EMRAM

HIMSS SOLUTION

EMRAM Validation Requirements Guide

Organization Reviewed:	
Reviewer Name / Title:	
Reviewer Organization / Company:	
Review Date:	

☐ Validated ☐ Validated with Condition ☐ Not Validated

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Introduction

Congratulations to your organization for the progress you have made in getting to this point in your adoption of information and technology to realize the full health potential of every patient.

As you prepare for your validation, we present you this EMRAM Checklist as a tool to help steer you through the validation process.

The typical EMRAM validation process consists of two parts: A Pre-Validation Planning Conference Call and a Validation Visit.

The pre-validation planning call is used to review the agenda, discuss the scope of the validation, address any outstanding questions, and confirm the validation date, and whether the validation will be on-site or virtual.

The validation visit will include an opening presentation followed by conversations with several hospital departments. It will also include interviews with clinical staff (nurses, doctors, pharmacists, allied health professionals, etc.) to validate processes in use as they relate to the EMR and overall technology environment.

At the conclusion of the visit, the review team will announce the official validation decision and lead a summarized discussion of the organization's observed strengths and opportunities for improvement. The validation process is an opportunity for the organization to measure itself against the capabilities prescribed by EMRAM.

Once you are successfully validated, your status is valid for three years. We will contact you in advance of the expiration date to begin the revalidation process.

Please share this checklist internally, make the best use of this document during your preparations for your validation visit, and ensure the HIMSS review team can positively identify your compliance with EMRAM Stage 6/7 requirements as outlined in section introductions and checklist items.

Opening Session

Organizational Overview

The opening presentation is an executive overview of the organization. A brief review of its history, services provided, as well as the Mission and Vision.

Digital Strategy, Governance, Clinical and Business Intelligence

Furthermore, the presentation is to provide an overview of how the organization sets strategic priorities and measures their outcomes. Provide an overview of strategic planning, decision making regarding clinical care, how the organization mobilizes data to inform and guide decisions that determine priorities, quality and safety of patient care, value and impact of care for patients, accountability frameworks to assess compliance with standards, how strategic priorities are determined, implemented, and evaluated for impact and outcomes.

Provide examples of strategic planning process, how data informed the strategy and decisions to prioritize special outcomes and describe how clinicians and staff contribute to the dialogue to inform the strategy, identify priorities, and lead or participate in implementation of strategic initiatives across the organization. This includes examples of routine and ad hoc reports.

The review team will expect to see a presentation that describes the entire analytics program used by the hospital wherever analyses may occur, including but not limited to clinical, financial and operational analytics activities. This subject reflects on analytics activities across the entire hospital. The organization must provide an overview of the information technology change control processes as well as an overview of the IT Security requirements.

Y = Criterion Met, N = Criterion Not Met

ID	Stage	Y	N	Compliance Statement
1	7			**Data mobilization strategy** Demonstrated data mobilization strategy tracks outcomes related to quality, patient safety, and cost for all programs.
2	7			**Analytics strategy** There is executive agreement for a documented analytics strategy that enables and drives outcomes for all strategic programs.
3	7			**Data governance strategy is evaluated annually** Data governance strategy is evaluated annually for privacy, security, and integrity of data to support tracking and monitoring patient outcomes for all clinical programs, and organizational performance.
4	7			**Clinical Governance process to manage workflow, content, alerts** Clinical Governance processes use data to manage workflow, content, alerts and the impact and burden of work on all members of clinical staff.
5	7			**Track clinician's use of the EMR** A program is in place to track clinician use of the EMR to improve efficiency, reduce time and increase effectiveness.

Note: Mobilization of data is the transformation of clinical and operational data into knowledge and insights to inform decisions focused on best possible outcomes for patients and optimization of performance of the organization.

ID	Stage	Y	N	Compliance Statement
6	**7**			Demonstrated use of **analytics to improve care**.
7	**7**			Demonstrated that analytics was used to **identify and prioritize improvement efforts**.
8	**7**			Demonstrated use of **analytics to improve chronic disease management**.
9	**7**			**Incorporated data from external sources** (e.g., professional societies, health plan data, patient/staff satisfaction surveys, etc.).
10	**7**			Developed and deployed **predictive alerting** based on analytics findings.
11	**7**			Demonstrated the ability to **monitor** diagnostic and treatment **protocol adherence and effectiveness**.
12	**7**			Demonstrated **clinical, operational and financial analytical case studies with combined data**.
13	**7**			**Data are normalized**. (List the standards, tool(s) and model(s) in use)
14	**7**			**Reports related to quality, patient safety, and outcomes** are evident and can be demonstrated.
15	**7**			Evidence of **self-service data presentation tools** (e.g., report writers, department level dashboards, etc.) to manipulate, format and report.
16	**7**			**Store or generate derived data** not found in the EMR CDR. Examples may include: SEPSIS, Readmission risks based on vitals and/or lab results
17	**7**			**Scorecards** and/or dashboards are used and have the **ability to drill down** to the associated data level.
18	**7**			Demonstrated comprehensive, **multi-disciplinary clinical and business intelligence strategy**.
19	**7**			Demonstrated a **method for data governance**.

Patient Engagement Strategy

Patient Engagement is defined as meeting and delivering on individual patient needs, values, and personalized health goals by offering patient's choice of care delivery, including digitally enabled, virtual care visits, telehealth, and/or digitally enabled self-management.

Patient engagement considers a range of digital options (e.g., online tools, handheld devices) for access to care anywhere approaches, or apps that enable on-demand health and wellness care support.

During the validation, the inspectors should be enabled to understand:

- Governance and team membership
- Digitally enabled care improvement by engagement between providers & patients
- Patient utilization outcomes, patient satisfaction, quality & safety outcomes
- Connection to service improvement team / activities

System Overview and Clinical User Adoption

The system overview should explain, at a high-level, the architecture and tools that make up the legal medical record. This often includes the EMR, PACS, document management tools, lab, etc. Clinical user adoption across all locations includes key statistics in such a way that the validation team has a clear understanding that these processes are in control; that is, the organization is consistently achieving the target percentage over a 4-months period.

User Adoption		Stage 6		Stage 7
CPOE		90%+		90%+
Meds scanned at PoC		50%+		95%+
Blood Products scanned at PoC		50%+		95%+
Human Milk scanned at PoC		50%+		95%+
Clinical Documentation		90%+		90%+
Specimen collection		50%+		95%+

ID	Stage	Y	N	Compliance Statement
20	1			**Lab IS - Results are matched with eOrder and distributed** Laboratory Information System - Requests are manually or electronically entered into the laboratory system. Results are matched with the requests and distributed to the ordering physician.
21	1			**Rad IS - Reports are matched with eOrder and distributed** Radiology Information System - Requests are manually or electronically entered into the Radiology system. Reports are matched with the requests and distributed to the ordering physician.
22	1			**Pha IS - Electronic prescriptions to update stock control inventory** Pharmacy Information System - Prescriptions are manually or electronically entered into the Pharmacy system in order to update the stock control inventory.
23	1			**Cardio IS - Reports are matched with eOrder and distributed** Cardiology Information System - Requests are manually or electronically entered into the Cardiology system. Reports are matched with the requests and distributed to the ordering physician.
24	1			**90%+ DICOM images are available in the hospital network** 90%+ DICOM images are stored in a patient centric manner across the hospital network.
25	1			**90%+ Lab results are available in the hospital network** 90%+ Lab results are stored in a patient centric manner and available across the hospital network.
26	1			**90%+ Lab can be leveraged for trending analysis or CDS features** 90%+ Lab (clinical chemistry, microbiology, molecular, etc.) are stored as structured and discrete data and can be leveraged for trending analysis or clinical decision support features.
27	2			**CDS defined by committees** Clinical decision support opportunities are defined by committees (multi-disciplinary groups).
28	3			**CDS effectiveness is continually assessed** Clinical governance committee continually assess the effectiveness of Clinical Decision Support opportunities.
29	4			**Process to identify and measure clinical outcomes** Clinical governance committee has a process in place to identify and measure clinical outcomes.
30	5			**Order Sets effectiveness is reviewed** The effectiveness of Order Sets, personalized templates and structured narrative is reviewed by a clinical governance committee.
31	5			**Analytics governance has defined Outcomes data captured** Analytics governance has defined Outcomes data captured…numerators, denominators, multi-source data points resolved.
32	7			**Ancillary clinical disciplines chart in the system** Ancillary clinical disciplines also chart in the system: pastoral care, occupational therapy, respiratory therapy, physiotherapy, social work, mental health teams, home care, long term care liaison staff.

IT Security, Change Management, and Resilience Overview

IT security deals with the protection of information technology and protection of maintenance of data confidentiality, integrity, availability, and accountability. In review of the resilience management the organization must describe how the organization manages business continuity in the event of total or partial system outages, both planned and unplanned. A coordinated communication process to inform impacted staff of the scope and expected duration of the outage will be reviewed. It will be necessary to have a clear communication plan when it is necessary to move to use downtime documentation.

The inspectors should be enabled to understand:

- Management of Business Continuity
- Availability of clinical data during an outage
- Mechanism to ensure downtime PC is operational
- Demonstration of standard operating procedures for downtime
- Statistic about regular staff training

ID	Stage	Y	N	Compliance Statement
33	3			**Role Based Access Control** Role Based Access Control (appropriate access to information systems is based on staff role).
34	5			**BC policy w/ Root Cause Analysis** Business Continuity policy contains Root Cause Analysis templates and lessons learned reports.
35	6			**BYOD policy; annually review** Bring your own device policy is agreed, implemented and reviewed every 12 months.
36	6			**BC plan understood by staff; annually training** Staff understand the Business Continuity plan and participate in, at a minimum, a disaster drill that simulates an enterprise wide outage of all systems every 12 months.
37	6			**Information assets managed across the enterprise** Information assets (network devices, software, interfaces, etc.) are proactively managed across the enterprise. An assessment is performed annually to identify risks to the infrastructure. The risk assessment and any issues identified by monitoring are escalated.
38	6			**Process to effectively communicate system changes** There is a process to effectively communicate system changes, based on impact and relevance, to all users. (Training if required is automatically scheduled and registries updated.)
39	6			**New devices and SW changes are risk assessed and authorized** To maintain patient safety the IT Change Management process ensures that all new devices and software modifications are risk assessed and authorized for use by the clinical safety officer.
40	6			**Scheduled and unscheduled outages are standardized** Outages are standardized for both scheduled and unscheduled disruptions in information systems. Disruptions are defined (e.g., planned, unplanned), reported, and tracked by organizational leaders. A mature process is in place defining time interval before paper and recovery sequence.
41	6			**Downtime PC w/ encrypted patient data** Patient data is encrypted on the downtime PC and password protected.
42	6			**During downtime: Summary reports ensure patient data integrity** Patient Data integrity is maintained during downtime using summary reports including patient allergies, medication profile, patient problem/diagnosis, department schedules, other.

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ID	Stage	Y	N	Compliance Statement
43	6			**Downtime PC on the ward w/ printer connection** Summary reports are available on a device on the wards / floors when the system is down – PC/workstations on a generator circuit or UPS and direct connected to a printer on a generator circuit or UPS.
44	6			**Staff awareness of downtime processes** Staff demonstrate awareness of downtime processes and available IT resources during downtimes. The organization evaluates the impact of downtime on staff and clinician teams.
45	6			**Clinical data integrity management during / after system outage** The organization manages clinical data integrity during and following a system outage by backloading clinical data into the EMR and the disposition of any clinically relevant paper.
46	6			**Simulated Disaster Recovery events are conducted** Simulated Disaster Recovery events are conducted, and lessons learned are implemented into protocols to manage downtime.
47	7			**Frequency of unscheduled outages are measured annually** Frequency of unscheduled outages are measured annually (i.e., has been measured over the past 12 months). An outage is determined when a clinician must resort to using paper to document care. That paper must then be scanned into the EMR and any orders backloaded.
48	7			**Long-term downtime processes** Demonstrated long-term downtime processes describe what the organization does in the event of a downtime, informed by documented guidelines for extended downtimes.
49	7			**Simulated Disaster events incl. downtime ClinDoc and recovery** The organization performs a simulated disaster event annually. The simulation must include downtime clinical documentation and recovery of data created during the downtime. This simulation does not affect the production environment.
50	7			**Communication plan for downtime procedures** A communication plan clearly outlines when to, or not to implement downtime procedures.
51	7			**Service interruptions are measured** Service interruptions that cause the creation of downtime documentation are measured by the number of downtime documents scanned into the EMR.

Health Information Exchange (HIE) - Strategy, Connections, and Benefits

The organization must demonstrate it has the capability to exchange clinical data and information with patients, external organizations, and specialized health teams (rehabilitation facilities, long term care facilities). Sharing patient records with patients and care providers across the journey of care (upon the consent of the patient) must be demonstrated. The impact and value of exchanging information and data must be clearly articulated and illustrated with 1-2 examples. Finally, the review team will expect the organization to describe its future HIE strategy and plans for engaging patients as partners in their care.

The inspectors should be enabled to understand:

- HIE strategy
- Leadership in digital health / Clinical and Information Governance
- Capabilities to exchange clinical data and information
- Sharing of patient records with patients and care providers
- Impact and value of exchanging information and data (1-2 examples)
- Confidentiality and legal framework
- Future HIE strategy and plans for engaging patients

ID	Stage	Y	N	Compliance Statement
52	6			**Structured data integration into CDR from external source** HIE enables Structured or Coded Data from external sources to be integrated into the Clinical Data Repository, an icon is used to indicate external data is available for clinician teams.
53	6			**Medical device integration** Medical devices are integrated into EMR (e.g., monitoring devices).
54	7			**Planned or actual integration of clinical data** with referring and admitting medical staff through HIE or other means. Explain:
55	7			**Assimilation of external clinical data into analytics program** Demonstrated assimilation of external clinical data into the hospital's analytics program that has contributed to improvements (e.g., reduced ancillary consumption from eliminating duplicate tests, reduced readmission rate due to active participation in a private or public HIE, etc.).
56	7			**Bi-directional information exchange w/ national patient DB** A bi-directional information exchange interface with a national patient database in countries where national repositories exist.
57	7			**Data integration from external sources enable seamless workflow** Data from external sources is fully enabled and integrated into the EMR to offer seamless workflow for clinicians accessing complete patient records from external organizations or sources of data.
58	7			**Data integration from external sources is used for CDS** Data from external sources is fully enabled and integrated into the EMR and is available for clinical decision support, both as alerts and background processes. HIE data is discrete and imported to the Clinical Data Repository and made available for alerts (drug/drug alerts, allergy alerts) and for background processes (sepsis alerts).

ID	Stage	Y	N	Compliance Statement
59	7			**Clinical data integration with referring/admitting medical staff** Integration of clinical data with referring and admitting medical staff is supported across the organization. Referring and admitting medical staff have access to the following patient data: access to consultant reports, patient reported outcomes/progress data, lab results, medication profile, allergy status, clinical order management data, surgical/procedure records, imaging reports, medication record alerts, allergy alerts, other.
60	7			**External data integration to track progress, perform risk analyses** The capacity to integrate data from multiple external sources of clinical data (e.g., patient reported data, external organizations, referring MD's, mobile digital tools for virtual care delivery) into the organization's data repository for tracking, monitoring progress, risks analyses for individual patients, and patient populations.
61	7			**Care delivery / patient outcomes improved through data integration** Data integration has resulted in improvements in care delivery and patient outcomes including reduced ancillary consumption from eliminating unnecessary or duplicate tests.
62	7			**SDoH are supported by digital tools/techs to reduce inequalities** Social determinants of health (e.g., housing, education, welfare, working conditions, food security, geography, and location) are supported by digital tools and technologies which aim to reduce inequalities and ensure inequalities are minimized or eliminated. Predictive analytics tools are examined for bias toward any community affected by social determinants of health and equity and equality are prioritized.
63	7			**Self-management support through information exchange interface** A bi-directional information exchange interface with patients where patients can access their personal health data, can report outcomes, can access clinician teams to support self-management of care.
64	7			**Medical Device - EMR - Integration in all critical care areas** Medical device data is fully integrated into the EMR in all critical care areas.
65	7			**Discrete data is normalized to standard medical vocabulary** Any discrete data generated from structured templates is normalized to standard / controlled medical vocabulary (e.g., LOINC, SNOMED, ICD-10) for all Clinician documentation.
66	7			**Smart pumps are interfaced with EMR** Smart pumps are interfaced directly to the EMR using a bi-directional interface.

Case Study

Stage 6 requires one case study; Stage 7 requires a minimum of three. At least one of the three case studies for Stage 7 will be required for validations to document patient engagement strategies, care delivery options offered to patients, and a comprehensive overview of outcomes. This case study will need to document patient outcomes that are of greatest priority to the populations the health organization serves. The cases will describe the types of patient engagement, prevalence of patient engagement, how quality and safety outcomes are measured relative to patient engagement, how patient engagement advances health outcomes for individual patients and patient populations, and document health system performance outcomes such as, but not limited to, productivity, efficiency, access, and equity. The case study must document the short-term impact and outcomes clearly, with a minimum of 12 months of data to validate outcomes and must identify and document the long-term impact and outcomes anticipated or achieved by the organization.

The care organization must submit a written, self-explanatory, and structured description of the case study/case studies prior to the validation event. Please use the template – that is attached to this guide. Note: Case studies will only be evaluated during the validation visit.

Refer to the template for more detail on the Case Study requirements.

During the opening presentation the care provider will use the HIMSS Case Study MS PowerPoint template – that is attached to this guide – to illustrate the case study / case studies.

Case Study 1

Case Study Title			
	Y	**N**	**Evaluation**
			The case study is related to the focus of the model and goes beyond requirement compliance
			IT capability and data analytics have been used to define the problem, understand its root cause and /or choose the solution.
			Root cause analysis, intervention development, and implementation steps are clearly described
			Relevant indicators are defined and used to measure progress throughout the project
			Lessons learned have been documented and a sustainability strategy defined.

Case Study 2

Case Study Title			
	Y	**N**	**Evaluation**
			The case study is related to the focus of the model and goes beyond requirement compliance
			IT capability and data analytics have been used to define the problem, understand its root cause and /or choose the solution.
			Root cause analysis, intervention development, and implementation steps are clearly described
			Relevant indicators are defined and used to measure progress throughout the project
			Lessons learned have been documented and a sustainability strategy defined.

Case Study 3

Case Study Title			
	Y	**N**	**Evaluation**
			The case study is related to the focus of the model and goes beyond requirement compliance
			IT capability and data analytics have been used to define the problem, understand its root cause and /or choose the solution.
			Root cause analysis, intervention development, and implementation steps are clearly described
			Relevant indicators are defined and used to measure progress throughout the project
			Lessons learned have been documented and a sustainability strategy defined.

Medical, Surgical, ICU Visit, and Health Information Management

Clinical Documentation

Show and demonstrate how nurses and allied health professionals use the system, especially regarding their daily clinical activities. This should include a discussion/presentation around nursing notes, nursing diagnosis documentation, nursing orders or tasks, vital signs and flowsheets, care plans, medication review and the eMAR. The structured format of clinician documentation should generate discrete data such as diagnoses, problems, disease scores, risk scores, medication history, or allergies that create a comprehensive data set used to assess a patient's health status and mobilized to inform clinician decisions on most appropriate care order sets and care pathways, while also identifying risks to patient's health status.

The specific physician documentation that we focus on here is: History & physical examination (H&P), history of present illness (HPI), consult notes, progress notes, discharge note, problems, and diagnoses.

ID	Stage	Y	N	Compliance Statement
Nursing Documentation captured in the EMR:				
67	6			**Vital signs.** Verified by nurse if monitors are interfaced with EMR.
68	6			**Flow sheets**
69	6			**Nursing notes**
70	6			**Risk assessments**
71	6			**Care plans**
72	6			**Electronic medication administration records (eMAR)**
Physician Documentation captured in the EMR:				
73	6			**Doctors** use **structured templates** to document **daily progress notes**.
74	6			**Doctors** use **structured templates** to document **operative notes**.
75	6			**Doctors** use **structured templates** to document **history & physicals**.
76	6			**Doctors** use **structured templates** to document **consult notes**.
77	6			**Doctors** use **structured templates** to document **discharge sum**.
78	6			**Structured templates drive CDS or order sets** Structured templates generate discrete data used to drive CDS or order sets and populates the CDR as discrete data.

ID	Stage	Y	N	Compliance Statement
79	7			**Procedural Suite Time-Out Process** A Procedural Suite Time-Out process is in place to ensure patient safety.
80	7			**Anaesthesia IS interfaced with EMR** An anaesthesia information system is live, in use, and interfaced with the EMR.
81	7			**Complete Nursing Documentation in EMR** Nurses complete documentation in the EMR for all of the following: vital signs (verified by nurse if monitors are interfaced), flow sheets (fluid balance, blood administration), nursing notes, risk assessments, care plans-nursing diagnoses, electronic medication administration records (eMAR).
82	7			**Medication Reconciliation Processes** Medication reconciliation processes occurs at admission, discharge and all unit level transfers, including reconciliation with home medications to be taken/resumed after discharge.
83	7			**Resuscitation meds available in eMAR until patient transfer** Nurses may chart resuscitation medications on paper, but document the medications administered in the eMAR record by the time the patient is transferred to another unit (e.g., ICU).
84	7			**Structured templates for clinician documentation** Clinician documentation uses structured templates for all patient care programs to ensure complete, accurate documentation of Clinician's care for patients.
85	7			**Structured templates for daily progress notes** Clinicians use structured templates to document daily progress notes for all patient care programs.
86	7			**Structured templates - Input to the design - Operative notes** Clinicians have input to the design and use of structured templates to document operative notes for all procedures.
87	7			**Structured templates - Input to the design - History & physicals** Clinicians have input to the design and use of structured templates to document history & physicals.
88	7			**Structured templates - Input to the design - Consult notes** Clinicians have input to the design and use of structured templates to document consult notes.
89	7			**Structured templates - Input to the design - Discharge summary** Clinicians have input to the design and use of structured templates to document discharge summaries.
90	7			**Nursing risk assessments inform standardized care delivery** Nursing risk assessments inform care delivery to ensure patients assessed at high risk receive preventive care to reduce risk and patients assessed at low risk receive care appropriate to low risk care needs. Care delivery is standardized to ensure risks are mitigated.

Remote Care and Remote Monitoring

Integration of medical device/monitoring equipment data into the patient record must be demonstrated to identify use of this data for informing clinical decisions.

CPOE & Clinical Decision Support

The organization must provide evidence of the prevalence of clinician use of computerized practitioner order entry (CPOE) and tools that mobilize data, assess, and track patient outcomes, and proactively identify risks to quality and safety outcomes supported with multiple Clinical Decision Support rules. Physicians should demonstrate how they use electronic orders (CPOE) and how aware they are about key system rules. Show examples of alerts and notifications that automatically fire when orders are placed.

ID	Stage	Y	N	Compliance Statement
Clinical Decision Support with alerts or reminders is in use for the following:				
91	6			**Drug-drug** interaction alerts are active
92	6			**Drug-allergy** interaction alerts are active
93	6			**Drug-food** interaction reminders are active
94	6			**Drug-lab** alerts/reminders are active
95	6			**Dose range** alerts (both high and low where appropriate) are active
96	6			**Duplicate order** alerts are active, including for all diagnostic testing
97	6			**Cumulative dose** alerts are active
98	7			**Meds are given upon protocol. Compliance & outcome is tracked** Medications are given in accordance with previously agreed group protocol clinical pathways or order sets. (e.g., simple analgesia, anticoagulants in VTE assessment, and pre-operative antibiotics.) Documentation of medication administration without an order present in the system is tracked and evaluated for standards compliance and outcomes in all clinical settings.
99	7			**Clinical Order Management in place to track AE medication errors** The organization has implemented Clinical Order Management for the entry of all patient care orders in all care delivery programs. Rate and type of adverse events-medication errors associated with physician orders are tracked, and monitored for all patient care settings: provide aggregate data illustrating adverse events associated with physician orders for 6 and 12 months
100	7			**Clinicians can enter orders remotely, unless not allowed** Clinicians are able to enter orders remotely, unless not allowed by organization policy. Prevalence of remote Clinicians' order are:
101	7			**EB order sets are evaluated for quality and safety outcomes** Evidence based order sets (self-developed or third-party developed specifically for this organization) are evaluated by clinician leaders for quality and safety outcomes, and to personalize pathways to support quality outcomes.
102	7			**Structured templates drive CDS or order sets** Structured templates use discrete data to drive CDS or order sets, and populates the CDR as discrete data for all patient care programs.
103	7			**Clinicians receive actionable alerts enabling proactive intervention** Clinicians receive actionable alerts to enable proactive interventions to reduce risks.

Closed Loops

At least one review team member will examine medication administration - from order acknowledgement, to selecting the appropriate medicine, to the bedside for medication administration and documentation. The review team member will also evaluate how nurses use medication administration data to assess risks of medication errors proactively (e.g., identify strategies to prevent allergic reactions or adverse drug interactions), how they use this data to track progress towards desired patient outcomes, and how they engage patients in building health literacy to better understand medication management.

A reviewer will also speak with nurses about how they use and mobilize EMR data to inform clinical decisions and track outcomes relevant to the process of administering blood products, expressed breast milk, and blood specimen/sample collection.

ID	Stage	Y	N	Compliance Statement
104	7			**Nursing assessments / care plans are supported by PoC scanning** Nursing assessments and care plans are supported by bedside scanning to automate data capture. (e.g., barcode or RFID scanning of blood glucose monitor, ABG machines, special mattress, infusion pumps, etc.) O Patient Identification (scan patient ID) in all clinical areas O Medication verification and data capture in all clinical areas O Blood Product verification and data capture for all programs O Expressed Breast Milk identification verification
105	7			**Infant formula ordered in the NICU is scanned at bed side** Infant formula ordered in the NICU is scanned at bed side to verify the product matches the nutritional needs of the order prior to feeding.
106	7			**All nurses use technology to identify the patient and the medicine** At the bedside, all nurses use technology to identify the patient and the medicine (all medicine types) and in so doing create a match confirming at least 5 rights of medication administration. Alerts and warnings signify mismatch.
107	7			**All medications administered are verified in eMAR at PoC** All medications administered to patients are verified in the eMAR at the point of care and automatically captured in the patient's medication profile is updated.
108	7			**All situations of overriding the eMAR are documented** All situations of overriding the eMAR are documented in all clinical settings with a discrete override justification required.

Knowledge of Business Continuity and Resilience Plan

The review team will determine clinicians understanding of downtime procedures in the event of total or partial system outages, communication processes, and IT security regulations.

Key Performance Indicators and Examples of Improved Outcomes

The review team will determine clinicians understanding of departmental key performance indicators and their use to improve outcomes.

Access to Data

The organization must demonstrate that various levels of clinicians can access and use relevant information that enables data-driven decision making on a regular basis.

ID	Stage	Y	N	Compliance Statement
109	7			**Self-service data presentation tools for staff** Staff has access to self-service data presentation tools (e.g., report writers, department level dashboards, and personalized health pathway) that enable tracking health outcomes for patients and clinician teams.
110	7			**Analytics tracks patient progress & proactively inform decisions** Advanced analytics is used to track patient progress outcomes and proactively identify and inform decisions to reduce risks. Examples may include Sepsis, Readmission risks based on vitals and/or lab results.
111	7			**Access to imaging reports and images from within patient's EMR** Clinicians can access medical imaging reports and actual images from within the patient's EMR either natively or through a context aware link for all patient care programs.

Scanning Process and Clinical Coding

The visit to the HIM/Medical Records department is to understand the workflow in document scanning and clinical coding. The review team will expect to understand what space saving strategies have been deployed, if any, as the paper chart has been replaced by the EMR and how that space has been repurposed. During the validation, the inspectors should be enabled to understand:

- The source data used for clinical coding
- Organization of clinical coding team
- Performance management of coders work with certain specialties (e.g., handling backlog)
- Coding quality measurement (e.g., internal, and external audits; coders as auditor/trainer)
- Use of encoder and classifications
- Coding of inpatient episodes versus OPD, ED, and day cases

ID	Stage	Y	N	Compliance Statement
112	6			**Clinically relevant documents are available in CDR within 24 hours** Clinically relevant documents are scanned and available in Clinical Data Repository within 24 hours.
113	7			**Clinically relevant paper are available in the EMR within 24 hours** Clinically relevant paper (e.g., EKG strip documentation, Code documentation) is scanned and available in the EMR within 24 hours from the time it was created.
Specific paper documents that should not be present (should be absent) during a review of HIM scanning process include:				
114	7			**Assessment forms**
115	7			**Flowsheets**
116	7			**Order forms**
117	7			**Medication list**
118	7			**Problems and diagnoses lists**
119	7			**Progress notes**
120	7			**Dietary and ancillary therapy documentation**
121	7			**Other clinically relevant paper documentation**
Paper documents that are allowed, but must be scanned within 24 hours of creation:				
122	7			**Charting done during critical events.** (e.g. code blue / resuscitations)
123	7			**Blood transfusion forms** (as required by government regulations).
124	7			**EKG waveforms.**
125	7			**Cardiac and fetal monitoring waveforms are stored electronically** Cardiac and fetal monitoring waveforms are stored electronically; if not, then alarmed readings are considered clinically relevant and are scanned into the EMR within 24 hours.
126	7			**Anaesthesia intra/perioperative progress notes.**
127	7			**Complex chemotherapy orders.**
128	7			Clinically relevant documents received in ED scanned within 24-hours.

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Patient Engagement Team

Provision of Information for Patients

The organization must demonstrate how patients are engaged in the care process and empowered with access to their medical information, administrative capabilities, and secured messaging. The review team need to see that the organization is utilizing patient engagement to improve chronic disease management, patient compliance, and patient satisfaction.

ID	Stage	Y	N	Compliance Statement
129	6			**Patient portal w/ access to a subset of clinical data** A patient portal is available for patients to access a subset of clinical data including discharge status, results, reports, current medication list, education tools/resources, etc.
130	6			**Secure Patient-Provider-Messaging** Secure messaging is offered to patients in support of communication between the patient and care provider teams.
131	6			**Prevalence of patients accessing their health record is tracked** Prevalence of patients accessing their health record across the organization is tracked and reported (stated at a percent of all active patients).
132	6			**Ability to report the # of virtual care visits over 12m period** Percent of Patients who select/use/access virtual care visits/telehealth appointments. Ability to report the number of virtual care visits over previous 12 months for all areas using virtual care.
133	6			**Patients receive care plan reminder and notifications remotely** Patients receive alerts, reminders, and notifications remotely, linked to care pathways/care plans to support patient self-management decisions to advance progress towards health goals.
134	6			**Tools in use for consumer health literacy and education programs** Digital infrastructure tools are designed to support and build consumer health literacy, consumers are provided with the resources, knowledge, and necessary tools to be confident in self-management of their health and wellness. Curated and personalized online information and advice is available to the patient or citizen in the form of an information prescription or education program.
135	6			**Patients have online access to medical images** Patients have online access to radiology and cardiology images created by the organization.
136	6			**Educational material for imaging-related procedures for patients** Patients have online access to educational material specific to their imaging-related procedures or problems (e.g., example to inform them about potential risks or benefits of upcoming treatments or imaging procedures).
137	6			**Rates of patient access to provider appointments within 24h** Rates of patient access to provider appointments (e.g., Online, virtual, telehealth, in person) within 24 hours.
138	6			**Rates of patient access to care based on type of access** Organization can report the rates of patient access to care based on type of access - telehealth, virtual visits, in person visits, or online services.

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ID	Stage	Y	N	Compliance Statement
139	7			**Prevalence of chronic patients accessing their health record** Prevalence of patients with chronic conditions accessing their health record across the organization (stated at a percent of patients in a chronic condition registry accessing their health record).
140	7			**Digital tools for self-management and health outcomes reporting** Rate of use (e.g., % of patients) who use digital tools (e.g., mobile devices, smart phone apps, dashboards, tablets) for self-management of care, and to report health outcomes is tracked and reported.
141	7			**Personalized digital tools support consumer self-management** Personalized digital tools, technologies, and platforms (e.g., virtual, online in real time, wearables) support consumer self-management of their health and wellness, and meaningful access to care providers when and where needed using secure messaging/communication.
142	7			**AE reporting is linked to patients, risk of adverse outcomes tracked** Adverse event reporting is automated (e.g., identifies lot and batch number of individual products to enable global traceability to the vendor), linked to individual patients who report adverse outcomes, track potential risk of adverse outcomes, to support rapid intervention to improve quality and safety outcomes in all care settings.
143	7			**Real-time P-P-Exchange for guidance during adm. & transition** Patients can use digital tools/technologies to connect, in real-time, to clinical systems and provider teams, (e.g., with a "point person"/ primary provider/navigator) that they can seek guidance about their health, report outcomes, seek information about care processes during inpatient admissions, and during transitions to outpatient care.
144	7			**Secure messaging with clinician teams during inpatient admission** Secure messaging with clinician teams during inpatient admission is available to meaningfully connect patients to their care team during hospitalization.

Remote Monitoring, Digital Tools, and Implants

The review team need to understand how remote monitoring capabilities support patients to manage their health personal health goals, and wellness.

ID	Stage	Y	N	Compliance Statement
145	5			**Patients can access their health records across care programs** Patients are able to access their health records across multiple care programs or provider teams.
146	6			**Care pathway/therapy adherence is reported by patients online** Patients can submit self-reported outcomes data and are able to update their personal health status data online (e.g., medication compliance, self-risk assessment, upload medically relevant images), and report progress with care pathways or therapies (e.g., patients can document that they performed the prescribed or recommended action).
147	6			**Insight from patient-specific data inform patient/caregiver decision** Patient-specific data collected from wearables, implants, or other digital devices is collected and transformed into knowledge and insights to inform patient and care giver decisions and management of their health and wellness.
148	7			**Real-time access to data flows to inform progress on health goals** Using digital apps and online portal patients have real time access to data flows to inform progress towards health goals, offer detailed documentation of care pathway/plan, products used in care (e.g., implants, drugs) to inform decisions to manage their health and wellness.
149	7			**Prior to DC care plans are reviewed w/ patients considering SDOH** Prior to patient discharge personalized, structured, and documented care plans are reviewed with the patient and/or associated on-going care facilitators (family members, guardian, or discharged-to care provider) that define personal health goals defined by individual patients in coordination with their care team, informed by their needs, values, and unique life circumstances taking into consideration social determinants of health (SDOH).

Measuring Patient Satisfaction and Patient Experience

Patient satisfaction is measured relative to the ease of use of digital tools (e.g., mobile devices, smart phone apps, dashboards, tablets) for self-management of care. This is a measure of how "happy" patients are in their experience from pre-admission, hospitalization, discharge, and follow-up care. Patient satisfaction gives the clinical team insights into various aspects of medicine, including the effectiveness of their care and their level of empathy with the patient.

ID	Stage	Y	N	Compliance Statement
150	6			**Patient satisfaction is measured using digital tools** Patient satisfaction is measured using digital tools (e.g., devices, apps, web-based portal) to profile the patient experience during hospitalization, discharge.
151	6			**Satisfaction is measured relative to ease of use of tools for SM** Patient satisfaction is measured relative to ease of use of digital tools (e.g., mobile devices, smart phone apps, dashboards, tablets) for self-management of care (denominator could be number of discharges per year, patient visits per year, etc.)
152	7			**Patients use digital tools for feedback reporting during admission** Patients are able to report outcomes, provide feedback using digital tools during hospital admissions, for all inpatient programs.
153	7			**Rates of patient reported outcomes** Rates of patient reported outcomes (e.g., percent of patients using digital tools for self-management who report health outcomes, adverse events, or engage provider teams using digital tools).

Outpatient Dept. (OPD), Clinics, Day Surgery, Renal Dialysis Unit

Clinical Documentation

In discussion with nursing personnel the review team will focus on the initial intake, vital signs, the degree to which the organization gathers patient submitted data through their portal strategy, nursing assessments and notes, medication reconciliation, nursing diagnosis documentation, per protocol orders that may be executed by a registered nurse.

The review team will dialogue with physicians/doctors about physician documentation with structured templates.

ID	Stage	Y	N	Compliance Statement
Nursing Documentation				
154	**6**			Documentation of vital signs.
155	**6**			Nursing notes
156	**6**			Patient Instructions
157	**6**			Allergies, problems, and medication reconciliation
158	**6**			**Medical device integration** (e.g., interfaces to vital signs equipment, glucometers, EKG, etc.) for automatic inclusion in record, where appropriate.
Physician Documentation				
159	**6**			**Discrete data is normalized to controlled medical vocabulary** Discrete data generated from structured templates are normalized to standard / controlled medical vocabulary (i.e., SNOMED, LOINC, ICD-10, etc.).
160	**6**			**Doctors** use **structured templates** to document **daily progress notes**.
161	**6**			**Doctors** use **structured templates** to document **history & physicals**.
162	**6**			**Doctors** use **structured templates** to document **consult notes**.
163	**6**			**Doctors** use **structured templates** to document **discharge sum**.

ID	Stage	Y	N	Compliance Statement
164	7			**Complete Nursing Documentation in EMR** Nurses complete documentation in the EMR for all of the following: vital signs (verified by nurse if monitors are interfaced), flow sheets (fluid balance, blood administration), nursing notes, risk assessments, care plans-nursing diagnoses, electronic medication administration records (eMAR).
165	7			**Structured templates for clinician documentation** Clinician documentation uses structured templates for all patient care programs to ensure complete, accurate documentation of Clinician's care for patients.
166	7			**Structured templates for daily progress notes** Clinicians use structured templates to document daily progress notes for all patient care programs.
167	7			**Structured templates - Input to the design - History & physicals** Clinicians have input to the design and use of structured templates to document history & physicals.
168	7			**Structured templates - Input to the design - Consult notes** Clinicians have input to the design and use of structured templates to document consult notes.
169	7			**Structured templates - Input to the design - Discharge summary** Clinicians have input to the design and use of structured templates to document discharge summaries.
170	7			**Nursing risk assessments inform standardized care delivery** Nursing risk assessments inform care delivery to ensure patients assessed at high risk receive preventive care to reduce risk and patients assessed at low risk receive care appropriate to low risk care needs. Care delivery is standardized to ensure risks are mitigated.

CPOE, Clinical Decision Support, Alerts and Warnings

The review team will dialogue with physicians/doctors about CPOE, alerts, alert fatigue and physician documentation with structured templates generating discrete data that can drive a rules engine. Further, we want to see and/or discuss examples of rules that fire and the physicians' awareness of other key rules and alerts. We will want a clear understanding of how this has improved consistency, quality, and safety.

ID	Stage	Y	N	Compliance Statement
171	6			**Nurses and AHPs receive eAlerts that prevent potential harm** Nurses and Allied Health professionals receive electronic alerts and warnings that prevent potential harm. (e.g., Change foley catheter, resite peripheral line, check central line dressing)
172	6			**Structured templates drive CDS or order sets** Structured templates generate discrete data used to drive CDS or order sets and populates the CDR as discrete data.
Clinical Decision Support with alerts or reminders is in use for the following:				
173	6			**Drug-drug** interaction alerts are active
174	6			**Drug-allergy** interaction alerts are active
175	6			**Drug-food** interaction reminders are active
176	6			**Drug-lab** alerts/reminders are active
177	6			**Dose range** alerts (both high and low where appropriate) are active
178	6			**Duplicate order** alerts are active, including for all diagnostic testing
179	6			**Cumulative dose** alerts are active

ID	Stage	Y	N	Compliance Statement
180	7			**Structured templates use discrete data to drive CDS or order sets** Structured templates use discrete data to drive CDS or order sets and populates the CDR as discrete data for all patient care programs.
181	7			**Clinicians receive actionable alerts enabling proactive intervention** Clinicians receive actionable alerts to enable proactive interventions to reduce risks.
182	7			**Meds are given upon protocol. Compliance & outcome is tracked** Medications are given in accordance with previously agreed group protocol clinical pathways or order sets. (e.g., simple analgesia, anticoagulants in VTE assessment, and pre-operative antibiotics.) Documentation of medication administration without an order present in the system is tracked and evaluated for standards compliance and outcomes in all clinical settings.
183	7			**Medication reconciliation processes at adm., DC, and all transfers** Medication reconciliation processes occurs at admission, discharge and all unit level transfers, including reconciliation with home medications to be taken/resumed after discharge.
184	7			**Clinical Order Management in place to track AE medication errors** The organization has implemented Clinical Order Management for the entry of all patient care orders in all care delivery programs. Rate and type of adverse events-medication errors associated with physician orders are tracked, and monitored for all patient care settings: provide aggregate data illustrating adverse events associated with physician orders for 6 and 12 months
185	7			**Clinicians are able to enter orders remotely, unless not allowed** Clinicians are able to enter orders remotely, unless not allowed by organization policy. Prevalence of remote Clinicians' order are:
186	7			**EB order sets are evaluated for quality and safety outcomes** Evidence based order sets (self-developed or third-party developed specifically for this organization) are evaluated by clinician leaders for quality and safety outcomes, and to personalize pathways to support quality outcomes.

Access to Data

The organization must demonstrate that various levels of clinicians can access and use relevant information that enables data-driven decision making on a regular basis.

ID	Stage	Y	N	Compliance Statement
187	7			**Self-service data presentation tools for staff** Staff has access to self-service data presentation tools (e.g., report writers, department level dashboards, and personalized health pathway) that enable tracking health outcomes for patients and clinician teams.
188	7			**Analytics tracks patient progress & proactively inform decisions** Advanced analytics is used to track patient progress outcomes and proactively identify and inform decisions to reduce risks. Examples may include Sepsis, Readmission risks based on vitals and/or lab results.
189	7			**Access to imaging reports and images from within patient's EMR** Clinicians can access medical imaging reports and actual images from within the patient's EMR either natively or through a context aware link for all patient care programs.

OPD Key Performance Indicators and Examples of Service Improvement Initiatives

The hospital must present examples of actions based on the collection and monitoring of key performance indicators, satisfaction surveys or using other data sources.

Laboratory

Associating a Blood Product with a Patient Identifier

The visit to the laboratory is to understand how closed loop technology supports and enables accurate and timely collection of specimen/and lab samples to advance quality and safety of patient care.

ID	Stage	Y	N	Compliance Statement
190	-----			**Laboratory services are provided inhouse.**

Receipting of Laboratory Samples

Specimen/sample identification must be supported by technology from the point of collection through to the testing and resulting processes in the laboratory. Lab specimens must be labelled using technology-enabled technologies that use global standards in accurately identifying the patient, specimen, time and location of specimen collection to enable tracking and tracing of lab specimens and the results accurately documented in the EMR.

ID	Stage	Y	N	Compliance Statement
191	**6**			**All specimen collections are documented in the EMR** All specimen collections are documented in the EMR. Lab receipt of specimens is electronically documented.
192	**7**			**Histol./AP replaces glass spec. slides w/ info from digitized slides** Histology/anatomical pathology is in place replacing glass specimen slides with information generated from digitized specimen slides.
193	**7**			**Lab: Tech supports timely processing of lab samples** Laboratory: Technology is used to match the specimen/sample with the patient order (e.g., scanned upon receiving) to document timely processing of lab samples.

Associating a Blood Product with a Patient Identifier

The organization must demonstrate how it associates a blood product identification (with traceability back to the donor), with a patient record in the EMR using technology (e.g., scanning the blood product into the patient's transfusion order) to support the technology-enabled identification of the blood product at the bedside at the time of administration. The review team expects the blood bank to fully utilize technology in their processes to enable "vein to vein" tracking and traceability to ensure safe and accurate blood administration, and to enable traceability of outcomes for patients linked to use of blood products. If the blood bank is outsourced, the organization is still expected to demonstrate how it associates the blood products it receives to the patient in the EMR, and how it tracks blood products to patient outcomes.

The review team will expect to see how the blood bank staff use technology to positively associate (e.g., scan a barcode, QR code, RFID tag, etc.) the selected blood product directly to the intended patient, documented in the EMR. This should enable the nurse to use the same identification technology on the blood product (e.g., scan the same barcode, QR code, RFID tag, etc.) at the bedside with full support of point of care tools linked to the EMR to verify the right blood product is being administered to the right patient, and outcomes (e.g., allergic response, improvement or deterioration in health status) can be documented and tracked by the care team.

ID	Stage	Y	N	Compliance Statement
194	6			**Disassociation process for not administered blood products** In the Blood Bank, a process is in place to disassociate a blood product from the patient in the EMR when the blood product is not administered and returned to the blood bank or laboratory.
195	7			**Technology is used to link the patient order and blood product** Blood Bank: Technology is used to link the patient order to the right blood product (e.g., scan the blood product barcode, QR code, RFID tag, etc.). The rate of error of blood product matching to patient order is tracked for all patient care programs.
196	7			**Process enables link of blood product admin to patient outcomes** Blood Bank: The Blood Bank processes enable linkage of blood product administration to patient outcomes for all patient care areas. Ability to report the number of errors without harm and errors with harm for the past 12 months.
197	7			**Process ensures repackaged blood ID = ID original product** Blood Bank: If the blood needs to be repackaged (NICU) a process is in place to ensure the repackaging has the same identifies as the original product package.
198	7			**Blood stored outside the blood bank is managed by it** Blood Bank: Blood stored outside the blood bank is managed by the blood bank and associated standards applied to map the blood order to the patient and the blood product.

Monitoring and Managing the Movement of Blood Products

The review team need to understand the electronically supported movement of blood products within the organization.

ID	Stage	Y	N	Compliance Statement
199	7			**Spec. are identified & tracked at PoC using auto-ID technology** Lab: Specimen/sample are identified and tracked at the point of collection using technology-enabled data capture (e.g., barcoded, QR coded, RFID tagged, etc.) at the processes at the point of collection.

Pharmacy

Pharmacy processes are reviewed to observe how technology is used to support quality and safety of medication dispensing in the pharmacy. Processes include how medication orders are reviewed for accuracy, appropriateness and safe administration, and quality controls that are in place to verify the medication dispensed are accurate, and safe for patients.

ID	Stage	Y	N	Compliance Statement
200	------			**An inhouse Pharmacy exists**

Monitoring and Managing the Movement of Medicines

A review of the processes in place intended to ensure the medications are accurately received and stored for distribution throughout the hospital. This includes medications received in unit dose technology enabled packets and those that must be repackaged.

ID	Stage	Y	N	Compliance Statement
201	6			**Tech-enabled accuracy checking process for supply coming in** Technology is in use and enables an accuracy checking process for supply coming in from the loading/receiving dock area.
202	6			**Repackaging of meds received in bulk is supported by automation** The packaging process pertaining to those medications the hospital received in bulk and repackages is well defined and supported by some level of automation.
203	6			**Inventory stock management system is supported by automation** The stocking of the main inventory management system and the use of technology into and out of stock storage is supported by automation.
204	6			**Process to review & remediate issues caused by mislabelling etc.** A process is in place to review and remediate any issues caused by medication mislabelling, wrong bin or other logistical incident.
205	6			**Technology-enabled labels for most medications and IV fluids** Most medications and IV fluids (e.g., diluents, infusion medications, etc.) are labelled with technology-enabled labels.
206	7			**Technology-enabled labels for all medications and IV fluids** All medications and IV fluids (e.g., diluents, infusion medications, etc.) are labelled with technology-enabled labels.
207	7			**Home medication policy** The organization has a home medication policy, if home meds are allowed to be administered, they are both technology-enabled and are documented in the eMAR.
208	7			**Process to review & remediate issues caused by mislabelling etc.** A process is in place to review and remediate any issues caused by medication mislabelling, wrong bin or other logistical incident.

Verification of Prescriptions and Medicine Reconciliation

The order verification process, accountability, and scope of practice of the pharmacist to modify or conduct a therapeutic substitution will be examined. Pharmacy engagement with clinician teams will be reviewed including communication and documentation of decisions made both with consultation from most responsible clinician caring for patients, and in cases whereby a pharmacist intervenes to modify an order (e.g., change a dose, therapeutic substitution, engage with clinician to determine safe medication).

The organization must clearly describe how and when orders are verified, and by who, and how communication occurs with the ordering clinician when an order may need to be modified. Processes for quality and safety of managing pharmacy processes when the pharmacist in not present will be examined for how quality and safety are supported. Some organizations do not have a 24x7 pharmacy operation. In such cases, the review team will expect to understand the process for ensuring medication orders are verified either through an auto-verify function and/or immediate retrospective review to ensure safety prior to medication administration commencing. Additionally, the process for monitoring medication administration overrides by nursing will be reviewed.

ID	Stage	Y	N	Compliance Statement
209	7			**2nd line validation of all medication orders prior to dispensing** Pharmacy: All medication orders are digitally verified by appropriate licensed professional prior to being dispensed.
210	7			**Systems in place to reduce medication errors** Pharmacy: Systems in place to reduce medication errors (wrong dose, route, time, mislabel if repackaged, wrong storage location, etc.) with harm and prescribing, administration, delivery.
211	7			**eMAR is automatically updated after prescribing & administering** Pharmacy: The medication profile (eMAR/EPMA) is automatically updated following prescribing and administering.
212	7			**CHG or REC to modify orders are documented in the EMR** Pharmacy: Modified orders or recommendations to modify orders are communicated to the Clinician who ordered the medication, and modification of orders are documented in the EMR for all patient care settings.
213	7			**Ability to override medication prescriptions; Review of overrides** Pharmacy: Clinicians and/or pharmacists have the ability to override a medication prescription (e.g., deemed unsafe, inappropriate). All overrides are reviewed and analysed to identify trends or patterns related to factors contributing to overrides and then reported to leadership to inform quality and safety decisions relevant to override processes.
214	7			**Tech to track & trace repackaged medications received in bulk** Pharmacy: Technology is used to track and trace medications, received in bulk and then repackaged, maintaining the traceability from manufacturer to patient outcome is well defined and supported by some level of automation.
215	7			**Access to eMAR at PoC, with tech-enabled verification of 5 R** Pharmacy: Nurses access prescribed medications at the bedside, with technology enabled verification of the correct medication, correct dose, correct patient, correct time, and correct route.
216	7			**Policy ensures Home & PHA meds have same dispensing process** Pharmacy: Home or Alternative medications the patient brings from home are managed per established policy. In the event medications from home are permitted, are administered (by the nurse or the patient), the medications follow the same process as pharmacy dispensed medications.

ID	Stage	Y	N	Compliance Statement
217	**7**			**Track & trace med errors linked to Pt. outcomes + online reporting** Pharmacy: Medication errors are reported online, analytics track and trace medication errors linked to outcomes for patients across the organization, and reported to patient care settings regularly.
218	**7**			**Med errors analyses are reported to quality and safety committee** Pharmacy: Medication errors analyses are reported to board level quality and safety committee to inform decisions to advance quality and safety across the organization.
219	**7**			**Review process for med errors to inform practice interventions** Pharmacy: A critical review process for medication errors is well established, analysed and reported to patient care units to inform practice interventions to strengthen medication safety and quality patient care for all patients are care teams.
220	**7**			**Med error rates are reported routinely to program teams** Medication error rates are reported routinely (ex. Quarterly, annually) to program teams to document trending.

Clinical Decision Support

ID	Stage	Y	N	Compliance Statement
Order verification CDS with alerts or reminders in use for the following:				
221	**6**			**Drug-drug** interaction alerts are active
222	**6**			**Drug-allergy** interaction alerts are active
223	**6**			**Drug-food** interaction reminders are active
224	**6**			**Drug-lab** alerts/reminders are active
225	**6**			**Dose range** alerts (both high and low where appropriate) are active
226	**6**			**Duplicate order** alerts are active, including for all diagnostic testing
227	**6**			**Cumulative dose** alerts are active

Emergency Department

ID	Stage	Y	N	Compliance Statement
228	-----			**Emergency Services are provided in the hospital**

Documentation and Clinical Decision Support

The ED must demonstrate physician, nursing, and allied health professionals documentation incl. CDS, technology-enabled closed-loop administration processes, and automated transmitting of vital signs to the EMR.

ID	Stage	Y	N	Compliance Statement
229	6			**Nurses & AHPs receive electronic alerts to prevent potential harm** Nurses and Allied Health professionals receive electronic alerts and warnings that prevent potential harm. (e.g., Change foley catheter, resite peripheral line, check central line dressing)
Clinical Decision Support with alerts or reminders is in use for the following:				
230	6			**Drug-drug** interaction alerts are active
231	6			**Drug-allergy** interaction alerts are active
232	6			**Drug-food** interaction reminders are active
233	6			**Drug-lab** alerts/reminders are active
234	6			**Dose range** alerts (both high and low where appropriate) are active
235	6			**Duplicate order** alerts are active, including for all diagnostic testing
236	6			**Cumulative dose** alerts are active
237	7			**Structured templates use discrete data to drive CDS or order sets** Structured templates use discrete data to drive CDS or order sets and populates the CDR as discrete data for all patient care programs.
238	7			**Discrete data are normalized to a standard medical vocabulary** Discrete data generated from structured templates are normalized to a standard/controlled medical vocabulary (e.g., LOINC, SNOMED, ICD).
239	7			**Nurses & AHPs document in the EMR** Nurses and allied health professionals document in the EMR (e.g., flowsheets, assessments, etc.)
240	7			**Vital signs are verified by nurses before being written to EMR** Vital signs data automatically transmitted to the EMR are verified by nurses before being written permanently to the patient's EMR, if used in the ED.
241	7			**Clinicians receive actionable alerts** to enable proactive interventions to reduce risks.

ED Key Performance Indicators and Examples of Service Improvement Initiatives

The hospital must present examples of actions based on the collection and monitoring of key performance indicators, satisfaction surveys or using other data sources.

Service Improvement Team and Clinical Outcomes Measurement

Governance

The review team will expect to see a presentation that describes the organization's entire strategy for mobilizing data, and analysing data to track outcomes, and generate knowledge and insights to inform decisions. Outcomes data includes, but is not limited to, clinical, financial, and operational performance. The use of data to inform decisions and analyse outcomes must be demonstrated across the entire organization. The presentation must also include a description of the data quality assurance process in place and how it is applied to the data prior to mobilizing data for analysis to generate knowledge and insights.

ID	Stage	Y	N	Compliance Statement
242	5			**Clinical program target outcomes and reporting annually** Clinical programs have established program target outcomes and report against those targets annually.
243	6			**Outcomes data quality is managed** Outcomes data quality is managed (timeliness, completeness, and accuracy) by clinical, operational and financial leaders.
244	6			**Analytics governance assesses outcomes data** Analytics governance actively assesses Outcomes data for needed changes.
245	6			**Analytics reports in a common repository are available to staff** Analytics reports are available in a common repository and available to frontline staff as needed per access policy. i.e., quality data, performance data, operational efficiencies, etc.
246	6			**Clinical & Data Gov Committee identify quality & safety priorities** Clinical Governance Committee is formed and works closely with Data Governance to optimize capture of clinical care outcomes to identify quality and safety priorities.
247	6			**Track performance of clinical outcome indicators** Operational and Finance data is used to track the performance of clinical outcome indicators.
248	6			**Strategy to strengthen validity of data** Data management processes include strategies to strengthen validity (e.g., data are normalized to include the value and normal range for data, date standardization, etc.)
249	7			**Performance measurement across all strategic platforms** Data is used to measure performance across all strategic platforms (ex. quality improvement performance, cost impact improvement).
250	7			**Data analytics to improve clinical outcomes for chronic patients** Advanced data analytics is used to improve the clinical outcomes for patient suffering from one or more chronic condition.
251	7			**External data is used in analyses to track outcome performance** Data from external sources (e.g., patients – wearables, digital tools, professional society registries, health plan data, quality of work life data for staff, patient reported outcomes data) is mobilized and integrated into analyses to document patient level and program level outcomes to track performance.

Service Improvement Programme Overview and Outcomes Targets

The organization must describe the strategy for capturing patient outcomes data, mobilizing that data to track progress towards health goals, and enable patients to report outcomes and progress towards their personal health and wellness goals.

ID	Stage	Y	N	Compliance Statement
252	7			**Tools track & trace care processes + products linked to outcomes** Digital tools and infrastructure track and trace care processes, and products used in care, linked to individual outcomes and progress toward patient health and wellness goals, for all inpatient care settings.
253	7			**Digital tools & tech is evaluated for ease of use and rates of use** Organization evaluates digital tools and technologies (e.g., wearables, devices, applications) for ease of use for patients, and rates of utilization.
254	7			**Tracking patient outcomes informs decisions to personalize care** Tracking patient outcomes informs decisions to personalize care delivery to strengthen patient's progress towards health goals and desired outcomes.

Local, Regional, and National Key Performance Indicators

The hospital must present examples of actions based on the tracking and monitoring of compliance with health authority key performance indicators.

Access to Data and Improvement Trends

The organization must demonstrate that various levels of clinicians can access and use relevant information that enables data-driven decision making on a regular basis.

Risk Management and Adverse Event Capture

ID	Stage	Y	N	Compliance Statement
255	6			**Rates of AE in inpatient services can be trended over a 12m period** Rates of adverse events (medical error, all types) /patient day (inpatients), and trending over a 12-month period.
256	6			**Errors in outpatient services can be trended over a 12m period** Clinical errors that occur in specialist Ambulatory Services (e.g., dialysis, infusion centres) are electronically recorded and displayed as a 12-month rolling trend.
257	6			**Rates of AE associated with high-risk care processes are tracked** Rates of adverse events associated with high-risk care processes are tracked for the following: anticoagulation errors/adverse events, insulin errors/adverse events, conscious sedation errors/adverse events, incorrect blood product use, antidote use, Intravenous medication errors/adverse events.
258	6			**Rates of Never events can be trended over a 12m period** Rates of Never events/Sentinel events across the organization, and trend over a 12-month period. (e.g., wrong site surgery, administration of medication by wrong route, transfusion/transplant incompatibility).
259	6			**Readmission rates are monitored (12m) for all patient conditions** Readmission rates are monitored for all patient conditions (trend over a 12-month period.)
260	6			**Risks are tracked & prioritized in service improvement programs** Outcome-associated risks are tracked to inform quality and safety priorities within service improvement programs. (e.g., extended patient waiting times in the ER.)
261	7			**Data mobilization to trigger alerts, reduce risks, improve outcomes** Data mobilization proactively identify risks to patients and provide automated alerts to cue clinician teams to intervene to reduce risks and strengthen outcomes.
262	7			**Medication error reporting to inform medication safety initiatives** Medication errors are reported by members of the care team and monitored by clinician leadership (or quality and safety teams) routinely for all clinical programs to inform quality and safety initiatives related to medication safety. Demonstrated improvement in frequency and type of medication errors in all patient care settings.

Medical Imaging Management

The visit to Diagnostic Imaging is conducted to examine documentation of images, imaging reports, and communication of results (incl. critical findings) to clinician teams and consultants.

ID	Stage	Y	N	Compliance Statement
263	-----			**Radiology services are provided inhouse.**

Order and Report Communication

The review team will spend time with a clinician in a reporting room to review the queue management, prioritization of imaging cases, and documentation of both preliminary and final results to clinicians and their teams. Documentation and availability of imaging reports will be evaluated including how diagnostic imaging team supports specialized patient care areas such as ED, ICU and Cardiac Catheterization lab. Staff must demonstrate monitoring of key performance indicators and that patients receive online access to educational material specific to their imaging-related procedures or problems.

ID	Stage	Y	N	Compliance Statement
264	7			**All orders are exchanged, accessed, and verified electronically** Imaging: All orders are exchanged and accessed electronically, whereby orders are verified prior to the patient undergoing the procedure.
265	7			**Access to imaging reports & images through patient's EMR** Clinicians can access medical imaging reports and actual images from within the patient's EMR either natively or through a context aware link for all patient care programs.
266	7			**Imaging results are communicated digitally to clinicians** Imaging: Medical Imaging results are communicated digitally to clinicians in all patient care settings.
267	7			**IS supports confirmation of image exam end & results delivery** Imaging: The electronic system supports the confirmation of image acquisition/examination completion and automated results delivery to the responsible clinician. (i.e. orders and results communication / status management).
268	7			**IS enables urgency-based imaging exams/reviews prioritization** Imaging: The software enables the prioritization of radiology and cardiology imaging examinations/reviews based on urgency in order to minimize the turnaround time for reports.

Documentation and Reporting

The review team will examine documentation of images, imaging reports, and communication of results (including critical findings) to clinician teams and consultants.

ID	Stage	Y	N	Compliance Statement
269	7			**Imaging specialists use structured templates** Imaging: Imaging specialists from radiology and cardiology use structured templates to document their findings.
270	7			**Important findings are captured as discrete data elements** Imaging: Important findings are captured as discrete data elements (e.g., size of a potentially malignant mass) and transferred automatically into reports.
271	7			**SR for capturing imaging analysis and reporting** Imaging: Specialists have the option of using **speech recognition** for capturing imaging analysis and reporting.

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Access and Image Management

The review team will examine the processes for managing imaging records received from other external organizations. The organization's policy and associated capability for digitizing film, uploading images from, and storing external images in the organization's EMR environment will be examined. Communication of imaging reports, and access to images by clinician teams, both in house and remotely, will be reviewed, including access of imaging reports to patients, and processes to share imaging reports (e.g., print film or produce a CD/DVD) upon request by the patient or external entity.

ID	Stage	Y	N	Compliance Statement
272	7			**Secure remote access to images** Imaging: Clinicians can access images from remote locations through a secure online connection (if permitted by policy).
273	7			**Images & waveforms are captured and managed digitally** Imaging: All images and waveforms are captured and managed digitally (e.g., CT, MRI, Ultrasound, Digital Radiography, Intravascular US, Coronary Angiogram, ECGs).
274	7			**External images can be ingested directly into the Image Archive** Imaging: External images can be ingested directly into the Image Archive (or similar application) to facilitate easy access for clinicians.
275	7			**Non-DICOM formats are stored & digitally available** Imaging: Non-DICOM images/videos are stored and digitally available for clinician access (e.g., images/videos in formats such as PDF, MPEG, JPEG, AVI, PNG, generated by devices like digital cameras, smartphones, endoscopes etc.).
276	7			**Clinical users can access & view images through primary system** Imaging: Authorized clinical users from the organization (inpatient and outpatient areas) can access and view radiology and cardiology images through their primary system.

Additional Capabilities

Additional imaging-related capabilities to improve efficiency, safety and quality of care are reviewed in this section.

ID	Stage	Y	N	Compliance Statement
277	7			**Radiation doses are monitored to ensure min dose per exam** Imaging: Radiation doses are regularly monitored to ensure minimum dose per examination.
278	7			**CDS for imaging to improve efficiency, safety, or quality of care** Imaging: The organization is able to demonstrate Clinical Decision Support Features for Radiology and Cardiology imaging that help to improve efficiency, safety, or quality of care.
279	7			**Enterprise Imaging is accomplished** Imaging: Enterprise Imaging is accomplished. Defined as "a set of strategies, initiatives and workflows implemented across a healthcare enterprise to consistently and optimally capture, index, manage, store, distribute, view, exchange, and analyse all clinical imaging and multimedia content to enhance the electronic health record.

Summary/Notes

Organizational Overview

Inpatient Services & HIM

Patient Engagement

Outpatient Services

Laboratory

Pharmacy

Emergency Department

Service Improvement Team

Medical Imaging