HL7 EHR-System Immunization Functional Profile

Based on HL7 EHR System Functional Model and Standard, Release 2.01

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Notes to Balloters

Functional Profile Components

The Function List includes the following components:

Function ID # (Normative)	This is the unique identifier of a function in the Function List (e.g. CP.1.1) and should be used to uniquely identify the function when referencing functions. The Function ID also serves to identify the section within which the function exists (CP = Care Provision Section) and the hierarchy or relationship between functions (CP.1.1 is a sibling to CP.1.2, parent of CP.1.1.1 and child of CP.1). In many cases the parent is fully expressed by the children.
Function Type (Reference)	Indication of the line item as being a header (H) or function (F) or conformance criteria.
Header/Function Name (Normative)	This is the name of the Function and whilst expected to be unique within the Function List; it is not recommended to be used to identify the function without being accompanied by the Function ID. Example: Manage Medication List
Function Statement (Normative)	This is a brief statement of the purpose of this function. Whist not restricted to the use of structured language that is used in the Conformance Criteria (see below); the Statement should clearly identify the purpose and scope of the function. Example: Create and maintain patient-specific medication lists.
Description (Reference)	This is a more detailed description of the function, including examples if needed. Example: Medication lists are managed over time, whether over the course of a visit or stay, or the lifetime of a patient. All pertinent dates, including medication start, modification, and end dates are stored. The entire medication history for any medication, including alternative supplements and herbal medications, is viewable. Medication lists are not limited to medication orders recorded by providers, but may include, for example, pharmacy dispense/supply records, patient-reported medications and additional information such as age specific dosage.
Conformance Criteria (Normative)	Each function in the Function List includes one or more Conformance Criteria. A Conformance Criteria, which exists as normative language in this standard, defines the requirements for conforming to the function. The language used to express a conformance criterion is highly structured with standardized components with set meanings. The structured language used to define conformance clauses in the Function List are defined in the Glossary (Chapter 4).
Reference (Reference)	Reference to the Functional Model or Functional Profile the current Functional Profile was developed against.
Change Indicator	The change indicator shows the change from previous versions. This will be valued as follows: C - Changed D - Deleted N - New NC - No Change DEP - Deprecated
Priority	The priority for the implementation of the item. This will be valued as follows: EN - Essential Now EF - Essential Future O - Optional

1. Overarching Section

Section Overview

The Overarching Section contains Conformance Criteria that apply to all EHR Systems and consequently must be included in all EHR-S FM compliant profiles. These criteria are grouped under a single Function. All functions within the Overarching Section have an identifier starting with “OV”.

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
OV.1 Function	Overarching Criteria	OV.1	NC	EN
	Statement: Overarching criteria are those that apply to all EHR Systems. **Description:** The Overarching Section contains Conformance Criteria that apply to all EHR Systems and consequently must be included in all EHR-S FM compliant profiles. These criteria are grouped under a single Function. **External References:**			
1.	The system SHALL conform to function CP.9.1 (Produce a Summary Record of Care).	OV.1	NC	EN
2.	The system SHALL conform to function CPS.9.3 (Health Record Output).	OV.1	NC	EN
3.	The system SHALL conform to function CPS.9.4 (Standard Report Generation).	OV.1	NC	EN
4.	The system SHALL conform to function RI.1.1 (Record Lifecycle) and all child functions.	OV.1	NC	EN
5.	The system SHALL conform to function RI.1.2 (Record Lifespan) and all child functions.	OV.1	NC	EN
6.	The system SHALL conform to function RI.2 (Record Synchronization).	OV.1	NC	EN
7.	The system SHALL conform to function RI.3 (Record Archive and Restore).	OV.1	NC	EN
8.	The system SHALL conform to function TI.1.1 (Entity Authentication).	OV.1	NC	EN
9.	The system SHALL conform to function TI.1.2 (Entity Authorization) .	OV.1	NC	EN
10.	The system SHALL conform to function TI.1.3 (Entity Access Control).	OV.1	NC	EN
11.	The system SHALL conform to function TI.1.4 (Patient Access Management).	OV.1	NC	EN
12.	The system SHALL conform to function TI.1.5 (Non-Repudiation).	OV.1	NC	EN
13.	IF the system transmits data to or receives data from a system outside of a secure network, THEN the system SHALL conform to function TI.1.6 (Secure Data Exchange), to ensure that the data are protected.	OV.1	NC	EN
14.	IF the system transmits data to or receives data from a system outside of a secure network, THEN the system SHALL conform to function TI.1.7 (Secure Data Routing), to ensure that the exchange occurs only among authorized senders and receivers.	OV.1	NC	EN
15.	The system SHALL conform to function TI.1.8 (Patient Privacy and Confidentiality).	OV.1	NC	EN
16.	The system SHALL conform to function TI.2 (Audit) and all child functions.	OV.1	NC	EN
17.	The system SHOULD conform to function TI.3 (Registry and Directory Services).	OV.1	NC	EN
18.	The system SHALL conform to function TI.4 (Standard Terminology and Terminology Services).	OV.1	NC	EN
19.	IF the system manages data for which standard terminologies have been established, THEN the system SHALL conform to function TI.4.1 (Standard Terminologies and Terminology Models) to support semantic interoperability.	OV.1	NC	EN
20.	IF the system manages data for which standard terminologies have been established, THEN the system SHALL conform to function TI.4.2 (Maintenance and Versioning of Standard Terminologies) to preserve the semantics of coded data over time.	OV.1	NC	EN
21.	IF terminology mapping is implemented within the system, THEN the system SHALL conform to function TI.4.3 (Terminology Mapping).	OV.1	NC	EN
22.	IF the system receives or transmits data for which jurisdictionally established interchange standards exist, THEN the system SHALL conform to function TI.5.1 (Application and Structured-Document Interchange Standards) and all child functions to support interoperability.	OV.1	NC	EN
23.	IF the system receives and transmits data for which generally accepted interchange standards have been established, THEN the system SHALL conform to function TI.5.2 (Interchange Standards Versioning and Maintenance), to accommodate the inevitable evolution of interchange standards.	OV.1	NC	EN
24.	The system SHOULD conform to function TI.5.3 (Standards-based Application Integration).	OV.1	NC	EN
25.	IF the system receives and transmits data with other systems outside itself, THEN the system SHALL conform to function TI.5.4 (Interchange Agreements), to define how the sender and receiver will exchange data.	OV.1	NC	EN
26.	The system SHOULD conform to function TI.6 (Business Rules Management).	OV.1	NC	EN
27.	The system SHOULD conform to function TI.7 (Workflow Management).	OV.1	NC	EN
28.	The system SHALL conform to function TI.8 (Database Backup and Recovery).	OV.1	NC	EN
29.	The system SHALL conform to function CPS.10 (Manage User Help).	OV.1	NC	EN
30.	The system SHALL conform to function TI.9 (System Management Operations and Performance).	OV.1	NC	EN

2. Care Provision Section

Section Overview

The Care Provision Section contains those functions and supporting Conformance Criteria that are required to provide direct care to a specific patient and enable hands-on delivery of healthcare. The functions are general and are not limited to a specific care setting and may be applied as part of an Electronic Health Record supporting healthcare offices, clinics, hospitals and specialty care centers. The functions in this section are organized in general flow of an encounter; however, it is recognized that encounter flow varies considerably in different care settings and scopes of practice. All functions within the Care Provision Section have an identifier starting with “CP”.

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
CP.1 Header	Manage Clinical History	CP.1	NC	EN
	Statement: Manage the patient's clinical history lists used to present summary or detailed information on patient health history. **Description:** Patient Clinical History lists are used to present succinct "snapshots" of critical health information including patient history; allergy, intolerance and adverse reactions; medications; problems; strengths; immunizations; medical equipment/devices; and patient and family preferences.			
CP.1.1 Function	Manage Patient History	CP.1.1	NC	EN
	Statement: Manage medical, procedural/surgical, mental health, substance use, social and family history. This includes pertinent positive and negative histories, patient-reported or externally available patient clinical history. **Description:** The history of the current illness and patient historical data related to previous medical diagnoses, surgeries and other procedures performed on the patient, clinicians involved in procedures or in past consultations, and relevant health conditions of family members is captured through such methods as patient reporting (e.g., interview, medical alert band) or electronic or non-electronic historical data. This data may take the form of a pertinent positive such as "The patient/family member has had..." or a pertinent negative such as "The patient/family member has not had...". When first seen by a health care provider, patients typically bring with them clinical information from past encounters. This and similar information may supplement locally captured documentation and notes wherever appropriate. Information regarding the patient's living situations may be an important means for a provider to uniquely identify a patient or to identify illnesses that may occur within a given proximity. Information regarding past or present living situations or environmental factors related to the patient or the fetal death may include a description of the father's type of occupation and occupational demographic information (such as the name and location of the employment). For example, it may be important for the clinician to know that the patient works in an occupation where lead exposure is common. It may also be important for the clinician to know that the patient lives in a household where asbestos routinely appears on clothing.			
1. The system SHALL provide the ability to manage current patient history including pertinent positive and negative elements (e.g., diagnosis or ruled out diagnosis), and information on clinicians involved.		CP.1.1	NC	EN
2. The system SHALL provide the ability to manage the identity of clinicians involved in patient history elements according to scope of practice, organizational policy, and/or jurisdictional law.		CP.1.1	NC	EN
3. The system SHOULD conform to function CPS.2.1 (Support externally-sourced Clinical Documents) to capture, store and render previous external patient histories.		CP.1.1	NC	EN
4. The system SHOULD conform to function CPS.2.2 (Support externally-sourced Clinical Data) to capture, store and render previous external patient histories.		CP.1.1	NC	EN
5. The system SHALL provide the ability to capture family history.		CP.1.1	NC	EN
6. The system SHALL provide the ability to capture social history.		CP.1.1	NC	EN
7. The system SHALL provide the ability to capture as part of the patient history the patient's relationships (e.g., genealogic, living situation, other).		CP.1.1	NC	EN
8. The system SHALL provide the ability to capture structured data in the patient history (e.g., administrative, social, mental health, geographic location, and/or financial statuses, poverty, orphan, disability, incarceration, incompetence, or remote geographic location).		CP.1.1	NC	EN
9. The system SHALL maintain and render documentation made in a non-linear as well as linear temporal and non-temporal sequence.		CP.1.1	NC	EN
10. The system SHOULD provide the ability to present multiple levels of data (log view versus readable view) versus not display at all.		CP.1.1	NC	EN
11. The system SHOULD provide the ability to capture patient history adhering to a standards-based form or template according to scope of practice, organizational policy, and/or jurisdictional law.		CP.1.1	NC	EN
12. The system SHOULD provide the ability to capture an indication of the patient's receipt of social subsidies.		CP.1.1	NC	EN
13. The system SHOULD provide the ability to capture Investigational Product (e.g., medication, device, immunization) exposure information including Start Date/time, End Date/Time, Dose Amount, Dose Unit, Study Treatment Name, Route, Formulation as discrete elements.		CP.1.1	NC	EN
14. The system SHOULD provide the ability to manage information regarding past or present living situations or environmental factors related to the patient (e.g., war, famine, poverty, political		CP.1.1	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
	situation, or proximity to dangerous chemicals) according to scope of practice, organizational policy, and/or jurisdictional law.			
140.	The system SHALL conform to RI.1.1.13 (Extract Record Entry Content) to extract and analyze the set of patient diagnosis(es).		N	EN
CP.1.2 Function	Manage Allergy, Intolerance and Adverse Reaction List	CP.1.2	NC	EN
	Statement: Manage patient-specific allergy, intolerance and adverse reaction lists. **Description:** Allergens to substances, (including immunizations), are identified and the list of allergies is captured and maintained over time. Information regarding allergies may be coded or free text; coded information is preferred (where possible). In this function the term "allergy" is used to refer to allergies, intolerances, adverse reactions and sensitivities. All pertinent dates, including patient-reported events, are stored and the description of the patient allergy and adverse reaction is modifiable over time. The entire allergy history, including reaction, for any allergen is viewable. The list(s) includes all reactions including those that are classifiable as a true allergy, intolerance, side effect or other adverse reaction to drug, food or environmental triggers. Notations indicating whether item is patient reported, and/or provider verified are maintained. The term 'true allergy' is defined by the US National Library of Medicine as: an allergy that is caused by a series of chemical steps in the body that produce the allergic reaction. The allergy information that should be captured may vary according to scope of practice, organizational policy, and/or jurisdictional law. For example, the documentation requirements regarding an allergic reaction to a substance that is reportable may require a higher level of data capture.			
1.	The system SHALL provide the ability to manage allergy, intolerance, and adverse reaction to drug, food, medical products (e.g., vaccines, biologics, devices, chemicals) or environmental triggers as unique, discrete entries.	CP.1.2	NC	EN
2.	The system SHOULD provide the ability to manage the reason for the capture, update or removal of the allergy, no-longer-allergic, intolerance, sensitivity, and adverse reaction.	CP.1.2	NC	EN
3.	The system SHALL provide the ability to manage the reaction type as discrete data.	CP.1.2	NC	EN
4.	The system SHOULD provide the ability to manage the reaction type as coded data.	CP.1.2	NC	EN
5.	The system SHALL provide the ability to manage the severity of an allergic or adverse reaction as discrete data.	CP.1.2	NC	EN
6.	The system SHALL provide the ability to manage a report of No Known Allergies (NKA) for the patient.	CP.1.2	NC	EN
7.	The system SHALL provide the ability to manage a report of No Known Food Allergies (NKFA) for the patient.	CP.1.2	NC	EN
8.	The system SHOULD provide the ability to manage the source of allergy, intolerance, and adverse reaction information.	CP.1.2	NC	EN
9.	The system SHALL provide the ability to tag as deactivated an allergy, intolerance or adverse reaction.	CP.1.2	NC	EN
10.	The system SHALL provide the ability to capture as discrete data the reason for deactivation of an allergy, intolerance or adverse reaction.	CP.1.2	NC	EN
11.	The system SHALL provide the ability to render an allergy, intolerance, and adverse reaction that has been deactivated.	CP.1.2	NC	EN
12.	The system SHOULD provide the ability to render the list of allergies, intolerances and adverse reactions in a user-defined sort order.	CP.1.2	NC	EN
13.	The system MAY provide the ability for authorized users to manage configuration parameters that limit user-defined overrides of sort-orders for the rendering of lists of allergies, intolerances, and/or adverse reactions according to scope of practice, organizational policy, and/or jurisdictional law (e.g., to reduce the confusion when the same list is sorted by severity one day and then by date-of-onset the next day).	CP.1.2	NC	EN
14.	The system SHALL provide the ability to tag that the list of allergies, intolerances and adverse reactions has been reviewed.	CP.1.2	NC	EN
15.	The system SHALL provide the ability to capture and render the date on which allergy information was entered.	CP.1.2	NC	EN
16.	The system SHOULD provide the ability to capture and render the approximate date of the allergy occurrence.	CP.1.2	NC	EN
17.	The system SHOULD provide the ability to manage allergy-information as standards-based coded data.	CP.1.2	NC	EN
18.	The system SHOULD provide the ability to capture and maintain allergy information prior to completion of the medication order.	CP.1.2	NC	EN
19.	The system SHOULD provide the ability to capture and render an indication that the allergies are "Unknown" or "Unable to Assess Allergies".	CP.1.2	NC	EN
20.	The system SHOULD provide the ability to capture the reason for "Unknown" or "Unable to Assess Allergies" documentation.	CP.1.2	NC	EN
21.	The system SHOULD provide the ability to tag records and render an indication that the allergies are "Unknown" or "Unable to Assess Allergies" and need to be updated.	CP.1.2	NC	EN
22.	The system SHOULD provide the ability to capture free text allergies and render them in a manner that distinguishes them from coded allergy entries.	CP.1.2	NC	EN
23.	The system SHOULD tag and render an indicator that interaction checking (e.g., drug-allergy checking) will not occur against free text allergies.	CP.1.2	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
24.	The system SHOULD provide the ability to render historical allergy information.	CP.1.2	NC	EN
25.	The system MAY provide the ability to link an allergy, intolerance, or adverse reaction with diagnostic results (e.g., laboratory or allergy test result).	CP.1.2	NC	EN
26.	The system SHOULD conform to function CPS.4.2.1 (Support for Medication Interaction and Allergy Checking) to render any potential interactions when capturing or maintaining allergies, intolerances or adverse reactions.	CP.1.2	NC	EN
27.	The system SHOULD capture an indicator that a provider was presented with, and acknowledged, a drug interaction notification.	CP.1.2	NC	EN
130.	The system SHALL conform to RI.1.1.13 (Extract Record Entry Content) to extract and analyze the set of known medication allergies.		N	EN
CP.1.3 Function	Manage Medication List	CP.1.3	NC	EN
	Statement: Create and maintain patient-specific medication lists. **Description:** Medication lists are managed over time, whether over the course of a visit or stay, or the lifetime of a patient. The entire medication history for any medication including, over-the-counter products, alternative supplements and herbal medications, is viewable. Medication lists are not limited to provider orders/prescriptions but may also include, for example, pharmacy dispensed medications without prescription, over the counter medications and patient-reported medications, etc. All pertinent dates, including medication start, modification, and end dates are stored. Medication Lists may also include additional information such as age-specific dosage.			
1.	The system SHALL provide the ability to manage a patient-specific medication list based on current medication orders or prescriptions.	CP.1.3	NC	EN
2.	The system SHALL provide the ability to manage as discrete data the details of the medication information including name of the medication ordered, medication identifier (e.g., RxNORM), prescriber, ordering date, SIG (e.g., dose amount and quantity, timing, duration and route, and/or site of administration), quantity, formulation and ancillary instructions according to scope of practice, organizational policy, and/or jurisdictional law.	CP.1.3	NC	EN
3.	The system SHALL provide the ability to manage as discrete data the Study Treatment Name for any captured Investigational Product Exposures according to scope of practice, organizational policy, and/or jurisdictional law.	CP.1.3	NC	EN
4.	The system SHOULD provide the ability to capture all dates associated with medications including start, end, and discontinuation dates according to scope of practice, organizational policy, and/or jurisdictional law.	CP.1.3	NC	EN
5.	The system SHALL provide the ability to capture and maintain current and historical patient-specific medications in the Medication List.	CP.1.3	NC	EN
6.	The system SHALL provide the ability to capture non-prescription medications including over the counter and complementary medications such as vitamins, herbs and supplements.	CP.1.3	NC	EN
7.	The system SHALL provide the ability to render the medication history associated with a patient.	CP.1.3	NC	EN
8.	The system SHALL provide the ability to tag a medication as "erroneously captured".	CP.1.3	NC	EN
9.	The system SHALL provide the ability to render a Medication List excluding medications that have been tagged as "erroneously captured".	CP.1.3	NC	EN
10.	The system SHALL render an indicator that a medication is tagged as "erroneously captured" when that medication is rendered in a Medication List.	CP.1.3	NC	EN
11.	The system SHALL provide the ability to render a current medication list for patient use.	CP.1.3	NC	EN
12.	The system SHOULD provide the ability to capture and render information regarding the filling of prescriptions - prior to the prescription being dispensed.	CP.1.3	NC	EN
13.	The system SHOULD provide the ability to capture and render a notification that a prescription cannot be filled.	CP.1.3	NC	EN
14.	The system SHOULD provide the ability to capture and render a notification that a prescription cannot be dispensed.	CP.1.3	NC	EN
15.	The system SHOULD provide the ability to receive current medications and a medication history from an external source (e.g., a plan, payer or pharmacy).	CP.1.3	NC	EN
16.	The system SHOULD provide the ability to tag that a medication history is unavailable or incomplete.	CP.1.3	NC	EN
17.	The system SHALL provide the ability to capture a description of the medication and a reason for the medication when the medication name is unknown (e.g., if patient has received medication from external source and does not have the name, and/or the name is not in the system formulary).	CP.1.3	NC	EN
18.	The system SHALL provide the ability to tag and render, on the active medication list, active medications that the patient brings from home to take while hospitalized, which the Pharmacy may not dispense, according to scope of practice, and/or organizational policy.	CP.1.3	NC	EN
19.	The system SHOULD provide the ability to maintain the medication list with changes from pharmacist verification including pharmacist, date, and time.	CP.1.3	NC	EN
20.	The system SHOULD provide the ability to manage the reason or indication for the medication when recording historical medications or medications from external sources (e.g., from home or other provider).	CP.1.3	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
21.	The system SHOULD provide the ability to update a medication order directly from the medication list.	CP.1.3	NC	EN
22.	The system SHALL conform to function CPS.4.2.1 (Support for Medication Interaction and Allergy Checking) to render any potential interactions when capturing or maintaining medications.	CP.1.3	NC	EN
23.	The system SHALL provide the ability to capture free text medications and render them in a manner that distinguishes them from coded medication entries.	CP.1.3	NC	EN
24.	The system SHALL render an indicator that interaction checking will not occur against free text medications at the time of their capture.	CP.1.3	NC	EN
25.	The system SHOULD provide the ability to render side effects of medications from the medication list that have been previously experienced by the patient.	CP.1.3	NC	EN
26.	The system SHOULD provide the ability to render potential side effects of medications from the medication list.	CP.1.3	NC	EN
27.	The system SHALL provide the ability to capture and render that the patient takes no medications.	CP.1.3	NC	EN
28.	The system SHALL provide the ability to render active medications as defined by user requirements and according to scope of practice, organizational policy, and/or jurisdictional law (e.g., including medications that may still have a physiologic effect long after last administration).	CP.1.3	NC	EN
29.	The system SHOULD provide the ability to render non-active medications or prescriptions for inclusion in current medication screening.	CP.1.3	NC	EN
30.	The system MAY provide the ability to capture medication self-administration details including timestamps, observations, complications, and reason if medication dose was not taken.	CP.1.3	NC	EN
31.	The system SHALL capture, maintain and present pre-admission medications according to scope of practice, and/or organizational policy.	CP.1.3	NC	EN
32.	The system SHALL present pre-admission medications at the time of discharge according to scope of practice, and/or organizational policy.	CP.1.3	NC	EN
CP.1.6 Function	Manage Immunization List	CP.1.6	NC	EN
	Statement: Create and maintain patient-specific immunization lists. **Description:** Immunization lists are managed over time, whether over the course of a visit or stay, or the lifetime of a patient. Details of immunizations administered are captured as discrete data elements including date, type, manufacturer and lot number. The entire immunization history is viewable.			
1.	The system SHOULD provide the ability to manage all immunizations associated with a patient.	CP.1.6	NC	EN
CP.1.9 Function	Manage Adverse Events	CP.1.9	NC	EN
	Statement: Capture and maintain adverse events. **Description:** This function is focused on the capture and maintenance of adverse events that have occurred to the patient. The system should capture discrete information about the adverse event to enable the rendering Serious Adverse Event (SAE) reports according to organizational policy, and or jurisdictional law. Reporting may conform to the HL7 Individual Case Safety Reporting (ICSR).			
1.	The system SHALL provide the ability to manage adverse events associated with a patient.	CP.1.9	NC	EN
2.	The system SHALL capture and maintain as discrete data an adverse event. For example:a) Patient identificationb) Event date/timec) Event descriptiond) Event severitye) Event category (e.g., medication error, fall)f) Care providers associated with the eventaccording to scope of practice, organizational policy, and/or jurisdictional law.	CP.1.9	NC	EN
3.	The system SHALL provide the ability to capture and render a Serious Adverse Event (SAE) report according to organizational policy, and/or jurisditional law.	CP.1.9	NC	EN
4.	The system MAY provide the ability to render a set of Serious Adverse Event (SAE) data as modeled by the current release of HL7 ICSR (Individual Case Safety Reporting).	CP.1.9	NC	EN
234.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to capture and store possible immunization-related adverse event.		N	EN
CP.3 Header	Manage Clinical Documentation	CP.3	NC	EN
	Statement: Clinical Documentation must be managed including the capture of the documentation during an encounter, maintenance and appropriate rendering. **Description:** Clinical documentation includes all documentation that the clinician may capture during the course of an encounter with the patient or relevant to the patient. This includes assessments, clinical measurements, clinical documents and notes, patient-specific care and treatment plans. Management of clinical documentation also includes the acknowledgement and amendments of documentation provided by other providers.			
CP.3.2 Function	Manage Patient Clinical Measurements	CP.3.2	NC	EN
	Statement: Capture and manage patient clinical measures, such as vital signs, as discrete patient data. **Description:** Within the context of an episode of care, patient measures such as vital signs are captured and managed as discrete data to facilitate reporting and provision of care. Other clinical measures (such as expiratory flow rate, size of lesion, etc.) are captured and managed, and may be discrete data.			

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
CP.3.3 Function	Manage Clinical Documents and Notes	CP.3.3	NC	EN
	Statement: Create, addend, amend, correct, authenticate, maintain, present and close, as needed, transcribed or directly-entered clinical documentation and notes. **Description:** Clinical documents and notes may be unstructured and created in a narrative form, which may be based on a template, graphic, audio, etc. The documents may also be structured documents that result from the capture of coded data. Each of these forms of clinical documentation is important and appropriate for different users and situations. To facilitate the management and documentation on how providers are responding to incoming data on orders and results, there may also be some free text or formal record on the providers' responsibility, and/or standard choices for disposition, such as Reviewed and Filed, Recall Patient, or Future Follow Up. The system may also provide support for documenting the clinician's differential diagnosis process.			
1.	The system SHALL provide the ability to capture and render clinical documentation as 'structured', and/or 'unstructured' data.	CP.3.3	NC	EN
2.	The system SHOULD present documentation templates (structured or free text) to facilitate creating documentation.	CP.3.3	NC	EN
3.	The system SHOULD provide the ability to present existing documentation within the patient's EHR while creating new documentation.	CP.3.3	NC	EN
4.	The system SHOULD provide the ability to link documentation with specific patient encounter(s) or event(s) (e.g., office visit, phone communication, e-mail consult, laboratory result).	CP.3.3	NC	EN
5.	The system SHOULD provide the ability to render the list in a user-defined sort order.	CP.3.3	NC	EN
6.	The system SHOULD provide the ability to link clinical documents and notes to one or more problems.	CP.3.3	NC	EN
7.	The system SHALL provide the ability to update documentation prior to finalizing it.	CP.3.3	NC	EN
8.	The system SHALL provide the ability to tag a document or note as final, according to scope of practice, organizational policy, and/or jurisdictional law.	CP.3.3	NC	EN
9.	The system SHALL provide the ability to render all author(s) and authenticator(s) of documentation.	CP.3.3	NC	EN
10.	The system SHOULD provide the ability to render designated documents based on metadata search and filter (e.g., note type, date range, facility, author, authenticator and patient).	CP.3.3	NC	EN
11.	The system MAY provide the ability for providers to capture clinical document process disposition using standard choices (e.g., reviewed and filed, recall patient, or future follow-up).	CP.3.3	NC	EN
12.	The system SHOULD provide the ability to capture, maintain and render the clinician's differential diagnosis and the list of diagnoses that the clinician has considered in the evaluation of the patient.	CP.3.3	NC	EN
13.	The system SHOULD provide the ability to render clinical documentation using an integrated charting or documentation tool (e.g., notes, flow-sheets, radiology views, or laboratory views).	CP.3.3	NC	EN
14.	The system SHOULD provide the ability to capture clinical documentation using specialized charting tools for patient-specific requirements (e.g., age - neonates, pediatrics, geriatrics; condition - impaired renal function; medication).	CP.3.3	NC	EN
15.	The system SHOULD provide the ability to capture, maintain and render transition-of-care related information according to scope of practice, organizational policy, and/or jurisdictional law.	CP.3.3	NC	EN
16.	The system SHOULD provide the ability to tag the status of clinical documentation (e.g., preliminary, final, signed).	CP.3.3	NC	EN
17.	The system SHOULD provide the ability to tag and render lists of patients requiring follow up contact (e.g., laboratory callbacks, radiology callbacks, left without being seen).	CP.3.3	NC	EN
18.	The system SHOULD provide the ability to capture patient follow-up contact activities (e.g., laboratory callbacks, radiology callbacks, left without being seen).	CP.3.3	NC	EN
19.	The system SHOULD provide the ability to save partially completed clinical documentation (i.e., without signature) for later editing and completion.	CP.3.3	NC	EN
20.	IF the system provides the ability to save partially completed clinical documentation, THEN the system SHALL render this documentation only to the authorized users (e.g., author or author's supervisors).	CP.3.3	NC	EN
21.	IF the system provides the ability to save partially completed clinical documentation, THEN the system SHOULD provide the ability to tag unsigned documentation.	CP.3.3	NC	EN
22.	IF the system provides the ability to save partially completed clinical documentation, THEN the system SHOULD render a notification at specified intervals to the author.	CP.3.3	NC	EN
244.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to capture and store patient physical exam.		N	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
CP.4 Function	Manage Orders	CP.4	NC	EN

Statement: Provide the ability to manage clinical orders and results including medication, non-medication, diagnostic tests, blood products, other biologics and referrals, using order sets as appropriate.

Description: The provision of clinical care includes the need to order from a variety of treatments using order sets as appropriate as well as reviewing the results of treatment. Orders for treatments may include medications, non-medication therapies (e.g., physical therapy, special diet, immunizations, non-allopathic regimens); diagnostic care (e.g., laboratory , radiology); blood products and other biologics (e.g., blood transfusions, human growth hormones). Patients are often referred to other health care providers for more specialized diagnostic workup, and/or treatment. An effective EHR-S must include support and management of these processes and associated documentation.

CP.4.1 Function	Use Order Sets	CP.4.1	NC	EN

Statement: Use Order Set templates to facilitate order entry by rendering the appropriate orders based on provider request, input or system configuration.

Description: Predefined order set templates may include medication and non-medication orders (e.g., diet, activities, nursing care, prescriptions and requests for investigations). They allow a care provider to choose common orders for a particular circumstance or disease state according to standards or other criteria such as provider preference. Recommended order set templates may be presented based on patient data or other contexts. Order Set templates may also allow the provider to modify (add/remove/change) orders during order entry for a particular patient.

CP.4.2 Function	Manage Medication Orders	CP.4.2	NC	EN

Statement: Create prescriptions or other medication orders with detail adequate for correct filling and administration. Provide information regarding compliance of medication orders with formularies. Provide drug utilization review functionality including alerts regarding drug interactions and allergies.

Description: Medications include prescribed and over the counter (OTC) drugs, allergy shots, oxygen, anesthetics, chemotherapy, and dietary supplements that were ordered, supplied, administered, or continued. Different medication orders, including new, discontinue, refill/continue, and renew require different levels and kinds of detail, as do medication orders placed in different situations. Administration or patient instructions are available for selection by the ordering clinician, or the ordering clinician is facilitated in creating such instructions. The system may allow for the creation of common content for prescription details. Appropriate time stamps for all medication related activity are generated. This includes series of orders that are part of a therapeutic regimen, e.g., Renal Dialysis, Oncology. When it comes to capturing the medication rationale, it is not mandatory that the provider always provide this information.

In addition, the system should present the clinician with clinical decision support functionality (such as the presentation of allergies, drug-drug interactions) during the medication ordering process. When a clinician places an order for a medication, that order may or may not comply with a formulary specific to the patient's location or insurance coverage, if applicable. Whether the order complies with the formulary should be communicated to the ordering clinician at an appropriate point to allow the ordering clinician to decide whether to continue with the order. Formulary-compliant alternatives to the medication being ordered may also be presented.

CP.4.2.1 Function	Medication Interaction and Allergy Checking	CP.4.2.1	NC	EN

Statement: Provide alerts for potential medication interactions and medication allergy reactions.

Description: Check and provide alerts at the time of medication order based upon coded, active and non-active medications for possible interactions, allergies, sensitivities, intolerances, and other adverse reactions.

1. The system SHALL conform to function CPS.4.2.1 (Support for Medication Interaction and Allergy Checking) to determine allergic reactions, drug-drug interactions, and other potential adverse reactions, and render alerts or notifications when new medications are ordered.	CP.4.2.1	NC	EN
2. The system SHALL conform to function CP.1.2 (Manage Allergy, Intolerance and Adverse Reaction List) to provide the ability to manage interaction and allergy checking and render alerts and notifications when new medications are ordered.	CP.4.2.1	NC	EN

CP.4.2.2 Function	Patient-Specific Medication Dosing and Warnings	CP.4.2.2	NC	EN

Statement: Render medication dosing and warnings related to a medication order based on patient-specific parameters.

Description: Provide parameter-based (e.g., weight, lean body mass, age, sensitivity, genomics, body surface area) medication dosing recommendations and warnings for simple medications and compounded medications at the time of order entry.

CP.4.2.3 Function	Medication Order Efficiencies	CP.4.2.3	NC	EN

Statement: Provide the tooling necessary to increase the efficiency of medication ordering.

Description: Make medication ordering workflows more efficient by allowing medications to be sorted and reviewed by key attributes (e.g., generic or trade names). Also support editing medication orders across multiple instances of an order and capturing medication orders in order sets.

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
CP.4.2.4 Function	Medication Alert Overrides	CP.4.2.4	NC	EN
	Statement: Capture the alerts and warnings for medications being overridden and reasons for the override. **Description:** Alerts are generated for possible contraindications to administration of medications (e.g., the administration of tetracycline to pregnant women) and the prescriber may choose to override the alert.			
CP.4.4 Function	Manage Orders for Diagnostic/Screening Tests	CP.4.4	NC	EN
	Statement: Enable the origination, documentation, transmission, tracking and maintenance of orders for diagnostic tests. **Description:** Orders for diagnostic tests (e.g., diagnostic radiology, laboratory) are captured and tracked including new, renewal and discontinue orders. Each order includes appropriate detail, such as order identification, instructions and clinical information necessary to perform the test. Orders and supporting detailed documentation shall be communicated to the service provider for completion of the diagnostic test(s).Some systems may contain instructions, but in some settings, instructions may be provided from external sources (e.g., handouts).			
1.	The system SHALL provide the ability to manage orders for diagnostic tests.	CP.4.4	NC	EN
2.	The system SHALL provide the ability to capture and render standard order detail for diagnostic test order fulfillment.	CP.4.4	NC	EN
3.	The system SHOULD provide the ability to capture and maintain user-created instructions, and/or prompts when ordering diagnostic tests or procedures.	CP.4.4	NC	EN
4.	The system SHALL provide the ability to manage the status (e.g., requisitioned, completed, in process) of diagnostic test(s).	CP.4.4	NC	EN
5.	The system SHOULD provide the ability to capture and render patient instructions relevant to the diagnostic test ordered.	CP.4.4	NC	EN
6.	The system SHALL provide the ability to transmit orders to the recipient (s) for order fulfillment of the diagnostic test.	CP.4.4	NC	EN
7.	The system SHOULD provide the ability to transmit supporting detailed documentation to the recipient (s) for order fulfillment of the diagnostic test.	CP.4.4	NC	EN
8.	The system SHALL conform to function CPS.4.3 (Support for Non-Medication Ordering).	CP.4.4	NC	EN
9.	The system MAY provide the ability to transmit order activity to public health authorities according to scope of practice, organizational policy, and/or jurisdictional law.	CP.4.4	NC	EN
10.	IF subsequent orders are being captured, THEN the system SHOULD provide the ability to render prior diagnostic results for a given patient.	CP.4.4	NC	EN
11.	The system SHOULD capture and render complete patient demographic information for diagnostic orders according to scope of practice, organizational policy, and/or jurisdictional law.	CP.4.4	NC	EN
12.	The system MAY provide the ability to capture, maintain, and render justification-related information regarding a test order (e.g., clinical rationale, reason, or a link to the Problem list).	CP.4.4	NC	EN
254.	The system SHALL conform to RI.1.1.8 (Transmit Record Entries) to transmit laboratory order.		N	EN
CP.5 Function	Manage Results	CP.5	NC	EN
	Statement: Present, annotate, and route current and historical test results to appropriate providers for review. Provide the ability to filter and compare results. **Description:** Results of tests are presented in an easily accessible manner to the appropriate providers. For example, flow sheets, graphs, or other tools allow care providers to view or uncover trends in test data over time. The provider may desire to annotate, filter, and/ or compare results. In addition to making results viewable, it is often necessary to send results to appropriate providers using electronic messaging systems, pagers, or other mechanisms. In addition, the system may have the ability to redirect or copy specific test results to a specified individual. Documentation of notification is accommodated. Results may also be routed to patients electronically or non-electronically (e.g., by hard copy). Note: “Results” are understood as applying to any type of test, whether biological or psychological. Management of the results may also require the provider's communication of the results to the patient (see function CPS.8.4 (Support for Communications between Provider and the Patient, and/or the Patient's Representative)). There may also be a need to notify public health agencies based on the result. See function POP.2 (Support Population-based Epidemiological Investigation).			
1.	The system SHALL provide the ability to manage test results according to scope of practice, organizational policy, and/or jurisdictional law.	CP.5	NC	EN
2.	The system SHALL provide the ability to render numerical and non-numerical current and historical test results.	CP.5	NC	EN
3.	The system SHALL provide the ability to render results for an identified patient or group of patients.	CP.5	NC	EN
4.	The system SHALL provide the ability to render results by factors that supports results management including type of test, critical indicator and abnormal indicator.	CP.5	NC	EN
5.	The system SHALL provide the ability to tag results as being normal or abnormal (based on data provided from the original data source) and render a "normal" or "abnormal" indicator accordingly.	CP.5	NC	EN
6.	The system SHOULD provide the ability to render numerical results in flow sheets, graphical form or other views that allow comparison of results, and display values graphed over time.	CP.5	NC	EN
7.	The system SHALL provide the ability to render results by date/time range including ordered date/ time, specimen collection date/time and results received date/time.	CP.5	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
8.	The system SHOULD provide the ability to tag new results received and render to the relevant providers (ordering, copy to) that new results have been received but not reviewed.	CP.5	NC	EN
9.	The system SHOULD provide the ability to capture an indicator that a result has been rendered and acknowledged by a user.	CP.5	NC	EN
10.	The system SHOULD provide the ability to transmit results to other care providers.	CP.5	NC	EN
11.	The system MAY provide the ability to transmit results to patients by methods such as phone, fax, electronically or letter.	CP.5	NC	EN
12.	The system MAY provide the ability to transmit results to an automated callback system.	CP.5	NC	EN
13.	The system MAY provide the ability to capture and transmit a request for action to another provider(s).	CP.5	NC	EN
14.	The system SHOULD conform to function CPS.9.2 (Support for Inter-Provider Communication) to receive a request for action regarding a test result from another provider and to transmit an acknowledgement to that provider of the receipt of that provider's request for action.	CP.5	NC	EN
15.	IF the system provides the ability to receive a request for action regarding a result from another provider, THEN the system MAY provide the ability to transmit an acknowledgement of the receipt of that provider's request for action.	CP.5	NC	EN
16.	The system MAY provide the ability to render results in clinically logical sections (e.g., Pathology, Chemistry, Cytology).	CP.5	NC	EN
17.	The system SHALL link results to the electronic order if the system contains the electronic order.	CP.5	NC	EN
18.	The system SHOULD provide the ability to annotate a result.	CP.5	NC	EN
19.	The system SHOULD provide the ability to link and render the results report to other data (e.g., images) with which it is associated.	CP.5	NC	EN
20.	The system SHALL provide the ability to import and receive preliminary and final result reports from ancillary systems according to scope of practice, organizational policy, and/or jurisdictional law.	CP.5	NC	EN
21.	The system SHALL provide the ability to import or receive preliminary and final results as discrete data from ancillary systems, when discrete data is sent from the ancillary system, according to scope of practice, organizational policy, and/or jurisdictional law.	CP.5	NC	EN
22.	The system SHALL provide the ability to capture, maintain and render preliminary (e.g., "wet read") and final result reports according to scope of practice, organizational policy, and/or jurisdictional law.	CP.5	NC	EN
23.	The system SHALL provide the ability to tag and render a notification to the appropriate health care team member(s) (using role-based or rule-based alerts) of clinically-significant results or result changes.	CP.5	NC	EN
24.	The system SHOULD provide the ability to link results to a specific medical condition, medication or therapeutic class of medication.	CP.5	NC	EN
25.	The system SHALL provide the ability to render non-diagnostic quality images.	CP.5	NC	EN
26.	The system SHOULD provide the ability to link with Radiology Information Systems (RIS) or Picture Archiving & Communication Systems (PACS) to enable the presentation of diagnostic quality images.	CP.5	NC	EN
27.	The system SHALL provide the ability to link one or more images to a result report.	CP.5	NC	EN
28.	IF the system provides the ability to annotate a result, THEN the system SHALL render the annotation with subsequent views of that result.	CP.5	NC	EN
29.	The system SHOULD provide the ability to capture an annotation from the patient on a result and render the annotation with subsequent views of that result.	CP.5	NC	EN
30.	The system SHALL determine that results were received for a patient who is no longer under the care of the ordering provider and tag and render a notification according to scope of practice, organizational policy, and/or jurisdictional law.	CP.5	NC	EN
31.	The system MAY provide the ability to manage results of specific genetic tests, genetic markers, or findings according to scope of practice, organizational policy, and/or jurisdictional law and subject to patient's preferences and consent.	CP.5	NC	EN
258.	The system SHALL conform to RI.1.1.9 (Receive and Retain Record Entries) to receive and store laboratory test results.		N	EN
260.	The system SHALL conform to RI.1.1.6 (Output/Report Record Entry Content) to output/report laboratory test results.		N	EN
262.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access notification of laboratory test results.		N	EN
CP.6 Header	Manage Medication, Immunization and Treatment Administration	CP.6	NC	EN

Statement: Provide the functionality required to support the management of medication and immunization administration.

Description: Provide the functionality required to support the safe administration of medications or immunizations to a patient based on medical requirement and orders within the system. This includes presenting providers with the list of medications or immunizations that are to be administered to a patient, necessary administration information, and capture all required and relevant administration details.

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
CP.6.2 Function	Manage Immunization Administration	CP.6.2	NC	EN

Statement: Capture and maintain discrete data concerning immunizations given to a patient including date administered, type, manufacturer, lot number, and any allergic or adverse reactions. Facilitate the interaction with an immunization registry to allow maintenance of a patient's immunization history.

Description: During an encounter, recommendations based on accepted immunization schedules are presented to the provider. Allergen and adverse reaction histories are checked prior to giving the immunization. If an immunization is administered, discrete data elements associated with the immunization including date, type, immunization expiration date, manufacturer and lot number are recorded. Any new adverse or allergic reactions are noted. If required, a report is made to the public health immunization registry or other organization (e.g., military unit commander, refugee program leadership). This function should include the ability to use GTIN barcode scanners to capture vaccine information (NDC, lot number, expiration date).

1. The system SHALL provide the ability to capture immunization administration details as discrete data, including:(1) the immunization name/type, series, strength and dose;(2) date and time of administration;(3) manufacturer, lot number, expiration date,(4) route and site of administration; (5) administering provider;(6) observations, reactions and complications;(7) reason immunization not given, and/or immunization related activity not performed;according to scope of practice, organizational policy, and/or jurisdictional law.	CP.6.2	NC	EN
2. The system MAY auto-populate the immunization administration record as a by-product of verification of administering provider, patient, medication, dose, route and time according to scope of practice, organizational policy, and/or jurisdictional law.	CP.6.2	NC	EN
3. The system SHALL provide the ability to determine and render required immunizations, and when they are due, based on widely accepted immunization schedules, when rendering encounter information.	CP.6.2	NC	EN
4. The system SHOULD provide the ability to capture, in a discrete field, an allergy/adverse reaction to a specific immunization.	CP.6.2	NC	EN
5. The system SHALL conform to function CP.3.2 (Manage Patient Clinical Measurements) to capture other clinical data pertinent to the immunization administration (e.g., vital signs).	CP.6.2	NC	EN
6. The system SHOULD provide the ability to link standard codes (e.g., LOINC, SNOMED or other jurisdictionally-specific codes) with discrete data elements associated with an immunization.	CP.6.2	NC	EN
7. The system SHALL provide the ability to maintain a patient-specific immunization schedule.	CP.6.2	NC	EN
8. The system SHALL provide the ability to render a patient's immunization history upon request for appropriate authorities such as schools or day-care centers.	CP.6.2	NC	EN
9. The system SHALL conform to function CP.1.2 (Manage Allergy, Intolerance and Adverse Reaction List).	CP.6.2	NC	EN
10. The system SHOULD transmit required immunization administration information to a public health immunization registry according to scope of practice, organizational policy, and/or jurisdictional law.	CP.6.2	NC	EN
11. The system SHOULD exchange immunization histories with public health immunization registries or Immunization Information Systems according to scope of practice, organizational policy, and/ or jurisdictional law.	CP.6.2	NC	EN
12. The system SHOULD harmonize Immunization histories with a public health immunization registry or Immunization information Systems according to scope of practice, organizational policy, and/ or jurisdictional law.	CP.6.2	NC	EN
13. The system SHOULD capture and render immunization histories from a public health immunization registry or Immunization Information Systems including immunization administration recommendations.	CP.6.2	NC	EN
14. The system SHALL conform to function CP.1.6 (Manage Immunization List).	CP.6.2	NC	EN
15. The system SHOULD provide the ability to update immunization histories at the time of capturing an immunization administration.	CP.6.2	NC	EN
16. The system SHALL provide the ability to render an immunization order as written (e.g., exact clinician order language or as mandated - such as by a public health requirement), when rendering administration information.	CP.6.2	NC	EN
17. The system SHALL provide the ability to determine due and overdue ordered immunizations including earliest through latest date ranges and render a notification according to organizational policy, and/or jurisdictional law.	CP.6.2	NC	EN
18. The system SHALL provide the ability to render a patient educational information regarding the administration (e.g., Vaccine Information Statement (VIS).	CP.6.2	NC	EN
19. The system SHALL provide the ability to capture that patient educational information (e.g., VIS) was provided at the time of immunization administration.	CP.6.2	NC	EN
20. The system SHOULD provide the ability to capture that patient educational information (e.g., VIS) was provided at the time of the immunization including to whom the information was provided and the date/time that it was provided.	CP.6.2	NC	EN
21. The system SHOULD provide the ability to capture and maintain immunization refusal reasons as discrete data.	CP.6.2	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
22.	The system SHOULD provide the ability to capture patient preferences regarding receipt of immunization (e.g., refusal of certain vaccines) at time of immunization administration.	CP.6.2	NC	EN
56.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to create and store an immunization history request.		N	EN
58.	The system SHALL conform to RI.1.1.8 (Transmit Record Entries) to transmit an immunization history request to an external system (e.g., a state or regional immunization information system).		N	EN
62.	The system SHALL conform to RI.1.1.9 (Receive and Retain Record Entries) to receive and store immunization history from an external source (e.g. a state or regional immunization information system).		N	EN
66.	The system SHALL conform to RI.1.1.9 (Receive and Retain Record Entries) to receive and store immunization history and forecast from an external source (e.g. a state or regional immunization information system).		N	EN
68.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access immunization history and forecast.		N	EN
74.	The system SHALL conform to RI.1.1.9 (Receive and Retain Record Entries) to receive and store immunization history and forecast from an external source (e.g., a state or regional immunization information system).		N	EN
76.	The system SHALL maintain and render immunization forecast based on rules whether by (a) analysis and determination of an internally configured clinical decision support (CDS) engine; (b) capture from an externally derived CDS (e.g., managed by an API to an external CDS source or an Immunization Registry that provides access to a CDS source); or (c) a combination of internally and externally derived CDS.		N	EN
78.	The system SHALL maintain and render a patient immunization forecast based on rules including age, previous doses and sex whether from an internally CDS or captured from externally derived CDS.		N	EN
80.	The system SHOULD maintain and render a patient immunization forecast based on rules including medications, medical conditions, allergies, prior adverse reactions, occupational risks and/or other risks whether from an internally CDS or captured from externally derived CDS.		N	EN
82.	The system MAY maintain and render a patient immunization forecast based on rules including travel plans whether from an internally CDS or captured from externally derived CDS.		N	EN
84.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to create and store patient immunization forecast.		N	EN
88.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access immunization history and forecast from external system (e.g., a state or regional immunization information system).		N	EN
90.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access immunization history and forecast generated by the system itself.		N	EN
92.	The system SHALL provide the ability to determine patient immunization history after reconciliation from multiple sources.		N	EN
94.	The system SHALL conform to RI.1.1.2 (Amend Record Entry Content) to amend/update immunization history.		N	EN
96.	The system SHALL conform to RI.1.1.8 (Transmit Record Entries) to transmit patient immunization history to an external system (e.g., a state or regional immunization information system).		N	EN
98.	The system SHALL conform to RI.1.1.13 (Extract Record Entry Content) to extract and analyze the set of previous known immunization doses.		N	EN
132.	The system SHALL conform to RI.1.1.13 (Extract Record Entry Content) to extract and analyze the set of forecast immunization doses.		N	EN
134.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access immunization forecast doses against known medication allergy(ies).		N	EN
136.	The system SHALL analyze and determine immunization forecast doses based on known medication allergy(ies).		N	EN
142.	The system SHALL analyze and determine immunization forecast doses based on patient diagnosis(es).		N	EN
144.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access immunization guidelines.		N	EN
146.	The system SHALL analyze and determine immunization doses based on updated immunization guidelines.		N	EN
148.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to create and store updated immunization forecast and schedule.		N	EN
150.	The system SHALL analyze and determine immunization dose schedule based on forecast.		N	EN
152.	The system SHALL analyze and determine immunization dose schedule based on orders.		N	EN
154.	The system SHALL analyze and determine inconsistencies between immunization forecast and orders.		N	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
156.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to create and store history of immunization recommendation(s), response(s) and action(s) taken.		N	EN
158.	IF the system supports immunization inventory management, THEN the system SHOULD determine available immunization product(s) based on private stock.		N	EN
160.	IF the system supports immunization inventory management, THEN the system SHOULD determine available immunization product(s) based on specific guarantee program(s).		N	EN
162.	IF the system supports immunization inventory management, THEN the system SHOULD capture the patient's dose-level eligibility for each vaccine antigen administered.		N	EN
164.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access available immunization product(s).		N	EN
166.	The system SHALL conform to RI.1.1.2 (Amend Record Entry Content) to amend/update immunization dose count(s).		N	EN
168.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access immunization dose count(s).		N	EN
170.	IF the system supports immunization inventory management, THEN the system SHALL determine and render instances of immunization products that have expired and those near the expiration date.		N	EN
172.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to create and store immunization dose(s) expiring and expired.		N	EN
174.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access expired immunization dose(s).		N	EN
176.	IF the system supports immunization dose management, THEN the system SHALL determine and render instances of immunization products that have expired and those near the expiration date.		N	EN
178.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to create and store vaccine information statements.		N	EN
180.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access vaccine information statements.		N	EN
188.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to create and store documentation regarding provision of education material (typically to patient or patient's representative).		N	EN
190.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to create and store immunization deferral reason.		N	EN
192.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to capture and store prior immunization history (e.g., from a written or oral source).		N	EN
194.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to capture and store notification of patient ineligibility for specific immunization(s).		N	EN
196.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access notifications of patient ineligibility for specific immunization(s).		N	EN
198.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to capture and store immunization administration reason for otherwise ineligible patient.		N	EN
200.	The system SHALL provide the ability to display available immunizations based on selection filters (e.g., combination vaccines).		N	EN
202.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access immunization history based on vaccine series.		N	EN
204.	The system SHALL conform to RI.1.1.3 (Translate Record Entry Content) to render discrete immunization data elements according to standard codes (e.g., for reporting to public health registries).		N	EN
206.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to capture and store immunization administration.		N	EN
208.	The system SHALL conform to RI.1.1.6 (Output/Report Record Entry Content) to output/report patient immunization history (e.g., for schools and daycare centers).		N	EN
210.	The system SHALL manage configurable immunization history templates to support specialized reporting requirements.		N	EN
212.	The system SHALL conform to RI.1.1.6 (Output/Report Record Entry Content) to output/report patient immunization history based on configurable immunization history template.		N	EN
214.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access immunization forecast and schedule.		N	EN
216.	The system SHALL conform to RI.1.1.6 (Output/Report Record Entry Content) to output/report patient immunization schedule.		N	EN
218.	The system SHALL conform to RI.1.1.6 (Output/Report Record Entry Content) to output/report aggregate population-level report of immunization data. Examples: 1) patients who received a specific lot number of vaccine that has been recalled; 2) patients who have no scheduled appointments and are overdue for required vaccines.		N	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
222.	The system SHALL conform to RI.1.1.6 (Output/Report Record Entry Content) to output/report patient-specific immunization recommendations. Examples: 1) patients who received a vaccine that has been recalled andwhere there is a specific action that needs to be taken (e.g., receive another vaccine, etc.), and (2) patients who are overdue for required vaccines and need to schedule appointment(s) to catch up with their vaccine schedules.		N	EN
224.	The system SHALL conform to RI.1.1.8 (Transmit Record Entries) to transmit patient-specific immunization recommendation(s) to an external system (e.g., via email or text message).		N	EN
236.	The system SHALL conform to RI.1.1.8 (Transmit Record Entries) to transmit adverse event report to an external system (e.g., a VAERS report to a state or regional agency).		N	EN
238.	The system SHALL conform to RI.1.1.6 (Output/Report Record Entry Content) to output/report a possible immunization-related adverse event.		N	EN
240.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to capture and store request to update immunization information.		N	EN
246.	The system SHALL conform to RI.1.1.6 (Output/Report Record Entry Content) to output/report pregnancy risk factor report and recommended vaccinations.		N	EN
248.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to capture and store pregnancy risk factor report and recommended vaccinations.		N	EN
250.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to capture and store laboratory order.		N	EN
266.	The system SHALL conform to RI.1.1.6 (Output/Report Record Entry Content) to output/report reminder for vaccination.		N	EN
268.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to capture and store recommendation for vaccination.		N	EN
CP.9 Header	Manage Care Coordination & Reporting	CP.9	NC	EN
	Statement: Provide the functionality required to coordinate care with other providers and report care provided. **Description:** During care provision it is necessary to coordinate care with other providers, internal or external to the organization, as well as to communicate the care provided.			
CP.9.1 Function	Produce a Summary Record of Care	CP.9.1	NC	EN
	Statement: Render a summarized review of a patient's episodic, and/or comprehensive EHR, subject to jurisdictional laws and organizational policies related to privacy and confidentiality. **Description:** Create summary views and reports at the conclusion of an episode of care. Create service reports at the completion of an episode of care such as, but not limited to, discharge summaries, specialist or consultation reports and public health reports, using information captured in the EHR and without additional input from clinicians.			
1.	The system SHALL provide the ability to render summaries of the patient's comprehensive EHR that include at a minimum: problem list, medication list, allergy and adverse reaction list, and procedures.	CP.9.1	NC	EN

3. Care Provision Support Section

Section Overview

The Care Provision Support Section focusses on functions required to support the provision of care to a specific patient to enable hands-on delivery of healthcare. This section is organized generally in alignment with Care Provision Section. For example, CP.4 (Manage Orders) is supported directly by CPS.4 (Support Orders). This alignment is designed to assist in finding related support functions related to care provision functions but is not expected to be 100% matched as some Care Provision Functions do not require matching Support functions or vice-versa. All functions within the Care Provision Support Section have an identifier starting with “CPS”.

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
CPS.1 Header	Record Management	CPS.1	NC	EN
Statement: Manage the patient record including all patient demographics, identifiers and other information to support the provision of care. **Description:** Management of the patient record includes creation through quick registration or through a captured referral request as well as managing the patient encounter information linked to the appropriate patient record. It is also critical to manage the patient's relationships through genealogy, insurance, living situation or other means. This section also includes support for the management of patient and family preferences including patient advance directives, consents and authorizations linked to the unique patient record. For those functions related to data capture, data should be captured using standardized code sets or nomenclature, depending on the nature of the data, or captured as unstructured data. Care-setting dependent data are entered by a variety of caregivers. Data may also be captured from devices or other tele-health applications.			
CPS.1.1 Function	Manage a Patient Record	CPS.1.1	NC	EN
Statement: Manage a single logical record for each patient. **Description:** A single record is needed for legal purposes, as well as to organize it unambiguously for the provider. Health information is captured and linked to the patient record. Static data elements as well as data elements that will change over time are maintained. The patient is uniquely identified, after which the record is tied to that patient. Combining information on the same patient, or separating information where it was inadvertently captured for the wrong patient, helps maintain health information for a single patient. In the process of creating a patient record, it is at times advantageous to replicate identical information across multiple records, so that such data does not have to be re-entered. For example, when a parent registers children as new patients, the address, guarantor, and insurance data may be propagated in the children's records without having to re-enter them.			
2. The system SHALL provide the ability to determine the unique identity of a patient and link the record to a single patient.		CPS.1.1	NC	EN
6. The system SHALL link key patient identifier information (e.g., system ID, medical record number) to each patient record according to scope of practice, organizational policy, and/or jurisdictional law.		CPS.1.1	NC	EN
CPS.1.2 Function	Manage Patient Demographics	CPS.1.2	NC	EN
Statement: Manage patient demographic information. **Description:** Demographic information (including names, addresses, phone numbers, email addresses, date of birth, gender, race, and ethnicity) must be managed to support unique patient identification, reporting, care provision requirements. Patient Demographic information may also include information about the patient's contacts, methods of contact (e.g., email or telephone), and modes of contact (e.g., call secretary during the day, send text message on the weekend). Patient demographic data are captured and maintained as discrete fields and may be enumerated, numeric, or codified according to scope of practice, organizational policy, and/or jurisdictional law. Key patient identifiers (i.e., name and primary patient record identifier) often appear on patient information output (e.g., rendering of a patient's record). Patients may have multiple, and/or compound names, sometimes employing accent marks or special characters. To help parse patient names, discete fields are often used.			
1. The system SHALL provide the ability to capture demographic information as discrete data as part of the patient record.		CPS.1.2	NC	EN
2. The system SHALL provide the ability to maintain demographic information as discrete data as part of the patient record.		CPS.1.2	NC	EN
3. The system SHALL provide the ability to render demographic information as discrete data as part of the patient record.		CPS.1.2	NC	EN
4. The system SHALL provide the ability to manage historic information for demographic data including prior names, addresses, phone numbers and email addresses.		CPS.1.2	NC	EN
5. The system SHALL render a set of patient identifying information at each interaction with the patient record, according to scope of practice, organizational policy, and/or jurisdictional law (e.g., a certain realm may require that the patient's picture appear on every screen that is used during a provider's face-to-face interactions with the patient).		CPS.1.2	NC	EN
6. The system MAY store the demographic information (and other meaningful individual identifiers) separately from clinical data for identity protection purposes.		CPS.1.2	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
7.	The system SHALL provide the ability to capture valid date/time values in discrete fields (e.g., 2011/12/31 2330), including valid incomplete or partial date/time values (e.g., 2011/12).	CPS.1.2	NC	EN
8.	The system SHOULD provide the ability to enter a partial date/time if the exact date/time of birth or death is unknown (e.g., year/month only).	CPS.1.2	NC	EN
9.	The system SHALL provide the ability to capture the patient's gender used for administrative purposes (as distinct from the clinical gender).	CPS.1.2	NC	EN
10.	The system SHOULD provide the ability to manage multiple active addresses for the patient.	CPS.1.2	NC	EN
11.	The system SHOULD provide the ability to manage multiple active phone numbers for the patient.	CPS.1.2	NC	EN
12.	The system SHOULD provide the ability to manage the names and contact information of the patient's personal representatives (e.g., guardian, surrogate or financial guarantor) and personal relationships (e.g., foster parents or biological parents).	CPS.1.2	NC	EN
13.	The system SHALL provide the ability to manage the date/time of birth, down to the minute, according to scope of practice, organizational policy, and/or jurisdictional law.	CPS.1.2	NC	EN
14.	The system SHOULD provide the ability to capture patient demographics through integration with hospital systems to facilitate patient registration.	CPS.1.2	NC	EN
15.	The system SHOULD provide the ability for the patient to annotate demographic data.	CPS.1.2	NC	EN
16.	The system SHOULD determine and render a patient's age and age units for any given date.	CPS.1.2	NC	EN
17.	The system MAY analyze and render potential merge matches for registrations according to organizational policy.	CPS.1.2	NC	EN
18.	The system SHALL provide the ability to manage multiple patient names in each name component field (e.g., first, middle, last, suffix, or title).	CPS.1.2	NC	EN
19.	The system SHALL provide the ability to manage patient names that include any accent marks or special characters.	CPS.1.2	NC	EN
20.	The system MAY provide the ability to link family or group members so that information that is common to all the members can be updated.	CPS.1.2	NC	EN
70.	The system SHALL conform to RI.1.1.5 (View/Access Record Entry Content) to view/access patient list.		N	EN
242.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to capture and store patient registration.		N	EN
CPS.2 Function	Support externally-sourced Information	CPS.2	NC	EN

Statement: Capture and maintain a variety of information from multiple external sources.

Description: External sources are those outside the EHR system, including clinical, administrative, and financial information systems, other EHR systems, Personal Health Record (PHR) systems, and data received through health information exchange networks.

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
CPS.2.1 Function	Support externally-sourced Clinical Documents	CPS.2.1	NC	EN

Statement: Incorporate clinical documentation (computable and scanned) from external (to the system) sources.

Description: Mechanisms for incorporating external clinical documentation (including identification of source) are available. External is considered anything that is external to the system - i.e. documents from the organization; but created in another system would be considered 'external' for the purposes of this function. Documentation incorporated through these mechanisms is presented alongside locally captured documentation and notes wherever appropriate. This covers all types of documents received by the provider that would typically be incorporated into a medical record, including but not limited to faxes, referral authorizations, consultant reports, and patient/resident correspondence of a clinical nature. Intrinsic to the concept of electronic health records is the ability to exchange health information with other providers of health care services. Health information from these external sources needs to be received, stored in the patient record, and displayed upon request.

External data and documents addressed in the function include:

- Laboratory results received through an electronic interface - This information is to be received and stored in the resident record as discrete data, which means that each separate element of the data needs to be stored in its own field. Therefore, if laboratory results are received through an electronic interface, the results are received in the EHR and the laboratory test name, result (value), and unit of measure are correctly displayed as discrete data (vs. report format).

- Scanned documents received and stored as images (e.g., power of attorney forms, Living wills) - These scanned documents are indexed and can be retrieved based on the document type, date of the original document, and the date of scanning.

- Text-based outside reports (e.g., x-ray reports, hospital discharge summaries, history & physicals) - Any mechanism for capturing these reports is addendable: OCR, PDF, image file of report, etc.

- Clinical images from an external source (e.g., radiographic images, digital images from a diagnostic scan or graphical images) – These images may be stored within the system or be provided through direct linkage to an external source such as a hospital PACS system.

- Other forms of clinical results, such as wave files of EKG tracings.

- Medication detail (e.g., a medication history) from an external source such as a pharmacy, the patient, payer, or another provider - While the medication detail includes the medication name, strength, and SIG, this does not imply that the data will populate the medication module.

- Structured, text-based reports (e.g., medical summary text in a structured format).

- Standards-based structured, codified data (e.g., a Continuity of Care Document (CCD) with SNOMED CT).

Data incorporated through these mechanisms is presented alongside locally captured documentation and notes wherever appropriate.

1. The system SHALL provide the ability to capture, store and render external documents.	CPS.2.1	NC	EN
2. The system SHALL provide the ability to capture, store and render scanned documents.	CPS.2.1	NC	EN
3. The system SHOULD provide the ability to capture, store and render computable documents (e.g., CDA, ISO 13606, laboratory results or medication lists).	CPS.2.1	NC	EN
4. The system SHOULD provide the ability to store imaged documents or link to the imaged documents in imaging systems.	CPS.2.1	NC	EN
5. The system SHALL provide the ability to receive from an external source unstructured, text-based documents and reports.	CPS.2.1	NC	EN
6. The system SHOULD provide the ability to receive from an external source structured, text-based documents and reports.	CPS.2.1	NC	EN
7. The system SHALL provide the ability to tag and render scanned documents based on the document type, the date of the original document, and the date of scanning according to scope of practice, organizational policy, and/or jurisdictional law.	CPS.2.1	NC	EN
8. The system SHALL provide the ability to link documentation and annotations with structured content (e.g., link information gathered during an office visit, phone communication, or e-mail consult with structured content that is stored as a laboratory result, problem, or diagnosis).	CPS.2.1	NC	EN
9. The system SHOULD conform to function TI.1.5 (Non-Repudiation) and TI.1.6 (Secure Data Exchange) when importing/receiving both structured and unstructured data.	CPS.2.1	NC	EN
10. The system MAY provide the ability to render a notification or alert based on information received from an external source according to scope of practice, organizational policy, and/or jurisdictional law.	CPS.2.1	NC	EN
11. IF a system receives information from external sources, THEN the system SHALL capture information regarding the identity of the source of that information.	CPS.2.1	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
CPS.2.2 Function	Support externally-sourced Clinical Data	CPS.2.2	NC	EN

Statement: Incorporate discrete clinical data from external sources and support communication/presentation of data captured from medical and non-medical devices and entities.

Description: Mechanisms for incorporating external clinical data (including identification of source) are available and communication with non-medical devices and entities is supported as appropriate to the care setting such as an office or a patient's home. Externally-sourced data may be presented with locally-sourced documentation and notes wherever appropriate. This covers all types of data received by the provider that would typically be incorporated into a medical record, including but not limited to faxes, referral authorizations, consultant reports, and patient/resident correspondence of a clinical nature. Intrinsic to the concept of electronic health records is the ability to exchange health information with other providers of health care services. Health information from these external sources needs to be received, stored in the patient record, and displayed upon request.

Examples of externally-sourced data and documents include:

- Laboratory results received through an electronic interface.

This information is received and stored in the resident record as discrete data, which means that each separate element of the data needs to be stored in its own field. Therefore, if laboratory results are received through an electronic interface, the results are received in the EHR and the laboratory test name, result (value), and unit of measure are correctly displayed as discrete data (instead of in report or summarized format).

- Scanned documents received and stored as images (e.g., power of attorney forms or living wills).

These scanned documents are indexed and can be retrieved, e.g., based on the document type, date of the original document, and the date of scanning.

- Text-based outside reports (e.g., x-ray reports, hospital discharge summaries or history and physical examinations).

Any mechanism for capturing these reports is acceptable (e.g., OCR, PDF, JPG or TIFF).

- Clinical images from an external source (e.g., radiographic images, digital images from a diagnostic scan or graphical images).

These images may be stored within the system or be available by direct linkage to an external source (e.g., a hospital's picture archiving and communication system).

- Other forms of clinical results (e.g., EKG waveforms).

- Medication history from an external source such as a retail pharmacy, the patient, or another provider .

While the medication history includes the medication name, strength, and SIG, this does not imply that the data will populate the medication administration module. In many systems the medication administration module is populated from the medication order rather than from the medication history.

- Structured, text-based reports (e.g., medical summary text in a structured format).

- Standards-based structured, codified data (such as a standards-based referral letter that contains SNOMED CT codes).

Such data may be presented with locally-sourced documentation and notes wherever appropriate.

1. The system SHALL provide the ability to capture and store computable data (e.g., laboratory results, telemetry, or medication details).	CPS.2.2	NC	EN
2. The system SHALL provide the ability to capture and store a reference to external data.	CPS.2.2	NC	EN
3. The system SHALL provide the ability to capture and store externally-sourced computable data (e.g., laboratory results, telemetry, medication details).	CPS.2.2	NC	EN
4. The system SHALL provide the ability to capture and store externally-sourced standards-based structured, codified data.	CPS.2.2	NC	EN
5. The system SHOULD provide the ability to capture and store laboratory test data as discrete data elements (e.g., test name, laboratory sample status, date/time of collection, test results, original test units, laboratory panel name, pre-defined testing conditions met indicator, specimen identifier, reference range lower limit, reference range upper limit, laboratory identifier, abnormal flag, and clinical significance indicator).	CPS.2.2	NC	EN
6. The system SHOULD provide the ability to capture and store externally-sourced clinical documentation as structured data, where appropriate, including the original, updates and addenda.	CPS.2.2	NC	EN
7. The system SHOULD provide the ability to capture and store health-related data from non-medical devices (e.g., digital camera or sound recorder).	CPS.2.2	NC	EN
8. The system SHOULD provide the ability to capture the original requisition ID number associated with an order.	CPS.2.2	NC	EN

CPS.3 Header	Support Clinical Documentation	CPS.3	NC	EN

Statement: Standard assessments, guidelines and prompts are provided to facilitate decision support for the optimization of patient care based on specific medical conditions.

Description: Provider support is offered for the consideration of issues that would help assure optimal patient management. These may include standard assessments, care plans and treatment protocols, with triggers and prompts to assist during the patient encounter. Recommendation for patient testing and follow-up is also included along with decision support for patient self-management of a condition between patient-provider encounters.

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
CPS.3.8 Function	Manage Documentation of Clinician Response to Decision Support Prompts	CPS.3.8	NC	EN
	Statement: Capture the decision support prompts and manage provider actions to accept or override decision support prompts. **Description:** Provider actions in response to prompts offered from decision support are captured. Management of these actions be accomplished at the patient level or aggregated for patient population, research protocol, or organizational trending.			
	1. The system SHALL provide the ability to capture that clinical decision support prompts have been rendered and user response to accept or override those prompts.	CPS.3.8	NC	EN
	2. The system SHALL provide the ability to capture the reason for variation from the decision support prompt.	CPS.3.8	NC	EN
	3. The system SHOULD provide the ability to render recorded variances from decision support prompts.	CPS.3.8	NC	EN
	4. The system MAY provide the ability to render a notification to users that a decision support alert has been disabled (e.g., notification to administrators or the user who disabled the alert).	CPS.3.8	NC	EN
CPS.4 Header	Support Orders	CPS.4	NC	EN
	Statement: Support for Orders is required to ensure that appropriate decision support and safety checks are conducted by the system at the time of ordering as well as at the time of dispensing medications or immunizations. **Description:** Support for orders includes the management of order set templates, the support for specific types of orders including medication, immunization, non-medication, diagnostic tests as well as blood products and biologicals. Decision Support for orders includes checking for allergies or adverse interactions, dosing checking and issuing the appropriate warnings. It may also include functions to increase ordering efficiency such as verifying all necessary information to fulfill the order is captured and making recommendations for supporting orders. A component of ordering medications and immunizations is the dispensing of those orders and, where applicable, this function will include criteria to support dispensing. Note: Administration of Orders is included in CPS.6 (Support for Treatment Administration).			
CPS.4.1 Function	Manage Order Set Templates	CPS.4.1	NC	EN
	Statement: Maintain order set templates based on preferred standards, provider preferences, organizational policy or other criteria. **Description:** Order set templates, which may include medication orders, allow a care provider to choose common orders for a particular circumstance or disease state according to standards (e.g., best practice guidelines) or other criteria. Order Set Templates may be defined to allow or not allow the provider to modify (add/remove/update) specific orders when applying them to a specific patient.			
	1. The system SHALL provide the ability to manage order set templates, including creation from provider input and version control.	CPS.4.1	NC	EN
	2. The system MAY capture an order set template based on a specific patient's orders/data according to scope of practice, organizational policy, and/or jurisdictional law.	CPS.4.1	NC	EN
	3. The system SHOULD provide the ability to manage order set templates created for conditions or diseases.	CPS.4.1	NC	EN
	4. The system MAY provide the ability to capture the practice standards or criteria used to create order set templates (e.g., as a note attached to the template).	CPS.4.1	NC	EN
	5. The system MAY render order set templates to providers based on diagnoses, conditions, or symptoms to aid decision support.	CPS.4.1	NC	EN
	6. The system SHALL conform to function CP.4.1 (Use Order Sets).	CPS.4.1	NC	EN
	7. The system SHOULD provide the ability to capture and maintain an order set template containing all order types relevant to a particular problem (e.g., laboratory , radiology, medications, nursing tasks, and materials management).	CPS.4.1	NC	EN
	8. The system SHOULD capture, maintain and render order set templates customized by patient age, sex, or other patient factors.	CPS.4.1	NC	EN
	9. The system SHOULD capture, maintain and render order set templates customized by provider type.	CPS.4.1	NC	EN
	10. The system MAY capture, maintain and render order set templates customized by provider.	CPS.4.1	NC	EN
	11. The system SHOULD capture, maintain and render standing order set templates for triage or for specific conditions.	CPS.4.1	NC	EN
	12. The system MAY provide the ability to manage links or access to applicable clinical standards and reference materials within an order set.	CPS.4.1	NC	EN
	13. The system SHOULD provide the ability to capture, maintain and render the date that an order set was last modified.	CPS.4.1	NC	EN
	14. The system SHOULD provide the ability to capture, maintain and render order set templates that are pre-configured with order entry information.	CPS.4.1	NC	EN
	15. The system SHOULD provide the ability to capture, maintain and render multiple choices of orders within an order set template for clinician selection.	CPS.4.1	NC	EN
	16. The system SHOULD provide the ability to capture, maintain and render text instructions or recommendations within order sets.	CPS.4.1	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
17.	The system SHALL provide the ability to capture a name for an order set.	CPS.4.1	NC	EN
18.	The system SHALL provide the ability to render order set(s) by name.	CPS.4.1	NC	EN
19.	The system SHALL provide the ability to render orders in the same manner regardless of the manner in which they were ordered (individually or from within an order set).	CPS.4.1	NC	EN
20.	The system SHOULD provide the ability to integrate order sets within other order sets.	CPS.4.1	NC	EN
21.	The system SHALL determine and render drug-drug interaction and drug-allergy reaction checking to orders placed through an order set in the same way as orders placed individually.	CPS.4.1	NC	EN
22.	The system MAY provide the ability to render reports on the use of order sets, including such data as orders, ordering provider, date/time ordered, basic patient data (e.g., demographics), and condition(s) being treated.	CPS.4.1	NC	EN
23.	The system SHALL provide the ability to capture, maintain and render order sets that allow or disallow individual orders to be selected or deselected by the user (e.g., standing orders that can't be modified during care provision).	CPS.4.1	NC	EN
24.	The system MAY provide the ability to capture and maintain order set preferences.	CPS.4.1	NC	EN
CPS.4.2 Function	Support for Medication and Immunization Ordering	CPS.4.2	NC	EN

Statement: Provide functionality to alert providers to potential medication and immunization ordering errors (such as wrong patient, wrong drug, wrong dose, wrong route and wrong time).

Description: During medication or immunization ordering it is critical to minimize potential errors that can cause adverse events. This is accomplished by the EHR system through the use of clinical decision support and prompting to validate the order at time of ordering. Whist many of these functions are more commonly associated with medication ordering; they also apply to ordering of immunizations when such ordering occurs. The support includes the checking for drug/drug interactions, checking against documented allergies or previous adverse events, as well as validating patient-specific dosing and providing appropriate warnings. Support for medical ordering efficiencies also ensures that orders are appropriate and contain all required supporting information.

CPS.4.2.1 Function	Support for Medication Interaction and Allergy Checking	CPS.4.2.1	NC	EN

Statement: Identify medication interaction warnings at the time of medication or immunization ordering, or prescribing, as well as at the time of dispensing.

Description: The clinician is alerted to medication-medication, medication-allergy, medication-food, medication-supplement (herbal or dietary) interactions at levels appropriate to the health care setting and with respect to the patient condition. These alerts may be customized to suit the user or group.

Note, medication may be affected by food or dietary choices; whist this is not considered an interaction it is consequently not included in this function; however, the provision of drug-food effectiveness in information to be provided to the patient is included in the function CP.8.1 (Generate, Record and Distribute Patient-Specific Instructions). If the patient's condition is one where, in order to view the necessary components of the health record, patient authorization or consent is required; then the system should show the medication but mask the condition for which the medication is prescribed until the required consent or authorization is available. In an emergent situation, where all health information is required to provide the most effective treatment, and it is not possible to obtain an authorization or consent; the system should provide an override (e.g., "break the glass") function to allow access to the diagnosis or problem for which a medication was ordered, according to scope of practice, organizational policies, and/or jurisdictional law.

1.	The system SHALL determine and present the presence of interactions between medications ordered and medications already on the current medication list.	CPS.4.2.1	NC	EN
2.	The system SHALL determine and present the presence of interactions between medications ordered and true-allergies on the current allergy list.	CPS.4.2.1	NC	EN
3.	The system SHOULD determine and present the presence of contraindications between medications ordered and patient's current health condition and characteristics (e.g., gender, age, weight, smoking status, pregnancy status, renal function).	CPS.4.2.1	NC	EN
4.	The system MAY determine and present the presence of interactions between medications ordered and ingestibles (e.g., food or beverages).	CPS.4.2.1	NC	EN
5.	The system MAY determine and render the presence of interactions between medications ordered, medications on the current medication list as well as previous medications according to organization policy, and/or jurisdictional law.	CPS.4.2.1	NC	EN
6.	The system SHOULD determine and present the presence of interactions between medications ordered and supplements (i.e. herbal or dietary) on the current medication list.	CPS.4.2.1	NC	EN
7.	The system SHALL provide the ability to capture, maintain and render a medication order despite alerts for interactions, and/or allergies being present.	CPS.4.2.1	NC	EN
8.	The system SHOULD provide the ability to determine and present the presence of duplicate therapies.	CPS.4.2.1	NC	EN
9.	The system SHALL conform to function CPS.3.8 (Manage Documentation of Clinician Response to Decision Support Prompts) and provide the ability to document why a drug interaction warning was overridden.	CPS.4.2.1	NC	EN
10.	The system SHOULD determine the presence of drug-laboratory interactions and present information to the clinician that certain laboratory test results may be impacted by a patient's medications.	CPS.4.2.1	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
11.	The system SHOULD provide the ability to determine, maintain, and present medications noted to be ineffective for the patient in the past.	CPS.4.2.1	NC	EN
12.	The system SHALL provide the ability to present, on demand, potential medication-allergy, medication-medication and medication-condition interactions based on current medications, active allergies and active problems lists.	CPS.4.2.1	NC	EN
13.	The system SHOULD present the rationale for a medication interaction alert.	CPS.4.2.1	NC	EN
14.	The system SHALL conform to function CP.1.3 (Manage Medication List) in order to maintain a coded list of medications for the patient (including a unique identifier for each medication).	CPS.4.2.1	NC	EN
15.	The system MAY render an alert to the user if the medication interaction information or database has not been updated within a set time parameter.	CPS.4.2.1	NC	EN
16.	The system SHOULD determine and render notifications regarding drug-drug interaction(s) to the patient's provider or to the patient's care team when relevant clinical information changes (e.g., new clinical data from an internal or external source) according to scope of practice, organizational policy, and/or jurisdictional law.	CPS.4.2.1	NC	EN
CPS.4.2.2 Function	Support for patient-specific Dosing and Warnings	CPS.4.2.2	NC	EN
	Statement: Identify and present appropriate dose recommendations based on known patient conditions and characteristics at the time of medication ordering and dispensing. **Description:** The clinician is alerted to patient-specific contraindications and warnings e.g., pregnancy, breast-feeding or occupational risks, hepatic or renal insufficiency. The preferences of the patient may also be presented (e.g., reluctance to use an antibiotic). Additional patient parameters, such as age, gestation, genetic disposition, height, weight, and Body Surface Area (BSA), shall also be incorporated.			
1.	The system SHALL determine and render contraindications to the ordered dosage range.	CPS.4.2.2	NC	EN
2.	The system SHOULD determine and render an appropriate medication dosage range, specific for each known patient condition (e.g., diagnosis, pregnancy) and parameter (e.g., height, weight, pulse).	CPS.4.2.2	NC	EN
3.	The system SHOULD conform to function CPS.9.2.3 (Support for Provider Pharmacy Communication) to support transmitting documented reasons for overriding a medication alert to the pharmacy .	CPS.4.2.2	NC	EN
4.	IF the maximum daily doses are known, THEN the system SHALL present the maximum dose per day in dosing decision support.	CPS.4.2.2	NC	EN
5.	The system SHOULD provide the ability to determine and render medication dose by patient body weight.	CPS.4.2.2	NC	EN
6.	The system SHOULD provide the ability to determine and render medication dose by body surface area.	CPS.4.2.2	NC	EN
7.	The system SHOULD provide the ability to determine and render medication dose recommendations based on patient parameters, including age and diagnostic test results.	CPS.4.2.2	NC	EN
8.	The system MAY determine when no recommended medication dosing is available that is specific to known patient conditions and parameters, such as age or weight, and render notifications to the provider.	CPS.4.2.2	NC	EN
9.	The system SHOULD determine whether no recommended pediatric medication dosing is available and render notifications to the provider according to scope of practice.	CPS.4.2.2	NC	EN
10.	The system SHOULD determine and render medication dosages using all components of a combination medication (e.g., acetaminophen-hydrocodone).	CPS.4.2.2	NC	EN
11.	The system SHOULD provide the ability to capture the factors used to calculate the future dose for a given prescription.	CPS.4.2.2	NC	EN
12.	The system SHALL determine whether data required to compute a dose are missing or invalid and render notifications to the provider.	CPS.4.2.2	NC	EN
13.	IF the system determines a value that affects medication dosing recommendations (e.g., creatinine clearance), THEN the system SHOULD maintain the formula used for the calculation.	CPS.4.2.2	NC	EN
14.	IF the system supports electronic communication with the pharmacy system, THEN the system SHOULD provide the ability to transmit the documented reasons for overriding a medication alert.	CPS.4.2.2	NC	EN
15.	The system SHOULD provide the ability to determine and maintain the cumulative drug dose.	CPS.4.2.2	NC	EN
16.	The system SHOULD determine and render a notification if the cumulative medication dose exceeds the recommended dose.	CPS.4.2.2	NC	EN
17.	The system SHOULD provide the ability to maintain and uniquely render medications with look-alike names with recommended conventions (e.g., from FDA or Institute for Safe Medication Practices), such as, "Tall Man lettering".	CPS.4.2.2	NC	EN
18.	The system SHOULD provide the ability to determine the presence of medication interactions when multiple medications of the same therapeutic or pharmacologic class are ordered and present notifications when such medications are selected during prescribing/ordering.	CPS.4.2.2	NC	EN
19.	The system SHOULD provide the ability to determine and render recommended medication for substitution based on availability, cost, generic equivalent, and according to organizational policy, and/or jurisditional law.	CPS.4.2.2	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
20.	The system SHALL provide the ability to capture, store and render information concerning medication orders including any alerts following screening of medication orders and the clinician responses (place, modify or cancel order).	CPS.4.2.2	NC	EN
21.	The system SHOULD provide the ability to capture and render medication warnings and recommendations from official governmental agencies (e.g., FDA, regional centers).	CPS.4.2.2	NC	EN
22.	The system SHOULD provide the ability to extract reference information for prescribing/warning (e.g., FDA warnings in the US realm).	CPS.4.2.2	NC	EN
23.	The system MAY provide the ability to store configuration parameters (e.g., coefficients, exponents, formulas) regarding the patient's body surface area.	CPS.4.2.2	NC	EN
CPS.4.2.4 Function	Support for Medication Recommendations	CPS.4.2.4	NC	EN
	Statement: Offer recommendations and options in medication treatment protocols as well as supporting medication monitoring on the basis of patient diagnosis, patient characteristics, or therapeutic guidelines and protocols. **Description:** The system should list medication treatment options on the basis of practice standards and the patient's conditions, diagnoses and characteristics (e.g., obesity, occupation). The system may also provide prompts and notifications to support medication monitoring.			
1.	The system SHALL conform to function CPS.4.2.2 (Support for Patient-Specific Dosing and Warnings).	CPS.4.2.4	NC	EN
2.	The system SHOULD determine and present recommendations for medication regimens based on findings related to the patient diagnosis.	CPS.4.2.4	NC	EN
3.	The system SHALL determine and present recommendations for alternative medication treatments on the basis of practice standards, patient conditions and characteristics.	CPS.4.2.4	NC	EN
4.	The system SHOULD determine and render recommendations for monitoring (e.g., labs, behaviors, adverse reactions, side effects) as appropriate to a particular medication.	CPS.4.2.4	NC	EN
CPS.4.3 Function	Support for Non-Medication Ordering	CPS.4.3	NC	EN
	Statement: Facilitate provider review and validation of order information to make it pertinent, effective and resource-conservative at the point of order entry. **Description:** The system assists provider during order entry for therapies, treatments, care, diagnostics and medical supplies and equipment. Support includes, for example: alerts to duplicate orders, missing results or other information required to initiate order, suggested corollary orders, order sets, best practice guidelines, institution-specific order guidelines and patient diagnosis specific recommendations. Also alerts for orders that may be inappropriate or contraindicated for specific patients, for example, X-rays on pregnant women.			
1.	The system SHALL determine and render, at the time of order entry, required order entry components for non-medication orders.	CPS.4.3	NC	EN
2.	The system SHALL render an alert at the time of order entry if a non-medication order is missing required information.	CPS.4.3	NC	EN
3.	The system SHOULD render an alert for orders that may be inappropriate or contraindicated for specific patients at the time of order entry.	CPS.4.3	NC	EN
4.	The system SHALL provide the ability to capture, maintain and render elapsed time parameters for purposes of duplicate order checking.	CPS.4.3	NC	EN
5.	The system SHOULD provide the ability to link a non-medication order with related clinical problem(s), and/or diagnosis code(s).	CPS.4.3	NC	EN
6.	The system SHOULD capture and maintain information required for pediatric ordering (e.g., age and weight of the child for radiology or laboratory orders) according to scope of practice.	CPS.4.3	NC	EN
7.	The system SHOULD auto-populate the answers to questions required for diagnostic test ordering from data within the medical record or captured during the encounter.	CPS.4.3	NC	EN
8.	The system SHOULD provide the ability to tag certain diagnostic studies that may/should not be repeated within a prescribed period of time and present an indicator at time of ordering.	CPS.4.3	NC	EN
9.	The system MAY provide the ability to capture and render reminders to patients regarding necessary follow up tests based on the prescribed medication (e.g., reminders may be sent manually or automatically via a pre-determined rule).	CPS.4.3	NC	EN
10.	The system SHOULD provide the ability to capture and render reminders to the clinicians regarding necessary patient follow up tests based on the prescribed medication.	CPS.4.3	NC	EN
11.	The system SHALL provide the ability to manage the process of order reconciliation according to scope of practice, organizational policy, and/or jurisdictional law.	CPS.4.3	NC	EN
CPS.8 Header	Support Patient Education & Communication	CPS.8	NC	EN
	Statement: Support for appropriate communication with the patient or the patient representatives. **Description:** Support for patient education and communication is critical to ensure that the patient can appropriately participate in his care. This includes providing access to relevant patient educational materials and reminders from internal, and/or external sources.			

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
CPS.8.4 Function	Support for Communications Between Provider and Patient, and/or the Patient Representative	CPS.8.4	NC	EN
	Statement: Facilitate communications between providers and patients, and/or the patient representatives. **Description:** Providers are able to communicate with patients and others, capturing as specified by the business rules the nature and content of electronic communication, or the time and details of other communication. Examples: - When test results arrive, the clinician may wish to email the patient that test result was normal (details of this communication are captured). - A patient may wish to request a refill of medication by emailing the physician. - Patients with asthma may wish to communicate their peak flow logs/diaries to their provider. - Hospital may wish to communicate with selected patients about a new smoking cessation program. - Automated notification regarding annual flu shots			
1.	The system SHALL provide the ability to capture and store documentation of communications between providers and patients and/ or the patient representatives.	CPS.8.4	NC	EN
2.	The system SHALL provide the ability to capture scanned documents.	CPS.8.4	NC	EN
3.	The system SHOULD provide the ability to receive and transmit information between providers and patients or their representative using a secure internet connection.	CPS.8.4	NC	EN
4.	The system SHALL provide the ability to manage authorizations documentation for family member or patient representative to receive patient related health information.	CPS.8.4	NC	EN
5.	The system SHOULD render an alert to providers regarding the presence of communications that originated from the patient or patient representative.	CPS.8.4	NC	EN
6.	The system SHOULD transmit a notification regarding the provider's unavailability (e.g., vacations) when the provider receives information or requests electronically based on user-defined configuration (e.g., email out-of-office notification).	CPS.8.4	NC	EN
7.	The system MAY determine alternate routing of information or requests received when the provider is unavailable based on user-defined configuration and transmit a notification of the routing (e.g., alternate provider covering for vacation).	CPS.8.4	NC	EN
8.	The system MAY provide the ability to render a notification of events and new treatment options to providers.	CPS.8.4	NC	EN
9.	The system MAY provide the ability to transmit to the patient or patient representative reminders of events related to their care (e.g., upcoming appointments) as agreed upon by the patient, and/ or the patient representative.	CPS.8.4	NC	EN
10.	The system MAY provide the ability to capture and transmit information between providers and patient groups.	CPS.8.4	NC	EN
11.	The system SHALL provide the ability to render notifications, manually, and/or automatically, to patients for conditions and results that require follow-up, according to scope of practice, organizational policy, and/or jurisdictional law, and to update the patient record with the fact that this was done.	CPS.8.4	NC	EN
12.	The system SHALL provide the ability to render information (e.g., electronic, paper, CD-ROM) to patients and to update the patient record with the fact that this was done.	CPS.8.4	NC	EN
13.	The system MAY provide the ability to render a notification to the patient when specific medication doses are due, and/or when diagnostic/screening tests are due.	CPS.8.4	NC	EN
14.	The system SHOULD provide the ability for the provider to capture an authorization for the transmittal of medication renewal data to an external system and transmittal of a notice to patient via preconfigured notification channel, one of which may be a Consumer Health Solution or a Personal Health Record, according to scope of practice, organizational policy, and/or jurisdictional law.	CPS.8.4	NC	EN
CPS.9 Header	Support Care Coordination & Reporting	CPS.9	NC	EN
	Statement: Support exchange and reporting of information between participants in patient-centered care. **Description:** Provide the support necessary to ensure that appropriate communication between providers is possible to coordinate the patient's care including, clinical communication between providers, standard and ad-hoc reporting and information views of the patient record.			

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
CPS.9.2 Function	Support for Inter-Provider Communication	CPS.9.2	NC	EN

Statement: Support exchange of information between providers as part of the patient care process, and the appropriate documentation of such exchanges. Support secure communication to protect the privacy of information as required by jurisdictional law.

Description: Communication among providers involved in the care process can range from real time communication (for example, communication between a therapist and nurse), to asynchronous communication (e.g., consult reports between physicians). Some forms of inter-practitioner communication will be paper based and the EHR-S must be able to produce appropriate documents.

The system should provide for both verbal and written communication. These exchanges would include but not be limited to consults, and referrals as well as possible exchanges within the office as part of the provision and administration of patient care (e.g., the communication of new information obtained within the office environment during the process of administration of a tetanus shot while the patient is in the exam room).The system should support the creation and acceptance of paper artifacts where appropriate.

CPS.9.2.3 Function	Support for Provider -Pharmacy Communication	CPS.9.2.3	NC	EN

Statement: Provide features to enable secure bi-directional communication of information electronically between practitioners and pharmacies or between practitioner and intended recipient of pharmacy orders.

Description: When a medication is prescribed, the order is routed to the pharmacy or other intended recipient of pharmacy orders. This information is used to avoid transcription errors and facilitate detection of potential adverse reactions. If there is a question from the pharmacy, that communication can be presented to the provider with their other tasks. In certain environments, medication order creation is a collaborative process involving the prescriber and facility staff. Accordingly, this function applies to communication process between the prescriber, facility and the pharmacy or other intended recipient of pharmacy orders. The transmission of prescription data between systems should conform to realm acceptable messaging standards. Informative examples:

- HL7 Clinical Document Architecture Release 2
- ISO/EN 13606 Electronic Health Record Communication
- CEN ENV 13607:2000. Health informatics. Messages for the exchange of information on medicine prescriptions
- X12N healthcare transactions
- US realm: National Council for Prescription Drug Programs (NCPDP)
- Canadian realm: National Electronic Claims Standard (NeCST)

1.	The system SHALL conform to function CP.4.2 (Manage Medication Orders) and provide the ability to transmit medication orders.	CPS.9.2.3	NC	EN
2.	The system SHALL provide the ability for a prescriber/provider to transmit orders, prescriptions, eligibility inquiries, acknowledgements and renewal responses electronically to a pharmacy to initiate, change, cancel, or renew a medication order.	CPS.9.2.3	NC	EN
3.	The system SHALL provide the ability to receive any acknowledgements, prior authorizations, renewals, inquiries and fill notifications provided by the pharmacy or other participants in the electronic prescription process.	CPS.9.2.3	NC	EN
4.	The system SHOULD provide the ability to exchange clinical information with pharmacies using current realm-specific messaging or services standards.	CPS.9.2.3	NC	EN
5.	The system MAY provide the ability for providers and pharmacies to receive and transmit clinical information via secure e-mail or other electronic means, on both general and specific orders.	CPS.9.2.3	NC	EN
6.	The system SHALL provide the ability to receive and transmit secure real-time messages or services.	CPS.9.2.3	NC	EN
7.	The system MAY provide the ability to transmit information on workflow tasks as part of communication to the provider.	CPS.9.2.3	NC	EN
8.	The system SHOULD provide the ability to transmit a request to the pharmacy (based on an existing order) that additional medication be delivered (i.e. re-supply request).	CPS.9.2.3	NC	EN
9.	The system SHOULD provide the ability to receive and transmit drug utilization review (DUR) findings and formulary & benefits (F&B) data with the pharmacy using standards-based messaging.	CPS.9.2.3	NC	EN
10.	The system SHOULD provide the ability to capture authorization for transmittal of medication renewal data to an external system and transmittal of a notice to patient via preconfigured notification channel (e.g., Consumer Health Solution or Personal Health Record), according to scope of practice, organizational policy, and/or jurisdictional law.	CPS.9.2.3	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
CPS.9.3 Function	Health Record Output	CPS.9.3	NC	EN
	Statement: Support the definition of the formal health record, a partial record for referral purposes, or sets of records for other necessary disclosure purposes. **Description:** Provide hardcopy and electronic output that fully chronicles the healthcare process, supports selection of specific sections of the health record, and allows healthcare organizations to define the report, and/or documents that will comprise the formal health record for disclosure purposes. A mechanism should be provided for both chronological and specified record element output. This may include defined reporting groups (i.e. print sets). For example Print Set A = Patient Demographics, History & Physical, Consultation Reports, and Discharge Summaries. Print Set B = all information created by one caregiver. Print Set C = all information from a specified encounter. An auditable record of these requests and associated exports may be maintained by the system. This record could be implemented in any way that would allow the who, what, why and when of a request and export to be recoverable for review. The system has the capability of providing a report or accounting of disclosures by patient that meets in accordance with scope of practice, organizational policy, and jurisdictional law.			
1.	The system SHALL provide the ability to render reports consisting of all and part of an individual patient's record according to scope of practice, organizational policy, and/or jurisdictional law.	CPS.9.3	NC	EN
2.	The system SHOULD provide the ability to capture and maintain the records or reports that are considered the formal health record for disclosure purposes.	CPS.9.3	NC	EN
3.	The system SHOULD provide the ability to render reports in both chronological and specified record elements order.	CPS.9.3	NC	EN
4.	The system SHOULD provide the ability to maintain and render hardcopy and electronic report summary information (e.g., demographics, procedures, medications, labs, immunizations, allergies, vital signs).	CPS.9.3	NC	EN
5.	The system MAY provide the ability to capture and maintain reporting groups (i.e., print sets) for specific types of disclosure or information sharing.	CPS.9.3	NC	EN
6.	The system SHALL provide the ability to render patient identifying information on each page of reports (i.e., hard copy and electronic) according to organizational policy, and/or jurisdictional law.	CPS.9.3	NC	EN
7.	The system SHOULD provide the ability to update reports to match mandated formats.	CPS.9.3	NC	EN
8.	The system MAY provide the ability to render a report that includes metadata for disclosure purposes (e.g., point of record exchange).	CPS.9.3	NC	EN
9.	The system SHALL provide the ability to manage-data-visibility of data elements or portions of a report to prevent a given recipient from seeing certain data according to organizational policy and/or jurisdictional law (e.g., by hiding, redacting, removing from view, and/or removing from output).	CPS.9.3	NC	EN
10.	The system SHOULD provide the ability to capture and render [cite] the reasons for redaction.	CPS.9.3	NC	EN
11.	The system MAY provide the ability to render [reproduce] a copy of the redacted document/record (e.g., through rules, storing a copy).	CPS.9.3	NC	EN
12.	The system MAY provide the ability to render patient care events sorted or configured by date and time ranges and data/record type.	CPS.9.3	NC	EN
13.	The system MAY provide the ability to maintain a record of disclosure/release that includes the recipient and outbound content.	CPS.9.3	NC	EN
14.	The system SHOULD provide the ability to render wrist bands that include appropriate demographic and clinical information.	CPS.9.3	NC	EN
15.	The system SHOULD provide the ability to render a record summary using the format specified by an organization to which a patient is transferred.	CPS.9.3	NC	EN
CPS.9.4 Function	Standard Report Generation	CPS.9.4	NC	EN
	Statement: Provide report generation features using tools internal or external to the system, for the generation of standard reports. **Description:** Providers and administrators need access to data in the EHR-S for clinical, administrative, financial decision-making, audit trail and metadata reporting, as well as to create reports for patients. Many systems may use internal or external reporting tools to accomplish this. Reports may be based on structured data, and/or unstructured text from the patient's health record. Users need to be able to sort, and/or filter reports. For example: -the user may wish to view only the diabetic patients on a report listing patients and diagnoses-the user may wish to view only male patients over 35 with a complaint of chest pain.			
1.	The system SHOULD provide the ability to render reports of structured clinical and administrative data using either internal or external reporting tools.	CPS.9.4	NC	EN
2.	The system MAY provide the ability to extract unstructured clinical and administrative data for inclusion in the report generation process, using internal or external tools.	CPS.9.4	NC	EN
3.	The system SHOULD provide the ability to extract and transmit reports generated.	CPS.9.4	NC	EN
4.	The system SHOULD provide the ability to capture and maintain report parameters, based on patient demographic, and/or clinical data, which would allow sorting, and/or filtering of the data.	CPS.9.4	NC	EN
5.	The system MAY provide the ability to save report parameters for generating subsequent reports either as integrated component of the system, or an external application, using data from the system.	CPS.9.4	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
6.	The system MAY provide the ability to edit one or more parameters of a saved report specification when generating a report using that specification either as an integrated component of the system, or an external application, using data from the system.	CPS.9.4	NC	EN
7.	The system SHOULD provide the ability to render automated reports as required by industry and regulatory bodies.	CPS.9.4	NC	EN
8.	The system SHOULD provide the ability to extract facility level data at an organizational level in support of organizational initiatives.	CPS.9.4	NC	EN
9.	The system MAY provide the ability to render a cumulative directory of all personnel who use or access the data.	CPS.9.4	NC	EN
CPS.10 Function	Manage User Help	CPS.10	NC	EN
	Statement: Support the ability to manage the configuration, and/or customization of appropriate user help that is context sensitive and may include the exchange of live online chat. **Description:** Throughout the system it is necessary to provide configurable, context sensitive, and/or searchable user help to assist in the use of the system. User help levels should be configurable based on user requirements, scope of practice, organizational policy, and/or jurisdictional law. User Help may include the live online chat support.			
1.	The system SHOULD provide the ability to manage the configuration and customization of User Help in accordance with user requirements, and according to scope of practice, organizational policy, and/or jurisdictional law.	CPS.10	NC	EN
2.	The system SHOULD receive queries and render responses for data entry and system navigation assistance (User Help).	CPS.10	NC	EN
3.	The system MAY exchange User Help queries and responses via live online chat.	CPS.10	NC	EN
4.	The system SHOULD render context-sensitive invokable help to guide users through activities in the system (e.g., charting steps, menu navigation).	CPS.10	NC	EN

4. Administration Support Section

Section Overview

The Administrative Support Section focusses on functions required in the EHR-S to support the management of the clinical practice and to assist with the administrative and financial operations. This includes management of resources, workflow and communication with patients and providers as well as the management of non-clinical administrative information on patients and providers. All functions within the Administrative Support Section have an identifier starting with “AS”.

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
AS.1 Header	Manage Provider Information	AS.1	NC	EN
	Statement: Maintain, or provide access to, current provider information. **Description:** Manage the information regarding providers within and external to an organization that is required to support care provision. This information includes a registry of providers (internal to the EHR-S or external), the provider's location, on-call information, and office information. Information regarding teams or groups of providers as well as individual patient relationships with providers is necessary to support care coordination and access to patient information.			
AS.1.1 Function	Manage Provider Registry or Directory	AS.1.1	NC	EN
	Statement: Provide a current registry or directory of practitioners that contains data needed to determine levels of access required by the system. **Description:** Provider information may include any credentials, certifications, or any other information that may be used to verify that a practitioner is permitted to use or access authorized data.			
	1. The system SHOULD provide the ability to manage a registry or directory of all personnel who currently use or access the system according to scope of practice, organizational policy, and/or jurisdictional law.	AS.1.1	NC	EN
	2. The system SHOULD provide the ability to capture and maintain realm-specific legal identifiers required for care delivery (e.g., the provider's license number or national provider identifier).	AS.1.1	NC	EN
	3. The system SHALL provide the ability to capture and maintain the role of each provider associated with a patient (e.g., encounter provider, primary care provider, attending, resident, or consultant).	AS.1.1	NC	EN
AS.1.7 Function	Manage Practitioner/Patient Relationships	AS.1.7	NC	EN
	Statement: Identify relationships among providers treating a single patient, and provide the ability to manage patient lists assigned to a particular provider. **Description:** This function addresses the ability to manage current information about the relationships between providers and the patients. This information should be able to flow seamlessly between the different components of the system, and between the EHR system and other systems. Business rules may be reflected in the presentation of, and the access to this information. The relationship among providers treating a single patient will include any necessary chain of authority/responsibility. Example: -In a care setting with multiple providers, where the patient can only see certain kinds of providers (or an individual provider); allow the selection of only the appropriate providers. -The user is presented with a list of people assigned to a given practitioner and may alter the assignment as required to a group, to another individual or by sharing the assignment.			
	1. The system SHALL provide the ability to extract the information needed to identify all providers by name associated with a specific patient encounter.	AS.1.7	NC	EN
	2. The system SHALL provide the ability to tag the role of each provider associated with a patient (e.g., encounter provider, primary care provider, attending, resident, or consultant).	AS.1.7	NC	EN
	5. The system SHOULD provide the ability to capture and maintain, as discrete data elements, the identity of providers who have been associated with a specific patient encounter.	AS.1.7	NC	EN
	8. The system SHALL provide the ability to tag primary or principal provider(s) responsible for the care of a patient within a care setting.	AS.1.7	NC	EN
	9. The system SHOULD provide the ability to capture and maintain, as structured data elements, the principal provider responsible for the care of an individual patient.	AS.1.7	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
AS.4 Header	Manage Communication	AS.4	NC	EN
	Statement: Support communication to enable the exchange of information internally and between healthcare and non-healthcare organizations. **Description:** Communication among providers involved in the care process can range from real time communication (e.g., communication between a therapist and nurse), to asynchronous communication (e.g., consult reports between physicians). Some forms of inter-practitioner communication will be paper based and the EHR-S must be able to produce appropriate documents. The system should provide for both verbal and written communication. These exchanges would include but not be limited to consults, and referrals as well as possible exchanges within the office as part of the provision and administration of patient care (e.g., the communication of new information obtained within the office environment during the process of administration of a tetanus shot while the patient is in the exam room).			
AS.4.4 Function	Support for Provider-Employer Communications	AS.4.4	NC	EN
	Statement: Provide support for capturing employment information, and/or special work related requirements (e.g., flyers, divers, firemen, transportation workers) to assist in medical disposition choices and notifications, and support communication to employers. **Description:** The ability to capture and maintain a patient's employment information, to include contact information and job title, which is expected to be helpful to the clinician when a patient's work environment may affect the assessment of alternative diagnoses, applicable to the individual, as well as the potential treatment(s) that have been tailored to the individual based on their occupation.			
1.	The system MAY provide the ability to capture patient's employment data relevant to potential medical conditions.	AS.4.4	NC	EN
2.	The system MAY provide the ability to capture data used to determine if a patient is able to fulfill physical job requirements and/ or special work requirements as part of their medical disposition.	AS.4.4	NC	EN
3.	The system MAY provide the ability to manage reporting to employers on a patient's ability to fulfill physical or special job requirements as a result of their medical disposition.	AS.4.4	NC	EN
264.	The system SHALL conform to RI.1.1.1 (Originate and Retain Record Entry) to capture and store recommendation for work precautions.		N	EN
AS.9 Header	Manage Administrative Transaction Processing	AS.9	NC	EN
	Statement: Support the creation (including using external data sources, if necessary), electronic interchange, and processing of transactions listed below that may be necessary foradministrative management during an episode of care. **Description:** Support the creation (including using external data sources, if necessary), electronic interchange, and processing of transactions listed below that may be necessary for administrative management during an episode of care. The EHR system collects patient health-related information needed for purpose of administrative and financial activities including reimbursement. Captures the episode and encounter information to pass to administrative or financial processes (e.g., triggers transmissions of charge transactions as by-product of on-line interaction including order entry, order statusing, result entry, documentation entry, medication administration charting).Automatically retrieves information needed to verify coverage and medical necessity. As a byproduct of care delivery and documentation captures and presents all patient information needed to support coding. Ideally performs coding based on documentation. Clinically automated revenue cycle - examples of reduced denials and error rates in claims. Clinical information needed for billing is available on the date of service. Physician and clinical teams do not perform additional data entry / tasks exclusively to support administrative or financial processes.			
AS.9.2 Function	Support Financial Eligibility Verification	AS.9.2	NC	EN
	Statement: Support interactions with other systems, applications, and modules to enable eligibility verification for health insurance and special programs, including verification of benefits and pre-determination of coverage. **Description:** Retrieves information needed to support verification of coverage at the appropriate juncture in the encounter workflow. Improves patient access to covered care and reduces claim denials. When eligibility is verified, the system could prompt a provider to capture eligibility information needed for processing administrative and financial documentation, reports or transactions; updating or flagging any inconsistent data. In addition to health insurance eligibility, this function would support verification of registration in programs and registries, such as chronic care case management and immunization registries. A system would likely verify health insurance eligibility prior to the encounter, but would verify registration in case management or immunization registries during the encounter.			
1.	The system SHOULD provide the ability to capture patient health plan eligibility information for date(s) of service.	AS.9.2	NC	EN
2.	IF the system does not provide the ability to exchange electronic eligibility information (e.g., health plan coverage dates) with internal and external systems, THEN the system SHALL provide the ability to enter and maintain patient health plan coverage dates.	AS.9.2	NC	EN
3.	The system MAY provide the ability to capture general benefit coverage information for patients.	AS.9.2	NC	EN
4.	The system SHOULD store eligibility date(s) of service, coverage dates, general benefits and other benefit coverage documentation for service rendered according to scope of practice, organizational policy, and/or jurisdictional law.	AS.9.2	NC	EN

Section/Id#: Type:	**Header/Function Name** **Conformance Criteria**	Reference	Chg Ind	Priority
5.	The system MAY provide the ability to capture electronic eligibility information from internal and external systems.	AS.9.2	NC	EN
6.	The system MAY provide the ability to render information received through electronic prescription eligibility checking.	AS.9.2	NC	EN
7.	The system MAY provide the ability to capture and maintain patient registration in special programs (e.g., registries and case management).	AS.9.2	NC	EN
8.	The system MAY provide the ability to analyze eligibility and coverage information for inconsistencies (e.g., coverage dates, patient identity data, coverage status), and render a notification to the user regarding identified inconsistencies.	AS.9.2	NC	EN
9.	The system MAY provide the ability to render information received through provider eligibility checking.	AS.9.2	NC	EN

5. Record Infrastructure Section

Section Overview

The Record Infrastructure Section consists of functions common to EHR System record management, particularly those functions foundational to managing record lifecycle (origination, attestation, amendment, access/use, translation, transmittal/ disclosure, receipt, de-identification, archive…) and record lifespan (persistence, indelibility, continuity, audit, encryption). RI functions are core and foundational to all other functions of the Model (CP, CPS, POP, AS). Note extensive reference to RI functions in Overarching Criteria. RI functions may be implemented within the architecture of a single system or across a tightly coupled suite of systems (applications).All functions within the Record Infrastructure Section have an identifier starting with “RI”.

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
RI.1 Header	Record Lifecycle and Lifespan	RI.1	NC	EN

Statement: Manage Record Lifecycle and Lifespan

Description: Actions are taken to support patient health. Actions are taken in provision of healthcare to individuals. Actions are taken as the result of rules-based EHR System algorithms. Actors (i.e., patients, providers, users, systems) take Actions. (Actions broadly encompass tasks, acts, procedures or services performed or provided.) The EHR System captures Actions taken and creates corresponding Record Entries. Record Entries provide persistent evidence of Action occurrence, context, disposition, facts, findings and observations. From the point of Record Entry origination to the end of its lifespan, the EHR System manages each Entry consistent with and according to scope of practice, organizational policy, and jurisdictional law. In support of individual health and in provision of healthcare to individuals, Actors perform Actions and Actions have corresponding Entries in the EHR Record, (i.e., Action instances are documented by Record Entry instances). Record Entries may be captured during the course of the Action or sometime thereafter. The Actor (author/source) of the Record Entry may be the same as an Actor performing the Action or not. The EHRS Functional Model does not specify a particular relationship of Actions and corresponding Record Entries. It may be one to one, many to one or even one to many. Actions have associated metadata (e.g., who, what, when, where, why, how, under what conditions, in what context). The corresponding Record Entry captures this metadata along with other Action and Record Entry related information.

Each Record Entry also includes its own provenance metadata such as who (authoring Actor) and when (documented). Record Entries may be encapsulated to bind Actor (individual, organization, and/or system) signatures to data and metadata content and data/time of occurrence. Actions and related Record Entries capture a chronology of patient health and healthcare and also a chronology of operations and services provided in/by a healthcare enterprise. Record Entries reflect changes in health information from the time it was created, to the time it was amended, sent, received, etc. In this manner, each Record Entry serves as persistent evidence of an Action taken, enabling providers to maintain comprehensive information that may be needed for legal, business, and disclosure purposes. To satisfy these purposes, Record Entries must also be retained and persisted without alteration. Record Entries have both a lifecycle and a lifespan. Lifecycle Events include originate, retain, amend, verify, attest, access/view, de-identify, transmit/receive, and more. Lifecycle Events occur at various points in a Record Entry lifespan, always starting with a point of origination and retention (i.e., when the Entry is first created and stored). A Record Entry may have a pre and post Event state if content is modified. In this case, the original Record Entry is preserved (with signature binding) and a new Entry is created (with new signature binding). A Record Entry contains data and metadata, in multiple formats, following various conventions and standards. Included data may be tagged, and/or delimited, structured (concise, encoded, computable), or unstructured (free form, non-computable). Data may be encoded as text, document, images, audio, waveforms, in ASCII, binary or other encoding. Structured data may be characterized as being concise, encoded, computable, and may be divided into discrete fields.

Examples of structured health information include:

- patient residence (non-codified, but discrete field)
- diastolic blood pressure (numeric)
- coded laboratory result or observation
- coded diagnosis
- patient risk assessment questionnaire with multiple-choice answers.

Unstructured data may be characterized as being free form, and/or non-computable. Unstructured health record information is information that is not divided into discrete fields AND not represented as numeric, enumerated or codified data.

Examples of unstructured health record information include:

- text (text message to physician) - word processing document (a letter from a family member) - image (photograph of a patient or a scanned image of insurance card) - multimedia (dictated report or a voice recording).

Context may determine whether data are structured or unstructured. For example, a progress note might be standardized and structured in some systems (e.g., Subjective/Objective/Assessment/Plan) but unstructured in other systems. The EHR System manages Record Lifecycle Events for each Record Entry, including pre and post Event record states, continuity, persistence and related Record Audit Logs.

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
RI.1.1 Function	Record Lifecycle	RI.1.1	NC	EN
	Statement: Manage Record Lifecycle **Description:** As aboveReferences: - ISO 21089: Health Informatics – Trusted End-to-End Information Flows- HL7 EHR Interoperability Model DSTU- HL7 Electronic Health Record Lifecycle Model DSTU			
1.	The system SHALL conform to function RI.1.2.1 (Manage Record Entries) as the final step to conclude each Record Lifecycle Event in RI.1.1 (Record Lifecycle) and all child functions.	RI.1.1	NC	EN
RI.1.1.4 Function	Attest Record Entry Content	RI.1.1.4	NC	EN
	Statement: Attest to content of Record Entry (1 instance) **Description:** Occurs when Record Entry content is attested for accuracy and completeness – typically during/after conclusion of an Action. - Attested Record Entry content is the responsibility of Attesting Author. The Attesting Author may be someone other than the originating Author, i.e., a supervisor, proctor, preceptor or other designated individual. - An Audit Trigger is initiated to track Record Entry attestation. The purpose of attestation is to show authorship and assign responsibility for an act, event, condition, opinion, or diagnosis. Every Record Entry must be identified with the author and should not be made or signed by someone other than the author unless they have authority to do so. For example, a resident may author Record Entry content but the person taking legal authority for the content is the “attester” – both individuals should be identified. (Note: A transcriptionist may transcribe an author's notes and a senior clinician may attest to the accuracy of another's statement of events.)- Author: All users who create or contribute content and have a role in the development of a Record Entry. Some entries may be created by an author whose role is a student, transcriber or scribe. - Attester: A user who takes legal authority for Record Entry content. The attester is often the same as the author, but they may also be an individual with authority to take responsibility for Record Entry content created in whole or in part by another author(s) (e.g., student, scribe, transcriptionist).Reference: ISO 21089, Section 12.2.2.			
1.	The system SHALL conform to function TI.1.1 (Entity Authentication).	RI.1.1.4	NC	EN
2.	The system SHALL conform to function TI.1.2 (Entity Authorization).	RI.1.1.4	NC	EN
3.	The system SHALL provide the ability to attest (approve and apply signature to) Record Entry content by the author.	RI.1.1.4	NC	EN
4.	The system SHALL capture the signature event (e.g., digital signature) of the Attesting Author, binding signature to Record Entry content.	RI.1.1.4	NC	EN
5.	The system SHALL provide the ability to maintain any attestable Record Entry content added or changed with the content's author	RI.1.1.4	NC	EN
6.	The system SHALL present the status of attestable Record Entry content which has not been attested, conforming to function RI.1.3.1 (Record Pending State).	RI.1.1.4	NC	EN
7.	IF the attester is different than the author(s), THEN the system SHALL provide the ability to maintain Record Entry content by properly authenticated and authorized users different from the author (e.g., counter-signature) according to scope of practice, organizational policy, and/or jurisdictional law.	RI.1.1.4	NC	EN
8.	The system SHOULD provide the ability to manage digital signatures as the means for attestation.	RI.1.1.4	NC	EN
9.	IF more than one author contributed to the Record Entry content, THEN the system SHALL provide the ability to maintain all authors/contributors associated with their content.	RI.1.1.4	NC	EN
10.	IF Record Entry content is attested by someone other than the author, THEN the system SHALL maintain and display the author(s) and attester.	RI.1.1.4	NC	EN
11.	The system SHALL provide the ability to present a minimum set of information that identifies the author of Record Entry content according to scope of practice, organizational policy, and/or jurisdictional law (e.g., name, credential, and/or role (such as Karen Smith, RN)).	RI.1.1.4	NC	EN
12.	The system SHALL capture the signature type of the entity (individual, EHR or other system, or organization) sending Record Entry content.	RI.1.1.4	NC	EN
13.	The system SHALL capture the signature type of the entity (individual, EHR or other system, or organization) receiving Record Entry content.	RI.1.1.4	NC	EN
14.	The system SHALL capture all signature types of the entities through which Record Entry content has passed.	RI.1.1.4	NC	EN
RI.1.2 Header	Record Lifespan	RI.1.2	NC	EN
	Statement: Manage Record Lifespan **Description:** Record Lifecycle Events (Function RI.1.1) are those required to manage Record Entries in persistent storage over the full course of Record Lifespan (Section RI.1.2). See Section RI.1.1 , Record Lifecycle, for further description.			

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
RI.1.2.1 Function	Manage Record Entries	RI.1.2.1	NC	EN
	Statement: Manage/Persist Record Entries (Multiple instances) **Description:** Occurs upon Record Entry origination/retention and thereafter on a continuous and uninterrupted basis for lifespan of each Record Entry. - Ensures long-term retention and preservation of EHR Record Entries, without alteration. Reference: ISO 21089, Section 12.2.2			
1.	The system SHALL manage each Record Entry as a persistent, indelible (unalterable) data object, including its revision history.	RI.1.2.1	NC	EN
2.	The system SHALL manage (persist) each Record Entry for its applicable retention period according to scope of practice, organizational policy, and/or jurisdictional law.	RI.1.2.1	NC	EN
3.	The system SHALL manage (persist) the full set of identity, event and provenance Audit Metadata for each Record Entry, conforming to lifecycle events in function RI.1.1 (Record Lifecycle) and metadata requirements in function TI.2.1.1 (Record Entry Audit Triggers).	RI.1.2.1	NC	EN
4.	The system SHALL manage (persist) the attestation/signature event (e.g., digital signature) of each Record Entry conforming to function RI.1.1.4 (Attest Record Entry Content).	RI.1.2.1	NC	EN
5.	The system SHALL manage Record Entries with data content in standard and non-standard formats.	RI.1.2.1	NC	EN
6.	The system SHALL manage Record Entries containing both structured and unstructured data.	RI.1.2.1	NC	EN
7.	The system SHOULD manage Record Entry content with tagged or delimited elements including data formatted as text, documents, images, audio, waveforms, in ASCII, binary and other encodings.	RI.1.2.1	NC	EN
8.	The system SHOULD manage Record Entries in clinical and business contexts.	RI.1.2.1	NC	EN
9.	The system SHOULD provide the ability to manage sets of clinical and business context data, to be captured in or linked to Record Entries.	RI.1.2.1	NC	EN
10.	The system SHOULD provide the ability to extract all available elements included in the definition of a legal medical record (including Audit Log Entries and the decoded translation of anything stored only in code form) according to scope of practice, organizational policy, and/or jurisdictional law.	RI.1.2.1	NC	EN
11.	The system MAY provide the ability to tag specific Record Entries for deletion according to scope of practice, organizational policy, and/or jurisdictional law.	RI.1.2.1	NC	EN
12.	IF allowing tags for specific Record Entry deletion, THEN the system SHALL provide the ability to manage the set of tagged Entries, allowing review and confirmation before actual deletion occurs according to scope of practice, organizational policy, and/or jurisdictional law.	RI.1.2.1	NC	EN
13.	IF allowing tags for specific Record Entry deletion, THEN the system SHALL provide the ability to delete Entries according to scope of practice, organizational policy, and/or jurisdictional law.	RI.1.2.1	NC	EN
14.	IF allowing tags for specific Record Entry deletion, THEN the system SHALL provide the ability to render confirming notification that the destruction occurred according to scope of practice, organizational policy, and/or jurisdictional law.	RI.1.2.1	NC	EN
15.	The system MAY provide the ability to maintain Record Entries by undeleting the Record Entries according to scope of practice, organizational policy, and/or jurisdictional law.	RI.1.2.1	NC	EN
16.	The system MAY transmit record destruction date information along with existing data when transmitting Record Entries (or extracts) to another entity.	RI.1.2.1	NC	EN
17.	The system SHOULD manage health care information for organizations that have multiple facilities according to scope of practice, organizational policy, and/or jurisdictional law.	RI.1.2.1	NC	EN
18.	The system MAY tag and render patient information that has been not been previously presented to the clinician.	RI.1.2.1	NC	EN
19.	IF the system tags patient information from internal or external systems that has not been previously presented to the clinician, THEN the system MAY present a notification to that clinician in accordance with user role and according to scope of practice, organizational policy, and/or jurisdictional law.	RI.1.2.1	NC	EN
RI.1.3 Header	Record States	RI.1.3	NC	EN
	Statement: Manage Record States **Description:** Record Entries may reside in various states that must be managed. An important underlying principle for managing record states is the need to retain Record Entries that have been viewed for patient care purposes even if the Entry has not been completed or attested. This principle has important legal impact because it provides an account of what the provider viewed and relied on for clinical decision-making. For example, if Record Entry content was available in pending state and a clinician used the information to make decisions, it is important to retain the pending version even after the final version was available. Determining if Record Entry content was used for patient care may be challenging. Access logs could provide a mechanism to determine if the information was used.			

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
RI.1.3.1 Function	Manage Record Pending State	RI.1.3.1	NC	EN
	Statement: Manage Record Entries during the various states of completion. **Description:** Record Entries may reside in various states that must be managed. An important underlying principle for managing record states is the need to retain Record Entries that have been viewed for patient care purposes even if it has not been completed or attested. This principle has important legal impact because it provides a record of what the provider relied on for clinical decision-making. For example, if a Record Entry was available in pending state and a clinician accessed the information to make decisions, it is important to retain the pending version even after the final version was available. Determining if the Record Entry was accessed for patient care may be challenging. Access logs should show if the information was accessed/viewed.			
	1. The system SHOULD provide the ability to manage the length of time a Record Entry can be in a pending or inactive state before being administratively closed.	RI.1.3.1	NC	EN
	2. The system MAY present a notification to the author or designate that a Record Entry will be administratively closed after a designated period of time.	RI.1.3.1	NC	EN
	3. The system MAY present pending Record Entries in accordance with the organization's business rules.	RI.1.3.1	NC	EN
	4. IF the system displays pending Record Entries, THEN the system SHALL tag and present that a Record Entry is pending or incomplete.	RI.1.3.1	NC	EN
	5. The system SHOULD provide the ability to update a Record Entry status to one of: - complete, - complete while retaining incomplete version of the Entry if viewed for patient care or used by the system, - mark as erroneous and retain if Entry used for patient care or by the system, or - discard if Entry never viewed for patient care purposes.	RI.1.3.1	NC	EN
	6. The system SHOULD provide the ability to manage administrative closure of a Record Entry after a period of inactivity according to scope of practice, organizational policy, and/or jurisdictional law.	RI.1.3.1	NC	EN
	7. The system SHALL capture a date/time stamp and identify the author each time a Record Entry is updated including when opened, when updated, with the signature event and when officially closed, conforming to function TI.2.1.1 (Record Entry Audit Triggers).	RI.1.3.1	NC	EN
RI.2 Function	Record Synchronization	RI.2	NC	EN
	Statement: Manage Record Synchronization **Description:** An EHR-S may consist of a set of components or applications; each application manages a subset of the health information. Therefore it is important that, through various interoperability mechanisms, an EHR-S maintains all the relevant information regarding the health record in synchrony. For example, if a physician orders an MRI, a set of diagnostic images and a radiology report will be created. As a result, the patient demographic information, the order for MRI, the diagnostic images associated with the order, and the report associated with the study must all be synchronized in order for the clinicians to receive a synchronized view the complete record (with respect to time and geographic location).Date and time need to be consistent across the applications that are part of the EHR system. Synchronization demonstrates a sequence and chain of events for reconstruction and is relevant during a legal proceeding. Maintenance of synchronization activities could be relevant during a legal proceeding. Note: Standards exist for Consistent Date and Time.			
	1. The system SHALL conform to function TI.5.1 (Application and Structured-Document Interchange Standards).	RI.2	NC	EN
	2. The system SHOULD conform to function TI.3 (Registry and Directory Services).	RI.2	NC	EN
	3. The system SHOULD provide the ability to link Record Entries to external information.	RI.2	NC	EN
	4. The system SHOULD store the location of each known Record Entry in order to enable authorized access to a complete logical health record if the EHR is distributed among several applications, services, or devices within the EHR-S.	RI.2	NC	EN
	5. The system SHALL provide the ability to manage date and time-related information between applications, components, services, systems, and devices.	RI.2	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
RI.3 Function	Record Archive and Restore	RI.3	NC	EN

Statement: Manage Record Archive and Restore

Description: EHR Record Entries must be transitioned over its lifecycle from online data structures to near-line or off-line data structures. The archive function performs this transition of Record Entries from an online, production EHR-S to offline storage for information that is not being purged/destroyed. The system must provide such archive and restore functions to extract and preserve indefinitely, Record Entries selected to be removed from the live production EHR-S database and retained.

Record Entries must be archived and restored in such a manner as to permit them to be returned to their original or similar information structures. Archived Record Entries must also include corresponding metadata to ensure logical and semantic consistency of the information for subsequent access upon restoration.

The archive function should provide both an automated, configurable capability as well as a user-invoked archival function to enable selected Record Entries to be preserved, or flagged for preservation.

In the first instance, rules are specified to enable the system to conduct archiving in an unattended fashion. This is often the case for periodic system maintenance requirements (e.g., nightly processing where archival, data summarization and possibly purging of information occurs). In the second instance the system should provide the ability to select Record Entries to be preserved for future reference and access, such as in the case where selected Entries need to be preserved and retained for litigation.

In restoring information, it may occur that Record Entries being restored are a subset of the Entries originally archived. For example, when all Record Entries for a patient encounter were archived and only a particular set of Record Entries related to a study or result are to be restored. The system may provide for such finer granularity of restoration.

Archiving and restoring of Record Entries must be performed in a timely fashion, consistent with the operational requirements of both EHR users and system and technology capabilities.

The system must enable compliance with records retention according to scope of practice, organizational policy or jurisdictional law.

1. The system SHALL provide the ability to archive and restore Record Entries according to scope of practice, organizational policy, and/or jurisdictional law (e.g., to/from off-line or near-line media).	RI.3	NC	EN
2. The system SHALL provide the ability for an authorized user to tag and untag Record Entries to be archived.	RI.3	NC	EN
3. The system SHALL provide the ability to archive or restore metadata that is associated with Record Entries that have been archived or restored.	RI.3	NC	EN
4. The system SHOULD provide the ability to enter a target destination when restoring Record Entries (e.g., original data location, temporary user storage, or a research/analysis database).	RI.3	NC	EN
5. The system SHOULD provide the ability to tag Record Entries that will be retained or archived during the archival process.	RI.3	NC	EN
6. The system SHOULD provide the ability to enter a schedule for archive and restore processing.	RI.3	NC	EN
7. The system MAY provide the ability to restore selected portions of archived Record Entries.	RI.3	NC	EN
8. The system SHALL provide the ability to manage (configure) archival parameters for Record Entries (e.g., what and when to archive).	RI.3	NC	EN

6. Trust Infrastructure Section

Section Overview

The Trust Infrastructure (TI) Section consists of functions common to an EHR System infrastructure, particularly those functions foundational to system operations, security, efficiency and data integrity assurance, safeguards for privacy and confidentiality, and interoperability with other systems. TI functions are core and foundational to all other functions of the Model (Care Provision, Care Provision Support, Population Health, Administrative Support and Record Infrastructure). Note extensive reference to TI functions in Overarching Criteria. TI functions may be implemented within the architecture of a single system or across a tightly coupled suite of systems (applications).All functions within the Trust Infrastructure Section have an identifier starting with "TI".

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
TI.1 Header	Security	TI.1	NC	EN
	Statement: Manage EHR-S security. **Description:** EHR-S security consists of entity authentication, entity authorization, entity access control, patient access management, secure data exchange, attestation, patient privacy and confidentiality. EHR audit functions are described in TI.2 .			
TI.1.1 Function	Entity Authentication	TI.1.1	NC	EN
	Statement: Authenticate EHR-S users, and/or entities before allowing access. **Description:** All entities accessing the EHR-S are subject to authentication. Examples of entity authentication, with varying levels of authentication rigor, include: - username/password; - digital certificate; - secure token; - biometrics.			
	1. The system SHALL authenticate entities (e.g., users, organizations, applications, components, objects, and/or devices) accessing EHR-S protected resources (e.g., functions and data) according to scope of practice, organizational policy, and/or jurisdictional law, using an authentication mechanism such as an accredited Standards Development Organization-approved authentication standard (e.g., SAML, WS-Trust, Kerberos), username/password, digital certificate, secure token, biometric, or hardware-specific addressing mechanism. (See also ISO 22600.)	TI.1.1	NC	EN
	2. The system SHALL manage authentication data/information securely (e.g., passwords or biometric data).	TI.1.1	NC	EN
	3. The system SHALL maintain configurable conditions and rules which protect against invalid, possibly malicious, authentication attempts according to organizational policy, and/or jurisdictional law (e.g., consecutive invalid logon attempts).	TI.1.1	NC	EN
	4. IF passwords are used to control access to the EHR-S, THEN the system SHALL provide the ability to maintain configurable timeframes (e.g., 180 days) for the reuse of passwords according to organizational policy, and/or jurisdictional law.	TI.1.1	NC	EN
	5. IF passwords are used to control access to the EHR-S, THEN the system SHALL provide the ability to maintain a configurable limit on the reuse of recently used passwords (e.g., the last 5 passwords) according to organizational policy, and/or jurisdictional law.	TI.1.1	NC	EN
	6. IF username/passwords are used to control access to the EHR-S, THEN the system SHALL maintain password strength rules (e.g., requiring a minimum number of characters and inclusion of alpha-numeric complexity).	TI.1.1	NC	EN
	7. IF passwords are used to control access to the system, THEN the system SHALL capture the password using obfuscation techniques (e.g., during user password entry) according to scope of practice, organizational policy, and/or jurisdictional law.	TI.1.1	NC	EN
	8. IF passwords are used to control access to the EHR-S, THEN the system SHALL manage password reset as an administrative function.	TI.1.1	NC	EN
	9. IF user passwords are initially set or later reset by an administrator, THEN the system SHALL provide the ability to update password at the next successful logon.	TI.1.1	NC	EN
	10. The system SHALL present limited feedback to the user during authentication.	TI.1.1	NC	EN
	11. The system SHALL provide the ability to enter case-insensitive 'usernames' that contain typeable alpha-numeric characters in support of ISO-646/ECMA-6 (aka US ASCII).	TI.1.1	NC	EN
	12. IF passwords are used, THEN the system SHALL provide the ability to enter case-sensitive passwords that contain typeable alpha-numeric characters in support of ISO-646/ECMA-6 (aka US ASCII).	TI.1.1	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
TI.1.2 Function	Entity Authorization	TI.1.2	NC	EN
	Statement: Manage set(s) of EHR-S access control permissions. **Description:** Entities are authorized to use components of an EHR-S in accordance with their scope of practice within local policy or legal jurisdiction. Authorization rules provide a proper framework for establishing access permissions and privileges for the use of an EHR system, based on user, role or context. A combination of these authorization categories may be applied to control access to EHR-S resources (i.e., functions or data), including at the operating system level. - User based authorization refers to the permissions granted to access EHR-S resources based on the identity of an entity (e.g., user or software component). - Role based authorization refers to the permissions granted to access EHR-S resources based on the role of an entity. Examples of roles include: an application or device (tele-monitor or robotic); or a nurse, dietician, administrator, legal guardian, and auditor. - Context-based Authorization refers to the permissions granted to access EHR-S resources within a context, such as when a request occurs, explicit time, location, route of access, quality of authentication, work assignment, patient consents and authorization. See ISO 10181-3 Technical Framework for Access Control Standard. For example, an EHR-S might only allow supervising providers' context authorization to attest to entries proposed by residents under their supervision.			
	1. The system SHALL provide the ability to manage sets of access-control permissions granted to an entity (e.g., user, application, device) based on identity, role, and/or context according to scope of practice, organizational policy, and/or jurisdictional law.	TI.1.2	NC	EN
	2. The system SHALL conform to function TI.2 (Audit) to audit authorization actions as security events.	TI.1.2	NC	EN
	3. The system SHALL provide the ability to manage roles (e.g., clinician versus administrator) and contexts (e.g., legal requirements versus emergency situations) for authorization according to scope of practice, organizational policy, and/or jurisdictional law.	TI.1.2	NC	EN
	4. The system SHALL maintain a revision history of all entity record modifications.	TI.1.2	NC	EN
	5. The system MAY provide the ability to manage authorizations for the use of portable media in according to scope of practice, organizational policy, and/or jurisdictional law.	TI.1.2	NC	EN
TI.1.3 Function	Entity Access Control	TI.1.3	NC	EN
	Statement: Manage access to EHR-S resources. **Description:** To ensure access is controlled, an EHR-S must authenticate and check authorization of entities for appropriate operations.			
	1. The system SHALL conform to function TI.1.1 (Entity Authentication).	TI.1.3	NC	EN
	2. The system SHALL conform to function TI.1.2 (Entity Authorization).	TI.1.3	NC	EN
	3. The system SHALL provide the ability to manage system and data access rules for all EHR-S resources according to scope of practice, organizational policy, and/or jurisdictional law.	TI.1.3	NC	EN
	4. The system SHALL manage the enforcement of authorizations to access EHR-S resources.	TI.1.3	NC	EN
	5. The system SHALL control access to EHR-S resources after a configurable period of inactivity by terminating the session, or by initiating a session lock that remains in effect until the entity re-establishes access using appropriate identification and authentication procedures, according to organizational policy, and/or jurisdictional law.	TI.1.3	NC	EN
	6. The system SHOULD provide the ability to control-access to data, and/or functionality according to scope of practice, organizational policy, and/or jurisdictional law.	TI.1.3	NC	EN
	7. The system SHALL control-access to data, and/or functionality by using authentication mechanisms that comply with regulatory and policy guidelines (e.g.,by using a combination of Username and Password, Digital Certificates, Secure Tokens, and/or Biometrics).	TI.1.3	NC	EN
	8. The system MAY provide the ability to determine the identity of public health agencies for healthcare purposes through the use of internal, and/or external registry services or directories.	TI.1.3	NC	EN
	9. The system MAY provide the ability to determine the identity of healthcare resources (e.g., Meal Delivery services for home-based patients) and devices (e.g., wheelchairs) for resource management purposes through the use of internal, and/or external registry services or directories.	TI.1.3	NC	EN
TI.1.4 Function	Patient Access Management	TI.1.4	NC	EN
	Statement: Manage a patient's access to personal health information. **Description:** A healthcare delivery organization will be able to manage a patient's ability to view his or her EHR based on organization policy or jurisdictional law. Typically, a patient or their legal representative (e.g., guardian, surrogate) has the right to view his or her EHR.			
	1. IF organizational policy allows patient access to the EHR-S, THEN the system SHALL conform to function TI.1.3 (Entity Access Control).	TI.1.4	NC	EN
	2. IF organizational policy allows patient access to the EHR-S, THEN the system SHALL conform to function TI.1.2 (Entity Authorization).	TI.1.4	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
TI.1.5 Function	Non-Repudiation	TI.1.5	NC	EN

Statement: Limit an EHR-S user's ability to deny (repudiate) data origination, transmission or receipt by that user.

Description: An EHR-S allows data entry to a patient's electronic health record and it can be a sender or receiver of healthcare information. Non-repudiation is a way to guarantee that the source of the data/record cannot later deny that fact; and that the sender of a message cannot later deny having sent the message; and that the recipient cannot deny having received the message. Components of non-repudiation can include:

- Digital signature, which serves as a unique identifier for an individual (much like a written signature);

- Confirmation service, which utilizes a message transfer agent to create a digital receipt (providing confirmation that a message was sent, and/or received);

- Timestamp, which proves that a document existed at a certain date and time;

- The use of standardized timekeeping protocols (e.g., the Integrating the Healthcare Enterprise (IHE) Consistent Time Profile).

1. The system SHALL capture the identity of the entity taking the action according to scope of practice, organizational policy, and/or jurisdictional law.	TI.1.5	NC	EN
2. The system SHALL capture time stamp of the initial entry, modification and exchange of data according to scope of practice, organizational policy, and/or jurisdictional law.	TI.1.5	NC	EN
3. The system SHALL conform to function TI.2 (Audit) to prevent repudiation of data origination, transmission and receipt according to scope of practice, organizational policy, and/or jurisdictional law.	TI.1.5	NC	EN
4. The system SHOULD conform to function RI.1.1.4 (Attest Record Entry Content) to ensure integrity of data and data exchange and thus prevent repudiation of data origination, transmission or receipt according to scope of practice, organizational policy, and/or jurisdictional law.	TI.1.5	NC	EN

TI.1.6 Function	Secure Data Exchange	TI.1.6	NC	EN

Statement: Secure all modes of EHR data exchange.

Description: Whenever an exchange of EHR information occurs, it requires appropriate security and privacy considerations, including data obfuscation as well as both destination and source authentication when necessary. For example, it may be necessary to encrypt data sent to remote or external destinations.

1. The system SHALL secure all modes of EHR data exchange.	TI.1.6	NC	EN
2. The system SHALL conform to function TI.1.7 (Secure Data Routing).	TI.1.6	NC	EN
3. The system SHOULD provide the ability to de-identify data.	TI.1.6	NC	EN
4. The system SHALL encrypt and decrypt EHR data that is exchanged over a non-secure link.	TI.1.6	NC	EN
5. IF encryption is used, THEN the system SHALL exchange data using recognized standards-based encryption mechanisms according to organizational policy, and/or jurisdictional law.	TI.1.6	NC	EN
6. IF the EHR-S is the recipient of a secure data exchange, THEN the system SHOULD provide the ability to transmit an acknowledgment of the receipt of the data.	TI.1.6	NC	EN
7. The system SHALL provide the ability to determine static or dynamic addresses for known and authorized sources and destinations.	TI.1.6	NC	EN

TI.1.7 Function	Secure Data Routing	TI.1.7	NC	EN

Statement: Route electronically exchanged EHR data only to/from known and authenticated destinations/sources (according to applicable healthcare-specific rules and relevant standards).

Description: An EHR-S needs to ensure that it is exchanging EHR information with the entities (applications, institutions, directories) it expects. This function depends on entity authorization and authentication to be available in the system. For example, a physician practice management application in an EHR-S might send claim attachment information to an external entity. To accomplish this, the application must use a secure routing method, which ensures that both the sender and receiving sides are authorized to engage in the information exchange. Known sources and destinations can be established in a static setup or they can be dynamically determined. Examples of a static setup are recordings of IP (Internet Protocol) addresses or recordings of DNS (Domain Name System) names. For dynamic determination of known sources and destinations, systems can use authentication mechanisms as described in TI.1. For example, the sending of a laboratory order from the EHR-S to a laboratory system within the same organization usually uses a simple static setup for routing. In contrast, sending a laboratory order to a reference laboratory outside of the organization will involve some kind of authentication process. Provision of a secure network infrastructure is beyond the scope of an EHR-S.

1. The system SHALL conform to function TI.1.1 (Entity Authentication) to exchange EHR data only to and from known, authenticated sources and destinations.	TI.1.7	NC	EN
2. The system SHALL conform to function TI.2 (Audit) to capture audit information about changes to the status of sources and destinations.	TI.1.7	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
TI.1.8 Function	Patient Privacy and Confidentiality	TI.1.8	NC	EN
	Statement: Enable the enforcement of the applicable jurisdictional and organizational patient privacy rules as they apply to various parts of an EHR-S through the implementation of security mechanisms. **Description:** Patients' privacy and the confidentiality of EHRs are violated if access to EHRs occurs without authorization. Violations or potential violations can impose tangible economic or social losses on affected patients, as well as less tangible feelings of vulnerability and pain. Fear of potential violations discourages patients from revealing sensitive personal information that may be relevant to diagnostic and treatment services. Rules for the protection of privacy and confidentiality may vary depending upon the vulnerability of patients and the sensitivity of records. Strongest protections should apply to the records of minors and the records of patients with stigmatized conditions. Authorization to access the most sensitive parts of an EHR is most definitive if made by the explicit and specific consent of the patient. Please see the definition of masking in the glossary. Organizational practices related to privacy and security jurisdictional laws could be called into question during a legal proceeding. Adherence to applicable laws supports the credibility and trustworthiness of the organization.			
	1. The system SHALL provide the ability to maintain compliance with requirements for patient privacy and confidentiality according to scope of practice, organizational policy, and/or jurisdictional law (e.g., US HIPAA Privacy Rules, US Federal Conditions of Participation for Medicare/Medicaid Providers).	TI.1.8	NC	EN
	2. The system SHALL conform to function TI.1.1 (Entity Authentication).	TI.1.8	NC	EN
	3. The system SHALL conform to function TI.1.2 (Entity Authorization).	TI.1.8	NC	EN
	4. The system SHALL conform to function TI.1.3 (Entity Access Control).	TI.1.8	NC	EN
	5. The system SHALL conform to function TI.1.5 (Non-Repudiation).	TI.1.8	NC	EN
	6. The system SHALL conform to function TI.1.6 (Secure Data Exchange).	TI.1.8	NC	EN
	7. The system SHALL conform to function TI.2 (Audit).	TI.1.8	NC	EN
	8. The system SHALL provide the ability to maintain varying levels of confidentiality according to patient preferences, user role, scope of practice, organizational policy, and/or jurisdictional law.	TI.1.8	NC	EN
	9. The system SHALL provide the ability to mask parts of the electronic health record (e.g., medications, conditions, sensitive documents) from disclosure according to patient preferences, user role, scope of practice, organizational policy, and/or jurisdictional law.	TI.1.8	NC	EN
	10. The system SHALL provide the ability to unmask (override a mask) in emergency or other specific situations in accordance with users' role, and according to scope of practice, organizational policy, and/or jurisdictional law.	TI.1.8	NC	EN
	11. The system SHOULD provide the ability to maintain indicators (flags) to health record users that content has been masked in accordance with users' role, and according to scope of practice, organizational policy, and/or jurisdictional law.	TI.1.8	NC	EN
	12. IF the system allows a user to unmask (override a mask) in an emergency or other specific situation, THEN the system SHALL provide the ability to capture the reason for unmasking or overriding the mask.	TI.1.8	NC	EN
	13. The system SHALL provide the ability to manage patient consents to, or restrictions against, any access to data.	TI.1.8	NC	EN
	14. The system SHALL provide the ability to manage a privacy policy according to patient preferences, user role, scope of practice, organizational policy, and/or jurisdictional law.	TI.1.8	NC	EN
	15. The system SHALL provide the ability to control access by specified user(s) to a particular patient health record either by inclusion or exclusion according to patient preferences, user role, scope of practice, organizational policy, and/or jurisdictional law.	TI.1.8	NC	EN
TI.2 Function	Audit	TI.2	NC	EN
	Statement: Audit Key Record, Security, System and Clinical Events **Description:** EHR Systems have built in audit triggers to capture key events in real-time, including events related to record management, security, system operations or performance or clinical situations. Event details, including key metadata (who, what, when, where), are captured in an Audit Log. Audit Review functions allow various methods of critical event notification as well as routine log review. Audit functions implement requirements according to scope of practice, organizational policy, and jurisdictional law.			
	1. The system SHALL conform to function TI.1.3 (Entity Access Control) to limit access to, or modification of, audit record information to appropriate entities according to scope of practice, organizational policy, and/or jurisdictional law.	TI.2	NC	EN
	2. The system SHALL conform to function TI.1.3 (Entity Access Control) to limit access to audit record information for purposes of deletion according to scope of practice, organizational policy, and/or jurisdictional law (e.g., limit access to only allow a specific system administrator to delete audit record information).	TI.2	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
TI.2.1 Function	Audit Triggers	TI.2.1	NC	EN
	Statement: Manage Audit Triggers **Description:** EHR Systems have built in audit triggers to capture key events in real-time. Audit triggers signal key: - Record management and lifecycle events; - Security events related to system and data safeguards, both routine and exceptional; - System events related to performance and operations, both routine and exceptional. - Clinical events with special log requirements.			
TI.2.1.1 Function	Record Entry Audit Triggers	TI.2.1.1	NC	EN
	Statement: Manage Record Entry Audit Triggers **Description:** Record Entries are managed throughout their lifespan at various points in their lifecycle. Record Entry Audit Triggers are designed to capture Record Entry related events including key metadata (who, what, when, where, why). See Function RI.1 , Record Lifecycle.			
	1. The system SHALL conform to function RI.1 (Record Lifecycle) and its RI.1.x.1 Subsections to capture and maintain Record Entry Audit Metadata.	TI.2.1.1	NC	EN
	2. The system SHALL link an Audit Log Entry to each Record Entry according to scope of practice, organizational policy, and/or jurisdictional law.	TI.2.1.1	NC	EN
	3. The system SHALL harmonize Audit Log Entry Metadata and corresponding Record Entry Metadata to ensure they remain identical.	TI.2.1.1	NC	EN
TI.3 Function	Registry and Directory Services	TI.3	NC	EN
	Statement: Enable the use of registry services and directories to uniquely identify, locate and supply links for retrieval of information related to: - patients and providers for healthcare purposes; - payers, health plans, sponsors, and employers for administrative and financial purposes; - public health agencies for healthcare purposes, and- healthcare resources and devices for resource management purposes. **Description:** Registry and directory service functions are critical to successfully managing the security, interoperability, and the consistency of the health record data across an EHR-S. These services enable the linking of relevant information across multiple information sources within, or external to, an EHR-S for use within an application. This applies to directories/registries internal to the EHR-S as well as directories/registries external to the EHR-S. Transmission may occur automatically or manually and may include small or large amounts of data. Directories and registries support communication between EHR Systems and may be organized hierarchically or in a federated fashion. For example, a patient being treated by a primary care physician for a chronic condition may become ill while out of town. The new provider's EHR-S interrogates a local, regional, or national registry to find the patient's previous records. From the primary care record, a remote EHR-S retrieves relevant information in conformance with applicable patient privacy and confidentiality rules. An example of local registry usage is an EHR-S application sending a query message to the Hospital Information System to retrieve a patient's demographic data.			
	1. The system SHALL provide the ability to manage internal registry services and directories.	TI.3	NC	EN
	2. The system SHALL provide the ability to exchange information with external registry services and directories.	TI.3	NC	EN
	3. The system SHALL provide the ability to exchange information securely with external registry services and directories.	TI.3	NC	EN
	4. The system SHALL conform to function TI.5.1 (Application and Structured-Document Interchange Standards) to exchange information with external registry services and directories.	TI.3	NC	EN
	5. The system SHOULD capture and render local registry services and directory information through standards-based interfaces.	TI.3	NC	EN
	6. IF the system communicates with external registry services and directories (i.e., external to an EHR-S), THEN the system SHOULD capture and render information using standards-based interfaces.	TI.3	NC	EN
	7. The system SHOULD provide the ability to determine the unique identity of a patient through the use of internal, and/or external registry services or directories.	TI.3	NC	EN
	8. The system MAY provide the ability to determine links to healthcare information regarding a patient through the use of internal, and/or external registry services or directories.	TI.3	NC	EN
	9. The system MAY provide the ability to determine the unique identity of a provider through the use of internal, and/or external registry services or directories.	TI.3	NC	EN
	10. The system MAY provide the ability to determine the identity of payers, health plans and sponsors for administrative or financial purposes through the use of internal, and/or external registry services or directories.	TI.3	NC	EN
	11. The system MAY provide the ability to determine the identity of employers for administrative or financial purposes through the use of internal, and/or external registry services or directories.	TI.3	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
TI.4 Function	Standard Terminology and Terminology Services	TI.4	NC	EN

Statement: Support semantic interoperability through the use of standard terminologies, standard terminology models and standard terminology services.

Description: The purpose of supporting terminology standards and services is to enable semantic interoperability. Interoperability is demonstrated by the consistency of human and machine interpretation of shared data and reports. It includes the capture and support of consistent data for templates and decision support logic.

Terminology standards pertain to concepts, representations, synonyms, relationships and computable (machine-readable) definitions. Terminology services provide a common way for managing and retrieving these items, including historically correct version interpretation. Terminology services need to support legal requirements for retrospective health record information and system data.

TI.4.1 Function	Standard Terminology and Terminology Models	TI.4.1	NC	EN

Statement: Employ approved standard terminologies to ensure data correctness and to enable semantic interoperability (both within an enterprise and externally).Support a formal standard terminology model.

Description: Semantic interoperability requires standard terminologies combined with a formal standard information model. An example of an information model is the HL7 Reference Information Model. Another example is the ISO/EN 13606 Electronic Health Record Communication.

A terminology provides semantic and computable identity to its concepts. Examples of terminologies that an EHR-S may support include: LOINC, SNOMED, ICD-9, ICD-10, and CPT-4.Terminologies are use-case dependent and may or may not be realm dependent. The key is that the standard be approved by all stakeholders. For example, terminologies for public health interoperability may differ from those for healthcare quality, administrative reporting, research, etc.

Formal standard terminology models enable common semantic representations by describing relationships that exist between concepts within a terminology or in different terminologies, such as exemplified in the model descriptions contained in the HL7 Common Terminology Services specification.

The clinical use of standard terminologies is greatly enhanced with the ability to perform hierarchical inference searches across coded concepts. Hierarchical Inference enables searches to be conducted across sets of coded concepts stored in an EHR-S. Relationships between concepts in the terminology are used in the search to recognize child concepts of a common parent. For example, there may be a parent concept, "penicillin containing preparations" which has numerous child concepts, each of which represents a preparation containing a specific form of penicillin (Penicillin V, Penicillin G, etc.). Therefore, a search may be conducted to find all patients taking any form of penicillin preparation.

Clinical and other terminologies may be provided through a terminology service internal or external to an EHR-S.

1. The system SHALL provide the ability to exchange data with other systems(internal or external to the EHR-S) using approved standard terminologies.	TI.4.1	NC	EN
2. The system SHALL determine that clinical terms and coded clinical data exist in an approved standard terminology.	TI.4.1	NC	EN
3. The system SHOULD provide the ability to receive and transmit healthcare data using formal standard information models and approved standard terminologies according to scope of practice, organizational policy, and/or jurisdictional law.	TI.4.1	NC	EN
4. The system SHOULD provide the ability to manage data using a formal standard terminology model according to scope of practice, organizational policy, and/or jurisdictional law.	TI.4.1	NC	EN
5. The system SHOULD provide the ability to determine hierarchical inferences (e.g., subsumption across coded terminology concepts that are expressed using standard terminology models).	TI.4.1	NC	EN
6. The system SHALL provide the ability to manage terminology assets and supporting tools (internal or external to the EHR-S).	TI.4.1	NC	EN
7. IF there is no recognized-standard terminology model available, THEN the system MAY provide the ability to manage data using a locally-defined standard terminology model.	TI.4.1	NC	EN
8. The system SHOULD provide the ability to capture information into structured data formats using approved standard terminologies without the user requiring knowledge of the terminologies used.	TI.4.1	NC	EN
9. The system SHOULD provide the ability to enter data using content that is common to the user, and allow for collection and presentation of text form data to meet the pre-determined purposes of others. Text forms should exclude cryptic or uncommon abbreviations.	TI.4.1	NC	EN
10. The system SHOULD provide the ability to present standard terminology terms in a language which is appropriate for the user.	TI.4.1	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
TI.4.2 Function	Maintenance and Versioning of Standard Terminologies	TI.4.2	NC	EN
	Statement: Enable version control according to scope of practice, organizational policy, and/or jurisdictional law to ensure maintenance of utilized standard terminologies. This includes the ability to accommodate changes to terminology sets as the source terminology undergoes its natural update process (new codes, retired codes, redirected codes). Such changes need to be cascaded to clinical content embedded in templates, custom formularies, etc., as determined by existing policy. **Description:** Version control allows for multiple sets or versions of the same terminology to exist and be distinctly recognized over time. Standard terminologies are usually periodically updated, and concurrent use of different versions may be required. Ideally, the meaning of a concept never changes over time, but a concept can be deprecated, and replaced with a new concept in a new version. However, in some terminologies, the meaning of a concept can change over time. In any case, it is important that retrospective analysis and research maintains the ability to relate to the appropriate conceptual meaning. If the terminology encoding for a concept changes over time, it is also important that for legal health records, as well as for retrospective analysis and research, the different encodings can be correlated to ensure the permanence of the concept as originally captured. This does not necessarily imply that complete older versions of the terminology be kept in the EHR-S, only access to the changes needs to be maintained.			
	1. The system SHALL provide the ability to manage data using different versions of standard terminologies.	TI.4.2	NC	EN
	2. The system SHALL provide the ability to update standard terminologies.	TI.4.2	NC	EN
	3. The system SHOULD maintain relationships among versions of a standard terminology to allow preservation of interpretation over time.	TI.4.2	NC	EN
	4. The system SHOULD provide the ability to receive and harmonize data from and transmit data to other systems that use known different versions of a terminology standard while preserving the meaning of that data.	TI.4.2	NC	EN
	5. The system SHALL provide the ability to update terminologies to a deprecated status.	TI.4.2	NC	EN
	6. The system SHALL provide the ability to update individual codes within a terminology to a deprecated status.	TI.4.2	NC	EN
	7. The system SHALL provide the ability to update terms with their equivalent when terminology is changed, where coded terminology content is embedded in clinical models (e.g., templates and custom formularies), when the terminology changes can be accomplished unambiguously, and if consistent with scope of practice, organizational policy, and/or jurisdictional law.	TI.4.2	NC	EN
	8. The system SHALL provide the ability to update standard terminologies used to enter clinical content (via templates, custom formularies, etc.)	TI.4.2	NC	EN
	9. The system SHALL maintain an audit log or a change history of code system to the individual code level, for versions used, dates implemented and updated to enable correct interpretation of historical data over time.	TI.4.2	NC	EN
TI.4.3 Function	Terminology Mapping	TI.4.3	NC	EN
	Statement: Map or translate one terminology to another as needed by local, regional, national, or international interoperability requirements. **Description:** The ability to map or translate one terminology to another is fundamental to an organization in an environment where several terminologies are in play to meet different purposes. It is a common occurrence that data is captured using one terminology, but is shared using another terminology. Example: Within a healthcare organization there may be a need to map terminology concepts with the same semantic meaning to meet different purposes (e.g., between an EHRS and an external laboratory system, or between an EHRS and a billing system). Standard terminologies are evolving and maps will need to be adjusted to support this evolution and more sophisticated use of standard terminologies and maps over time. Realm specific (including local, regional, national or international) interoperability requirements can also determine the need for terminology mapping, and in many cases terminology mapping services (internal or external) can be used to satisfy these requirements. The interaction and mapping of terminologies may be called into question in a legal proceeding, when clinical decisions were documented or when semantic meaning could be misinterpreted. It is important to seek guidance, document and retain all mapping decisions for all types of terminology mapping, and to recognize when mapping may not be possible from one concept to another. The quality of mapping is dependent upon the skills and interpretation of standard terminologies and clinical information by mapping experts.			
	1. The system SHALL provide the ability to manage data using terminology maps which may be provided by terminology mapping services (internal or external).	TI.4.3	NC	EN
	2. The system SHOULD provide the ability to update terminology maps using standard terminology services (internal or external).	TI.4.3	NC	EN
	3. The system SHOULD provide the ability to render data quality and technical quality reports for a user to determine the validity of terminology mappings using approved mapping techniques.	TI.4.3	NC	EN
	4. The system MAY provide the ability for a user to maintain custom terminology maps using approved mapping techniques where formal standard terminology maps are unavailable.	TI.4.3	NC	EN
	5. The system MAY provide the ability for a user to maintain custom terminology maps to formal standard terminology maps in order to support historical data use.	TI.4.3	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
TI.5 Header	Standards-Based Interoperability	TI.5	NC	EN

Statement: Provide automated health care delivery processes and seamless exchange of clinical, administrative, and financial information through standards-based solutions.

Description: Interoperability standards enable certain applications to be shared among EHR systems, resulting in a unified (logical) view of a given EHR system where several disparate systems may actually be participating transparently. Interoperability standards also enable certain information to be shared among EHR systems (including information that resides in regional, national, or international information exchanges). Interoperability standards also promote timely and efficient information capture, use, and re-use, often reducing the cumulative workload of the broad set of stakeholders.

When health-related information is exchanged -- or when external applications are used to extend an EHR system -- the interoperability methods and underlying standards that were used in the process may need to be disclosed during a legal proceeding (especially when the resulting information becomes part of the patient's medical record).

TI.5.1 Header	Application, Structured-Message, and Structured-Document Interchange Standards	TI.5.1	NC	EN

Statement: Support an EHR system's ability to operate seamlessly with systems that adhere to recognized application interchange standards. These systems include other EHR systems, subcomponents of an EHR system, or other (authorized, non-EHR) systems.

Description: Since a health care organization typically has various external and internal interoperability requirements, it must use a set of corresponding interoperability or interchange standards that will meet its connectivity and information structure, format, and semantic requirements. Information should be exchanged -- and applications should provide functionality -- in a manner that appears to be seamless to the user. To be specific, if data is received from an external source that requires a user to manually copy-and-paste that data into multiple parts of the system, the exchange is not considered to be "seamless".

Examples of standards-based EHR information content and exchange methods include: standards-based data extracts, standards-based messages, standards-based documents (e.g., HL7 Clinical Document Architecture (CDA) documents), standards-based healthcare transactions, and standards-based images (e.g., Digital Imaging and Communication in Medicine (DICOM) documents).

Support for multiple interaction modes is needed to respond to differing levels of immediacy and types of exchange. For example, messaging is effective for many near-real time, asynchronous data exchange scenarios but may not be appropriate if the end-user is requesting an immediate response from a remote application.

A variety of interaction modes are typically supported such as:

- Unsolicited Notifications (e.g., Adam Everyman has arrived at the clinic for his scheduled appointment);
- Query/Response (e.g., Query: Is Adam Everyman known to the system? Response: Yes, Adam's medical record number is 12345678);
- Service Request and Response (e.g., Request: Laboratory Order for “Fasting Blood Sugar”. Response: the results of the test);
- Information Interchange between organizations (e.g., in a regional health exchange or in a national health system);
- Structured/discrete clinical documents (e.g., a structured clinical note);
- Unstructured clinical document (e.g., dictated surgical note).

Standard terminology is a fundamental part of interoperability and is described in function TI.4 . Using a formal explicit information model further optimizes interoperability. An example of an information model is the HL7 Reference Information Model (RIM). Organizations typically need to deal with more than one information model and may need to develop a mapping between information models, a meta-model (that helps to explain and organize the various information models), or both.

TI.5.1.1 Function	Application Interchange Standards	TI.5.1.1	NC	EN

Statement: Support the ability to operate seamlessly with other systems by using applications, and/or structured messages and documents that adhere to interchange standards.

Description: Placeholder - Not Defined at this time

External References:

1. The system SHALL provide the ability to receive and transmit information using interchange standards as required by realm / local -specific profiles, and/or by recognized jurisdictional authorities.	TI.5.1.1	NC	EN
2. The system SHALL provide the ability to integrate with the operations of other systems that adhere to interchange standards as required by realm / local -specific authorities and/or by recognized jurisdictional authorities.	TI.5.1.1	NC	EN
3. The system SHALL conform to function TI.4 (Standard Terminology and Terminology Services) including all child-functions, to support terminology standards according to scope of practice, organizational policy, and/or jurisdictional law.	TI.5.1.1	NC	EN
4. IF a standard information model is not available, THEN the system SHOULD provide the ability to exchange information with other systems in a seamless manner by using a formal explicit information model.	TI.5.1.1	NC	EN
5. The system MAY provide the ability to exchange information with other systems by using an explicit formal information model, and/or by using a standard coded terminology.	TI.5.1.1	NC	EN
6. The system SHALL provide the ability to receive and transmit data using standard, coded terminology.	TI.5.1.1	NC	EN

Section/Id#: Type:	Header/Function Name Conformance Criteria	Reference	Chg Ind	Priority
7. The system SHOULD provide the ability to export data using an explicit and formal information model in accordance with industry and governmental-mandated standards.		TI.5.1.1	NC	EN
8. The system SHOULD provide the ability to import data using an explicit and formal information model in accordance with industry and governmental-mandated standards.		TI.5.1.1	NC	EN
9. The system SHOULD provide the ability to harmonize data with another system.		TI.5.1.1	NC	EN
10. The system SHOULD provide the ability to determine whether the information transmitted to another system has been successfully received by that other system.		TI.5.1.1	NC	EN
11. The system SHALL store a log record of each data exchange (transaction) when transmitting information with external systems.		TI.5.1.1	NC	EN
TI.5.1.2 Function	Structured-Document Interchange Standards	TI.5.1.2	NC	EN
Statement: Support the management of structured documents. **Description:** Structured documents are an important method of facilitating the exchange of information to support care. Documents are often considered to be more permanent in nature; messages are often considered to be more transitory in nature. Examples of structured documents include: a referral from a primary care physician to a specialist; a medical summary; a discharge instruction for the patient. **External References:**				
1. The system SHALL provide the ability to exchange structured documents according to scope of practice, organizational policy, and/or jurisdictional law.		TI.5.1.2	NC	EN
TI.5.1.3 Function	Structured-Message Interchange Standards	TI.5.1.3	NC	EN
Statement: Support the management of structured messages. **Description:** Structured messages are an important method of facilitating the exchange of information to support care. Messages are often considered to be more transitory in nature; documents are often considered to be more permanent in nature. **External References:**				
1. The system SHALL provide the ability to manage structured messages according to scope of practice, organizational policy, and/or jurisdictional law.		TI.5.1.3	NC	EN
TI.5.2 Function	Interchange Standards Versioning and Maintenance	TI.5.2	NC	EN
Statement: Support various versions of an interchange standard. **Description:** Interchange standards characteristically change throughout their lifecycles; those changes are often tagged with "version" numbers. EHR systems need to control the various versions of interchange standards that are used within an EHR implementation and accommodate changes that arise with each version. For example, if an organization migrates to version 2.5 of HL7's messaging standard, it may choose to utilize that version's specimen or blood bank information capabilities. The organization may also find that certain fields have been retained for backwards compatibility only or withdrawn altogether. The EHR-S needs to be able to handle all of these possibilities. Standards typically evolve in such a way as to protect backwards compatibility. On the other hand, sometimes there is little, or no, backwards compatibility when an organization may need to replace an entire standard with a new methodology. An example of this is migrating from HL7 v2 to HL7 v3. Interchange standards that are backward compatible support exchange among senders and receivers who are using different versions. Version control ensures that those sending information in a later version of a standard consider the difference in information content that can be interchanged effectively with receivers, who are capable of processing only earlier versions. That is, senders need to be aware of the information that receivers are unable to capture and adjust their business processes accordingly. Version control enables multiple versions of the same interchange standard to exist and be distinctly recognized over time. Since interchange standards are usually periodically updated, concurrent use of different versions may be required. Large (and/or federated) organizations typically need to use different versions of an interchange standard to meet internal organizational interoperability requirements. For example, the enterprise-wide standard might use HL7 v2.5 for laboratory messages, but some regions of the enterprise might be at a lower level. It should be possible to retire deprecated interchange standards versions when applicable business cycles are completed while maintaining obsolete versions. An example use of this is for possible claims adjustment throughout the claim's life cycle. When interchange standards change over time, it is important that retrospective analysis and research correlate and note gaps between the different versions' information structures to support the permanence of concepts over time.				
1. The system SHALL provide the ability to exchange information with other systems that use different versions of interchange standards.		TI.5.2	NC	EN
2. The system SHALL provide the ability to exchange information based on updated (or reconfigured) interchange standards and/or based on updated business needs.		TI.5.2	NC	EN
3. The system SHOULD provide the ability to tag an interchange standard as being deprecated.		TI.5.2	NC	EN

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4. The system SHOULD provide the ability to integrate with other systems that use previously-supported versions of an interoperability standard according to scope of practice, organizational policy, and/or jurisdictional law.		TI.5.2	NC	EN
TI.5.3 Function	Standards-Based Application Integration	TI.5.3	NC	EN
Statement: Integrate applications in a standards-based manner. **Description:** An EHR-S often consists of multiple applications. Some of those applications may be within the EHR-S; others may be external to the EHR-S. The user of the EHR-S often benefits when those applications are integrated. Application integration can be accomplished in an ad-hoc fashion or in a standards-based fashion. The method(s) by which applications may be integrated within an organization depends on that organization's approach to application integration. A given organization could conceivably employ multiple application integration approaches to meet various application integration requirements.				
1. The system SHALL provide the ability to integrate applications in a standards-based fashion when the system is composed of, and/or is extended by disparate applications.		TI.5.3	NC	EN
2. The system SHOULD provide the ability to integrate user (or system) authentication for the purposes application context management (e.g., Graphical User Interface application integration via HL7's Context Management Standard from the Clinical Context Object Work Group (CCOW)).		TI.5.3	NC	EN
TI.5.4 Function	Interchange Agreements	TI.5.4	NC	EN
Statement: Support the use of Interchange Agreements to specify the rules, responsibilities, expectations, and methods by which Interchange Agreement partners may exchange information. **Description:** Systems that wish to communicate with each other must agree on certain parameters/criteria that will govern an information exchange process. Interchange agreements enable partnering systems to discover, negotiate, and utilize those parameters/criteria. An EHR-S can use this information to define how data will be exchanged between the sending and the receiving partners. Interchange services and capabilities can be discovered in an automated fashion. Entity directories can be used to determine the address, profile, and data exchange requirements of known, and/or potential Interchange Agreement partners. Entity registries can be used to determine the security, addressing, and reliability requirements between potential Interchange Agreement partnering systems.			
1. The system SHALL exchange information with Interchange Agreement partners based on interoperability agreement descriptions.		TI.5.4	NC	EN
2. IF an interchange agreement description specifies the use of a certain standard, THEN the system SHOULD exchange information using the standard specified by the interchange agreement description according to scope of practice, organizational policy, and/or jurisdictional law.		TI.5.4	NC	EN
3. The system MAY conform to function TI.3 (Registry and Directory Services) to interact with registries, and/or directories to determine the address, profile, and data exchange requirements of known, and/or potential partners.		TI.5.4	NC	EN
4. The system MAY analyze and present interchange service descriptions and capabilities according to scope of practice, organizational policy, and/or jurisdictional law.		TI.5.4	NC	EN
5. The system SHOULD provide the ability to manage Interchange Agreements that have been established with Interchange Agreement partners.		TI.5.4	NC	EN
TI.6 Function	Business Rules Management	TI.6	NC	EN
Statement: Manage the ability to create, update, delete, view, and version business rules including institutional preferences. Apply business rules from necessary points within an EHR-S to control system behavior. An EHR-S audits changes made to business rules, as well as compliance to and overrides of applied business rules. **Description:** EHR-S business rule implementation functions include decision support, diagnostic support, workflow control, and access privileges, as well as system and user defaults and preferences. An EHR-S supports the ability of providers and institutions to customize decision support components such as triggers, rules, or algorithms, as well as the wording of alerts and advice to meet realm specific requirements and preferences.			
1. The system SHALL provide the ability to manage business rules.		TI.6	NC	EN
2. The system SHOULD provide the ability to enter, import, or receive business rules to guide system behavior.		TI.6	NC	EN
3. The system SHOULD provide the ability to maintain business rules and their components.		TI.6	NC	EN
4. The system SHOULD provide the ability to tag decision support rules as inactive / obsolete or to remove them according to scope of practice, organizational policy, and/or jurisdictional law.		TI.6	NC	EN
5. The system SHOULD provide the ability to render business rules.		TI.6	NC	EN
6. The system SHOULD provide the ability to manage diagnostic decision support rules that guide system behavior according to scope of practice, organizational policy, and/or jurisdictional law.		TI.6	NC	EN
7. The system SHOULD provide the ability to manage workflow control rules that guide system behavior according to scope of practice, organizational policy, and/or jurisdictional law.		TI.6	NC	EN
8. The system SHOULD provide the ability to manage access privilege rules that guide system behavior according to scope of practice, organizational policy, and/or jurisdictional law.		TI.6	NC	EN

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9.	The system SHOULD provide the ability to manage other rules (for example, monitoring rules, user defaults rules and preferences rule) that guide system behavior according to scope of practice, organizational policy, and/or jurisdictional law.	TI.6	NC	EN
10.	The system SHALL provide the ability to determine system behavior based upon defined business rules.	TI.6	NC	EN
TI.7 Function	Workflow Management	TI.7	NC	EN
	Statement: Support workflow management functions including both the management and set up of work queues, personnel lists, and system interfaces as well as the implementation functions that use workflow-related business rules to direct the flow of work assignments. **Description:** Workflow management functions that an EHR-S supports include: -Distribution of information to and from internal and external parties; -Support for task-management as well as parallel and serial task distribution; -Support for notification and task routing based on system triggers; and-Support for task assignments, escalations and redirection in accordance with business rules. Workflow definitions and management may be implemented by a designated application or distributed across an EHR-S.			
1.	The system SHALL provide the ability to manage workflow business rules including work queues, personnel lists, and system interfaces.	TI.7	NC	EN
2.	The system SHOULD provide the ability to determine workflow assignments based on workflow-related business rules.	TI.7	NC	EN
3.	The system MAY provide the ability to manage human resources (i.e., personnel lists) for workflow queues.	TI.7	NC	EN
4.	The system MAY exchange information with external systems (for example, Human Resources system or Staff Management system) to support the management of human resources.	TI.7	NC	EN
5.	The system MAY exchange information with external systems (for example, Human Resources system or Staff Management system) to support the management of workflow queues (task lists).	TI.7	NC	EN
6.	The system MAY provide the ability to exchange workflow related information with an external system.	TI.7	NC	EN
7.	The system MAY provide the ability to render notifications and tasks based on system triggers.	TI.7	NC	EN
8.	The system MAY determine and render an updated priority of tasks on the workflow (task list) queue in accordance with business rules, and according to scope of practice, organizational policy, and/or jurisdictional law.	TI.7	NC	EN
9.	The system MAY determine and render an update to the tasks, and/or execution path on the workflow (task list) queue in accordance with business rules, and according to scope of practice, organizational policy, and/or jurisdictional law.	TI.7	NC	EN
10.	The system MAY determine and render an update to the assignment of the resources to workflow (task list) queue in accordance with business rules, and according to scope of practice, organizational policy, and/or jurisdictional law.	TI.7	NC	EN
11.	The system SHOULD provide the ability to render a notification of a workflow update.	TI.7	NC	EN
12.	The system MAY provide the ability to render a notification of a workflow update including the details of the update.	TI.7	NC	EN
13.	The system SHOULD provide the ability to transmit a workflow (task list) queue update request to an external system.	TI.7	NC	EN
14.	The system SHOULD provide the ability to receive a workflow (task list) queue update response from an external system.	TI.7	NC	EN
TI.8 Function	Database Backup and Recovery	TI.8	NC	EN
	Statement: Provide for the ability to backup and recover the EHR system. **Description:** To enable the preservation of the EHR database and its data, functionality needs to be present to record a copy of the database and its contents to offline media as well as the recovery of the system from a backup copy and resumption of normal system operation. The backup must preserve both data as well as database structure and definition information sufficient to recover a complete functional EHR system. Database components may include, but not be limited to application data, security credentials, log/audit files, and programs; ultimately all EHR components necessary to provide a full and complete operating environment. Finally, the backup must be capable of being used during recovery processing to restore an exact copy of the EHR system as of a particular instant in time. This is a requirement to be able to preserve logical consistency of information within the recovered EHR system. In providing for this capability the system may include multiple backup, and/or redundancy solutions such as fail-over architecture, database journaling, transaction processing, etc. The backup and recovery function must address both physical system failure (i.e., failure of EHR system hardware) as well as logical system failure (e.g., database corruption). To support the requirement that the EHR system be available whenever it is needed within the design parameters of the system and provide reliability and redundancy of the EHR database and its data, the backup function shall not impact user functionality or appreciably impact user performance. The backup function may include features which permit multiple processes and technologies to perform its task. This may include multiple backup technologies such as tape, disk, cloud, etc. Also, multiple architectures such as redundancy, online, near-line and off-line media.			

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1.	The system SHALL provide the ability to backup and recover EHR information according to scope of practice, organizational policy, and/or jurisdictional law.	TI.8	NC	EN
2.	The system SHALL provide the ability to backup and recover all database contents including programs and all software components necessary to permit a complete EHR to be recovered. (i.e., 'full' backup and recovery)	TI.8	NC	EN
3.	The system MAY provide the ability to backup and recover EHR information using alternative backup methods in addition to a full backup/recovery (e.g., incremental, differential, reverse delta, or continuous).	TI.8	NC	EN
4.	The system MAY provide the ability to backup EHR information according to a defined schedule of storage media rotation.	TI.8	NC	EN
5.	IF the EHR user requirements specify that the EHR system be available continuously, THEN the system SHALL provide the ability to backup EHR information concurrently with the normal operation of the EHR application.	TI.8	NC	EN
6.	The system SHOULD provide the ability to backup EHR information to a remote location.	TI.8	NC	EN
7.	The system MAY provide the ability to backup EHR information to more than one storage media (e.g., disk, tape, or cloud).	TI.8	NC	EN
8.	The system MAY provide the ability to encrypt backup data.	TI.8	NC	EN
TI.9 Function	System Management Operations and Performance	TI.9	NC	EN

Statement: Manage the change of status of an external facility and the ability to access, render and determine information related to Service Level Agreement.

Description: A health care delivery relies on services provided by other external facilities such as laboratories or Long Term Care facilities. The status of those facilities is subject to change for example: power outage, flooding or overcapacity. Therefore, the EHR system needs to capture the status of the external facilities, notify appropriate individuals / organizations or even change the workflow based on established business rules. Change of the status of an external facility is patient safety concern because a provider may need to adjust patient care or care workflows accordingly. For example, changes of status of external facility include: laboratory no longer accredited, laboratory power outage, Long Term Care facility at overcapacity. If laboratory loses accreditation an administrator needs to be notified to adjust the workflow. If status change is anticipated on regular basis, the system may automatically trigger workflow adjustment according to established business rules that take into consideration the status of the external facility. The example for later, the local Long Term Care facility may routinely exceed the capacity on the weekends; therefore, the business rule will accommodate for automatic workflow adjustments. A provider may need to be aware of certain Service Level Agreement information in order to mitigate patient safety-related risks that depend on system availability or system performance.

1.	The system SHOULD provide the ability to manage the change of status of an external facility.	TI.9	NC	EN
2.	The system SHOULD provide the ability to manage Service Level Agreement information according to scope of practice, organizational policy, and/or jurisdictional law.	TI.9	NC	EN
3.	The system MAY provide the ability to render system availability statistics and system performance statistics as specified in the Service Level Agreement according to scope of practice, organizational policy, and/or jurisdictional law.	TI.9	NC	EN