

IRF-PAI Data Submission Specifications Overview

Version 4.00.0

01/11/2019

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1 Introduction

The present set of data submission specifications, version 3.00.1, was developed to support the October 1, 2018 release of the IRF-PAI.

Version 4.00.0 of the IRF-PAI data submission specifications will be implemented on October 1, 2019 (for IRF-PAI assessments with discharge date on or after October 1, 2019).

Except for revision of the items submitted, the structure of the data submission files for version 4.00 is the same XML structure as for prior versions 1.10, 1.11, 1.12, 2.00, 2.01, and 3.00. All users of the specifications are strongly urged to read through this document carefully.

2 Version History

Table 1 summarizes the versions of the data submission specifications that have been released along with their effective dates for the new and revised items.

Table 1: Data Submission Specifications Version History

Data Specs Version	Effective Start Date	Effective End Date
1.01A	01/01/2002	09/30/2012
1.10.1	10/01/2012	09/30/2014
1.11.1	10/01/2014	09/30/2015
1.12.1	10/01/2015	09/30/2016
2.00.1	10/01/2016	09/30/2017
2.01.1	10/01/2017	09/30/2018
3.00.1	10/01/2018	09/30/2019
4.00.0	10/01/2019	none

When a new major version of the IRF-PAI data specifications is published, a starting effective date is assigned to it. The prior version is assigned an ending effective date equal to the day before the new version takes effect. The data specifications effective dates, in conjunction with the Discharge Date (Item 40) for a submitted record, determine which version of the data specifications applies to the record.

When a submitted record is validated by the Assessment Submission and Processing (ASAP) system, its Discharge Date is examined and is used to load the appropriate set of edits for the submission specifications in effect on the Discharge Date. If the submitted record does not conform to those edits, the appropriate warning and/or fatal error messages are issued. When a new version of the data specifications takes effect, provider data entry and submission software typically handles records from the previous version (or versions) and the new version. Thus provider software must identify the discharge date for each record, determine which version of the specifications applies, and use those specifications to validate the record prior to submission. Failure to do this may result in warnings, fatal errors, or unexpected results.

For example, a new item is defined and activated in a new version of the data submission specifications. If that new item is included in a record with a discharge date that precedes the new version of the specifications, then that new item is ignored. It is ignored because the new item is unknown to the data specifications that are in effect for that discharge date and the ASAP system ignores unknown items. If the new item is omitted from a record with a discharge date that is on or after the effective date of the new specifications, then a fatal error occurs and the record is rejected. This occurs because the ASAP system

applies the new version of the specifications and determines that the new item was not included in the submitted record when it was required.

The appropriate data specifications version does not depend on the submission date. If a record is submitted on or after 10/1/2019 with a discharge date of 9/30/2019, version 3.00.1 applies, not version 4.00.0. Note also that if a record is modified, then the version of the data specifications is determined using the discharge date of the modified record (not the submission date), just as if it were a new record.

When submitting a record (new record, modification, or inactivation), the SPEC_VRSN_CD item in the control section must be included. The SPEC_VRSN_CD is an informational item that indicates the version of the data specifications the provider software used to create the record. The allowable values of SPEC_VRSN_CD correspond to the published major version numbers, and the submitted value should match the version that is in effect based upon the discharge date of the record, otherwise a warning is issued. Furthermore, the value submitted does not affect or control in any way the version of the data specifications that is applied to the submitted record. The version of the specifications applied is controlled solely by the discharge date of the submitted record.

3 Changes with IRF-PAI Data Specifications Version 4.00.0

3.1 Changes from the prior data specifications version 3.00.1

- **Removed items.** The FIM items (29A through 39RG) and flu items (O0250A-C) have been removed from the IRF-PAI, along with edits specific to those items.
- **Replacement of edit -1130 with -1131 on January 1, 2020.** Item 2 will only accept the Medicare Beneficiary Identifier (MBI) on January 1, 2020 and beyond, as the transition period from the Medicare Number to MBI will have ended.

Please consult the detailed data specifications, the item change report and the edit change report for additional information.

4 Submission File Format

- **Submission file format.** Version 4.00.0 of the IRF-PAI data specifications makes no changes to the submission file format. IRF-PAI submissions 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.

Note: Only printable characters are allowed in the submission file tags and tag values. Non-printable and control characters are not allowed in the submission file tags and tag values.

- **Modifications:** Modifications will continue to be accepted. All modifications must obey the data submission specifications appropriate to the Discharge Date (Item 40) on the record being modified.
- **Inactivations:** Inactivations will continue to be accepted. The active items on an inactivation are only 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 record types 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. All items per the Data Specifications in effect on the discharge date (Item 40) of the assessment must be submitted. Any items submitted in the XML file that are not active are ignored (not edited and not stored).

When an Inactivate existing record (TRANS_TYPE_CD = 3) is submitted, 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 Information 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 specifications also define a fixed format file layout which can 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 used for research. The fixed-format file layout will also be used to pass data to standard applications (e.g., CMG payment classification groupers) that are provided by CMS.
- **Control vs. assessment vs. calculated 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 include informational items needed to identify and control record processing, facility address and contact information, software vendor information, the CMG payment group calculated by the facility, and CMG version used. Assessment and control items are all submitted in the XML file. Calculated items are those items produced by the ASAP system for the submitted assessment. This includes system recalculated CMG codes and version; identifiers for the resident, assessment, and submission file; and other information needed for processing and identification. Calculated items are not submitted.
- **IDs assigned to edits.** 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 for each item. An Unduplicated Edit report has been included in the specifications, containing the text for each edit along with a list of the items to which that edit applies. This report should assist developers in creating and validating their software. Finally, the edit IDs from the data specifications are used on the IRF-PAI Final Validation Reports to assist providers in correcting problems that result in fatal errors and warnings.

- **Submitted CMG value.** The appropriate CMG value should be submitted in the Control Section item with tag SBMTD_CMG_TXT based on the discharge date of the assessment. If the submitted CMG value does not match the ASAP recalculated CMG value, a warning message will be issued. The CMG version should also be submitted in the Control Section item with tag SBMTD_CMG_VRSN_TXT. If the submitted CMG version does not match the ASAP version used, a warning message will be issued. The appropriate CMG version is based on the assessment discharge date (Item 40) as given in Table 2.

Table 2: CMG Grouper Versions

Release Date	Specs Version	Description
October 1, 2019	4.00.0 draft	Grouper 4.00 effective beginning October 1, 2019
October 1, 2018	3.00.1 final	Grouper 3.10 effective beginning October 1, 2018
October 1, 2017	2.01.1 final	Grouper 3.00 effective beginning October 1, 2017
October 1, 2016	2.00.1 final	Grouper 2.90 effective beginning October 1, 2016
October 1, 2015	1.12.1 final	Grouper 2.80 effective beginning October 1, 2015
October 1, 2014	1.11.1 final	Grouper 2.70 effective beginning October 1, 2014
October 1, 2014	1.11.0 preliminary	Grouper 2.70 effective beginning October 1, 2014
October 1, 2012	1.10.1 final	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 only recalculate the CMG on assessments with a discharge date within 27 months of the submission date.

5 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 within that version. For example, **4.00.0** will be the initial release of Version 4.00. If there are subsequent revisions to this version, then the next revision will be 4.00.1; the following revision 4.00.2, etc. In addition, the file names for draft versions of the documents will contain the word “draft” after the version number. Also, in the files below, mm-dd-yyyy refers to the calendar date when the file was created.

5.1 Reports and Documentation in the Distribution Package

- IRF-PAI Data specs overview (vn.nn.r) mm-dd-yyyy.pdf The current document.

- **IRF-PAI Detailed data specs report (vn.nn.r) mm-dd-yyyy.zip** This zip file contains separate detailed data specifications reports in PDF format for the items in each section of the IRF-PAI record (e.g., “01-Control Section-IRF-PAI Data Specs (V4.00.0).pdf”, “02-Identification Section-IRF-PAI Data Specs (V4.00.0).pdf”, etc.). This report is discussed in more detail later in this document.
- **IRF-PAI Undup edits report by edit ID (vn.nn.r) mm-dd-yyyy.pdf** This report contains an unduplicated list of all edits (formatting rules, consistency checks, skip patterns, etc.) that apply to the item set. It is sorted by the unique edit ID number. This report is discussed in more detail later in this document.
- **IRF-PAI Item change report (vn.nn.r) mm-dd-yyyy.pdf** This report lists changes that have been made to items, item responses, or the edits applied to an item since the previous version of the data specifications.
- **IRF-PAI Edit change report (vn.nn.r) mm-dd-yyyy.pdf** This report lists changes that have been made to edits since the previous version of the data specifications.
- **IRF-PAI Item list by item ID (vn.nn.r) mm-dd-yyyy.pdf** This report lists all items in the data set with the Control Section items first, the Assessment Section items next (items in the order they appear on the IRF-PAI), and the Calculated Section last.
- **IRF-PAI Data Specifications Version History (vn.nn.r) mm-dd-yyyy.pdf.** This document provides a summary of all versions of the data specifications.
- **IRF-PAI HTML data specs (vn.nn.r) mm-dd-yyyy.zip** This zip file contains a set of HTML files that display the same information as is in the detailed data specifications 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 specifications.

5.2 Data Dictionary Files in the Distribution Package

- **IRF-PAI data dictionary (vn.nn.r) mm-dd-yyyy.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. The tables in this database and fields within each of the tables are described in Appendix A of the current document. Using this access database to generate reports is discussed in the next section of this document.
- **IRF_PAI 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 data dictionary. The fields (columns) in this file are described in Appendix A of the current document.
- **IRF_PAI 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 drop down lists containing the response options and associated text for each item. The fields (columns) in this file are described in Appendix A of the current document.

5.3 Generating IRF-PAI Data Dictionary Reports

One of the files distributed with the data specifications is the Microsoft Access database containing the IRF-PAI data dictionary. This database can be used to generate predefined reports or develop custom reports. The following is a brief description of the predefined reports:

- **Public: data dictionary report.** This report contains a description of each table and field that is part of the data specifications data dictionary. This information is presented in Appendix A of the current document.
- **Public: data specs report.** This is the same as the data specifications reports that are part of the distribution package except that it is a single report including all sections of the IRF-PAI record.
- **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 is the same as the item list report that is part of the distribution package.
- **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 unduplicated edits 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.).

Also note that there are predefined queries that will produce quick listings of items with the following special values:

- ^ value: indicating that the item can be skipped due to a skip pattern.
- - value: indicating that the item was not assessed. This value is only available for the race/ethnicity, height, weight, and the Quality Indicators Section items.
- = value: indicating that the item is voluntary and the provider chose to not submit. This value is only available for some Quality Indicators Section items.

6 IRF-PAI Data Specs Report

The IRF-PAI Data Specs Report contains at least one page for every item in the IRF-PAI item set. Each item begins on a new page. This report includes all of detailed information concerning each item in the IRF-PAI data set. The report contains 3 types of information for each item:

1. Basic information.
2. Allowable responses or values for the item
3. Fatal and warning edits associated with the item.

The 3 types of information are described below.

6.1 Basic Item Information

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

- **Item ID.** The item identifier (e.g., “14” for the Admission Class item).
- **XML Tag.** The XML tag used to identify the item in the submission file (e.g. <R14> for item 14).
- **Description.** A brief description of the item (e.g., Admission Class for Item 14).
- **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., facility information, vendor information for 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 Assessment 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.*
- **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., M0300B1_1, Number of Stage 2 pressure ulcers at admission).
 - **Date.** Examples of date items include 12, Admission Date.
 - **ICD.** The ICD items (e.g., 22, 24, 47) contain diagnosis codes. The QIES ASAP system accepts the appropriate ICD code defined by the version of the data specifications for the discharge date in the assessment. ICD items must conform to a specific format that is defined in the data specifications. Note: assessments with a discharge date prior to 10/01/2015 must submit ICD-9 codes. Assessments with a discharge date on or after 10/01/2015 must submit ICD-10 codes.
- **Max Length.** This property shows the maximum number of characters or bytes that the submitted item may contain. Number of characters in the submitted value must be less than or equal the maximum number of characters allowed for the item.
- **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.

6.2 Item Responses/Values

The table in the second section of the page lists the allowable responses/values that may be submitted for the item. For example, three values are listed for item 20A: 02, 51, and 99. The text associated with each item value is included. For items in the Assessment item group, the response text is taken directly from the IRF-PAI item set, where available.

6.3 Item Edits

The table in the third 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 the data specifications 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 to which that edit applies. 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. An invalid response/value for an item is also reported as a Format edit.
 - **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 caret (^) will be submitted as the response/value in the submission file to indicate that the item was not answered due to a skip pattern. Item 42, for example, contains skip pattern edits -1115 and -1116. These edits are related to a trigger item (42) and to a set of dependent items (43A – 43F). The edit -1115 requires that if 42 is equal to zero (no program interruption), the dependent items (program interruption dates) must be skipped (must not be answered). The edit -1116 requires that if 42 is equal to one (yes), the first dependent item (43A) must be answered (must not be skipped). 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 involved in the skip pattern.
- **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, invalid response/value, 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 ASAP system recalculated CMG code.

- **Edit Text.** This column contains the text of the edit.

7 Unduplicated Edit Report

The IRF-PAI Data Specs 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 to which it applies.

For each edit listed, the edit ID, edit type, severity, 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.

8 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 IRF-PAI Data Specs 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, Item 8 (Gender) has the values 1 and 2 listed in the “Item Values” table. If any other value is submitted for Item 8, a fatal error will occur. Note that consistency 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 separate 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) in the Control Section 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 that the submitted value must be one number greater than the previously accepted assessment.
- A dash (-) is used to indicate that an item was not assessed. 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.
- A caret (^) is used to indicate that an item was skipped due to a skip pattern or the item can be answered with a blank. For example, Item M0210_1 indicates pressure ulcers present on admission with a value of 0 indicating no ulcers and a value of 1 indicating ulcers present. The items M0300A1_1, M0300B1_1, M0300C1_1, M0300D1_1, M0300E1_1, M0300F1_1, M0300G1_1 indicate the number of ulcers of different types at admission. If M0210_1 is 0 (no ulcers at admission), then all of the items indicating number of ulcers of each type at admission are skipped and must be submitted with a caret. If M0210_1 is 1 (ulcers present at admission), then none of the items indicating number of ulcers of each type at admission can be submitted with a caret. 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.
- An equal sign (=) indicates that an item is not being submitted and it is a voluntary item.

- 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).
 - [-] means that an active item was not assessed.
 - [^] means that an items skipped due to a skip pattern.
 - [=] means that a voluntary item is not being submitted.

9 XML File Structure

IRF-PAI data is submitted using XML files. Figure 1, below, illustrates the structure of an IRF-PAI XML submission record.

Figure 1: XML Submission File Structure

```
<?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>999432123</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>
  .
  .
  .
  <M0210_1>-</M0210_1>
  <M0210_2>0</M0210_2>
  .
  .
  .
</ASSESSMENT>
```

The example above begins with the standard XML header line which is followed by a line with the ASSESSMENT element beginning tag <ASSESSMENT>, followed by the lines containing the data for all assessment items, and ending with a line with the ASSESSMENT element ending tag </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 assessment file must be compressed using standard compression into the zipped file. To submit two or more XML assessment files at the same time, the separate XML assessment files can 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 standard 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 the IRF-PAI and any data contained in those elements will not be stored in the CMS's database. **NOTE:** Tags names for any item cannot be longer than 30 characters, excluding the delimiters. If a tag greater than 30 characters is included in the XML file, a system error will be generated and record processing stopped.

The tag for each item corresponds to the item ID. 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 M0300B1_1 is used to report the number of stage 2 pressure ulcers at admission. This is an integer item so only the following integer values will be accepted:

```
< M0300B1_1 >0</ M0300B1_1 >
< M0300B1_1 >1</ M0300B1_1 >
< M0300B1_1 >2</ M0300B1_1 >
< M0300B1_1 >3</ M0300B1_1 >
< M0300B1_1 >4</ M0300B1_1 >
< M0300B1_1 >5</ M0300B1_1 >
< M0300B1_1 >6</ M0300B1_1 >
< M0300B1_1 >7</ M0300B1_1 >
< M0300B1_1 >8</ M0300B1_1 >
< M0300B1_1 >9</ M0300B1_1 >
```

Note that these rules do not apply to the diagnosis code items (22, 24A through 24Y, 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 stored in the CMS database and 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 a special character (dash) described above. Item M0210_1 contains a dash indicating that the item was not assessed.

10 Fixed-Format File Layout

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 for research and for importing data to applications such as the CMG DLL used to classify patients for Medicare payment. This fixed format may also be useful for transferring large batches of assessment data, and software vendors may find it useful to support this format for importing IRF-PAI 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 (item master) table in the data dictionary Access database or in the itm_mstr.csv file that is supplied with the data specifications. 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 can be sorted by the field called fixed_rec_srt_id to put items in the order they will appear in the fixed format record.

Note that the item master table and csv file list additional information describing the IRF-PAI items. The field/column 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.

11 Additional Documentation

In order to understand the submission process completely, software developers will need information that is not contained within the data specifications documents. This additional information is available on the CMS websites for IRFs. For example, detailed information on the IRF-PAI CMG grouper is available on the CMS website.

Appendix A: Data Dictionary Files

The data dictionary that was used to produce the data specifications is distributed to assist software developers. The data dictionary is a Microsoft Access database (.accdb file) and includes data dictionary tables, predefined reports, and predefined queries. In addition, extracts from the item master and item values 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 in Table A1 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 with the characteristics for every relational (consistency) edit or information message.
rltn_txt	Contains one record with the message text for every relational edit or information message.
rltn_itms	Contains one record linking an edit or information message with an item.
rltn_itm_txt	Contains one record for every edit or information message that is associated with an item and includes the edit ID, edit characteristics, and edit text. This table is used to generate the "Item Edits" section of the detailed Data Specs Report and the Unduplicated Edits Report.

Table A2 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)—data specs and IRF-PAI assessment order
itm_mstr	itm_id	Text	30	item ID code (e.g., "5A", item number on the IRF-PAI)
itm_mstr	itm_db_id	Text	30	ASAP QIES 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" for Control information, "02" for Identification information, "03" for Payer information, etc.)
itm_mstr	itm_sect_label	Text	10	item section label (e.g., "Identification")
itm_mstr	itm_grp_cd	Text	10	"Asmt", "Control", "Filler", "Calc"
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)—fixed format order

Table	Field	Data Type	Field Size	Description
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 both start and end bytes
itm_mstr	fixed_rec_lngth	Number	4	Field length for fixed format record (e.g., export record)
itm_mstr	XML_tag	Text	40	XML tag of item that is used in submission file
itm_val	itm_val_key	Number	4	item value key (primary key)
itm_val	itm_mstr_key	Number	4	item master key (foreign key to itm_mstr)
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")
rltn_mstr	rltn_key	Number	10	edit/message key (primary key)
rltn_mstr	rltn_id	Number	10	edit/message ID
rltn_mstr	rltn_srt_id	Text	10	edit/message sort ID (e.g., "01", "02")
itm_mstr	rltn_src_cd	Text	1	source code: "M"=manual, "G"=generated ("G" not used)
rltn_mstr	rltn_trgr	Text	20	not used
rltn_mstr	rltn_type_cd	Text	10	edit/message type code: "FORMAT", "CONSIST"
rltn_mstr	rltn_svrty	Text	10	severity level of the edit/message: "FATAL", "WARNING"
rltn_mstr	rltn_vrsn_notes	Memo		not used (notes describing changes since previous specs version)
rltn_itms	rltn_itm_key	Number	10	primary key for table
rltn_itms	rltn_key	Number	10	foreign key to the rltn_mstr table
rltn_itms	rltn_itm	Text	20	item label of an item associated with the edit/message
rltn_txt	rltn_txt_key	Number	10	primary key for table
rltn_txt	rltn_type_cd	Text	10	edit/message type code: "FORMAT", "CONSIST"
rltn_txt	rltn_type_txt	Text	10	edit/message type code description for reports: "Format", "Consistency"
rltn_txt	rltn_svrty	Text	10	severity level of the edit/message: "FATAL", "WARNING"
rltn_txt	rltn_key	Number	10	foreign key to the rltn_mstr table
rltn_txt	rltn_id	Number	10	edit/message ID
rltn_txt	rltn_srt_id	Text	10	edit/message sort ID (e.g., "01", "02")
rltn_txt	rltn_src_cd	Text	5	source of text: "G"=generated, "M"=manual ("G" not used)

Table	Field	Data Type	Field Size	Description
rtln_txt	rltn_txt	Memo		edit/message description
rtln_txt	rltn_vrsn_notes	Memo		not used (notes describing edit/message 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	foreign key to itm_mstr
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 ("G" not used)
rtln_itm_txt	rltn_id	Number	10	edit/message ID
rtln_itm_txt	rltn_srt_id	Text	10	edit/message sort ID (e.g., "01", "02")
rtln_itm_txt	rltn_type_cd	Text	10	edit/message type code: "FORMAT", "CONSIST"
rtln_itm_txt	rltn_type_txt	Text	10	edit/message type code description for reports: "Format", "Consistency"
rtln_itm_txt	rltn_svrty	Text	10	severity level of the edit/message: "FATAL", "WARNING"
rtln_itm_txt	rltn_txt	Memo		edit/message description
rtln_itm_txt	rltn_vrsn_notes	Memo		not used (notes describing edit/message changes since previous specs version)
rtln_itm_txt	itm_vrsn_notes	Memo		not used (notes describing item changes since previous specs version)