5 Date Format Specifications

Starting with version 3.1, OpenClinica uses the ISO 8601 standard date format as its canonical representation for dates and partial dates. An OpenClinica DATE is a string with year, month, day separated by a -which is the ISO8601 standard date format and all dates are stored internally in this format.

The OpenClinica user interface supports localization of dates, with the default date format in the user interface being DD-MMM-YYYY, but others (such as MM/DD/YYYY or DD/MM/YYYY) may be used depending on the localization/translation packages installed on a given OpenClinica instance. All dates are translated by the application to the canonical format specified here prior to insert/update into the database.

In versions 3.0.x and earlier, the OpenClinica canonical date format for internal storage of CRF item data values is MM/DD/YYYY, while for other fields (such as date of birth or enrollment date) it was ISO 8601. This approach limited the consistency of dates and partial dates and is not a universally recognized format. In 3.1 the canonical ISO 8601 date format was established for internal storage of all dates, including CRF item data values for dates and partial dates.

This document helps readers understand the impact of changing the default date format in OpenClinica, as well as explains the transformation of existing date values in the item_data table that will occur when upgrading to OpenClinica version 3.1.

For CRF items, OpenClinica 3.0.x and prior stored dates and partial dates in either the U.S. date format, or as Strings dependent on the users localization settings. Because of this date values (especially partial dates) were sometimes ambiguous. It is possible for OpenClinica instances upgraded from 3.0.x and older versions that some CRF items of type DATE may have existing values that do not match the allowed string pattern, in this case they will not be converted to ISO 8601 upon upgrade. Further sections of this chapter specify the changes being made to the default date format stored in the item_data table of the OpenClinica database and also describe in detail the migration/transformation of existing date values in the item_data table that occur when upgrading from OpenClinica 3.0.x to version 3.1.

For a more formal specification of data typing for user-defined CRF Item Data values in OpenClinica version 3.1 (Amethyst), see OpenClinica Item Data Specifications.

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5.1 Overview with Definitions and Acronyms

The date format in the database was changed to ISO 8601 for the following reasons:

1. Allow partial dates to be saved in a standard, consistent format, rather than as a string based on the users locale

2. Eliminate confusion amongst people accessing the database directly as to what format the date is in.
3. Support future introduction of time zone and time properties in OpenClinica.

Definitions and Acronyms:

ISO 8601 is the standard date format to be supported for CRF items with a data type of DATE or PDATE.

ISO 8601 is a universally recognized standard date format. More information about the standard can be found at the following URLs:

http://www.iso.org/iso/date_and_time_format

http://en.wikipedia.org/wiki/ISO_8601

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5.2 DATE and PDATE Datatypes

When upgrading to OpenClinica version 3.1, the application will attempt to transform existing data in the item_data table of type DATE or PDATE to match the ISO 8061 format, as discussed below. Transformations will be applied at upgrade time by OpenClinicas Liquibase database change tracking library.

Date values stored in other parts of the database other than the item_data table will not be modified.

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5.2.1 DATE Datatype

Values collected in prior versions of OpenClinica should be stored in the MM/DD/YYYY format. If the data is stored in a different format, the values will not be updated and will remain as they are. A separate script will need to be created to identify and update these values.

For all dates stored in MM/DD/YYYY, a liquibase script will convert the values to conform to the ISO 8601 standard date format, YYYY-MM-DD.

5.2.2 PDATE Datatype (Complete Dates)

Values collected in prior versions of OpenClinica should be stored in the MM/DD/YYYY format. If the data is stored in a different format, the values will not be updated and will remain as they are. A separate script will need to be created to identify and update these values.

For all partial dates stored in MM/DD/YYYY, a liquibase script will convert the values to conform to the ISO 8601 standard date format, YYYY-MM-DD.

5.2.3 PDATE Datatype (Month and Year Provided)

Values collected in prior version of OpenClinica would be stored in the format specified by the users locale. The default format in the **user interface** for DATE and PDATE in OpenClinica is DD-MMM-YYYY. The default format in the user interface for DATE and PDATE in OpenClinica is DD-MMM-YYYY. Therefore, when only a month and year are provided in a PDATE field, the value in the database would be MMM-YYYY. This is the only format that will be updated automatically by a liquibase script when OpenClinica is upgraded to Amethyst. A separate script will need to be created to identify and update values in a different format.

For all partial dates stored in MMM-YYYY format, the liquibase script will convert the values YYYY-MM in order to conform to the ISO 8601 standard date format.

5.2.4 PDATE Datatype (Year Provided)

No changes will be made. The values saved in prior versions of OpenClinica (in the format YYYY) meet the ISO 8601 standard date format.