**C-CDA Rubric Update 2018 (includes 2016 rubric)**

Updated 2018 Rubric (includes 2016 rubric)

### **The following are detailed rubrics used to identify and evaluate potential best practice tests that could be added to a C-CDA scoring tool. The rubric below have been approved by the HL7 Structured Documents Working Group (SDWG). The Office of the National Coordinator for Health IT currently maintains the C-CDA Scorecard and pending Appropriations makes updates as new rubric are approved by the HL7 SDWG.**

Note: There are Rubric below the main table denoted as Informational. Any tool should not lower score, but provide a warning.

| **Section/Entry/Header** | **Rubric** | **Description** | **Date Approved** |
| --- | --- | --- | --- |
| Patient Demographics | Patient Date of Birth should be valid and properly precisioned | The Patient's date of birth has to have a value which has a precision at least to the day. | 6/2016 |
| Patient's alternative names such as birth name, previous name should exist in its own name element independent of the legal name. | Patient's alternative names such as birth name, previous name should exist in its own name element independent of the name element representing a legal name. | 6/2016 |
| Encounters | EffectiveDate/Time elements should have the right time and time zone offsets | EffectiveTime elements in the section are expected to have time offsets along with the date and are typically nonzero time offsets. In addition they are expected to have the time zone information for proper interpretation. For e.g. if the time is being defaulted to 000000 for hours, minutes and seconds for multiple entries it might be worth checking if the data was entered properly. Also if the time offsets are present without a time zone, the time may be interpreted incorrectly, hence time zones should be specified as part of the time element. | 6/2016 |
| EffectiveDate/Times for all historical activities should be within the lifespan on the patient | EffectiveDate/Times for historical events should be greater than the patient's date of birth and less than the earliest of current time or patient's date of death. | 6/2016 |
| Encounter date/time and ID in the header are also in an EncounterActivity | Check if the Encounter date/time and ID in the header is present in one of the EncounterActivity entries in the Encounter section of the body. | August 31, 2018 |
| Check if an Encounter is present | If an encompassingEncounter is present in the header, then check whether there is an encounter in the Encounter section (not a null flavor) | August 31, 2018 |
| Encompassing encounter is present in Encounter documents | Check whether the encompassing encounter is present in all encounter based documents i.e. Discharge Summary, Referral Note, etc. (do not ding if using CCD/Care Plan) | August 31, 2018 |
| The Display Names used by the structured data should conceptually align with the meaning of the code  | Each of the code systems, value sets specified by the C-CDA IG refers back to standard terminologies like SNOMED-CT, LOINC, RxNorm, ICD9, ICD10. When codes from these code systems are used to represent structured data the short or long description assigned in the code system for the code should be used in the display name of the code element in the C-CDA document | 6/2016 |
| Each entry has to be linked to related narrative text | Each entry should have a text element with a reference that is linked to the corresponding narrative text in the section.text. | 6/2016 |
| Allergies | AllergyObservation entry has a reaction | Allergy Observation entry must have a reaction. Require a nullFlavor if not known. | August 31, 2018 |
| EffectiveDate/Times for all historical activities should be within the lifespan on the patient | EffectiveDate/low for historical events should be greater than one year prior to the patient's date of birth and effectiveTime/high less than the earliest of current time or patient's date of death. | 6/2016 |
| The Display Names used by the structured data should conceptually align with the meaning of the code | Each of the code systems, value sets specified by the C-CDA IG refers back to standard terminologies like SNOMED-CT, LOINC, RxNorm, ICD9, ICD10. When codes from these code systems are used to represent structured data the short or long description assigned in the code system for the code should be used in the display name of the code element in the C-CDA document | 6/2016 |
| Each entry has to be linked to related narrative text | Each entry should have a text reference that is linked to the narrative text in the section. | 6/2016 |
| Allergen representation is correct | The narrative name of the Allergen should represent the conceptual meaning of the code in the entry | August 31, 2018 |
| Author entry includes a last modified date | Author entry must include at least a timestamp with information of the last modified date and be present within the Allergies entry, which could be at the concern or observation level. | August 31, 2018 |
| Allergies should be structured with the correct code systems | Allergies should be structured in UNII, NDF-RT, SNOMED or RxNorm | August 31, 2018 |
| Problems | EffectiveDate/Time elements have the right time and time zone offsets - This should be removed. | EffectiveTime elements in the section are expected to have time offsets along with the date and are typically nonzero time offsets. In addition they are expected to have the time zone information for proper interpretation. For e.g. if the time is being defaulted to 000000 for hours, minutes and seconds for multiple entries it might be worth checking if the data was entered properly. Also if the time offsets are present without a time zone, the time may be interpreted incorrectly, hence time zones should be specified as part of the time element | 6/2016 |
| EffectiveDate/Times for all historical activities should be within the lifespan on the patient | EffectiveDate/low for historical events should be greater than one year prior to the patient's date of birth and effectiveTime/high less than the earliest of current time or patient's date of death. When the subject is the patient, the previous statement should be true. | 6/2016 |
| The Display Names used by the structured data should conceptually align with the meaning of the code.  | Each of the code systems, value sets specified by the C-CDA IG refers back to standard terminologies like SNOMED-CT, LOINC, RxNorm, ICD9, ICD10. When codes from these code systems are used to represent structured data the short or long description assigned in the code system for the code should be used in the display name of the code element in the C-CDA document | 6/2016 |
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| Problem Concern effective times reflect the appropriate problem concern status | A Problem Concern of completed or suspended should have a Problem Concern effectiveTime/high value present. Similarly a Problem Concern which is Active shall not have a Problem Concern effectiveTime/high value. | 6/2016 |
| Problem Observation value shouldn’t be the same as Problem Observation code | The problem observation value should not be set to the problem observation code (problem type value set) | August 31, 2018 |
| The Problem narrative representation should be correct  | The narrative name of the Problem should represent the meaning of the code in the Problem Observation value | August 31, 2018 |
| Author entry includes a last modified date and be present in the Problems entry | Author entry must include the most recent author with at least a timestamp with information of the last modified date and be present within the Problems entry, which could be at the concern or observation level. | August 31, 2018 |
| Narrative name of the problem should relate to the meaning of the code in the value | The narrative name of the Problem should represent the meaning of the code in the Problem Observation value | August 31, 2018 |
| Each entry has to be linked to related narrative text | Each entry should have a text reference that is linked to the narrative text in the section. | 6/2016 |
| Medications | Medications effective/time should minimally be represented to the day, but should reflect more specific time when such time is available (e.g., reflecting hospital MAR time specificity)  | EffectiveTime elements in the section are expected to have time offsets if a more specific time is given (e.g. HHMMSS) For e.g. if the time is being  defaulted to 000000 for hours, minutes and seconds for multiple entries it might be worth checking if the data was entered properly. Also if the time offsets are present without a time zone, the time may be interpreted incorrectly, hence time zones should be specified as part of the time element | 6/2016 |
| EffectiveDate/Times for all historical activities should be within the lifespan on the patient. | EffectiveDate/low for historical events should be greater than one year prior to the patient's date of birth and effectiveTime/high less than the earliest of current time or patient's date of death. | 6/2016 |
| The Display Names used by the structured data should conceptually align with the meaning of the code.  | Each of the code systems, value sets specified by the C-CDA IG refers back to standard terminologies like SNOMED-CT, LOINC, RxNorm, ICD9, ICD10. When codes from these code systems are used to represent structured data the short or long description assigned in the code system for the code should be used in the display name of the code element in the C-CDA document | 6/2016 |
| Medications should be coded with RxNorm SCD, SBD, GPCK, or BPCPK codes | C-CDA medication lists should contain medications coded as RxNorm Semantic Clinical Drugs, Semantic Branded Drugs, and packs. This means prescribable products on the level of 'loratadine 10mg oral tablet | 6/2016 |
| Immunizations should be represented in the Immunizations section.  | Immunizations should be recorded using the Section Code 11369-6 within the document.  | 6/2016 |
| Substance administration effectiveTime should match the narrative  | The Substance administration/effectiveTime @xsi:type = pivl should agree with the Free Text Sig information. | August 31, 2018 |
| Substance administration effectiveTime  | The Substance administration/effectiveTime @institution specified should agree with the Free Text Sig information | August 31, 2018 |
| Medications should have Free Text Sig entry. | Medications should have a free text sig entry to communicate medication instructions to providers and patients. | 6/2016 |
| The Author should include a timestamp and modified date in the Medication Activity entry | Author entry must include at least a timestamp with information of the last modified date and be present within the Medication Activity entry. | August 31, 2018 |
| Name of the drug should agree with the coded entry | The narrative name of the drug should represent the conceptual meaning of the code in the entry | August 31, 2018 |
| The substance administration/route code should reconcile with the medication consumable |  | August 31, 2018 |
| The substance administration status code should not conflict with the medication status observation |  | August 31, 2018 |
| Medication status end time should be later than the document creation date | When Medication status is active the high time should be in the future relative to the document generation date or the effectiveTime/high could be not present | August 31, 2018 |
| Machine readable should align with the narrative | The machine readable doseQuantity should agree with the Free Text Sig information | August 31, 2018 |
| Each entry has to be linked to related narrative text | Each entry should have a text reference that is linked to the narrative text in the section. | 6/2016 |
| Immunization | Immunizations effective/time should minimally be represented to the day, but should reflect more specific time when such time is available (e.g., reflecting hospital MAR time specificity) | EffectiveTime elements in the section are expected to have time offsets if a more specific time is given (e.g. HHMMSS) For e.g. if the time is being defaulted to 000000 for hours, minutes and seconds for multiple entries it might be worth checking if the data was entered properly. Also if the time offsets are present without a time zone, the time may be interpreted incorrectly, hence time zones should be specified as part of the time element | 6/2016 |
| EffectiveDate/Times for all historical activities should be within the lifespan on the patient. | EffectiveDate/low for historical events should be greater than one year prior to the patient's date of birth and effectiveTime/high less than the earliest of current time or patient's date of death. | 6/2016 |
| The Display Names used by the structured data should conceptually align with the meaning of the code. | Each of the code systems, value sets specified by the C-CDA IG refers back to standard terminologies like SNOMED-CT, LOINC, RxNorm, ICD9, ICD10. When codes from these code systems are used to represent structured data the short or long description assigned in the code system for the code should be used in the display name of the code element in the C-CDA document | 6/2016 |
| The narrative should align with the meaning of the coded entry | The narrative name of the Immunization should represent the concept meaning of the code in the entry | 8/31/2018 |
| Each entry has to be linked to related narrative text | Each entry should have a text reference that is linked to the narrative text in the section. | 6/2016 |
| Social History | EffectiveDate/Time elements have the right time and time zone offsets if the precision is proposed to the minute.  | Social History elements are often less precise. Do not over specify the precision. For e.g. if the time is being defaulted to 000000 for hours, minutes and seconds for multiple entries it might be worth checking if the data was entered properly. Also if the time offsets are present without a time zone, the time may be interpreted incorrectly, hence time zones should be specified as part of the time element | 6/2016 |
| EffectiveDate/Times for all historical activities should be within the lifespan on the patient. | EffectiveDate/low for historical events should be greater than one year prior to the patient's date of birth and effectiveTime/high less than the earliest of current time or patient's date of death. | 6/2016 |
| The Display Names used by the structured data should conceptually align with the meaning of the code. | Each of the code systems, value sets specified by the C-CDA IG refers back to standard terminologies like SNOMED-CT, LOINC, RxNorm, ICD9, ICD10. When codes from these code systems are used to represent structured data the short or long description assigned in the code system for the code should be used in the display name of the code element in the C-CDA document | 6/2016 |
| Smoking status observation Template Id should be present in CCD and Referral Note.  | Smoking status observation should be present. This is an observation with observation.code=72166-2  | 6/2016 |
| Birth Sex has to be recorded as a social history observation. | C-CDA documents should capture birth sex as a social history observation independent of the Administrative Gender element in the US-Realm Header. | 6/2016 |
| Each entry has to be linked to related narrative text | Each entry should have a text reference that is linked to the narrative text in the section. | 6/2016 |
| Laboratory Tests and Results | EffectiveDate/Time elements have the right time format and time zone offsets | EffectiveTime elements in the section are expected to have time offsets along with the date and are typically nonzero time offsets. In addition they are expected to have the time zone information for proper interpretation. For e.g. if the time is being  defaulted to 000000 for hours, minutes and seconds for multiple entries it might be worth checking if the data was entered properly. Also if the time offsets are present without a time zone, the time may be interpreted incorrectly, hence time zones should be specified as part of the time element | 6/2016 |
| EffectiveDate/Times for all historical activities should be within the lifespan on the patient. | EffectiveDate/low for historical events should be greater than one year prior to the patient's date of birth and effectiveTime/high less than the earliest of current time or patient's date of death. | 6/2016 |
| The Display Names used by the structured data should conceptually align with the meaning of the code. | Each of the code systems, value sets specified by the C-CDA IG refers back to standard terminologies like SNOMED-CT, LOINC, RxNorm, ICD9, ICD10. When codes from these code systems are used to represent structured data the short or long description assigned in the code system for the code should be used in the display name of the code element in the C-CDA document | 6/2016 |
| Lab Result values should use preferred UCUM units for the specific lab test. | Lab Result values should use preferred UCUM units | 6/2016 |
|  |  |  |
| The effectiveTime is an interval that spans the effectiveTimes of the contained result observations. | The effectiveTime interval in the Result Organizer must encompass the effectiveTimes of the observations within the organizer. | 6/2016 |
| If observation value is recorded as a PQ datatype and if present, the observation range should be coded as an “IVL\_PQ” | If observation value is recorded as a PQ datatype and if present, the observation range should be coded as an “IVL\_PQ” (a parse-able range high/low attributes instead of narrative text). | August 31, 2018 |
| Each entry has to be linked to related narrative text | Each entry should have a text reference that is linked to the narrative text in the section. | 6/2016 |
| Vital Signs | EffectiveDate/Time elements have the right time format and time zone offsets | EffectiveTime elements in the section are expected to have time offsets along with the date and are typically nonzero time offsets. In addition they are expected to have the time zone information for proper interpretation. For e.g. if the time is being  defaulted to 000000 for hours, minutes and seconds for multiple entries it might be worth checking if the data was entered properly. Also if the time offsets are present without a time zone, the time may be interpreted incorrectly, hence time zones should be specified as part of the time elementNote: Organization should consider taking points away if it fails more than once as there’s a chance someone input 12:00:00 and it fails | 6/2016 |
| EffectiveDate/Times for all historical activities should be within the lifespan on the patient | EffectiveDate/low for historical events should be greater than one year prior to the patient's date of birth and effectiveTime/high less than the earliest of current time or patient's date of death. | 6/2016 |
| The Display Names used by the structured data should conceptually align with the meaning of the code. | Each of the code systems, value sets specified by the C-CDA IG refers back to standard terminologies like SNOMED-CT, LOINC, RxNorm, ICD9, ICD10. When codes from these code systems are used to represent structured data the short or long description assigned in the code system for the code should be used in the display name of the code element in the C-CDA document | 6/2016 |
| The Vital Sign Observation entries should use the right LOINC codes to represent the type of vital sign being captured | Each of the vital sign observation present in the document should use the recommended LOINC codes to represent the vital sign | 6/2016 |
| Each of the Vital Sign Observation should use the recommended UCUM units to represent the vital sign measurement result. | The recommended UCUM units should be used to represent the Vital Sign result values as part of the observation. | 6/2016 |
| The EffectiveDate/Time elements for the Vital Sign Organizer must encompass the underlying observations.  | The EffectiveDate/Time elements of the Vital Signs Organizer cannot be out of sync with the Vital Signs Observation. Each of the Observation's EffectiveTime/low >= Organizer's EffectiveTime/low and Observation's EffectiveTime/high should be <= Organizer's EffectiveTime/high | 6/2016 |
| Vital signs and results should use a LOINC Code. | A LOINC Code must be used when coding vital signs and results. | August 31, 2018 |
| BMI should match height and weight |  | August 31, 2018 |
| Vital signs and results should use a LOINC Code |  | August 31, 2018 |
| Each entry has to be linked to related narrative text. | Each entry should have a text reference that is linked to the narrative text in the section. | 6/2016 |
| Procedures | The Display Names used by the structured data should conceptually align with the meaning of the code. | Each of the code systems, value sets specified by the C-CDA IG refers back to standard terminologies like SNOMED-CT, LOINC, RxNorm, ICD9, ICD10. When codes from these code systems are used to represent structured data the short or long description assigned in the code system for the code should be used in the display name of the code element in the C-CDA document | 6/2016 |
| Procedures should be structured with the correct code system | Procedures should be structured in CPT, CDT-2, ICD-9, ICD-10, SNOMED, HCPCS or LOINC | August 31, 2018 |
| Each entry has to be linked to related narrative text | Each entry should have a text reference that is linked to the narrative text in the section. | 6/2016 |
| Goals | Each goal must be related to a specific health concern | If there’s a goal you must be able to tell what health concern(s) the goal is related to (Care Plan Document Type specific rubric for now, but will throw a warning for CCD, Referral Note, Progress Note and Discharge Summary - may ding for all document templates in the future) | August 31, 2018 |
|  | Each intervention must relate to a specific goal | If there’s an intervention you must be able to tell what goal(s) the intervention is related to (Care Plan Document Type specific rubric for now, but will throw a warning for CCD, Referral Note, Progress Note and Discharge Summary - may ding for all document templates in the future) | August 31, 2018 |
| Miscellaneous | All Template Ids for C-CDA and Supplemental IGs should be correct | All Template Ids should be Valid for C-CDA and Supplemental IGs. If there is a valid template ID, but doesn’t align with above then provide an Informational message saying it’s an unrecognized template ID. | 6/2016 |
| Documentcode should specify a valid document type | The clinicalDocument.code that specifies the document type should come from one of the concepts or value sets specified by C-CDA. | August 31, 2018 |
| If observation value is recorded as a PQ datatype and if present, the observation range should be coded as an “IVL\_PQ” | If observation value is recorded as a PQ datatype and if present, the observation range should be coded as an “IVL\_PQ” (a parse-able range high/low attributes instead of narrative text). | August 31, 2018 |
| The identifiers used within a CDA document should be unique within the same document. Reoccurrences of an identifier should represent the same instance of the item in the document. | Instance Identifiers should be unique for distinct acts. Encounters could have same ids when referencing the same encounter. | 6/2016 |
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The rubric listed below are informational only. All tools adopting this criteria should throw a warning not an error.

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| --- | --- | --- | --- |
| **Section/Entry/Header** | **Rubric** | **Description** | **Date Approved** |
| Laboratory Tests and Results | Lab results should be expressed with preferred LOINC codes which are published as the top 2000 LOINC codes from Regenstrief. | Lab results should be expressed with LOINC codes.  | August 31, 2018 |
| Problems | All problem codes should be expressed with core subset of SNOMED codes | All problem codes should be expressed with core subset of SNOMED codes | August 31, 2018 |
| Medications | The substance administration/route code must not conceptually conflict with the narrative sig |  | August 31, 2018 |