AA>
<R48AA>5</R48AA>
<R48AA>6</R48AA>
<R48AA>7</R48AA>
<R48AA>8</R48AA>
<R48AA>9</R48AA>
```

Note that these rules do not apply to the diagnosis code items (22, 24A through 24J, 46 through 47F) which are not numeric and which have their own specific formatting rules (refer to the specifications for those items for details).

Dates must be submitted in YYYYMMDD format (see item 12 in Figure 1 for an example). The exception is a birth date where the day or the month and day may be unknown. If the full birth date is known, it must be submitted as YYYYMMDD like any other date. For example, if the birth date is April 01, 1935, it would be submitted as:

```
<R6>19350401</R6>
```

If the year and month were known, but not the day, it would be submitted as:

```
<R6>193504</R6>
```

If only the year were known, it would be submitted as:

```
<R6>1935</R6>
```

Note that for all items, leading and trailing blanks should be trimmed. In addition, alphabetic text in any item (such as patient name) may be submitted in upper, lower, or mixed case. The Submission System will trim all submitted values and convert alphabetic text to upper case without issuing any warnings. These converted values will be used on the IRF-PAI Final Validation Reports and other CASPER reports. Thus, users should be aware that even if a text item (such as patient name) is submitted as a lower case string or with leading or trailing blanks, it will appear trimmed and in upper case in the reports.

Figure 1 also illustrates the use of the special character (dash) described above. Item 50D contains a dash indicating that the item was not assessed.

## **Fixed-Format File Layout**

As noted above, inpatient rehabilitation facilities will use XML files to submit data to CMS. However, the data specifications also define a fixed-format file layout which will be used in other circumstances. For example, CMS will use the fixed file format for data extracts, such as producing data extracts for other users (such as researchers or individual providers who need to rebuild their assessment database). It will also be used for test data that will be supplied with CMS supplied software (such as CMG DLLs). This fixed format will be useful for anyone who wishes to transfer large batches of assessment data, and software vendors may find it useful to support this format for importing IRF-PAI 1.10 data.

The data specifications provide information about starting and ending bytes for each item in the fixed format record. This information is also contained in the itm\_mstr table in the Access database or in the itm\_mstr.csv file that is supplied with the data specs. Each item's starting byte, ending byte, and length are contained in the following fields: fixed\_rec\_strt\_byte, fixed\_rec\_end\_byte, and fixed\_rec\_lngth. The table must be sorted by the field called itm\_srt\_id to put items in the order they will appear in the fixed format record.

Note that the table contains items that are not included in XML submission files. The field called itm\_grp\_cd identifies the item group: "control", "asmt" (assessment), "calc" (calculated), and "filler". Only control and assessment items are to be included in XML submission files. When a record is accepted by the ASAP system, certain calculated values are stored in CMS's national database. These calculated values will be contained in the "calc" items at the end of the fixed-format string. The filler items provide space that will be used for additional items that will be defined at a later time.

## **Additional Documentation**

In order to understand the submission process completely, software developers will need information that is not contained within the data specs themselves or in the current document. This additional information is available on the CMS website [http://www.cms.gov/InpatientRehabFacPPS/04\\_IRFPAI.asp#TopOfPage](http://www.cms.gov/InpatientRehabFacPPS/04_IRFPAI.asp#TopOfPage). Detailed specifications for CMGs which are published in separate documents on the CMS website [http://www.cms.gov/InpatientRehabFacPPS/06\\_Software.asp#TopOfPage](http://www.cms.gov/InpatientRehabFacPPS/06_Software.asp#TopOfPage) may also be of use to software developers.

## Appendix A: Data Dictionary Files

As noted above, the data dictionary that was used to produce the data specifications are distributed to assist software developers. The first of these files is the Microsoft Access database (ACCDB file) that was used to store the data dictionary tables. In addition, the data dictionary tables are distributed as a set of comma-separated value (CSV) files. The most useful tables that are contained in the database are described below.

**Table A1: Database Table Descriptions**

| Table Name   | Description  |
|--------------|--|
| itm_mstr     | Master table containing one record for every item that is contained in the IRF-PAI item set.   |
| itm_val      | Contains one record for every value (response option) allowed for each item. This table is linked to the itm_mstr table using the itm_mstr_key field.  |
| rltn_mstr    | Contains one record for every edit or information message.   |
| rltn_txt     | Contains one record for every edit or information message. The text of each message is stored in each record.  |
| rltn_itms    | Contains one record for every edit or information message ID associated with each item.  |
| rltn_itm_txt | Contains one record for every edit or information message that is associated with every item. This table was used to generate the detailed data specifications report, the unduplicated edits report, and the supplemental information report. |

The following table describes the fields that are contained in each of the database tables described above.

**Table A2: Database Field Descriptions**

| Table    | Field                | Data Type | Field Size | Description   |
|----------|----------------------|-----------|------------|---|
| itm_mstr | itm_mstr_key         | Number    | 4          | primary key   |
| itm_mstr | sys_cd               | Text      | 10         | "IRF-PAI"   |
| itm_mstr | itm_srt_id           | Number    | 4          | item sort sequence (e.g., 12600)                            |
| itm_mstr | itm_id               | Text      | 30         | item ID code (e.g., "5A")                                   |
| itm_mstr | itm_db_id            | Text      | 30         | item database ID (e.g., "PAT_LAST_NAME")                    |
| itm_mstr | itm_shrt_label       | Text      | 50         | item short label (e.g., "Patient Last Name")                |
| itm_mstr | itm_sect_srt_id      | Text      | 2          | item section sort ID (e.g., "01", "02")                     |
| itm_mstr | itm_sect_label       | Text      | 10         | item section label (e.g., "Identification")                 |
| itm_mstr | itm_grp_cd           | Text      | 10         | "Asmt", "Control",  |
| itm_mstr | itm_type_cd          | Text      | 10         | "Text", "Date", "Code", "Number", "ICD"                     |
| itm_mstr | Fixed_rec_srt_id     | Number    | 10         | Fixed format record sort sequence (e.g., 12600)             |
| itm_mstr | fixed_rec_strt_byte  | Number    | 4          | Starting byte for fixed format record (e.g., export record) |
| itm_mstr | fixed_rec_end_byte   | Number    | 4          | Ending byte for fixed format record (e.g., export record)   |
| itm_mstr | fixed_strt_end_bytes | Text      | 10         | String showing start and end bytes                          |
| itm_mstr | fixed_rec_lngth      | Number    | 4          | Field length for fixed format record (e.g., export record)  |
| itm_mstr | itm_vrsn_notes       | Memo      | 0          | Notes describing changes since previous specs version       |
| itm_mstr | XML_tag              | Text      | 40         | XML tag of item that is used in submission file             |
|          |                      |           |            |   |

| Table        | Field            | Data Type | Field Size | Description   |
|--------------|------------------|-----------|------------|---|
| itm_val      | itm_val_key      | Number    | 4          | primary key   |
| itm_val      | itm_mstr_key     | Number    | 4          | foreign key   |
| itm_val      | val_srt_id       | Number    | 4          | value sort order within item                          |
| itm_val      | itm_id           | Text      | 30         | item ID code (e.g., "8")                              |
| itm_val      | val_id           | Text      | 20         | item value (e.g., "2")                                |
| itm_val      | val_txt          | Text      | 255        | text associated with value (e.g., "Female")           |
|              |                  |           |            |   |
| rtln_mstr    | rltn_key         | Number    | 10         | Primary key   |
| rtln_mstr    | rltn_id          | Number    | 10         | Message ID  |
| rtln_mstr    | rltn_srt_id      | Text      | 10         | relation sort ID (e.g., "01", "02")                   |
| itm_mstr     | rltn_src_cd      | Text      | 1          | source code: "M"=manual, "G"=generated                |
| rtln_mstr    | rltn_trgr        | Text      | 20         | triggering field                                      |
| rtln_mstr    | rltn_type_cd     | Text      | 10         | Relation type code                                    |
| rtln_mstr    | rltn_svrty       | Text      | 10         | Severity level of the edit                            |
| rtln_mstr    | rltn_vrsn_notes  | Memo      |            | Notes describing changes since previous specs version |
|              |                  |           |            |   |
| rtln_itms    | rltn_itm_key     | Number    | 10         | Primary key for table                                 |
| rtln_itms    | rltn_key         | Number    | 10         | Foreign key to the rltn_mstr table                    |
| rtln_itms    | rltn_itm         | Text      | 20         | Item label of item associated with relation           |
|              |                  |           |            |   |
| rtln_txt     | rltn_txt_key     | Number    | 10         | Primary key for table                                 |
| rtln_txt     | rltn_type_cd     | Text      | 10         | Relation type code                                    |
| rtln_txt     | rltn_type_txt    | Text      | 10         | Relation type code description                        |
| rtln_txt     | rltn_svrty       | Text      | 10         | Severity level of the edit                            |
| rtln_txt     | rltn_key         | Number    | 10         | Foreign key to the rltn_mstr table                    |
| rtln_txt     | rltn_id          | Number    | 10         | Message ID  |
| rtln_txt     | rltn_srt_id      | Text      | 10         | relation sort ID (e.g., "01", "02")                   |
| rtln_txt     | rltn_src_cd      | Text      | 5          | source of text: "G"=generated, "M"=manual             |
| rtln_txt     | rltn_txt         | Memo      |            | Relation description                                  |
| rtln_txt     | rltn_vrsn_notes  | Memo      |            | Notes describing changes since previous specs version |
|              |                  |           |            |   |
| rtln_itm_txt | rltn_itm_txt_key | Number    | 10         | Primary key for table                                 |
| rtln_itm_txt | itm_mstr_key     | Number    | 4          | primary key   |
| rtln_itm_txt | itm_id           | Text      | 30         | item ID code (e.g., "8")                              |
| rtln_itm_txt | itm_srt_id       | Number    | 4          | item sort sequence (e.g., 12600)                      |
| rtln_itm_txt | rltn_key         | Number    | 10         | Foreign key to rltn_mstr table                        |
| rtln_itm_txt | rltn_src_cd      | Text      | 5          | source code: "M"=manual, "G"=generated                |
| rtln_itm_txt | rltn_id          | Number    | 10         | Message ID  |
| rtln_itm_txt | rltn_srt_id      | Text      | 10         | relation sort ID (e.g., "01", "02")                   |
| rtln_itm_txt | rltn_type_cd     | Text      | 10         | Relation type code                                    |
| rtln_itm_txt | rltn_type_txt    | Text      | 10         | Relation type code description                        |
| rtln_itm_txt | rltn_svrty       | Text      | 10         | Severity level of the edit                            |
| rtln_itm_txt | rltn_txt         | Memo      |            | Relation description                                  |
| rtln_itm_txt | rltn_vrsn_notes  | Memo      |            | Notes describing changes since previous specs version |
| rtln_itm_txt | itm_vrsn_notes   | Memo      |            | Notes describing changes since previous specs version |