

Usage of Dates/Times/Timezones/Intervals in CDA Documents

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Overview

As part of CDA Implementation Guides for continuity of care document types there are data elements defined that describe use of date or date-time values. In the table below these data elements are listed with guidance on appropriate use of TS and IVL_TS data types in each case. This covers requirements on appropriate use of date only; exact date-time; approximate/partial date and approximate/partial time, and duration period for these elements.

Appropriate Usage

- 1) When a time value is supplied it SHALL also be accompanied by a four digit time-zone value.
- 2) When a time value is supplied it SHALL include hours and minutes; it MAY also include seconds and fractions of seconds.
- 3) The specific usage defined below is that which is recommended as appropriate for each data element – comments may also highlight areas where uses are specifically prohibited.

Column headings for the recommended specific usage guide table below:

IG Section – Implementation guide section reference including document type and section number. Referenced continuity of care implementation guides are as follows:

DS – eDischarge Summary CDA Implementation Guide v3.4

EREF – eReferral CDA Implementation Guide v2.2

ES – Event Summary CDA Implementation Guide v1.2

SHS – Shared Health Summary CDA Implementation Guide v1.3

SL – Specialist Letter CDA Implementation Guide v1.3

IG Section Title – Nominal title of the section referenced in the implementation guide.

IG Data Element Path – The specified path details as per the implementation guide.

IG Description – The description text as it is specified by the implementation guide.

Type – The data type of the data elements

TS – point-in-time/date-time

IVL_TS – interval of date-time

IVL_TS/TS – interval of date-time that may also be validly instantiated as a point-in-time/date-time

Usage – Appropriate usage for each case. The precision defined applies to date/date-time values for a point-in-time (TS) or for each (high/low) end of an interval of time (IVL_TS) depending on type specified.

Precision notation:

yyyy – year SHALL be 4 digits e.g. '2012'

MM – month SHALL be 2 digits between 01 and 12 with leading zeros as needed e.g. February is '02'

dd - day of month SHALL be 2 digits between 01 and 31 with leading zeros as needed, and be valid to month length e.g. 1st is '01'

HH - hour of the day (24 hour) SHALL be 2 digits between 00 and 23 with leading zeros as needed e.g. 3pm is '15'

mm – minutes SHALL be 2 digits between 00 and 59 with leading zeros as needed e.g. '32'

ss – seconds SHALL be 2 digits between 00 and 59 with leading zeros as needed e.g. '42'

.f... - fraction of seconds (repeating digit) SHALL have decimal point and as many decimal places as needed e.g. '.321232' or '.4'

±zzzz - time zone SHALL be 4 digits, include a sign and be between 0000 and 1300 with leading zeros as needed e.g. '-0200' or '+1000'

[...] - content contained between brackets is optional e.g. 'yyyy[MM[dd]]' allows:

'2012' - year 2012; year is mandatory

'201211' - November 2012; month may be supplied; year must be supplied

'20121113' - 13th November 2012; when day is present month must be present; year must be present

Recommended Specific Usage

IG Section	IG Section Title	IG Data Element Path	IG Description	Type	Usage
DS-5.1 EREF-5.1 ES-5.1 SHS-5.1 SL-5.1	Clinical Document	ClinicalDocument/effectiveTime	Signifies the document creation time, when the document first came into being. Where the CDA document is a transform from an original document in some other format, the ClinicalDocument.effectiveTime is the time the original document is created.	TS	yyyyMMddHHmm[ss[f...]]±zzzz
DS-5.1.1, EREF-5.1.1, ES-5.1.1, SHS-5.1.1, SL-5.1.1	LegalAuthenticator	legalAuthenticator/time/@value	Indicates the time of authentication.	TS	yyyyMMddHHmm[ss[f...]]±zzzz
SL-6.1.1, DS-6.1.2, EREF-6.1.2, ES-6.1.2, SHS-6.1.2	Subject of Care	recordTarget/patientRole/patient/ birthTime	The date of birth of the person.	TS	yyyyMMdd[HHmm[ss[f...]]±zzzz] usually only date except when the document is created as part of the care immediately following birth

SL-6.1.1, DS-6.1.2, EREF-6.1.2, ES-6.1.2, SHS-6.1.2	Subject of Care	recordTarget/patientRole/patient/ext:deceasedTime	The date or date and time at which a person was estimated or certified to have died.	TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz
SL-6.1.1, DS-6.1.2, EREF-6.1.2, ES-6.1.2, SHS-6.1.2	Subject of Care	ext:coverage2/ext:entitlement/ext:effectiveTime	The time interval for which an entitlement is valid.	IVL_TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz] usually date only range
SL-6.1.2, DS-6.1.1, EREF-6.1.1, ES-6.1.1, SHS-6.1.1	Document Author	author/time	The time interval during which the participation in the health care event occurred.	TS	yyyyMMddHHmm[ss[.f...]]±zzzz only the end time need be recorded
DS-7.1.1.1	Encounter	componentOf[enc]/encompassingEncounter/effectiveTime	The date (and optionally time) of the start and end of the encounter that this discharge summary refers to.	IVL_TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz
DS-7.1.1.1.1	Responsible Health Professional at Time of Discharge	encounterParticipant/time	The time interval during which the participation in the health care event occurred.	IVL_TS/TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz usually a date only or date only range
DS-7.1.1.1.2	Other Participant	participant/time	The time interval during which the participation in the health care event occurred.	IVL_TS/TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz usually a date only or date only range
DS-7.1.1.5.1 EREF-7.1.5.1 ES-7.1.6.1 SL-7.1.5.1	Pathology Test Result	entry[path_test_res]/observation/entryRelationship[tst_date]/observation/effectiveTime	The date and, optionally, time of the Pathology Test Result observation. If the Pathology Test Result Duration is non-zero, it is the time at which the Pathology Test Result observation was completed, i.e. the date (and time) of the trailing edge of the Pathology Test Result Duration.	TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz usually includes time, see the FAQ ¹
DS-7.1.1.5.1.1 EREF-7.1.5.1.1 ES-7.1.6.1.1 SL- 7.1.5.1.1	Test Specimen Detail	entryRelationship[spec]/observation/effectiveTime	The date and time that collection has been ordered to take place or has taken place.	TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz usually includes time
DS-7.1.1.5.1.1 EREF-7.1.5.1.1 ES-7.1.6.1.1 SL- 7.1.5.1.1	Test Specimen Detail	entryRelationship[spec]/observation/entryRelationship[date_rec]/observation/value:TS	The date and time that the sample was received at the laboratory	TS	yyyyMMddHHmm[ss[.f...]]±zzzz
DS-7.1.1.5.1.2.1 EREF-7.1.5.1.2.1 ES-7.1.6.1.2.1 SL- 7.1.5.1.2.1	Result Group Specimen Detail	component/observation/effectiveTime	The date and time that collection has been ordered to take place or has taken place.	TS	yyyyMMddHHmm[ss[.f...]]±zzzz
DS-7.1.1.5.1.2.1 EREF-7.1.5.1.2.1 ES-7.1.6.1.2.1 SL- 7.1.5.1.2.1	Result Group Specimen Detail	component/observation/entryRelationship[date_rec]/observation/value:TS	The date and time that the sample was received at the laboratory	TS	yyyyMMddHHmm[ss[.f...]]±zzzz

¹ The FAQ referred to there is “Proper representation of Pathology test result Date/Time”

(<https://vendors.nehta.gov.au/sections/myCompany/index.cfm?assetCategoryId=373#0>). Consult this for information about date times in pathology reports

DS-7.1.1.5.2 EREF-7.1.5.2 ES-7.1.6.2 SL- 7.1.5.2	Imaging Examination Result	entry[img_exam_res]/observation/ entryRelationship[res_date]/ observation/effectiveTime	The date and, optionally, time when the Imaging Examination Result became available.	TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz] usually includes time
DS-7.1.1.5.2.2 EREF-7.1.5.2.2 ES-7.1.6.2.2 SL- 7.1.5.2.2	Examination Request Details	entryRelationship[exam_req]/act/ entryRelationship[exam_perf]/act/ entryRelationship[img_det]/ observation/effectiveTime	Specific date/time the imaging examination was performed.	TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz]
DS-7.1.2.1.2	Therapeutic Good	entry[sbadm]/ substanceAdministration/ effectiveTime:IVL_TS	The time period that the patient has taken or will take the prescribed medication.	IVL_TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz] date-time range OR 'duration' only is also supported, that is, with only width element included defining a period of time without specific start or end date-time.
DS-7.1.4.1	Arranged Services	component[arranged]/section/ entry[service]/act/effectiveTime	The datetime or date range at/during which the arranged service is scheduled to be provided to the subject of care.	IVL_TS/TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz] date-time or date-time range
EREF-7.1.1	Referral Detail	entry[ref_time]/observation/ value:TS	The date/time when the Referral document was sent	TS	yyyyMMddHHmm[ss[.f...]]±zzzz
EREF-7.1.1	Referral Detail	entry[ref_val]/observation/ value:IVL_TS	The length of time the referral is valid from the date of the first patient/specialist encounter.	IVL_TS	'duration' only; where this is the period of time for which the referral is valid; using only the width element without specific start or end date-time
EREF-7.1.2.1 ES-7.1.4.1 SHS- 7.1.3.1	Problem/Diagnosis	entry[prob]/observation/ effectiveTime	Estimated or actual date the Problem/Diagnosis began, in the opinion of the clinician	TS	yyyy[MM[dd]] usually only a date; approximate allowed
EREF-7.1.2.1 SHS- 7.1.3.1	Problem/Diagnosis	entry[prob]/observation/ entryRelationship[crt]/observation/ code/value:IVL_TS	The date or estimated date that the problem/diagnosis resolved or went into remission, as indicated/identified by the clinician	TS	yyyy[MM[dd]] time is prohibited; interval of date/date-time not specified
EREF-7.1.2.2 ES-7.1.4.2 SHS- 7.1.3.3	Procedure	entry[proc]/procedure/ effectiveTime	The start date and/or time for the procedure.	TS	yyyy[MM[dd[HHmm[ss[.f...]]±zzzz]] usually only a date; approximate allowed
EREF-7.1.2.3 ES-7.1.4.3 SHS- 7.1.3.5	(Other) Medical History Item	entry/act/effectiveTime	The date range during which the item applied or occurred	IVL_TS	yyyy[MM[dd]] usually date only range; approximate allowed
EREF-7.1.5.3 ES-7.1.6.3 SL-7.1.5.3	Requested Service	entry[service]/act/effectiveTime	The datetime at which the arranged service is scheduled to be provided to the Subject of Care.	TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz]
EREF-7.1.5.3 ES-7.1.6.3 SL-7.1.5.3	Requested Service	entry[service]/act/effectiveTime	The datetime or date range at/during which the arranged service is scheduled to be provided to the Subject of Care.	IVL_TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz]
EREF-7.1.5.3 ES-7.1.6.3 SL-7.1.5.3	Requested Service	entry[service]/act/ entryRelationship/act/ effectiveTime	The point in time at which the Requested Service action is completed	TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz]

Note that there are two different SCS elements mapped to the same CDA element

ES-7.1.5.1 SHS- 7.1.4.1	Immunisation	entry[med_act]/ substanceAdministration/ effectiveTime	The point in time at which the Medication Action is completed	TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz
ES-7.1.6.3.1.2 SL- 7.1.5.3.1.2	Service Provider - Organisation	performer/time	The time interval during which the participation in the health care event occurred.	IVL_TS/TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz date-time or date-time range
SL-6.1.3	Referrer	participant/time	The time interval during which the participation in the health care event occurred.	IVL_TS/TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz usually a date only or date only range
SL-7.1.2.1	Recommendation	entry[rec_prov]/act/effectiveTime	The time or time period for which the Recommendation applies.	IVL_TS/TS	yyyyMMdd[HHmm[ss[.f...]]±zzzz usually a date only or date only range