NABH Draft Standards for HIS and EMR Systems
July 2024

INTRODUCTION

The healthcare industry is in the midst of rapid evolution, driven by transformative digital innovations that are fundamentally reshaping the delivery and management of healthcare services. Recognizing the critical need for robust standards to ensure quality and interoperability across platforms, the National Accreditation Board for Hospitals & Healthcare Providers (NABH) has developed standards for HIS/EMR systems. These standards are pivotal in fostering a more efficient, interconnected, and technologically advanced healthcare ecosystem in India. They empower hospitals to leverage digital technologies effectively, thereby improving patient outcomes, optimizing operations, and elevating overall healthcare delivery standards.

Aligned with both the NABH Core standards and the NABH Digital Health Standards for Hospitals, these HIS/EMR standards uniquely position NABH as the sole entity responsible for these critical benchmarks, developed with a cohesive and consistent approach on a global scale. The NABH continues its hallmark methodology of Standards and Objective Elements, maintaining a structured approach to framework of standards. The categorization of Objective Elements into Core, Commitment, Achievement, and Excellence reflects a commitment to continual improvement. The total number of Objective Elements are 212, comprising 61 in the Core category, which are essential to be complied with during each assessment; 91 in the Commitment category; 37 in the Achievement category and 23 in the Excellence category. This streamlined approach ensures comprehensive evaluation while emphasizing ongoing enhancement of healthcare standards.

NABH acknowledges and applauds the National Health Authority (NHA) for its pivotal role in driving interoperability through the ABDM platform. NHA's certification efforts ensure that Digital Health products meet rigorous ABDM interoperability and security standards, including comprehensive WASA testing. Consequently, NABH's standards for HIS/EMR systems mandate that products undergo NHA evaluation and approval prior to seeking NABH certification. This collaborative effort harmonizes NHA and NABH initiatives, ensuring that only robust Digital Health solutions are certified and widely adopted across hospitals in India.

The development of the NABH Standards for HIS/EMR systems certification has been a meticulously orchestrated endeavor, drawing inspiration from global Digital Health standards and integrating best practices from software development and security. Extensive collaboration with industry experts has enriched these standards, refining them to effectively meet the dynamic and evolving requirements of the healthcare sector.

The potential impact NABH Standards for HIS/EMR systems certification in advancing Digital Health adoption in India is profound. By establishing standardized product requirements, the certification streamlines the procurement process for hospitals, promoting the widespread adoption of high-quality HIS/EMR products nationwide.

While these standards represent a significant achievement, NABH recognizes that their development is an ongoing journey. Feedback and insights from Digital Health companies, hospitals, and stakeholders will continue to be instrumental in refining and enhancing these standards further. In parallel, NABH is diligently working on the testing and certification framework for HIS/EMR products, including the selection of NABH-approved software testing agencies. This proactive approach underscores NABH's commitment to ensuring the integrity and efficacy of certified products.

Together, these initiatives underscore NABH's steadfast dedication to fostering excellence and innovation in Digital Health, paving the way for a more interconnected and efficient healthcare ecosystem in India and beyond

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HOW TO READ THE STANDARD?

The standard focuses on the key points required for providing patient-centered, safe, high-quality care. The interests of various stakeholders have been incorporated into the standard. They provide a framework for quality assurance and quality improvement. The focus is on patient safety and quality of patient care. It sets forth the basic standards that organizations must achieve to improve the quality of care.

The eight chapters are:

1. Access, Assessment and Care of Patient (AAC)
2. Care of Patients (COP)
3. Management of Medication (MOM)
4. Digital Applications Control (DAC)
5. Digital Operations Management (DOM)
6. Finance and Procurement Management (FPM)
7. Human Resource Management (HRM)
8. Information Management System (IMS)

Every chapter begins with an 'intent'. The intent states the broad requirements of what the organization needs to put in place and implement to improve the quality of care. This is followed by the 'summary of standards' which lists all the standards of that chapter. The standards and objective elements are explained after the summary.

WHAT IS A STANDARD?

A standard is a statement of expectation that defines the structures and processes that must be substantially in place in an organization to enhance the quality of care. The standards are numbered serially, and a uniform system is followed for numbering. The first three letters reflect the name of the chapter and the number following this reflects the order of the standard in the chapter. For example, AAC.1. would mean that it is the first standard of the chapter titled 'Access, Assessment and Care of patient'.

WHAT IS AN OBJECTIVE ELEMENT?

It is that component of standard which can be measured objectively on a rating scale. Acceptable compliance with objective elements determines the overall compliance with a standard. The objective element is scored during assessments to arrive at the compliance. The objective element is numbered alphabetically in serial order. For example, AAC.1.c. would mean that it is

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the third objective element of the first standard of the chapter titled 'Access, Assessment, and Care of patient'.

WHAT IS AN INTERPRETATION?

The interpretation provides guidance on what the organization needs to do to ensure that the requirement(s) of the objective element is met. Where applicable, it provides references and suggests a specific methodology that the organization needs to adhere to. The word 'shall/should' or 'will/would' is used to reflect a mandatory requirement. The interpretation also lists out desirable aspects for the organization to implement, and the word 'can/could' be used to reflect this. During scoring, the desirable aspects are not considered, and they are only used to reflect on the overall achievement of the standard, which is reflected in the assessment report. At places, the interpretation would not be specific and would have used the words like 'adequate/appropriate'. This has been done keeping in mind the diverse nature of healthcare delivery and adhering to the intent of this standard which is to improve the quality of healthcare and at the same time, be feasible. The expectation is that whenever such a phrase has been used in the interpretation/objective element, the organization shall base its practice on evidence-based/best practice. In some places, the interpretation has listed examples. The examples are only illustrative in nature, and the organization has the liberty to decide what/how to implement. However, the requirement of the objective element would have to be adhered.

Core Objective Element

Certain Objective Element in the standard have been designated as Core. These are Objective Element that the organization should have in place to ensure the quality of care or the safety of people within the organization.

Levels

The rest of the standards have been divided into three levels, namely commitment, achievement, and excellence.

Some requirements in the standards apply exclusively to HIS systems, some to EMR systems, and others are common and apply to both.

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NABH Standards for HIS and EMR Systems

Chapter	Standard	Objective Elements	Core	Commitment	Achievement	Excellence
AAC	8	68	22	35	7	4
COP	12	46	10	18	10	8
MOM	4	18	9	4	3	2
DIS	2	9	2	3	2	2
DOM	4	15	10	4	1	0
FPM	4	29	5	16	7	1
HRM	3	14	1	6	5	2
IMS	3	13	2	5	2	4
Total	40	212	61	91	37	23

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MATURITY LEVEL SCHEMES

NABH's maturity level schemes for certification of HIS/EMR systems is as follows-

1. **Base Level**
2. **Advanced Level**

Base Level	
Category of OE	**Percentage**
Core	**100%**
Commitment	**60%**
Achievement	**30%**
Excellence	**NA**

Advance Level	
Category of OE	**Percentage**
Core	**100%**
Commitment	**80%**
Achievement	**60%**
Excellence	**60%**

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Access, Assessment and Continuity of Care (AAC)

Intent of the Chapter:

The Access, Assessment, and Continuity of Care chapter covers administrative, and operational and clinical functionalities required by an HIS/EMR system. The chapter includes patient registration, admission, referral, discharge and transfer, patient education, and ancillary functions like laboratory, radiology, and patient feedback.

HIS/EMR system brings efficiency by gathering and sharing current and accurate information about patients including diagnostics, and clinical services.

HIS/EMR system enhances laboratory operations by enhancing quality of test results, streamlining workflows and increasing process efficiency. Likewise, in radiology, technology adoption helps in seamless management of imaging services in a systematic, practical, and efficient manner.

HIS/EMR enables the healthcare staff to monitor patient progress and plan admission, discharge, or transfer. With the help of digital systems, the entire patient journey gets well integrated.

Patient information through digital tools ensures that health-related information is easily accessible and understandable. This results in improved decision-making by patients and family members and better perception of care at the healthcare organization.

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Summary of Standards	
AAC.1.	The system manages patient registration and referral processes.
AAC.2.	The system supports patient appointments and the medical practitioner schedules.
AAC.3.	The system handles laboratory test orders and samples.
AAC.4.	The system handles radiology test orders and images.
AAC.5.	The system supports patient admissions.
AAC.6.	The system manages patient discharge and transfer processes.
AAC.7.	The system has capabilities to disseminate information to patients.
AAC.8.	The system manages patient feedback and complaints.

Standard

AAC.1.	The system manages patient registration and referral processes.

Objective Elements

Category	Core	Head	Common	Type	Functional
Core a.	The system registers a new patient and modifies the details as and when required.				
Interpretation	The system shall carry out patient registration. The system shall be able to configure mandatory & non mandatory fields depending on the healthcare organization's requirements. Further the registration data can be qualified as editable/ non-editable by the healthcare organization. The system should be able to capture the essential details like demographics of the patients (e.g., date of birth, address, mobile number), their registered National ID details (for example, Adhaar, ABHA (ABDM), driving license etc.), insurance details and payment preference. The mandatory and non-mandatory fields shall be clearly marked.				

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	Some of the mechanisms of digital patient registration could be through kiosks, website, ABDM Scan & Share, mobile app or QR code along with the inbuilt patient registration feature of the system.				

Category	Commitment	Head	Common	Type	Functional
Commitment b.	The system verifies the patient's mobile number.				
Interpretation	After a patient is registered in a system, a notification/ OTP shall be sent to the patient's registered mobile number for verification. This mobile number can then become the primary source of communication.				

Category	Core	Head	Common	Type	Functional
Core c.	The system generates a unique patient identification number				
Interpretation	Every healthcare organization uses a unique patient identifier for all its patients. This number remains constant across all departments, services including laboratory and radiology processes, etc. and helps to identify the patient.				

Category	Core	Head	Common	Type	Functional
Core d.	The system has the capability to configure the unique patient identifier as per the healthcare organization's requirements.				
Interpretation	The unique patient identifier shall have a consistent format (numeric or alphanumeric). It can be configured on multiple parameters, some of the examples are: • Date (year, month etc.) • Hospital department • Hospital branch / location The unique patient identifier shall follow the predefined format across all locations of a given healthcare organization.				

Category	Core	Head	Common	Type	Functional

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Core e.	The system has the capability to generate and capture ABHA number of the patient and link it to the unique patient identifier.
Interpretation	The system shall be able to generate and capture ABHA number (Ayushman Bharat Health Account) which is a unique health identifier. This corresponds to Milestone 1 (M1) of ABDM. Additionally, the system should be able to link the ABHA number of the patient with their unique patient identifier.

Category	Commitment	Head	Common	Type	Functional
Commitment f.	The system checks and flags duplicate patient registrations				
Interpretation	The system shall be able to identify duplicate patient registrations based on a set of unique patient identifiers (e.g., ABHA, Aadhar, any National ID number, name, and date of birth). This helps with correct patient identification and reduces the possibility of errors and improves the quality of care.				

Category	Commitment	Head	Common	Type	Functional
Commitment g.	The system supports patient registration in offline mode.				
Interpretation	Digital systems may become unavailable temporarily due to Internet failure (e.g., network issues, system breakdown, or planned maintenance activities). During these unprecedented situations, HIS/EMR system shall be able to support patient registration process including capturing of key patient details (e.g., unique patient identifier, name, address, phone number, date of birth, gender etc.) and medical history in the offline mode. The offline data shall be accurately synchronized once the system gets back to online mode.				

Category	Commitment	Head	Common	Type	Functional
Commitment h.	The system bundles multiple visits of the same patient for the same condition.				

| Interpretation | The system shall identify multiple visits of the same patient for a specific condition as a part of a larger episode of care. An episode represents a continuous period during which the patient receives related healthcare services.

For example, in the case of pregnancy: each prenatal visit, ultrasound, and postpartum check-up should be grouped into the same pregnancy episode.
The system can use timestamps or other criteria to determine the start and end of an episode. This ability to bundle multiple patient visits helps in keeping accurate records of the patient's visits over time and ensures continuity of care.

Additional Information: Building patient visits need to be done as per the defined criteria which will vary for different specialty, condition, diagnosis, etc. |
|---|---|

Category	Core	Head	Common	Type	Functional
Core i.	The system links all patient medical records to respective unique patient identifier.				
Interpretation	The system shall ensure that patient records generated across different service areas (e.g., pharmacy, laboratory, radiology, etc.) are linked to the patient's unique patient identifier.				

Category	Commitment	Head	Common	Type	Technical
Commitment j.	The system shares patient medical records with different facilities/ affiliates				
Interpretation	The system shall ensure access to patient's medical records across different facilities/affiliates of a healthcare organization.

Facilities/affiliates refer to specialized units, for example, blood bank, pharmacy, laboratories. Larger healthcare organizations may have facilities at different locations (Split locations). | | | | |

Category	Commitment	Head	Common	Type	Functional
Commitment k.	The system manages patient referrals across different specialties.				

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Interpretation	Patient referral through the system shall allow medical practitioners to digitally refer patients to other specialists. The system shall allow medical practitioners to share relevant patient's clinical information with other specialists. The digital system of referral can improve the efficiency and accuracy of the process and streamline communication between the medical practitioners. The system may also highlight the urgency of referral needed.				

Category	Achievement	**Head**	Common	**Type**	Functional
Achievement I.	The system connects with external devices and stores captured information.				
Interpretation	For carrying out day to day administrative functions in a healthcare organization several devices may be required to be connected with HIS/EMR system. These devices could be • Biometric device (e.g. for attendance, access to the system) • RFID Reader (e.g. for restricted areas access, patient identification) • Scanners (e.g. for patient related documents) • Printers (e.g. for billing, reports) • Barcode scanners (e.g. for pharmacy, lab samples) The system shall have provisions to connect with such devices and capture data transmitted.				

Standard

AAC.2.	The system supports patient appointments and the medical practitioner schedules.

Objective Elements

Category	Commitment	**Head**	Common	**Type**	Functional
Commitment a.	The system creates and manages appointments.				
Interpretation	The system shall have provisions for booking, changing or cancelling patient appointments. The appointments can be • New or follow-up. • Physical visit or teleconsultation.				

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			The system shall also capture details of the patient for example contact information, patient condition, doctor's name, appointment date and time, location		

Category	Commitment	Head	Common	Type	Functional
Commitment b.	The system generates and sends notifications to the patients				
Interpretation	The system shall have a robust mechanism to generate notifications (including reminders). These notifications can be sent through SMS, WhatsApp, email, or on a patient portal. For in-person appointments, notifications shall include date and time of appointment, name of the doctor and the location. For teleconsultation appointments, notifications should include a link for the same.				

Category	Core	Head	Common	Type	Functional
Core c.	The system has the capability to record time stamps.				
Interpretation	The system shall capture time stamps for all touchpoints both in OPD and IPD. Example, for an OPD appointment, the touch points could be registration, initial assessment, consultation, diagnostic procedures and tests being carried out, and billing. Similarly, in IPD scenario, the touch point may include admission of the patient being carried out, administration of medications and discharge, etc.				

Category	Excellence	Head	Common	Type	Functional
Excellence d.	The system captures details of appointments made through external systems.				
Interpretation	There are many ways to book an appointment, e.g., through phone calls, healthcare organizations patient portals/ website, mobile applications, WhatsApp, email etc. The system shall have the capability to transfer appointment information into the HIS/EMR system. Patients may also book an appointment through third-party websites or mobile applications. Such websites/ mobile applications shall also be integrated with HIS/EMR systems.				

Core	Commitment	Achievement	Excellence

Category	Commitment	Head	Common	Type	Functional
Commitment e.	The system displays the available dates, time and the profile of the medical practitioners for booking appointments by the staff.				
Interpretation	The system shall display the available dates and time of medical practitioners for the purpose of booking appointments by the staff upon receiving requests from the patients. The system shall also display the complete profile of the medical practitioners including the years of experience, detailed educational qualifications, specialty, and additional certifications (if any).				

Category	Commitment	Head	Common	Type	Functional
Commitment f.	The patients are able to digitally book an appointment with a specific medical practitioner based on the dates and time displayed on the system.				
Interpretation	The system shall provide an interface through healthcare organization's website or patient portal to book appointments with a specific medical practitioner based on request by a patient and the practitioner's availability. This also enables the patient to consult the same medical practitioner for follow-up visits, which can be important for care continuity.				

Category	Commitment	Head	Common	Type	Functional
Commitment g.	The system displays and prints the medical practitioner's schedule.				
Interpretation	The system used in the healthcare organizations shall have a capability to display and print the schedule of medical practitioners				

Category	Achievement	Head	Common	Type	Functional
Achievement h.	The system has the capability of queue management for various healthcare services.				

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Interpretation	The healthcare organization requires a system to manage queues for various healthcare services such as patient registration, OPD, pharmacy, laboratory, radiology, etc.
	A queue management system enables healthcare organization's staff to monitor and control patient flow, assigning a digital token to track progress of queue. Additionally, the system should have digital signage or display boards to provide patient's real-time information about the digital token status.

Category	Excellence	Head	Common	Type	Functional
Excellence i.	The system displays estimated patient waiting time for various healthcare services				
Interpretation	The system shall have a capability to connect with the display board and show the approximate waiting time for a patient for various healthcare services such as patient registration, OPD, pharmacy, laboratory, radiology, etc. The patient should get the estimated wait time information either through a notification or on a display board. This helps in relieving patient's anxiety and prevents overcrowding.				

Standard

AAC.3.	The system handles laboratory test orders and samples.

Objective Elements

Category	Core	Head	Common	Type	Functional
Core a.	The system configures clinical and administrative workflow for laboratory management.				

Core   Commitment   Achievement   Excellence

Interpretation	Laboratory Management is an important part of a healthcare organization system, and this system should support the following features: Laboratory Management is vital for healthcare organizations, and the system should support: • Workflows: Setup of master data, process configurations, and information flow between practitioners, the lab, and billing. • Quality Controls: Configuration of essential quality controls. • Report Generation: Ability to generate specialty-specific reports (e.g., microbiology, biochemistry).				

Category	Core	Head	Common	Type	Functional
Core b.	The system automatically assigns a specimen number for every sample collected / received and links it to the patient's unique identifier.				
Interpretation	A unique sample identifier is required to link each sample to its unique patient identifier. A unique sample identifier is crucial for laboratory testing to ensure accuracy, traceability, and accountability in the diagnostics process. Each specimen number must be unique within the laboratory. The system shall generate a unique sample identifier based on some predefined rules. For example, • Prefix: Specimen identifier starts with a department or location code (e.g., "LAB" for the laboratory) • Sequential Number: A numeric portion that increments with each new specimen. • Date and Time Stamp: Include the collection date and time (e.g., "LAB2105071230" for a sample collected on May 7, 2021, at 12:30 PM).				

Category	Core	Head	Common	Type	Functional
Core c.	The system tracks specimens.				

Interpretation	With a unique identifier assigned to each sample, lab technicians can easily track and manage the sample, improving efficiencies, and reducing the risk of mix-ups or errors. The key features of specimen tracking include splitting orders, progress tracking, and data review & approval.
	Tracking allows increased visibility of the status of the sample, for example whether the sample has been processed rejected, or there is a mismatch, etc.

Category	Commitment	Head	Common	Type	Functional
Commitment d.	The system creates/ modifies templates for laboratory reports.				
Interpretation	The system shall have the capability to create, modify, and configure the reporting templates for different specialties like biochemistry, microbiology, etc. and for provisional and final reports.				

Category	Commitment	Head	Common	Type	Functional
Commitment e.	The system enables sample label printing.				
Interpretation	As soon as the sample is collected, the system shall generate printable unique labels for the samples.				

Category	Commitment	Head	Common	Type	Functional
Commitment f.	The system appends laboratory reports.				
Interpretation	A patient may give multiple samples during the visit, or a particular sample may be used for multiple tests. The reports from these multiple tests will be prepared at different times. The system should have the capability to append or consolidate these multiple test reports and issue one final report to the patient. There should be a clear audit trail regarding the changes made.				

Category	Core	Head	Common	Type	Functional

Core	Commitment	Achievement	Excellence

Core g.	The system generates a non-editable final report once it is signed by the pathologist.
Interpretation	The system shall have the capability to generate a final report with the ability of pathologist to sign the report. Final reports generated and signed by the pathologist shall not be editable.

Category	Core	**Head**	Common	**Type**	Functional
Core h.	The system clearly marks the damaged/ rejected samples.				
Interpretation	The system shall have the capability to mark a sample as damaged or rejected. This could include adding a specific code or annotation to indicate the sample's status. For example, appending "DAMAGED" or "REJECTED" to the sample ID can help clearly distinguish it from other samples. This ensures that the samples are not used for further testing. Indicators: The system could use color-coding/ icons to visually highlight damaged or spoiled samples. For example: • Red labels or tags could indicate damaged samples. • Yellow labels or tags could indicate samples that need retesting due to spoilage. • Green labels or tags could represent valid samples.				

Category	Core	**Head**	Common	**Type**	Functional
Core i.	The system displays the reference range for a test and highlights abnormal/out of range results.				
Interpretation	The system shall maintain reference ranges for each laboratory test. These ranges define normal values for a specific test based on factors such as age, gender, and health condition. For example: If a patient's cholesterol level is 200 mg/dL, the system should indicate whether this falls within the normal range (e.g., "Normal") or not. To draw attention to abnormal results, the system could use color-coding such as: Green: Normal results Yellow: Borderline or cautionary results Red: Abnormal or critical results				

Category	Commitment	Head	Common	Type	Functional
Commitment j.	The system flags the incorrect tests/ reports that need to be repeated.				
Interpretation	The system shall have the capability to flag a test for which an incorrect report has been issued. In such cases, a repeat test is required. After the repeat test, a new report can be generated. In certain cases, the laboratory may be required to repeat a particular test. The system shall have the capability to flag such tests which are required to be repeated. This helps in improving the quality of laboratory tests and record keeping.				

Category	Commitment	Head	Common	Type	Functional
Commitment k.	The system sends notifications to patients and medical professionals when their reports are ready.				
Interpretation	The system shall send notifications to the patients once the reports are ready. This can be done through email, WhatsApp/ online messaging platform, SMS, or a notification on the patient portal.				

Category	Commitment	Head	Common	Type	Functional
Commitment l.	The system allows patients to view/download their reports.				
Interpretation	The system shall also have the capability to allow the patients to view/download their reports. A link to the reports should be sent to the patients by email, WhatsApp/ online messaging platform, SMS, or patient portal. The link should provide secure access to patients to view and download their reports.				

Category	Achievement	Head	Common	Type	Functional
Achievement m.	The system identifies tests that have been referred to external labs and maintains the records of the results				

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Interpretation	The system shall maintain a list of tests sent to external laboratory and maintain digital records of these tests. These tests should be clearly identifiable and sample collection material clearly labelled accordingly.

Category	Core	Head	Common	Type	Functional
Core n.	The system links the laboratory reports of the patients to their ABHA.				
Interpretation	The system shall have the capability to link a patients' laboratory reports to patients' ABHA. Linking patients' laboratory reports to their ABHA makes this information more sharable and helps healthcare providers to have a complete and accurate understanding of patient's health status, allowing them to make more informed decisions about diagnosis, treatment, and care planning. This corresponds to Milestone 2 (M2) of ABDM.				

Standard

AAC.4.	The system handles radiology test orders and samples.

Objective Elements

Category	Commitment	Head	Common	Type	Functional
Commitment a.	The system configures clinical and administrative workflow for management of radiology department.				
Interpretation	The management of the Radiology department is an important part of healthcare organizations and the system being used should support the same. Radiology Management is vital for healthcare organizations. The system should support: • Workflows: Setup of master data, process configurations, and information flow between practitioners, the radiology, and billing. • Quality Controls: Configuration of essential quality controls. • Report Generation: Ability to generate specialty-specific reports (e.g., CT, X-ray, USG etc.).				

	Core		Commitment		Achievement		Excellence

Category	Commitment	Head	Common	Type	Functional
Commitment b.	The system creates/ modifies a new radiology request, generate a unique ID for the request, and link it to the patient's unique ID.				
Interpretation	The system shall create a unique ID for a radiology request for every radiological test or procedure. It should be able to link this unique ID with the patient's unique identification. This linkage helps create complete medical records for patients and provide better care.				

Category	Commitment	Head	Common	Type	Functional
Commitment c.	The system sends notifications to the radiology department as soon as any test is booked				
Interpretation	The system shall send notifications to the radiology department as soon as any test is booked in OPD or IPD. These notifications should include details like the patient's name, age, type of test required, and the medical practitioner who has requested for the test.				

Category	Commitment	Head	Common	Type	Functional
Commitment d.	The system creates/ modifies templates for radiology reports.				
Interpretation	The radiology system shall have the capability to create and modify the reporting templates for different modalities (e.g., X-ray, Ultrasound, MRI, CT etc.). These different templates should be configurable and editable in the system. The system shall also display the reference range in the templates for radiology tests as applicable and highlights abnormal and out of range results.				

Category	Commitment	Head	Common	Type	Functional

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Commitment e.	The system captures and shows the radiological test status for every radiology test order.
Interpretation	The system shall have the capability to show the status of radiology tests ordered by the medical practitioners. The status options could include tests booked, on-going, completed, reported, etc.

Category	Commitment	Head	Common	Type	Functional
Commitment f.	The system appends radiology reports.				
Interpretation	A patient may visit radiology multiple times for multiple tests. The reports from these multiple tests will be prepared at different times. The system should have the capability to append all the radiology reports.				

Category	Excellence	Head	Common	Type	Functional
Excellence g.	The system has the capability to book radiology test appointment slots based on equipment and staff availability.				
Interpretation	The ability to conduct radiology tests is dependent on availability of radiology equipment and qualified staff. The system should be able to book radiology tests based on the radiology equipment and staff availability along with the patient's clinical condition. Such functionalities help in optimal use of radiology equipment and staff and reduce wait time for patients.				

Category	Core	Head	Common	Type	Functional
Core h.	The system generates a non-editable final report once it is signed by the radiologist				
Interpretation	The system shall have the capability to generate a final report with the ability of radiologist to sign the report. Final reports generated and signed by the radiologist shall not be editable.				

Color	Label
Core	Core
Commitment	Commitment
Achievement	Achievement
Excellence	Excellence

Category	Commitment	Head	Common	Type	Functional
Commitment i.	The system flags the amended radiology reports issued by the radiologist				
Interpretation	The system shall have the capability to edit the final report and issue amended report to the patient. The system shall be able to maintain an audit trail of all original and revised reports.				

Category	Achievement	Head	Common	Type	Functional
Achievement j.	The system sends notifications to patients and medical professionals when their reports are ready.				
Interpretation	The system shall be able to send notifications to the OPD and IPD patients and medical professionals as per the policy of healthcare organizations once the reports are ready. This can be done through email, chat platforms, SMS, or a notification on the patient portal.				

Category	Achievement	Head	Common	Type	Functional
Achievement k.	The system allows patients to view/download their reports.				
Interpretation	The system shall also have the capability to allow the patients to download their reports. A link to the reports should be sent to the patients by email, WhatsApp/ online messaging platform, SMS, or patient portal. The link should provide secure access to patients to view and download their reports. The system should also have the capability to allow the patients to view/download their reports. A link to the reports should be sent to the patients by email, WhatsApp/ online messaging platform, SMS, or patient portal. The link should provide secure access to patients to view and download their reports.				

Category	Core	Head	Common	Type	Functional

Core I.	The system sends a notification when a test ordered is contraindicated based on the patient's condition.
Interpretation	The system shall have the capability to raise an alert/ notification if the test ordered is contraindicated in certain conditions, e.g. some tests are not suitable for pregnancy, chest x-ray to be avoided for patient with pacemaker, tests not suitable for specific gender, etc. This can substantially help in reducing medical errors.

Category	Core	Head	Common	Type	Functional
Core m.	The system links radiology report/s of the patient to their ABHA.				
Interpretation	The system shall link a patients' radiology reports to their ABHA. Linking a patients' radiology reports to their ABHA number/Address makes the information more shareable and help healthcare providers to have a completed and accurate understanding of a patient's health status, allowing them to make more informed decisions about diagnosis, treatment, and care planning. This corresponds to Milestone 2 (M2) of ABDM.				

Category	Commitment	Head	Common	Type	Functional
Commitment n.	The system maintains a record of the tests that are outsourced to other radiology centres and maintains a repository of their results.				
Interpretation	The system shall maintain a list of tests sent to external radiology centres and maintain digital records of these tests. These tests should be clearly identifiable, and records of the reports should be maintained.				

Standard

AAC.5.	The system supports patient admissions.

Core	Commitment	Achievement	Excellence

Objective Elements

Category	Core	Head	Common	Type	Functional
Core a.	The system configures rules/ workflow for patient admission.				
Interpretation	There are different types of admissions. The system should be able to generate admission documents and configure admission rules accordingly: • Emergency admission • Planned admission. • Day care admission For example: In case of emergency admissions, the system should have the capability to admit the patient with limited information. The system should highlight only the critical fields to allow admission as soon as possible. These may include details like demographic details and brief medical history of the patient. In addition, if the case needs to be reported to relevant authorities, the system should have the ability to capture the required information needed to make the report and notify the medical practitioner to take the appropriate action.				

Category	Core	Head	Common	Type	Functional
Core b.	The system configures templates for various healthcare services.				
Interpretation	The system shall configure and modify various templates that are used by the healthcare organizations during the admission process. The system shall clearly identify mandatory and non-mandatory fields in the templates.				

Category	Core	Head	Common	Type	Functional
Core c.	The system manages patient's admission related information.				

	Core		Commitment		Achievement		Excellence

Interpretation	The system shall capture admission related information which may include patient demographics, preliminary diagnosis, medical history, care plan, date of admission, expected date of discharge, package details, payor details, etc. Additionally, the system should have capabilities to: • Capture both mandatory and non-mandatory patient data • Scan and upload patient documents (e.g., consent form) • Capture and track the insurance details of the patient

Category	Commitment	Head	Common	Type	Functional
Commitment d.	The system creates and manages healthcare packages for patients with inclusion/exclusion of services.				
Interpretation	The system shall have the capability to create and manage different healthcare packages. The package information should capture inclusion/exclusion of services, charges, etc. Healthcare packages can include charges based on the type of services availed, for example choice of bed/ room, ward, charges for medical treatment, medicines, ICU, Operation theatre, ambulance services, consultation, physiotherapy, food etc. Fixed Package: Some healthcare organizations offer fixed package deals for specific treatments (e.g., maternity packages, cardiac surgery packages) that include a set of healthcare services at a fixed price.				

Category	Core	Head	Common	Type	Functional
Core e.	The system designates the treating medical practitioners.				
Interpretation	The system shall designate the treating medical practitioners along with the supporting team.				

Category	Commitment	Head	Common	Type	Functional

Core   Commitment   Achievement   Excellence

Commitment f.	The system auto populates all relevant data fields when a patient is admitted on entering their unique patient Identifier.				
Interpretation	Once a unique identifier of a patient is created, the system shall populate data on entering the unique patient Identifier. For example, for a repeat patient, all demographic details, medical history, etc. should be auto populated in as soon as the unique patient ID is entered. A similar workflow/process is expected to be followed in case a patient is transferred from OPD to IPD.				

Category	Commitment	**Head**	Common	**Type**	Functional
Commitment g.	The system sends notifications to all relevant departments and staff during the admission / transfer process.				
Interpretation	The system shall have the capability to send notifications to all departments and staff, for example floor managers/administrators/registration desk during admission and transfer related processes in the healthcare organizations. These notifications should include: • Ward assignment, ward type, and details • Bed allocation, bed type, bed number, etc. • Transfer details				

Category	Commitment	**Head**	Common	**Type**	Functional
Commitment h.	The system displays details of occupied beds.				
Interpretation	The system shall provide real-time data regarding vacant, preoccupied, occupied and under maintenance, and information on reserved beds. The system shall also provide real-time insights into bed information, enabling employees and management to optimize capacity planning and make data-driven decisions.				

Category	Excellence	**Head**	Common	**Type**	Functional
Excellence i.	The system has the capability to predict bed availability.				

Interpretation	From the data available in the system, the system shall be able to predict how the bed availability will change over the next few days / weeks. This information can be very useful during extreme situations (e.g., during dengue outbreak, pandemics) and for business / capacity planning purposes.

Standard

AAC.6.	The system manages patient discharge and transfer processes.

Objective Elements

Category	Core	Head	Common	Type	Functional
Core a.	The system creates / modifies a discharge summary.				
Interpretation	The system shall have predefined templates for the discharge summary. The template for discharge summary should include (but not limited to): • Patient's name • Unique identification number • Name of the treating doctor • Date of admission and date of discharge • Reasons for admission • Significant findings, diagnosis and patient's condition at time of discharge • Information regarding investigation results • Any procedure performed • Medication administered • Any other treatment given				

Category	Commitment	Head	Common	Type	Functional
Commitment b.	The system shows the list of patients due for discharge.				

Core	Commitment	Achievement	Excellence

Interpretation	The system shall show the list of patients due for discharge on a daily basis. The discharges like LAMA, DAMA, and absconding shall be clearly marked in the system and a notification regarding the same should be sent to the relevant departments and staff.

Category	Commitment	Head	Common	Type	Functional
Commitment c.	The system creates and processes a checklist and manage clearances for patient discharge, if any.				
Interpretation	A discharge checklist should be available that captures all checkpoints before a patient is discharged. This checklist is needed for clearances across the healthcare organization prior to discharge, clinical clearance, financial clearance, and final clearance.				

Category	Commitment	Head	Common	Type	Functional
Commitment d.	The system manages transfer patients within the healthcare organizations.				
Interpretation	The system shall enable patient transfers and notify relevant staff of the healthcare organization and the treating medical practitioner. During the transfer, the handover of documents is duly given to the receiving medical practitioner/ staff. This information is vital in ensuring that the patient receives appropriate care during and after the transfer. The transfer protocol applies when the patient is transferred across two departments (for example, from the OT to post-operative recovery, and then from a post-recovery room to ward, or from emergency department to the ward); from one primary medical practitioner to another, or from one healthcare organization to another.				

Category	Achievement	Head	Common	Type	Functional
Achievement e.	The system raises interim bills upon the patient's request.				
Interpretation	The system shall generate an interim bill on request of the patient.				

Core   Commitment   Achievement   Excellence

Category	Core	Head	Common	Type	Functional
Core f.	The system links the discharge summary of the patient with their ABHA.				
Interpretation	The system shall link a patients' discharge summary to their ABHA. Going forward, healthcare providers treating a patient can access their discharge summary to get a comprehensive overview of the patient's medical history, including any critical/ sensitive health issues and medications from the past. This corresponds to Milestone 2 (M2) of ABDM.				

Standard

AAC.7.	The system has capabilities to disseminate information to patients.

Objective Elements

Category	Commitment	Head	Common	Type	Functional
Commitment a.	The system provides important care delivery information for patients.				
Interpretation	The system shall provide important care delivery information to patients through email, WhatsApp, SMS, patient portal etc. This information could include: • Appointment details (location, address, contact details) • Reports availability • Follow-up schedule With appropriate consent, the system shall send notifications to designated kin or relatives. This is especially useful for elderly patients or those with limited digital fluency. To cater to local preferences, the information could be provided in multiple languages.				

Category	Commitment	Head	Common	Type	Functional

Core   Commitment   Achievement   Excellence

Commitment b.	The system has the capability to display its NABH certifications.
Interpretation	After achieving NABH certification, HIS/EMR system shall clearly display the same on the system's login page/screen and other relevant pages/screens.

Standard

AAC.8.	The system manages patient feedback and complaints.

Objective Elements

Category	Commitment	Head	Common	Type	Functional
Commitment a.	The system has the capability to receive feedback and complaints from the patients/family members.				
Interpretation	The system should have the ability to capture patient feedback using online surveys. These surveys can be rolled out to patients after their visit or stay. Collecting patient feedback is important for healthcare organizations to continuously improve their service delivery and patient satisfaction. In case of complaints, the records of resolution of the complaints shall be captured by the system.				

Category	Achievement	Head	Common	Type	Functional
Achievement b.	The system analyzes the feedback received and generates reports/ updates dashboards.				
Interpretation	The system shall analyze and summarize patient experiences and satisfaction levels across various touchpoints, such as: • appointments • healthcare organization stay • post-treatment follow-ups This data could identify areas of improvements as well as tracking progress over time.				

Core	Commitment	Achievement	Excellence

Chapter 2

Care Of Patients (COP)

Intent of the Chapter:

It is imperative for healthcare organizations to consistently provide superior quality care across all care settings. The "Care of Patients" chapter describes the essential specifications for EMR/HIS to support standardized care delivery, which is of critical significance as use of digital systems are becoming an increasingly important part of care delivery. The objective of this chapter is to foster and prioritize patient care and safety by using EMR/HIS.

Healthcare organizations need to adopt digital technology to effectively manage health conditions, diseases and foster preventive care. Such technology should support all facilities in a healthcare organization, including outpatient departments, daycare centres, and in-patient wards. Further, the system should support patient services in remote settings.

Digital systems must allow medical practitioners to access medical records and proficiently initiate orders for laboratory tests, radiological examinations, and pharmaceutical services. Systems should also manage dietary consultation and specific nutritional therapy. On the other hand, systems should also support infection related cases and sentinel events.

Digital systems can also provide clinical decision support – Clinical Decision Support Systems (CDSS) - for medical professionals, leveraging the data available in the system and the ability to apply evidence-based guidelines for enhance care and patient safety.

Core   Commitment   Achievement   Excellence

Summary of Standards	
COP.1.	The system manages consultation services in OPD and IPD
COP.2.	The system manages nursing care processes.
COP.3.	The system supports blood transfusion services.
COP.4.	The system manages emergency and medico-legal cases.
COP.5.	The system has the capability to record the surgical/ procedure safety checklist in operating rooms/wards/OPD.
COP.6.	The system manages dietary consultation and specific nutritional therapy.
COP.7.	The system tracks and monitors all infection prevention and control related activities and sentinel events.
COP.8.	The system supports patient services in remote settings.
COP.9.	The system manages the assessment and re-assessment of patients availing rehabilitation services.
COP.10.	The system provides a Clinical Decision Support System.
COP.11.	The system has the capability to create care plans.
COP.12.	The system has the capability of performing medical reconciliation.

Standard

COP.1.	**The system manages consultation services in OPD and IPD**

Objective Elements

Core   Commitment   Achievement   Excellence

Category	Commitment	Head	EMR	Type	Functional
Commitment a.	The system records and reviews initial assessment in OPD and IPD and patient progress.				
Interpretation	The system shall record and review the initial assessment of patients undergoing treatment in OPD and IPD. During initial assessment, a thorough review is conducted by a designated member of staff. The records of review include vital signs, medical history, physical examination findings, and diagnostic tests. The system shall maintain a comprehensive record of all these details. The system should be able to capture initial assessment and re-assessment for different categories of patients including antenatal, obstetrics, pediatrics, ophthalmology, ENT etc. The system shall allow nurses and medical practitioners to monitor and analyze the progress of the patients, enabling them to track trends in patients' condition over time. This feature empowers nurses and medical practitioners to make informed decisions regarding patient care.				

Category	Commitment	Head	EMR	Type	Functional
Commitment b.	The system provides a summary of the patient's condition, medication order and follow-up visit for OPD visit.				
Interpretation	The system shall generate a concise overview of a patient's health condition, thereby enhancing clinical efficiency and patient care in the OPD. Following shall be included in the overview: • Summary of the patient's condition: Summary could include relevant medical history, current symptoms, diagnosis, and any significant findings from physical examinations or tests. • Medication Order Management: The system should provide history and details of the medications being prescribed along with the dosage, frequency, and route of administration, any episode of allergic/ adverse reaction etc. • Follow-Up Visits: The system should facilitate the scheduling and documentation of follow-up visits. This helps healthcare providers and patients to manage upcoming appointments, and capture follow-up consultation notes.				

Core	Commitment	Achievement	Excellence

Category	Achievement	Head	EMR	Type	Functional

Achievement c.	The system creates order sets based on frequently prescribed medications.
Interpretation	The system shall have the capability for medical practitioners to view commonly prescribed medications and create order sets. The system should have a comprehensive medication database (drug names, dosage forms, routes, strengths, indications, contraindications, and potential side effects, as well as the categorization of medications into different classes or therapeutic categories). This information assists medical practitioners in making informed decisions. Order sets (also known as "abbreviated medication lists") help to organize and automate the process of placing orders. To facilitate creation of order sets, the system should offer pre-established templates tailored for common medical conditions or procedures. These templates can then be personalized by medical practitioners to suit their specific needs and the needs of individual patients.

Category	Excellence	Head	EMR	Type	Functional

Excellence d.	The system provides details of the medications, radiology and diagnostics. .
Interpretation	The system shall have a feature that allows the medical practitioner to get details of medication, radiology, and laboratory orders e.g., know about type, dosage, and specific instructions related to a prescribed order. For example, a particular diagnostic test may carry information about the patient preparation, time of collection, site of collection, details or subcategories of the test deployed, expected report preparation time, etc. Similarly, a medication may carry details around different strengths and formulations available, potential side effects, potential contraindications, etc.

Category	Commitment	Head	EMR	Type	Functional

Commitment e.	The system has the capability to capture the digital signatures of treating medical practitioners
Interpretation	The system shall have the capability to deploy digital signatures to identify the treating medical practitioner and ensure authenticity of medical records. Digital signature methods may include biometric authentication, one-time password (OTP) generated digital signatures, or digital signature keys, which help obliterate the need for a doctor to physically sign the documents. It is imperative to note that the copy/pasting of signatures onto records is permissible only with explicit permission from the respective medical practitioner. Digital signatures shall be time stamped for audit purposes.

Category	Core	Head	Common	Type	Technical
Core f.	The system has the capability to generate Computerized Provider Order Entry (CPOE) for laboratory tests				
Interpretation	The system shall allow medical practitioners to place laboratory orders for patients. This functionality empowers medical practitioners to electronically order a diverse array of laboratory tests. Computerized Provider Order Entry (CPOE) for laboratory services empowers treating medical practitioners with access to the catalogue of available laboratory tests. Medical practitioners can select the suitable tests, thereby mitigating potential confusion within both laboratory and billing departments. CPOE should also provide workflows to fulfil these orders and enable collaboration across facilities.				

Category	Core	Head	Common	Type	Technical
Core g.	The system has the capability to generate Computerized Provider Order Entry (CPOE) for radiological examinations.				

Interpretation	The system should have the capability to allow medical practitioners to place radiology orders for patients. This functionality empowers medical practitioners to electronically order a diverse array of radiology tests. Computerized Provider Order Entry (CPOE) for radiology services empowers treating medical practitioners with access to the catalogue of available radiology tests. Medical practitioners can select the suitable tests, thereby mitigating potential confusion within both radiology and billing departments.				

Category	Core	Head	EMR	Type	Functional
Core h.	The system has the capability to generate e-prescription or Computerized Provider Order Entry for medicines				
Interpretation	The system shall allow medical practitioners to place medication orders for patients, as per regulatory guidelines, for example ePrescription in India etc. This functionality empowers medical practitioners to electronically prescribe medication. The system must support safety checks (e.g., dosage, drug-drug interaction, conflict with patient condition) to reduce medication errors. This functionality diminishes the likelihood of errors from illegible handwriting or lost documents, thereby ensuring patients receive precise prescriptions.				

Category	Commitment	Head	Common	Type	Functional
Commitment i.	The system creates order sets (laboratory and diagnostics) based on the patient's diagnosis.				
Interpretation	The system shall create order sets (laboratory and diagnostics) based on the patient's diagnosis. For example, when a medical practitioner encounters a patient with kidney disease and requests specific tests such as Kidney Function Tests (KFT), Complete Blood Count (CBC), and Ultrasonography (USG), the system should recommend pre-defined order sets for both laboratory and radiology procedures. This functionality empowers medical practitioners to select appropriate test sets for patients. The system helps streamline clinical workflows, saving time, and enhancing both the efficiency and quality of patient care.				

	Core		Commitment		Achievement		Excellence

Category	Commitment	Head	EMR	Type	Functional
Commitment j.	The system allows importing patient specific information / results for review and comments.				
Interpretation	The system shall allow medical practitioners to import patient-specific information / results obtained from laboratory, radiology/imaging, or other departments for review and comments. This capability supports creation of complete medical record in the system - needed for continuity of care and to ensure patient safety.				

Category	Commitment	Head	Common	Type	Functional
Commitment k.	The system notifies treating medical practitioners when placing duplicate orders.				
Interpretation	The system shall notify treating medical practitioners when placing duplicate orders (For example laboratory / radiology / pharmacy requests/other diagnostics procedures) There are chances of placing duplicate orders when patients consult multiple medical practitioners, who independently prescribe the same tests or medications. For example, two physicians making the same order or test ordered when a valid test result is already in the system. The system should notify the medical practitioner when a duplicate order is placed. Additionally, the systems should allow medical practitioners to access and review tests and medications previously prescribed by other medical practitioners.				

Category	Commitment	Head	EMR	Type	Functional
Commitment l.	The system allows patients to access their prescriptions.				

Interpretation	The system shall allow patients to access their prescriptions. This empowers patients to manage their medications more effectively and ensure adherence to prescribed regimens. For example, digital access to prescriptions via SMS, mobile applications, email notifications, or patient portals, enables patients to retrieve and review their prescriptions at any time. Active involvement of patients in their health management ensures improved engagement and higher medication adherence.

Category	Commitment	Head	Common	Type	Functional
Commitment m.	The system sends alerts in case of critical test results.				
Interpretation	The system shall notify critical laboratory values to relevant staff/departments such as the treating medical practitioner or health care providers involved in patient care. If a patient's laboratory findings indicate critical values (significantly exceeding or falling below the normal range), they are promptly identified as critical results. The system shall send notifications or alerts via SMS, email, or a secure messaging system to the relevant staff.				

Category	Core	Head	HIS	Type	Functional
Core n.	The system allows medical practitioners to access past medical records within the healthcare organization.				
Interpretation	The system should have provision for treating or referring medical practitioners to access patients' medical records within the healthcare organization. Patient records can be retrieved using key identifiers such as patient name, mobile number, UHID, or ABHA, etc. Access to comprehensive medical records, medical history, medication history, surgical history, and vaccination records, holds significant importance for treating medical practitioners. This longitudinal data aids in identifying patterns and trends for future care decisions.				

Category	Core	Head	HIS	Type	Technical
Core o.	The system has the capability to link patient's health records to their ABHA.				
Interpretation	The system shall have the capability to establish a link to the medical records of patients with their ABHA. These records can then be shared with other healthcare providers or other entities upon receiving the patient's consent. This corresponds to Milestone 2 (M2) of ABDM				

Category	Core	Head	HIS	Type	Technical
Core p.	The system provides access to a patient's past medical records through ABHA.				
Interpretation	The system shall have the capability to access a patient's past medical records (including laboratory results, imaging studies, and clinical notes) using the patient's ABHA, once the patient gives consent to the healthcare organization. Medical practitioners can use past medical records to make accurate diagnosis and deliver optimal clinical care. This corresponds to Milestone (M3) of ABDM				

Standard

COP.2.	The system manages nursing care processes.

Objective Elements

Category	Core	Head	EMR	Type	Functional
Core a.	The system captures nursing notes for inpatients.				

Core	Commitment	Achievement	Excellence

	Every patient admitted to a healthcare organization is placed under the care of a designated nurse, who is responsible for completing nursing notes during his/her shift hours.
Interpretation	The system shall enable nurses to document nursing notes for patients. These notes typically include patient identification, nurse identification, overview of the patient's condition, clinical findings, significant events, and observations regarding the patient's response to care. Nursing notes serve as comprehensive documentation outlining the nursing care administered.

Category	Core	Head	EMR	Type	Functional
Core b.	The system facilitates digital handover between medical practitioners/ nurses during shift changes for inpatients.				
Interpretation	The system shall capture handovers between healthcare providers during shifts and maintain comprehensive records of nursing care plans for all inpatients. At the conclusion of each shift, the designated healthcare provider, whether a nurse or medical practitioner, conducts a verbal handover supplemented by a documented handover (in a standardized template) to the respective healthcare provider in subsequent shifts. This handover template could include essential details such as the healthcare worker's identification details (employee ID, name etc.) and patient-related information such as vital signs, procedures undergone, scheduled diagnostics or procedures for the day, and any other pertinent information.				

Standard

COP.3.	**The system supports blood transfusion services.**

Objective Elements

Category	Commitment	Head	EMR	Type	Functional
Commitment a.	The system maintains records of prospective donors.				

	Core		Commitment		Achievement		Excellence

Interpretation	The system shall register and screen blood donors by creating a database that securely stores donor information and medical histories. This database must be readily accessible to relevant healthcare staff during the screening process for potential donors. The database should also capture crucial details such as the frequency of blood donations, blood grouping, compatibility screening results and blood component analysis. Digital systems help in streamlining the screening process e.g., to identify high-risk donors-based travel history and underlying health conditions. This ensures that only eligible donors are accepted and minimizes the risk of transfusion-transmitted infections.

Category	Achievement	Head	HIS	Type	Functional
Achievement b.	The system manages the stock of blood and blood components.				
Interpretation	The system shall report availability of blood units, promptly verify requisitions, and manage dispatch times efficiently. Such capabilities empower blood banks to effectively manage their inventory, track blood donations and transfusions, and generate essential reports.				

Category	Commitment	Head	HIS	Type	Functional
Commitment c.	The system supports safe transfusion of blood/blood components and captures blood transfusion related incidents.				
Interpretation	The digital system shall maintain blood transfusion-related incidents, including errors during transfusions. The system should also have the capability to prepare an incident report for analysis and onwards submission to hemovigilance. The system should assist in carrying out transfusion audits to ensure rational use of blood/ blood components.				

Category	Excellence	Head	HIS	Type	Functional
Excellence d.	The system has the capability to check bloodstock information through the Unified Health Interface.				

	Core		Commitment		Achievement		Excellence

Interpretation	The Unified Health Interface (UHI) is a platform designed to integrate various health information systems. Among other functionalities, it facilitates the sharing of blood bank stock information by connecting the blood bank information system with the UHI platform.
	The UHI platform aids in the integration of the blood bank information from various systems with UHI, healthcare organizations can effortlessly disseminate real-time updates on blood bank stock levels to other healthcare providers within the UHI network. This enables healthcare organizations to quickly identify available blood supplies in other facilities, potentially saving lives during emergencies.

Standard

COP.4.	The system manages emergency and medico-legal cases.

Objective Elements

Category	Core	Head	HIS	Type	Functional
Core a.	The system manages registration and record maintenance of patients in emergency department.				
Interpretation	The system shall manage registration of patients in emergency department by enabling medical practitioners to register and retrieve patient information during emergency situations swiftly and accurately. This system should support an accelerated admission process, by allowing registration with compliance to mandatory information only.				
	The system should also be able to send out communication to relevant departments about the condition of the patient received in the emergency department.				

Category	Core	Head	Common	Type	Functional
Core b.	The system has the capability to label a case as a medico-legal case (MLC).				
Interpretation	The system shall be able to label a case as a medico-legal case. For example, adding a checkbox that allows for streamlined identification of such cases. The system must provide a digital checklist for collecting and recording pertinent information within the				

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	system. The system must allow comprehensive documentation of the case and the accurate storage of relevant data, with a complete audit trail.

Category	Excellence	Head	HIS	Type	Functional
Excellence c.	The system supports monitoring and transmissions of patient's information from ambulance to the emergency department.				
Interpretation	The system shall communicate patient information from ambulance to the emergency department of the healthcare organization. To comply with this requirement, the ambulance needs to be equipped to record and monitor patients' vital signs, subsequently transmitting the same to the emergency department. To ensure integration with smart ambulances, healthcare organization's systems should be able to support real-time communication, biomedical sensing, telemedicine, and GPS enablement.				

Category	Commitment	Head	EMR	Type	Functional
Commitment d.	The system has the capability to capture emergency codes and staff response.				
Interpretation	The system shall promptly alert and notify the relevant teams about the activation of various emergency codes. Emergency codes, such as Code Red, Yellow, Blue, Pink, and Black are commonly used in healthcare organizations to manage patient care during critical situations. The digital system could incorporate displays, announcements, notifications, and alerts through SMS and other online communication channels for the various emergency codes. Some of the suggested ways by which systems can help manage or capture emergency codes/ staff response are as below: • By maintaining a list of team members/ respondents to the code and activating the mechanisms whenever a code is announced. • By maintaining a log or a record of different codes activated in a defined period and the respective corrective and preventive action taken thereof. • By integrating healthcare organization's operations in the response system, for example, blocking of the healthcare organization's exit doors in case code pink or code yellow is announced.				

■ Core	■ Commitment	■ Achievement	■ Excellence

Standard

COP.5.	The system has the capability to record the surgical/ procedure safety checklist in operating rooms/wards/OPD.

Objective Elements

Category	Achievement	Head	EMR	Type	Functional
Achievement a.	The system records procedure/ surgical safety checklist in operating rooms/wards/OPD.				
Interpretation	The system shall have the capability to assist healthcare organizations in recording a comprehensive surgical safety checklist within operating rooms or a procedure checklist in various areas of the hospital to prevent adverse events like a wrong site, wrong patient and wrong procedure/surgery.				

Category	Achievement	Head	EMR	Type	Functional
Achievement b.	The system captures notes related to pre-operative assessment and patient preparation for surgeries				
Interpretation	The system shall capture detailed information during pre-operative assessments and patient preparation for surgeries. This includes medical practitioner clearance, documented consent from the patient, pre-anesthetic review and plan, arrangements for blood transfusion, and patient-centric data comprising medical history, laboratory results, and imaging studies.				

Category	Excellence	Head	Common	Type	Technical
Excellence c.	The system maintains records of patient consent.				
Interpretation	The system shall have the capability to record patient consent for various healthcare activities, and procedures. Patient consent is a critical component of healthcare delivery, ensuring that patients are informed and empowered to make decisions				

Core   Commitment   Achievement   Excellence

about their care. The system facilitates the documentation of patient consent for treatment, medical procedures, sharing of health information, participation in research studies, and other healthcare-related activities in alignment with statutory requirements. The system should mark the records belonging to a minor or patient with disability and obtaining consent from legal guardian.

Refer to the Digital Personal Data Protection Act (DPDP) Act, 2023 where the HIS/EMR systems have been considered as Data Fiduciaries.

Category	Achievement	Head	EMR	Type	Functional
Achievement d.	The system schedules, re-schedules, or cancels interventional procedures/ surgeries.				
Interpretation	The system shall provide real-time OT availability status, assisting in scheduling upcoming surgeries. The system should allow for seamless booking of available slots as well as facilitate changes or rescheduling as necessary. While the OT is booked by designated staff, nurses and the billing department also play pivotal roles in facilitating OT clearances. For example, before a patient is transferred to the OT, nurses ensure that all preoperative patient workup is completed. By streamlining the booking process and integrating designated staff/ departments roles within the system, errors and miscommunications related to surgery scheduling can be significantly reduced.				

Category	Commitment	Head	EMR	Type	Functional
Commitment e.	The system records the start and end times of the planned operation				
Interpretation	The system shall record the start and end time of the surgery as per healthcare organization's policies. Accurate timestamps are indispensable for maintaining precise records of the entire surgical process, including the duration of the operation. This information serves as a valuable resource for future reference and analysis. By scrutinizing the time taken for specific procedures, healthcare providers can identify opportunities to optimize processes for greater efficiency.				

Category	Commitment	Head	EMR	Type	Functional
Commitment f.	The system records necessary details for surgical procedures / interventions undertaken and the anesthesia/sedation administered.				
Interpretation	The system shall maintain digital records of intra operative notes for surgical procedures and interventions. The system shall incorporate records of pre-induction assessment and intra-operative monitoring. At a minimum, the operative note shall include the surgery performed, name of the surgeon (s), name of anesthesiologist(s), nursing teams, salient steps of the procedure and the key findings intra-operative findings. The record shall provide information about the procedure performed, postoperative diagnosis and the status of the patient before shifting and shall be documented by the surgeon/doctor member of the operating team. The system shall incorporate various resources utilized during surgery, and any specimens collected. The system shall incorporate post-op plan which should address, as required advice on IV fluids, medication, care of wound, nursing care, observing for any complications, etc. This plan should be documented by the operating surgeon or member of the operating team. The system shall record the post-anaesthesia monitoring and status before shifting the patient on the basis of defined criteria.				

Standard

COP.6.	**The system manages dietary consultation and specific nutritional therapy.**

Objective Elements

Category	Achievement	Head	Common	Type	Functional
Achievement a.	The system captures dietary screening, manages dietary consultation and maintains records where relevant.				
Interpretation	The system shall incorporate validated screening and assessment tools to guide nutritional therapy. The system shall accommodate a range of diets, including				

	Core		Commitment		Achievement		Excellence

Category	Achievement	**Head**	Common	**Type**	Functional
Achievement b.	The system maintains a record of the therapeutic diet given to inpatients.				
Interpretation	The system shall maintain a record of dietary options, catering to individual needs, preferences, and allergies, including specialized dietary requirements for patients. The system shall allow assessment by the dietician and the record of the prescribed therapeutic diets. The kitchen team shall have access to these records for ensuring availability of the prescribed diet for the respective in-patients.				

specialized dietary requirements tailored for each in-patient. This ensures that all consultations and dietary recommendations are meticulously documented and readily accessible to the concerned staff. The system provides necessary linkages across clinical departments and the kitchen to ensure that patients receive diets as per their nutritional needs and dietary preferences, where relevant.

Standard

COP.7.	**The system tracks and monitors all infection prevention and control related activities and sentinel events.**

Objective Elements

Category	Commitment	**Head**	EMR	**Type**	Functional
Commitment a.	The system captures, monitors, manages and reports, different types of infection related incidents.				
Interpretation	The system shall monitor and report various types of infection-related incidents i.e., Hospital Acquired Infections (HAIs). Documentation of these incidents should include reporting time, staff who reported, type of infection measures taken to address the infection etc. The system shall enable infection control nurse/ designated staff to complete the HAI checklists, track results of test samples, and provide charting tools to monitor the progression of infections. The system should also enable documentation pertaining to prophylactic medications administered, improvements observed, and overall progress made.				

	The system shall update dashboards on a monthly basis. It is desirable that the data from preceding months is also displayed.

Category	Commitment	**Head**	Common	**Type**	Functional
Commitment b.	The system supports the healthcare organization's antimicrobial usage policy				
Interpretation	The system should incorporate controls based on the antimicrobial usage policy defined by healthcare organizations. The antimicrobial usage policy shall be readily available to the medical practitioners in a digital format. System shall prompt medical practitioners to provide a justification while prescribing antimicrobials as per the antimicrobial usage policy. Antimicrobial policy provides detailed indications for antimicrobial usage, criteria for antimicrobial selection, appropriate dosing regimens, preferred routes of administration, optimal duration of treatment, and timing considerations. The overarching objective is to achieve maximal clinical efficacy in curing infections or preventing their onset, while concurrently minimizing the risk of unintended consequences associated with antimicrobial use, such as antimicrobial resistance and adverse effects.				

Category	Commitment	**Head**	EMR	**Type**	Functional
Commitment c.	The system captures all patient care incidents and sentinel events.				
Interpretation	In the event of patient care incidents and sentinel events, the system triggers real-time alerts to staff, ensuring a swift response, and enhancing overall patient safety. Common patient care incidents and sentinel events include wrong-site surgery, foreign body retention, falls, suicide, delays in treatment, and medication errors. The system should possess the capability to record and track the incidents to closure. In addition, the system should analyze the data and generate dashboards and reports. Through the examination of patterns, trends, and potential areas for enhancement, healthcare organizations can proactively identify opportunities to enhance patient safety and optimize care delivery processes.				

Core	Commitment	Achievement	Excellence

Category	Achievement	Head	EMR	Type	Functional
Achievement d.	The system maintains records of the healthcare organization staff, exposed to any infections at the workplace				
Interpretation	The system shall capture and maintain digital records of healthcare organization's staff who have been exposed to infectious agents such as HIV, Hepatitis B, and Hepatitis C during their duty hours (e.g., needle stick injury, spillage). It should be able to maintain comprehensive digital health records detailing the post-exposure prophylaxis administered to affected employees. The same should be linked to the employees' personnel records and health records to enable due follow-up. By meticulously tracking exposed staff, the system facilitates the identification of individuals at risk due to potential infection exposure, enabling prompt intervention and implementation of preventive measures.				

Standard

COP.8.	The system supports patient services in remote settings.

Objective Elements

Category	Achievement	Head	EMR	Type	Functional
Achievement a.	The system has the capability to offer remote/virtual clinical consultations to patients when needed.				
Interpretation	The system shall assist medical practitioners in providing virtual consultations to patients at remote locations. These remote consultations can be provided through a variety of modalities e.g., desktop/laptop or mobile applications (including video conferencing / instant messaging) based on the available regulatory guidelines				

Category	Excellence	Head	EMR	Type	Technical
Excellence b.	The system supports effective homecare services.				

Core	Commitment	Achievement	Excellence

	The system shall assist healthcare organizations to digitally manage homecare services. The system should facilitate booking and monitoring of homecare services, billing management and collection of patient feedback.
Interpretation	

Standard

COP.9.	**The system manages the assessment and re-assessment of patients availing rehabilitation services.**

Objective Elements

Category	Excellence	**Head**	EMR	**Type**	Functional
Excellence a.	The system supports functional assessment and re- assessment of patients who avail rehabilitation services.				
Interpretation	The system shall support functional assessments and reassessments for patients undergoing rehabilitation services, including physiotherapy, occupational therapy, speech therapy, and clinical psychology. These assessments are conducted using functional assessment scales, incorporated into the healthcare organization's system.				

Standard

COP.10.	**The system provides a Clinical Decision Support System.**

Objective Elements

Category	Excellence	**Head**	EMR	**Type**	Technical
Excellence a.	The system supports Clinical Decision Support System (CDSS).				

| Interpretation | Clinical Decision Support System (CDSS) plays a pivotal role in enhancing clinical decision-making, promoting patient safety, and facilitating effective risk assessment and management within healthcare organizations.

By providing evidence-based recommendations, alerts, and guidelines, CDSS tools empower healthcare providers to make informed decisions, thereby improving patient outcomes, reducing medical errors, and enhancing efficiency in care delivery processes.

The system shall be equipped to offer CDSS functionality either internally or integrated with external CDSS systems. This functionality can be across a wide range of domains like diagnosis, drug prescriptions, and treatment planning. Refer Annexure-A for a non-exhaustive list of common CDSS use cases. |
|---|---|

Category	Excellence	Head	EMR	Type	Functional
Excellence b.	The system triggers alerts to medical practitioners whenever critical interventions are required				
Interpretation	The system shall provide alerts for critical scenarios such as duplicate therapy, drug interactions, allergy warnings, and other pertinent issues. By proactively identifying critical scenarios, the system significantly enhances patient safety.

Refer Annexure B for a non-exhaustive list of possible alerts and notifications that can be raised by the system. | | | | |

Category	Commitment	Head	Common	Type	Functional
Commitment c.	The system triggers an alert for notifiable diseases as required by the health department				

Interpretation	The system should be configurable to incorporate a list of notifiable diseases applicable to specific states or union territories. Few examples of notifiable diseases include HIV/AIDS, tuberculosis, dengue fever, chikungunya, malaria, and others. The system shall trigger an alert when a patient with a notifiable disease is identified. The alert will ensure timely communication and compliance with notification requirements, thereby facilitating efficient coordination of care and adherence to regulatory guidelines. The systems shall also provide a consolidated list of all cases notified by the healthcare organization.

COP.11.	**The system has the capability to create care plans.**

Objective Elements

Category	Achievement	Head	EMR	Type	Functional
Achievement a.	The system has the capability to create customized care plans based on current standards of practice				
Interpretation	The system shall be able to develop customized care plans for specific disease conditions in patients. For example, care plans for individuals with asthma, diabetes, COPD etc. Care plans shall also include elements of assessment and evaluation, goal setting, interventions, monitoring and adjustments, documentation and communication, etc. They may also include aspects of preventive, promotive, curative, rehabilitative, and palliative care.				

COP.12.	**The system has the capability of performing medication reconciliation.**

Objective Elements

	Core		Commitment		Achievement		Excellence

Category	Commitment	Head	EMR	Type	Functional
Commitment a.	The system facilitates the medication reconciliation.				
Interpretation	The system shall enable medical practitioner to review and reconcile all medications a patient is taking during hospitalization or clinical encounter, including the drug name, dosage, frequency, and route. The system shall also facilitate modification in the prescription based on this information received.				

	Core		Commitment		Achievement		Excellence

Chapter 3

Management of Medication (MOM)

Intent of the Chapter:

This chapter highlights the digital systems requirements for management of medication. The system must have the capabilities to ensure consistent prescription, indentation, dispensing and safe administration of medications. The system should provide real-time clinical decision support to medical practitioners while prescribing medications. For example, with regard to drug interactions, allergies and contraindications.

Further, it is important for the system to issue alerts for high-risk medication orders and require the healthcare professional to re-confirm the correctness of prescribed dosage, frequency and route of administration. This is important for adherence to stringent safety protocols to reduce risks and protect both patients and healthcare professionals. For example, narcotics, chemotherapeutic agents and radioactive substances.

Summary of Standards	
MOM.1.	The system maintains inventory records for medicines and consumables in the pharmacy.
MOM.2.	The system supports the process of medication management.
MOM.3.	The system supports safe administration of medications.
MOM.4.	The system manages and supports implementation of emergency medications protocols and maintains records.

Core   Commitment   Achievement   Excellence

Objective Elements

Standard

MOM.1.	**The system maintains inventory records for medicines and consumables in the pharmacy.**

Objective Elements

Category	Core	Head	Common	Type	Functional
Core a.	The system has the capability to search, track and maintain inventory records of medicines and consumables in the pharmacy.				
Interpretation	The system shall manage the inventory of medicines and consumables, which helps in streamlining the supply management. The system should be able to search and track inventory levels, monitor expiration dates, and quickly locate specific items when needed. This ensures that the supplies are readily available for patient care. The system should also maintain records of inventory with proper grouping and categorization of medicines. For example, high-risk medications (including sound-alike drugs) and varying concentrations of the same medications should be appropriately managed.				

Category	Achievement	Head	HIS	Type	Functional
Achievement b.	The system notifies and alert the minimum re-order levels of medication to the relevant staff/ departments				
Interpretation	The system shall notify and alert relevant staff/ departments such as pharmacists, supply chain, and purchase departments if inventory falls below the minimum re-order levels of a given medication. In addition, the system shall be able to track consumption and propose optimal re-order level based on the trends observed. This will prevent outages and optimize stock usage.				

Category	Core	Head	EMR	Type	Functional

Core	Commitment	Achievement	Excellence

Core c.	The system has the capability to identify high risk medications including look alike sound alike medications.
Interpretation	The system shall tag high alert, look alike and sound alike medications and have checks in place to ensure that different strengths of the same medications are easily identifiable by the prescribing physician and at points of their storage.

Standard

MOM.2.	**The system supports the process of medication management.**

Objective Elements

Category	Core	Head	EMR	Type	Functional
Core a.	The system manages the process of prescribing, indenting, dispensing, and administration of pharmacy orders and maintenance of records.				
Interpretation	Based on the real time updates provided by the system on the availability of medications and stocks available, the medical practitioners should be able to prescribe medications. In case of low stocks, the practitioners shall be given a choice to prescribe alternate medicines. This feature shall also help in streamlining the processes of indenting, dispensing, and administration of pharmacy orders in all the departments. The system shall maintain records of all activities.				

Category	Core	Head	Common	Type	Functional
Core b.	The system provides a timestamp at the time of dispensing of medication or devices.				
Interpretation	The system shall capture the timestamp for dispensing of medicines and devices at different patient care stations such as at pharmacy, ward, ICU, emergency etc. With timestamp, healthcare providers can avoid duplication (giving the same medication twice) or omission (missing a dose).				

	Core		Commitment		Achievement		Excellence

Category	Core	Head	EMR	Type	Functional
Core c.	The system alerts the prescription of a high-risk medication and has the capability to verify at the time of dispensing.				
Interpretation	The system shall alert the prescription and dispensing of high-risk medications (for example, narcotic drugs, psychotropic substances, chemotherapeutic agents, radioactive substances) to designated medical practitioners, nursing professionals, para-medical professionals, etc. The system should also support the verification of high-risk medication by two pharmacists, at the time of dispensing as per the policy of healthcare organization.				

Category	Core	Head	HIS	Type	Functional
Core d.	The system generates reports of stock inventory.				
Interpretation	The system shall generate reports with medication stocks in the healthcare organization to facilitate the management of inventory levels. In addition, the system shall provide insights into inventory levels, usage patterns, and potential shortages. By analyzing this data, healthcare organizations can make informed decisions about stock management, prevent stockouts, and ensure that essential supplies are always available when needed.				

Category	Achievement	Head	EMR	Type	Functional
Achievement e.	The system suggests medication based on the healthcare organization's formulary.				
Interpretation	The system shall maintain and display the healthcare organizations formulary for the medical practitioners and other relevant staff/ departments. The system shall also capture updations in formulary from time to time whenever new drugs are introduced. It should also be able to provide suggestions while prescribing the medications by the medical practitioners. Maintaining formulary helps to ensure standardization of treatment plan, cost effectiveness of treatment, compliance to any legal or regulatory requirement, and use of therapeutic alternatives as needed. Additionally, medical practitioners should be able to access essential information about medications available at the healthcare organization. This includes details such as generic name of drugs, dosage, indications, and potential side effects. Having this information readily available saves time and reduces errors, allowing practitioners to make informed decisions about patient care.				

🟥 Core   🟦 Commitment   🟪 Achievement   🟩 Excellence

Category	Excellence	Head	EMR	Type	Functional
Excellence f.	The system highlights the drugs and devices sourced from outside the formulary				
Interpretation	The treating medical practitioners are encouraged to prescribe from the healthcare organization formulary list. In certain cases, the medical practitioners may be required to prescribe drugs from outside the formulary. For example, in emergency cases or in case of rare diseases where the desired drug or devices is not in the formulary list. In such cases, the treating medical practitioner should still be able to prescribe those drugs or devices. The system shall have the capability to highlight such prescriptions for necessary evaluation and record purposes.				

Category	Core	Head	Common	Type	Functional
Core g.	The system records the history of drug allergy/adverse reactions and alerts the prescribing medical practitioner.				
Interpretation	The system shall record any allergic reaction/ adverse reaction linked to any medication or other factors related to the patient and alert the prescribing medical practitioner This feature promotes safer prescribing practices and leads to improved patient outcomes, as patients receive medications that are safe and compatible with their health conditions.				

Category	Commitment	Head	HIS	Type	Functional
Commitment h.	The system has the capability to notify about the medications or devices nearing expiry date				
Interpretation	The system shall generate notification for the relevant staff/ departments when medications are nearing their expiry dates. The notifications can be sent through system dashboard, emails, or other alert mechanisms integrated into the healthcare organization's workflow. This feature shall also be integrated with the pharmacy management for the purpose of records. By doing so, healthcare organizations can minimize medication wastage, dispose off medications promptly, and prevent their use beyond the expiration date.				

🔴 Core   🔵 Commitment   🟣 Achievement   🟢 Excellence

Category	Commitment	**Head**	HIS	**Type**	Functional
Commitment i.	The system maintains record of medications or devices that are returned or recalled				
Interpretation	The system shall be able to track medications and devices that are recalled/ returned and capture the reason for such action. The system can also track returned or recalled medications by location/department, by supplier, or by date. This enables healthcare organizations to identify trends and take remedial actions. It benefits healthcare organizations in the following ways: • Accurate Record-Keeping: By digitally tracking returns and recalls, the system maintains precise records of the reasons behind these actions. This includes potential adverse reactions or quality issues associated with the product. • Patient Safety: Recording medication or product returns digitally helps healthcare organizations ensure patient safety. It prevents the use of expired, damaged, or defective items that could harm patients. • Reasons for Returns: Healthcare organizations may need to return medications or products for various reasons, such as expiration, recalls, damage, incorrect orders, or overstock situations.				

Standard

MOM.3.	**The system supports safe administration of medications.**

Objective Elements

Category	Excellence	**Head**	EMR	**Type**	Functional
Excellence a.	The system correctly identifies the patient at the time of medication administration and captures records.				
Interpretation	The system shall offer a range of capabilities to ensure the correct identification and administration of medicines and allows record capturing thus enhancing patient safety and healthcare efficiency. Identification of the patient can be done using digital tools like bar code, RFID, unique patient identifier search for medication administration. The system shall provide digital options for labelling. injectables and intravenous infusions for example RFID and Bar code etc.				

The system should have the capability of correctly identify the patients and medications to be administered. By scanning the patient-identification and the medication barcodes, the system ensures that the right medication is administered to the correct patient.

The system ensures that the right patient gets the right medication in the right dose (including right dosages calculation where relevant) at the right time, via the right route, right reason, and with the right necessary documentation.

The system should have the capability to provide workflow to capture, and authenticate the drugs ordered verbally by the concerned physician.

Category	Commitment	Head	EMR	Type	Functional
Commitment b.	The system has the capability of maintaining an electronic medication administration record (eMAR)				
Interpretation	An eMAR provides a comprehensive view of medication administration to the medical practitioners administering medications. The electronic Medication Administration Record (eMAR) system should have the capability to record drugs administered using a specific template. The eMAR should contain: • Dosage: The prescribed amount of the medication. • Route of Administration: The method by which the medication is administered (for example, oral, intravenous, subcutaneous). • Date and Time: When the medication was given. • Administering Personnel: The name or initials of the person who administered the medication and who verified the medication in case of high-risk medications. • Record of any medication administered based on verbal orders.				

Category	Commitment	Head	EMR	Type	Functional
Commitment c.	The system maintains records of medical implants				
Interpretation	The system shall maintain record batch number, serial number, etc. of medical implants (including stents, prosthetics). The system shall also capture additional details of implants such as (implant identifier, type, size, manufacturer, lot number, and expiration date), The details should also include patient identifier and associated procedure details.				

Core   Commitment   Achievement   Excellence

	This information should be documented in the patient's medical record as well as in the discharge summary. This information is vital for tracking individual implants, implant performance tracking and recall management (where needed).

Standard

MOM.4.	**The system manages and supports implementation of emergency medications protocols and maintains records.**

Objective Elements

Category	Core	Head	EMR	Type	Functional
Core a.	The system maintains record of emergency medications and supports regular updating of the list.				
Interpretation	The system shall have the capability to maintain records of emergency medications at various locations and in crash carts. The inventory of these medications shall be updated based on the policy of the healthcare organization. The system shall also be able to capture the usage and timely replacement of the emergency medications.				

Category	Core	Head	EMR	Type	Functional
Core b.	The system generates records of medication errors.				
Interpretation	The system shall assist the hospital in maintaining records of medication errors including near misses, medication errors and adverse drug reactions. The system shall also have the capability to do a detailed analysis of such errors for pharmacovigilance.				

Category	Achievement	Head	EMR	Type	Functional
Achievement c.	The system supports implementation of emergency medication protocols for critical scenarios.				
Interpretation	The system shall provide checklists to ensure accurate inventory tracking and management in order to implement emergency medication protocol for critical scenarios. It benefits healthcare organizations by:				

Core	Commitment	Achievement	Excellence

	• Preventing Waste: By using checklists, healthcare organizations can systematically monitor stock levels. This proactive approach helps prevent shortages and minimize the wastage of essential medications.
	• Reducing Errors and Oversights: The checklist ensures that inventory-related tasks are consistently performed according to established policies. This reduces the risk of errors and oversights, enhancing patient safety.
	• Enhancing Efficiency: Digital checklists allow healthcare organization staff to access and update inventory information in near real-time. This streamlines process and improves overall efficiency.
	• Better Patient Care: With essential information at their fingertips, healthcare organization staff can focus on providing high quality patient care. Timely access to inventory details helps avoiding errors and ensuring smooth operations.

Core   Commitment   Achievement   Excellence

Digital Application Controls (DAC)

Intent of the Chapter:

With increasing use of Digital technologies in a healthcare organization, it is imperative for HIS/EMR systems to provide secure and easy access to all stakeholders. This chapter focuses on ease of access, provisions to protect the security and privacy of personal health data. By prioritizing compatibility, security, and ease of use, the system can empower healthcare professionals to focus on patient care while maintaining data integrity.

The system should be designed to function seamlessly across major web browsers. The system should have controls in place to secure data i.e., data is encrypted at-rest (in all places, including back-up) and in-transit.

The system should have robust capability to ensure that all patient data sharing outside the healthcare organization (or with other departments within healthcare organization) happens with appropriate patient consent.

The systems should take cognizance of India's Personal Data Protection Act 2023, which establishes a framework for the processing of personal data, ensuring the protection of individuals' privacy. It mandates the consent of individuals for data processing, outlines individuals' rights such as data access and correction, and imposes obligations on data fiduciaries regarding data handling and security. The act also introduces penalties for data breaches and non-compliance, and it establishes the Data Protection Board of India to oversee enforcement. There are special provisions for processing of children's data.

Core   Commitment   Achievement   Excellence

Summary of Standards	
DAC.1.	The system provides secure and flexible access to users.
DAC.2.	The system has robust access and data security controls

Standard

DAC.1.	**The system provides secure and flexible access to users.**

Objective Elements

Category	Commitment	Head	Common	Type	Technical
Commitment a.	The system supports secure URL access.				
Interpretation	The system shall enhance security and integrity of patient data by offering secure URL access. Authorized users with proper credentials should be able to access the system through designated URLs. This implementation mitigates the risk of unauthorized access, ensuring that the patient information remains confidential and protected from potential security breaches. This feature is relevant for web-based and hosted applications.				

Category	Achievement	Head	Common	Type	Technical
Achievement b.	The system supports the application usage on multiple devices				
Interpretation	The system shall support users to seamlessly access the application through multiple devices including desktops, laptops, tablets, and mobile devices. It should be able to dynamically detect the device's resolution and adjust the display accordingly (a responsive design is recommended). This approach ensures a consistent and optimized user experience across various devices, enhancing accessibility and usability. This feature also empowers healthcare professionals to stay connected and efficiently perform critical tasks while on the move.				

■ Core	■ Commitment	■ Achievement	■ Excellence

		Note: Specific modules of HIS/ EMR may not be accessible on tablet or mobile devices for security reasons. Also, some modules (e.g., patient portal) may be only designed for tablet or mobile devices.			

Category	Commitment	Head	Common	Type	Technical
Commitment c.	The system supports cross-browser compatibility where applicable.				
Interpretation	The system shall have the capability to be used with common browsers (including Chrome, Microsoft Edge and Safari) to ensure a consistent user experience across browsers. The systems should provide details such as the preferred browser and specifications like compatible version, screen resolution, etc.				

Category	Excellence	Head	Common	Type	Technical
Excellence d.	The system offers multiple digital channels for the patient to engage with healthcare organizations and avail healthcare services.				
Interpretation	The system shall offer multiple digital channels for patients to engage with their healthcare organization and medical professionals, based on the user preferences. This helps healthcare organizations enhance patient engagement and service delivery. Key delivery channels include: • Web • Email • WhatsApp/ Chatbot • SMS • Mobile/Tablets (Android, IOS) • Kiosk				

Category	Excellence	Head	Common	Type	Technical
Excellence e.	The system supports single sign-on.				

Interpretation	The system shall be capable of providing Single Sign-On (SSO) functionality. This feature enables authorized users to access multiple applications and systems using a single set of login credentials. By streamlining the authentication process, SSO enhances user convenience, reduces the need for multiple logins, and improves overall system accessibility.

Category	Achievement	Head	Common	Type	Technical
Achievement f.	The system supports a mobile application for medical professionals that is compatible with the prevalent Android and/or IOS operating systems.				
Interpretation	The system shall support a mobile application that is compatible with Android and/or IOS operating systems. This enables healthcare professionals to efficiently manage common tasks from their smartphones or tablets. The common tasks which should be supported on a mobile application include- View Patient history, Medication records, Records of laboratory and diagnostic investigations etc.				

Standard

DAC.2.	**The system has robust access and data security controls**

Objective Elements

Category	Core	Head	Common	Type	Technical
Core a.	The system is able to encrypt all the healthcare data at rest and that in transmission.				
Interpretation	To safeguard personal and sensitive data from unauthorized access and maintain confidentiality, the system shall ensure that all healthcare data at rest is encrypted (including backup data). Also, all healthcare data in transmission should be encrypted. The system should employ contemporary data encryption techniques. These techniques utilize encryption algorithms and protocols to securely encode sensitive PHI (Personal Health Information).				

Core   Commitment   Achievement   Excellence

Category	Core	Head	Common	Type	Technical
Core b.	The system provides role-based access to patient data in line with the role assigned to the healthcare staff				
Interpretation	The system shall support role-based access based on rules configured by the healthcare organizations. Typical roles could be medical practitioners, nursing staff, administrative staff, and other authorized personnels. Each user should be granted permissions and data access rights based on their role and responsibilities within the healthcare organization by preventing unauthorized individuals from accessing sensitive patient information.				

Category	Commitment	Head	Common	Type	Technical
Commitment c.	The system configures rules to capture and retain audit logs.				
Interpretation	Administrators shall have the ability to configure rules within the system, specifying how audit logs should be collected and retained. These logs should capture details such as: User Information, Action Type, Actions performed, Timestamp, Status and IP Address login. Audit logs for key events and transactions should include successful log-in, unsuccessful log-in, patient registration, patient discharge etc. This capability allows control over the recording of system activities, ensuring compliance with requirements and facilitating any forensic analysis when needed.				

Core   Commitment   Achievement   Excellence

Digital Operations Management (DOM)

Intent of the Chapter:

Given the need to build robust HIS/EMR system, software development and support processes should need to adhere to best practices. Digital Operations Management chapter outlines the approach, controls, testing and documentation guidelines that software companies need to establish to ensure high quality deliverables.

The HIS/EMR vendor should be capable of providing maintenance and support in a timely manner with clearly defined service level agreements (SLAs). This is very important for building trust and comfort within healthcare organizations while using these systems in providing critical care delivery.

The software vendor should ensure the secure release of updates and patches to address identified software bugs and security issues. While systems go through ongoing enhancements, the vendor must be able to roll-back changes / upgrades, whenever they cause errors in operations or issues with system data.

Healthcare data needs to be preserved over time, both for care delivery and compliance to legal requirements. System must have the ability to backup and retrieve healthcare data in a timely and efficient manner whenever required.

The system must also provide strong end-user controls e.g., password policy, auto-log out etc. to ensure that only authorized individuals are accessing the system.

Documentation is the backbone of effective software management. System documentation should be emphasized throughout the development process, and user manuals to support easy implementation and use should be available.

Core   Commitment   Achievement   Excellence

Summary of Standards

DOM.1.	Standardized methodology is used to design and implement the system across the healthcare organization.
DOM.2.	The system provides software support and guidance to the users
DOM.3.	The system captures and manages critical incidents.
DOM.4.	The system manages access controls to provide secure access to the users.

Standard

DOM.1.	**Standardized methodology is used to design and implement the system across the healthcare organization.**

Objective Elements

Category	Core	Head	Common	Type	Technical
Core a.	The system configures access rights based on the technical roles.				
Interpretation	The system shall have a role-based access control mechanism. Different technical user roles should be defined, each with varying levels of access privileges. This ensures that each user can only access information and functionalities relevant to their specific role. For example, a software developer and a technical support professional should have different access rights. One commonly used model for implementing hierarchical access control is Role-Based Access Control (RBAC). In RBAC, permissions are assigned to roles rather than individual users. Users are thereafter assigned to specific roles based on their responsibilities. The access privileges can be: Create Access: Allows the user to create records. Read Access: Allows users to view data. Update Access: Enables users to update data. Delete Access: Permits users to delete the data.				

Category	Core	Head	Common	Type	Technical
Core b.	The system provides a help section in the system to guide the users.				
Interpretation	The system shall include a help section designed to offer guidance and support for users. This feature should encompass documentation, frequently asked questions (FAQs), and tutorials. Its purpose is to assist users in understanding system functionalities, troubleshooting common issues, and optimizing their overall user experience.				

Category	Core	Head	Common	Type	Technical
Core c.	The system has robust security mechanism to protect data against external vulnerabilities.				
Interpretation	The system shall be free from known technical vulnerability listed by various cyber security organizations. This requirement is similar to the requirements of WASA certification. The system should be WASA compliant and must obtain a formal WASA certification at least every 2 years or whenever there is a major upgrade of the systems, whichever is earlier. Apply regular updates and patches in the system to mitigate vulnerabilities. Monitor systems for suspicious activities and respond promptly to incidents. Good references for ensuring security in HIS/EMR systems could be OWASP and SANS guidelines, adhering to secure coding practices such as input validation, output encoding, and authentication controls as outlined in OWASP's Top Ten and SANS CWE Top 25 Most Dangerous Software Errors to avoid common pitfalls.				

Category	Commitment	Head	Common	Type	Technical
Commitment d.	The system is capable of sharing the master data across all the modules of the system.				
Interpretation	The system shall store and share master files and data across all modules. This feature is essential for maintaining consistent system performance, preventing data duplication, and ensuring that the master data remains efficient and responsive.				

Core   Commitment   Achievement   Excellence

Category	Core	Head	Common	Type	Technical
Core e.	The system is capable of taking a backup/ archiving old data				
Interpretation	The system shall be capable of data backup/ archive, empowering administrators to systematically retain and access data for a specified retention period depending on the law of the state or healthcare organization requirements (e.g., 5 years or as notified by state laws). This will help the system to adhere to the data compliance requirements as per industry best practices. The system shall be capable of retrieving and restoring the backup whenever needed. The system shall follow the data backup/archiving policy/SOP as documented by the healthcare organization.				

Category	Commitment	Head	Common	Type	Technical
Commitment f.	The source code management processes are defined and practiced by the HIS/EMR vendor.				
Interpretation	The HIS/EMR vendor shall follow well-defined source code management processes. These processes should include organized versioning and thorough documentation (e.g., high level design, low level design, and solution architecture). By adhering to these practices, the vendor can enhance collaboration among developers, facilitate code review, and contribute to the overall stability and maintainability of the system.				

Standard

DOM.2.	The system provides software support and guidance to the users.

Objective Elements

Category	Core	Head	Common	Type	Technical
Core a.	The HIS/ EMR vendor disseminates timely patches or updates to address key functionality bugs or identified security issues.				

Interpretation	The HIS/ EMR vendor shall consistently provide timely patches and updates to address key functionality bugs or identified security and other issues. This proactive approach ensures that the system remains robust for care delivery and resilient against emerging threats, vulnerabilities, and evolving cybersecurity challenges.

Category	Core	Head	Common	Type	Technical
Core b.	The HIS/EMR vendor provides maintenance and user support in a timely manner with clearly defined service level agreements (SLAs).				
Interpretation	The system shall ensure continuous functionality and prompt issue resolution. This should include regular updates, patches, and responsive customer support. The HIS/EMR vendor shall define service level agreement (SLA) with healthcare providers and track performance against these SLAs on a regular basis. Maintenance of an application should include several critical aspects such as performance monitoring, memory management, ensuring system availability and adequate documentation (user manual, design documents, code change history, installation guides, API services documents, etc.) of the application.				

Additionally, skilled IT support staff should be available to provide guidance, perform regular application maintenance, address technical issues, and ensure secure and smooth system operation. Support channels can include in-application support, email, or phone support.

Levels of support, support process and resolution time should be clearly defined by EMR/HIS vendor:

L0 Support: Well defined self-help process

L1 Support: Base end-user support (for functionality or technical issues)

L2 Support: Support related to system or admin configuration requirements or issues. Needs deeper expertise in handling technical problems, technology, and product

L3 Support: Support related to software bugs or changes in software deployment. Needs in-depth expertise in computer hardware, software, system architecture, and network configurations. Tasks include diagnosing intricate software bugs, optimizing system performance, and addressing hardware issues.

By adhering to well defined SLAs and support practices, the vendor can ensure reliable and efficient support to healthcare organizations. In many cases, L0 and L1 support can be managed by the healthcare organization themselves, whereas the HIS/EMR vendor can provide L2 and L3 support for the product.

Core   Commitment   Achievement   Excellence

Standard

DOM.3.	The system captures and manages critical incidents.

Objective Elements

Category	Core	Head	Common	Type	Technical
Core a.	The system has the capability to log critical security incidents and events information.				
Interpretation	The system shall be able to log critical security incidents and events, enabling systematic issue resolution, audit trails, compliance with security standards, and post-incident analysis. This aids in improving the overall robustness of the system over time.				

Category	Commitment	Head	Common	Type	Technical
Commitment b.	The system has capability to roll-back changes by a designated IT officer, whenever needed.				
Interpretation	The system shall be able to roll-back any changes made e.g., upload of patches, upgrades, and transactions. This roll-back functionality ensures that the system can be correctly restored to the previous working state in case of any errors / failures with the new changes rolled out in the system, and the staff/ departments can continue working on the previous working state with no loss of system data.				

Standard

DOM.4.	The system manages access controls to provide secure access to the users.

Objective Elements

Category	Core	Head	Common	Type	Technical

Core   Commitment   Achievement   Excellence

Core a.	The system follows a defined password policy for user authentication.
Interpretation	The system shall have password policy functionality, allowing administrators to define and enforce specific rules for user passwords. These policies may include requirements such as minimum length, complexity, and expiration intervals, password renewal timeframe, ensuring a high level of security and compliance with industry standards.

The system must ensure that password policy meets minimum requirements for example:

- At least 8 characters (alpha-numeric, 1 special character)
- Changes in passwords at least every 90 days
- Avoidance of commonly used passwords (e.g., Password123)

Category	Core	Head	Common	Type	Technical
Core b.	The system has the capability to configure auto screen lock feature.				
Interpretation	The system shall have the capability to set up an automatic screen lock feature (i.e., idle after certain duration). This functionality enhances security by automatically locking user screens after a specified period of inactivity, thereby preventing unauthorized access in situations where users leave their workstations unattended.				

Category	Core	Head	Common	Type	Technical
Core c.	The system has the capability to block user-based security provisions.				
Interpretation	To enhance security measures, the system shall include a user block feature. This functionality should automatically block user access following a specified number of unsuccessful logins attempts or access from multiple locations, thereby reducing the risk of unauthorized entry resulting from password guessing.				

Category	Commitment	Head	Common	Type	Technical
Commitment d.	The system has an effective centralized user management.				

	Core		Commitment		Achievement		Excellence

Interpretation	The system shall have the feature for centralized user management, enabling efficient administration of user accounts, permissions, and roles from a single interface. This streamlines user management, simplifies account maintenance, and ensures security and consistency.				

Category	Achievement	**Head**	Common	**Type**	Technical
Achievement e.	The system has the capability to configure multi-factor authentication (MFA).				
Interpretation	The system shall offer a Multi-Factor Authentication (MFA) configuration. MFA adds an extra layer of protection by requiring users to verify their identity through multiple authentication methods. Administrators should be able to customize and configure MFA settings based on the healthcare organization's security policies, ensuring enhanced data protection and user verification. MFA can include mobile OTP, fingerprint reader, facial recognition software, etc.				

Chapter 6

Finance and Procurement Management (FPM)

Intent of the Chapter:

In today's rapidly evolving landscape, digitalization has become a cornerstone for efficient and streamlined business operations. For healthcare organizations, adopting digitalized finance, procurement, billing and insurance processes offers significant advantages - track finances and cashflows, manage procurement, patient billing and payment processes. This chapter focuses on how digital systems play a pivotal role in transforming finance and procurement processes as well as patient billing and claims processing, highlighting the various advantages and impact of these digital solutions for suppliers and for patients.

Finance and Procurement Process for suppliers:

- **Asset Tracking and Management:** Systems should empower organizations to track assets such as medical devices, products, or supplies. Real-time visibility ensures optimal asset utilization and minimizes losses.
- **Stakeholder Communication:** Suppliers are the key stakeholders in any healthcare ecosystem. Digitalized finance processes ensure suppliers remain informed throughout the payment lifecycle. Automated notifications, status updates, and transparent communication enhances trust and fosters stronger relationships.
- **Supply Chain and Vendor Management:** Systems should extend their capabilities beyond finance to supply chain and vendor management. Real-time data on inventory levels, demand forecasts, and supplier performance enables proactive decision-making.
- **Vendor Collaboration:** Streamlined communication with vendors ensures timely deliveries, quality control, and cost-effective procurement.

Billing and Claims processes for patients:

- **Seamless Patient Billing:** The digitization of billing processes significantly enhances patient experience. Digital platforms should manage insurance claims electronically, reducing paperwork and processing time. Patients should have convenient options to settle bills through various channels including online banking, mobile apps etc. The system should be capable of performing automated calculations to minimize errors, ensuring accurate billing and prompt settlements.
- **Claim management:** Effective claim management involves handling insurance claims from initiation to resolution. Key steps include documenting and reviewing policy coverage, filing accurate and complete claims, responding to payor queries, and resolving the claims. The system plays a central role in automating claims processing, reducing burden for all stakeholders – healthcare organizations, patients and insurance providers.

Summary of Standards

FPM.1.	The system provides ability to manage the supply chain processes.
FPM.2.	The system manages vendor payments
FPM.3.	The system performs patient billing functions.
FPM.4.	The system support insurance payment functions

Standard

FPM.1.	The system provides ability to manage the supply chain processes.

Objective Elements

Category	Commitment	Head	HIS	Type	Functional
Commitment a.	The system configures masters, workflows and rules for procurement management.				
Interpretation	Procurement is a critical process through which healthcare organizations acquire medical equipment, products, or services they need. The procurement process comprises of following key capabilities: • Need identification • Supplier identification • Solicitation of bids • Supplier selection • Purchase order approval • Order placement • Order receipt & quality control The system shall have the ability to configure masters needed for procurement and inventory management, including material master, supplier master etc. The system should have the capability of configuring workflows for supplier onboarding, procurement, quality control and stock management.				

The system should provide flexibility to adapt workflows and rules of procurement and inventory management based on the specific product or services needs of a healthcare organization. For example, medical device vs general supplies.

Category	Commitment	Head	HIS	Type	Functional
Commitment b.	The system tracks the movement of stocks within the healthcare organization.				
Interpretation	The system shall capture the stock movements across healthcare organization units/ departments. It shall clearly indicate the available stock throughout these units/ departments for example OPD, IPD, day care, sub store, laboratory, pharmacy, OT, CSSD, Laundry, Kitchen etc. The system should be configurable to generate alerts when stock levels approach or fall below certain thresholds. This capability helps in preempt shortages and ensures optimal resource utilization across the organization.				

Category	Commitment	Head	HIS	Type	Functional
Commitment c.	The system generates and manages indents.				
Interpretation	The system shall have the capability of creating and managing indents. This capability enables healthcare organizations to ascertain available stocks and efficiently place orders.				

Category	Commitment	Head	HIS	Type	Functional
Commitment d.	The system creates and tracks the purchase order.				
Interpretation	The system shall have the capability to create, modify, and track purchase orders as per the healthcare organization's policy. The system should streamline the procurement process, minimizing the time and effort needed for creating and tracking the orders.				

Core   Commitment   Achievement   Excellence

Category	Commitment	Head	HIS	Type	Functional
Commitment e.	The system captures the receipt of items as per the purchase order and generates receipt notes, and flag discrepancies.				
Interpretation	The system shall generate a material receipt note to acknowledge the receipt of goods and services. This document enables healthcare organizations to accurately track goods and services received, including their quantity, quality, and price, etc. The system should be capable of issuing an alert when discrepancies are detected either in (a) quantity (b) price or (c) quality. This feature ensures accurate inventory management. The system shall include reconciliation functionality, reconcile with returned, discarded stocks and purchased stocks.				

Category	Commitment	Head	HIS	Type	Functional
Commitment f.	The system records feedback about the quality of purchased goods.				
Interpretation	The system shall record quality concerns and feedback on goods received. This feature enables healthcare organizations to document and track issues such as item expiry dates, volume discrepancies, and SKU (Stock Keeping Unit) numbers.				

Standard

FPM.2.	The system manages vendor payments.

Objective Elements

Category	Commitment	Head	HIS	Type	Functional
Commitment a.	The system configures rules and workflows to manage vendor invoices.				
Interpretation	The system shall capture, validate, and process vendor invoices as well as configure rules associated with these processes.				

Core	Commitment	Achievement	Excellence

Category	Commitment	Head	HIS	Type	Functional
Commitment b.	The system supports payments through multiple online/digital channels.				
Interpretation	The system shall support a range of commonly used digital payment channels for making payments. These channels include Electronic Funds Transfer (EFT), wire transfer, online bill payment through a bank's website, mobile payment applications, Unified Payments Interface (UPI), credit/ debit card payments, etc. The system shall also have the capability to capture the mode of payment along with other relevant information for easy reconciliation.				

Category	Commitment	Head	HIS	Type	Functional
Commitment c.	The system maintains a record of all payables and receivables.				
Interpretation	The system shall have the capability of maintaining comprehensive digital records of all payable and receivables. In the context of a healthcare organization this includes detailed financial transactions with suppliers.				

Category	Commitment	Head	HIS	Type	Functional
Commitment d.	The system generates debit/credit note for suppliers.				
Interpretation	The system shall have the capability to generate both debit notes and credit notes for suppliers.				

Category	Achievement	Head	HIS	Type	Functional
Achievement e.	The system configures individual supplier payment scheduling.				
Interpretation	The system shall include a payment scheduling capability allowing users to schedule payments to individual supplier at specific times, thereby preventing delays.				

	Core		Commitment		Achievement		Excellence

Category	Achievement	Head	HIS	Type	Functional
Achievement f.	The system monitors and tracks vendor payables.				
Interpretation	The system shall incorporate vendor payment functionalities to streamline all vendor bill payments. It should include a dashboard for tracking payments and monitor the total payables in real-time.				

Category	Achievement	Head	HIS	Type	Functional
Achievement g.	The system issues notifications to the suppliers regarding their payment status.				
Interpretation	The system shall be able to send notifications to suppliers regarding payment status or updates including details of relevant invoices. This can be facilitated through a vendor portal or direct communication e.g., SMS, email, WhatsApp, etc.				

Standard

FPM.3.	The system performs patient billing functions.

Objective Elements

Category	Core	Head	HIS	Type	Functional
Core a.	The system configures rates for various services provided by healthcare organizations.				
Interpretation	The healthcare organization shall configure rates for all the services being offered. This flexibility allows for customized pricing based on services provided.				

Category	Core	Head	HIS	Type	Functional
Core b.	The system configures patient billing templates.				

Interpretation	The system shall have the feature of configurable billing templates, tailored to the needs of healthcare organizations ensuring consistency across all billing documents. The template includes at least following but not limited to- a) Patient unique identifier b) The date on which the bill was generated and the date(s) over which the services were delivered c) Details of the services availed In addition, the bill shall clearly mention whether it is an interim or final bill and bear all necessary disclaimers as per the healthcare organization's policy.

Category	Commitment	Head	HIS	Type	Functional
Commitment c.	The system generates estimates for the care/services rendered.				
Interpretation	The healthcare organization system shall be capable of generating estimated costs for selected packages. These estimates should include all relevant parameters such as consulting physician fees, medication costs, surgery costs (if applicable), room charges based on the length of stay, and applicable taxes.				

Category	Core	Head	HIS	Type	Functional
Core d.	The system generates patient bills as per the goods and services provided				
Interpretation	The system shall generate bills based on the services provided, goods and services consumed, taxes, and discounts. The billing process begins by gathering essential information from patients or insurers, including insurance policy numbers and demographic data. After insurance clearance the healthcare organization generates and sends patient bills or statements for any outstanding balances. The system should support discounts at various levels: individual item level, category level, or across the entire bill.				

Category	Core	Head	HIS	Type	Functional
Core e.	The system supports payments through various digital payment modes.				

■ Core	■ Commitment	■ Achievement	■ Excellence

Interpretation	The system shall support multiple digital payment methods for patients to pay their medical bills. These include cash, credit / debit cards, UPI, bank transfers and other digital payments.

Category	Commitment	Head	HIS	Type	Functional
Commitment f.	The system manages the patient's account and provides details on payment transactions and other relevant details to the patient.				
Interpretation	The system shall manage the patient's account and captures episode or stepwise billing details. The system shall provide details of treatment charges, payment information to the patients through email, SMS, WhatsApp or using a patient portal.				

Category	Achievement	Head	HIS	Type	Functional
Achievement g.	The system has the capability to send out/receive system and workflow related triggers.				
Interpretation	System related notifications may include scheduled downtimes, and standardized process information and would usually be exchanged between the healthcare organization and the payer (to and from Payors, Patients, and any other interested parties (e.g., caregivers)). Workflow related notifications may include changes in status of a claim step, need for additional information, etc., and would usually be sent to patients. To enable notification functionalities effectively, the system should ensure: • Receiving and Responding to Notifications: Capable of receiving and responding to system-related notifications such as scheduled downtimes and standardized process information exchanged between the healthcare organization and the payer. Additionally, able to handle workflow-related notifications, such as changes in claim status or requests for additional information, which are typically sent to patients. • Triggering Notifications to Patients: Able to trigger notifications to patients regarding changes in their healthcare processes or statuses, ensuring timely and relevant communication. • Safeguarding Patient Information: Ensuring robust measures to protect the privacy and security of patient information during all stages of notification exchange				

Standard

FPM.4.	**The system support insurance payment functions.**

Objective Elements

Category	Core	Head	HIS	Type	Functional
Core a.	The system captures patients' insurance details including their eligibility and coverage.				
Interpretation	The system shall capture insurance eligibility and coverage post verification which could be performed either digitally or manually. This includes confirming the patient's insurance details such as policy number, coverage dates, co-payments, deductibles, and any applicable limitations or exclusions.				

Category	Commitment	Head	HIS	Type	Functional
Commitment b.	The system enables easy patient authentication.				
Interpretation	The system shall assist in smooth auto-verification via various digital modes available, for example digilocker. Auto verification enables fetching of various KYC documents (with the help of an OTP from the patient) that are required as a part of the initial documentation process for an insurance patient at any healthcare organization.				

Category	Commitment	Head	HIS	Type	Functional
Commitment c.	The system captures pre-authorization details from the payor for planned treatment/procedures.				

Interpretation	The system shall be able to capture pre-authorization or pre-approval information for billing requirements. Pre-authorization from the payor could be performed either digitally or manually. Pre-authorization functionality allows the system to submit planned treatment details to payors for pre-approval on the estimated treatment costs done either digitally or manually. The payer category includes TPA/Insurance companies or any applicable government insurance schemes.				

Category	Achievement	Head	HIS	Type	Functional
Achievement d.	The system captures the claim submission for the payors.				
Interpretation	The system shall be able to capture the details and cost of the final treatment provided to the patient and as submitted for reimbursement purposes to the payor (can be done digitally or manually). In addition to the claim submission, the system should also have the capability to capture any associated or relevant correspondence made with the insurance company towards the claim settlement.				

Category	Achievement	Head	HIS	Type	Functional
Achievement e.	The system checks the status of the requests.				
Interpretation	The system shall be able to request the latest status information for specific payor transactions - Coverage Eligibility, Pre-Authorization and Claims. To enable this functionality, the system should be able to: • **Send Status Check Requests** to the payor for specific payor transactions. • **Receive and process status responses** from the payor and update the status of the request. • **Protect Patient Information** throughout the information exchange process.				

Category	Commitment	Head	HIS	Type	Functional
Commitment f.	The system notifies the patients about the status of their claims.				

Core	Commitment	Achievement	Excellence

Interpretation	The system shall have the capability of sending notifications to patients regarding their claim status. These notifications can be sent by SMS, email, WhatsApp or made accessible through the patient portal.

Category	Excellence	Head	HIS	Type	Functional
Excellence g.	The system receives payment reconciliation communication from the payor and responds to it.				
Interpretation	The system shall be able to receive payment reconciliation information from the payor, which allows healthcare organizations to keep track of the payment settlements for each adjudicated claim. To enable this functionality, the system should be able to: • Receive a payment reconciliation notice from the payor. • Process and respond to the payment reconciliation notice with the status. • Safeguards the privacy and security of patient information during the information exchange.				

Category	Commitment	Head	HIS	Type	Functional
Commitment h.	The system shows relevant dashboard(s) of all pre-authorization and claim status.				
Interpretation	The system shall provide dashboards displaying relevant information regarding pre-authorization requests and insurance claims. This functionality facilitates seamless claim reconciliations by presenting essential data and status updates in a consolidated format. This capability enhances operational efficiency, facilitates effective claim management, and contributes to improved patient flow within healthcare facility.				

Category	Achievement	Head	HIS	Type	Functional
Achievement i.	The system has the capability to submit health insurance claims via National Health Claims Exchange (NHCX)				

Core   Commitment   Achievement   Excellence

Interpretation	The system shall be able to submit health insurance claims via National Health Claims Exchange (NHCX). NHCX enables the standardization and automation of health claim-related information exchange between payors, healthcare organizations, beneficiaries, and other stakeholders. NHCX is supported by the National Health Authority (NHA) and aligns with the IRDAI guidelines.
	
	To support NHCX, the systems must have complied with the following:
	    1. M1 integration requirements of ABDM
	    2. Integration with NHCX APIs
	    3. Attain NHCX certificate from NHA
	
	To learn more about NHCX and how HIS can get certified, visit NHA website.

Core   Commitment   Achievement   Excellence

Chapter 7

Human Resource Management (HRM)

Intent of the chapter

Human resources are a vital aspect of any organization, serving as a key asset for effective and efficient operations. The Human Resource Management (HRM) chapter defines how leveraging HIS systems can optimize HR processes and enhance overall organizational efficiency. By digitizing routine tasks such as onboarding, records management, attendance tracking, and training administration, HIS frees HR staff from manual administrative burdens. This chapter highlights the capabilities designed to minimize manual data entry and processing, thereby enabling healthcare organizations to achieve operational efficiency.

A centralized database for staff information helps to ensure accuracy and compliance with privacy regulations.

The system should enable staff to independently manage their HR information, thereby reducing the workload of the HR team and allowing them to focus on more strategic tasks.

The system should be capable of providing critical information on demand. Access to workforce analytics and performance metrics empowers informed decision-making, driving organizational success.

The system should efficiently manage training needs, including induction programs and upskilling requirements, while maintaining comprehensive records of these activities.

Digital Human Resource Management goes beyond administrative functions, acting as a catalyst for organizational excellence. Embracing digitalization empowers the workforce, ensures compliance, and positions organizations for sustained growth.

Note: The term "employee" refers to all salaried personnel working in the organization. The term "staff" refers to all personnel working in the organization including staffs, "fee for service" clinicians, part time workers, contractual personnel, and volunteers.

Core   Commitment   Achievement   Excellence

Summary of Standards

HRM.1.	The system manages human resource administration
HRM.2.	The system manages recruitment and exit related activities
HRM.3.	The system manages the training needs of the staff

Standard

HRM.1.	The system manages human resource administration

Objective Elements

Category	Commitment	**Head**	HIS	**Type**	Functional
Commitment a.	The system captures personal and professional data (master data) related to medical and non-medical staff.				
Interpretation	The system shall manage essential master data elements related to staff. This involves details such as names of departments, structures, staff master data, role master, and department master. The system shall also maintain staffs' personal files which contain information such as their contact details, employment history, health records, credentialing and privileging performance evaluations, trainings and certifications, job duties and responsibilities, benefits and compensation, workplace related incidents, disciplinary action (if any) and other important documentation related to their employment with the hospital. The system should also include staff information forms, education forms, and professional record forms, enabling administrators to input and update essential staff details. These details encompass personal information such as names, addresses, phone numbers, emergency contacts, email addresses, gender, date of birth, salary bank account information, education, skills, certifications, degrees and registration. Additionally, the system should support the uploading of important documents such as birth certificates, Aadhaar cards, Healthcare Provider Registration number (ABDM-HPR), PAN cards, driving licenses, photographs, and registration certificates.				

Core   Commitment   Achievement   Excellence

The forms should include fields for personal information, job roles, qualifications, and other relevant data. Additionally, the system should maintain staff family details, including the names and ages of spouses and children, and information about parents.

In terms of functionality, the system should support operations such as Create, Read, Update, and Delete for staff records including contractual staff. Additionally, it should include management functions for controlling permissions and ensuring data security.

The system should also extend its capability to include the setting up leave types and policies, as well as setting up parameters needed for attendance, payroll, skills & competencies, and training.

Category	Core	Head	HIS	Type	Functional
Core b.	The system assigns unique IDs and role/s to each staff.				
Interpretation	The system shall be able to assign a unique identifier to each member of staff within the healthcare organization. This unique ID plays is essential for organizing data efficiently and facilitating seamless retrieval of individual staff information. Upon creating a new staff record and providing the respective role, the system should automatically generate a unique staff ID, ensuring that each ID remains exclusive across the entire system.				

Category	Commitment	Head	HIS	Type	Functional
Commitment c.	The system has the capability to configure duty rules for the staff				
Interpretation	The system shall have the capability to configure duty rules for the staff, which is essential for efficient workforce scheduling. Real-time parameters for this process may include dynamic adjustments to templates based on factors such as staff availability, skill sets, and compliance with labour regulations. Additionally, the system should be configured to capture, store, perform, and execute operations in real-time based on available data. This includes staff-specific duty start and end hours for each shift and break, day offs, weekends, monthly leave allowance, additional shifts, shift codes, tour or event schedules, overtime, and extra shifts.				

	Core		Commitment		Achievement		Excellence

Category	Commitment	Head	HIS	Type	Functional
Commitment d.	The system creates and manages roster for the working of staff				
Interpretation	The system shall enable administrators in the healthcare organization to create staff roster based on the staff availability, shifts assignment and workload distribution. The system may also be customized to offer automatic roster generation based on pre-defined templates that consider factors such as staff qualifications and compliance with labour regulations.				

Category	Achievement	Head	HIS	Type	Functional
Achievement e.	The system communicates shift schedules to all staff				
Interpretation	To streamline staff communication related to shift schedules, changes, swap requests, and important announcements, the system shall have robust communication capabilities. Such capabilities can include mobile notifications, centralized announcement board, or integrated messaging system. These tools facilitate seamless communication among staff members, promoting collaboration and addressing scheduling concerns in real-time.				

Category	Excellence	Head	HIS	Type	Functional
Excellence f.	The system predicts staffing needs based on historical data and workload				
Interpretation	Predicting staffing needs, based on historical data and workload, requires analytics and forecasting demand/support capabilities based on historical data. The system should enable administrators' input historical staffing data, patient volume data and develop staffing needs. The staffing models should provide easy to understand output and visual trends.				

Category	Commitment	Head	HIS	Type	Functional
Commitment g.	The system manages staff attendance and maintains records.				

Core   Commitment   Achievement   Excellence

Interpretation	The system shall have a comprehensive attendance management module. This module should provide options for capturing attendance – manual entry, biometric verification (fingerprint or face detectors), integration with attendance tracking devices (access cards), or location-based recording (mobile apps or web interfaces). The system shall maintain records of attendance. The system will display the leave balance for the staff and give options for applying for leaves.

Category	Excellence	Head	HIS	Type	Functional
Excellence h.	The system maintains performance appraisal ratings for all the hospital staff.				
Interpretation	The system shall facilitate evaluation of the performance of staff and maintain performance appraisal ratings. The system shall include a performance rating form where administrators can input and update the ratings for individual hospital staff based on their performance evaluations. The system should ensure data accuracy, accessibility, and historical tracking of performance ratings over time.				

Category	Commitment	Head	HIS	Type	Functional
Commitment i.	The system has the capability to calculate, maintain, and share staff payroll.				
Interpretation	The system shall have the capability to compute and distribute staff payroll, based on preconfigured rules. The system should automate payroll calculations based on attendance, leaves, and deductions, ensuring accurate and timely salary processing. Integrated within the payroll module, this functionality utilizes configured rules for salary components, tax calculations, and other relevant parameters.				

Standard

HRM.2.	**The system manages recruitment and exit related activities**

🟥 Core	🟦 Commitment	🟪 Achievement	🟩 Excellence

Objective Elements

Category	Achievement	Head	HIS	Type	Functional
Achievement a.	The system configures and manages rules to manage staff recruitment process				
Interpretation	The system shall configure rules for the staff recruitment process which can be facilitated through a staff recruitment module. This may include various recruitment processes, onboarding documentation, background verification etc. Configurable workflows and notifications can be incorporated to ensure adherence to the defined recruitment process rules.				

Category	Achievement	Head	HIS	Type	Functional
Achievement b.	The system configures and manage rules for staff exit process.				
Interpretation	The system shall have the capability to manage the staff exit process. This module should feature an exit rule configuration that allows administrators to efficiently handle activities such as exit processing, clearance procedures, account deactivation, and documentation requirements. Configurable workflows and notifications can be integrated to ensure adherence to defined exit process rules.				

Standard

HRM.3.	**The system manages the training needs of the staff**

Objective Elements

Category	Achievement	Head	HIS	Type	Functional
Achievement a.	The system maintains records of induction training and feedback of the new joinees.				
Interpretation	The system shall capture onboarding training status and feedback of new joiners for effective onboarding. This feature enables the tracking of the progress of new staff through the onboarding process, ensuring completion of necessary orientation activities.				

Additionally, the system should provide a platform for new staff to share their feedback on the onboarding process, helping the organization identify areas for improvement. Typically, this functionality is incorporated into the onboarding module, using forms and workflows to collect induction status updates and feedback.

Category	Achievement	Head	HIS	Type	Functional
Achievement b.	The system creates and manages training calendars for the staff.				
Interpretation	The system shall assist the human resource team to create and manage the training calendar for the staff. As per the healthcare organization policy, an annual training calendar can be planned for all the staff. These include trainings based on specific job description, training on safety and quality and on-going professional training of staff. Further, training needs can be identified during the performance evaluation process. This feature enables the human resource team to schedule and communicate upcoming training programs, workshops, and events effectively. Typically, this functionality allows planning and scheduling of training and provides information such as dates, topics, modes, pre-requisites and trainer information to the staff.				

Category	Commitment	Head	HIS	Type	Functional
Commitment c.	The system supports scheduling of the training programs for the staff				
Interpretation	The system shall capture the attendance along with post training evaluation for each staff. The system shall also have provisions to collect feedback on the effectiveness of training initiatives.				
	Human resource teams can use these reports to evaluate participation and the impact of training sessions. The human resource team can also generate customized reports based on criteria such as training type, date range, and staff attendance. This capability provides valuable insights for continuous improvement and strategic decision-making.				

	Core		Commitment		Achievement		Excellence

Information Management System (IMS)

Intent of the Chapter:

The intent of this chapter is to provide a comprehensive framework of standards and guidelines for Hospital Information Systems (HIS) and Electronic Medical Record (EMR). The primary objectives is to ensure interoperability, security, privacy, and integrity of patient data. By adhering to relevant digital health standards, organizations can enhance the functionality and reliability of their digital solutions.

Key standards and guidelines covered in this chapter include:
1. Interoperability and Continuity of Care
2. Key Performance Indicators and Analytics
3. Compliance with Quality and Security Standards

Additionally, the chapter also emphasizes the importance of robust consent management mechanisms that are aligned with data privacy laws.

By following these guidelines, healthcare technology providers can build open systems that form the backbone of a resilient and efficient healthcare ecosystem, ensuring trust and reliability in digital health solutions.

The intent is to ensure safeguarding patient privacy while leveraging technology to enhance health care delivery.

Summary of Standards	
IMS.1	The system supports healthcare data and interoperability standards for patient, clinical, administrative information to ensure continuity of care, including ABDM
IMS.2	The system has the capability to support NABH defined key performance indicators and analytical dashboards.
IMS.3	The system complies with Information Security (ISO 27001:2022) and Safety and Security of Health Software Products (ISO 82304) standards

■ Core   ■ Commitment   ■ Achievement   ■ Excellence

Standard

IMS.1.	The system supports healthcare data and interoperability standards for patient, clinical, administrative information to ensure continuity of care, including ABDM

Objective Elements

Category	Core	Head	EMR	Type	Technical
Core a.	The system supports minimum set of clinical ABDM FHIR profiles to exchange data with other systems				
Interpretation	FHIR – Fast Health Interoperability resource is a globally accepted standard for healthcare information management and exchange. The system should support ABDM FHIR profiles to exchange data with other systems. ABDM provides a framework for implementation and exchange of FHIR to create an interoperable digital healthcare ecosystem. The system should implement capture and exchange of following ABDM FHIR resource profiles as core capability				

Profile	Description
Diagnostic Report Record	This profile represents diagnostic reports including Radiology and Laboratory reports that can be shared across the health ecosystem.
OP Consult Record	This represents the outpatient visit consultation note which may include clinical information on any OP examinations, procedures along with medication administered, and advice that can be shared across the health ecosystem.
Discharge Summary Record	Clinical document used to represent the discharge summary record for ABDM HDE data set.
Immunization Record	This represents the immunization records with any additional documents such as vaccine certificate, the next immunization recommendations, etc.
Prescription Records	This represents the medication advice to the patient in compliance with the Pharmacy Council of India (PCI) guidelines, which can be shared across the health ecosystem.

ABDM FHIR standards for a reference are available at the National Resource center for EHR standards: https://www.nrces.in/ndhm/fhir/r4/index.html

Core	Commitment	Achievement	Excellence

Category	Commitment	Head	EMR	Type	Technical
Commitment b.	The system supports extended set of clinical ABDM FHIR profiles to exchange data with other systems				

The system shall have the capability to capture and exchange following ABDM FHIR resource profiles:

Interpretation

Profile	Description
Observation Vital Signs	This profile sets minimum expectations for the Observation Vital Signs to record, search, and fetch the details of the vital signs of a patient.
Observation General Assessment	This profile sets minimum expectations for the Observation General Assessment to record, search, and fetch the details of the general health assessment of a patient.
Procedure	This profile sets minimum expectations for the Procedure resource to record, search, and fetch procedures associated with a patient.
Diagnostic Report Imaging	This profile represents the set of information related to the imaging diagnosis report generated by imaging services like Radiology, Cardiology, Endoscopy, etc. are ordered for the patient.
Family Member History	This profile sets minimum expectations for the Family Member History resource for searching and fetching significant health conditions of a person related to the patient in the context of care.

ABDM FHIR standards for a reference are available at the National Resource center for EHR standards: https://www.nrces.in/ndhm/fhir/r4/index.html

Category	Achievement	Head	EMR	Type	Technical
Achievement c.	The system supports advanced set of clinical ABDM FHIR profiles to exchange data with other systems				

Core   Commitment   Achievement   Excellence

The system shall have the capability to capture and exchange following ABDM FHIR resource profiles:

ABDM FHIR standards for a reference are available at the National Resource center for EHR standards: https://www.nrces.in/ndhm/fhir/r4/index.html

	Profile	Description
Interpretation	**Health Document Record**	This represents the unstructured historical health records as a single of multiple Health Record Documents generally uploaded by the patients through the health locker and can be shared across the health ecosystem.
	Wellness Record	This represents regular wellness information of patients typically through the Patient Health Record (PHR) application covering clinical information such as vitals, physical examination, general wellness, women wellness, etc., that can be shared across the health ecosystem.
	Medication Statement	The Medication Statement resource can be used to record a patient's medication information. It is used to record the information about the medications consumed by the patient in the past, present, or future.
	Observation Lifestyle	This profile sets minimum expectations for the Observation Lifestyle to record, search, and fetch the details of the lifestyle of the patient.
	Observation Physical Activity	This profile sets minimum expectations for the Observation Physical Activity to record, search, and fetch the details of the physical activities of a patient.
	Specimen	This profile sets minimum expectations for the Specimen resource to searching for and fetching information regarding a sample to be used for the analysis of a patient.

Category	Excellence	Head	Common	Type	Technical
Excellence d.	The system has the capability to integrate with NHCX ABDM to submit and track health insurance claims				
Interpretation	The system shall have the capability to support, capture and exchange NHCX ABDM resource profiles: Reference: NHCX Profiles - FHIR Implementation Guide for ABDM v6.0.0 (nrces.in)				
	Profile		**Description**		

	Claim bundle	The profile is based on a Bundle of type collection, where all the supporting information required for processing claim can be shared. Multiple entries can be added in a bundle to provide information like financial, clinical, provision of health care services with payors and for reporting to regulatory bodies and firms which provide data analytics. The bundle can be generated depending on the nature of the request defined by 'use' element in a claim resource, like preauthorization, predetermination and claim and can be shared over NHCX ecosystem.
	Claim Response Bundle	The profile is based on a Bundle of type collection, where adjudicated response to a Claim, Predetermination or Preauthorization related information is carried. Multiple entries included in a bundle carries the information and provides application level adjudication results.
	Claim Eligibility Request Bundle	The profile is based on a Bundle of type collection, where all the information required to process Coverage Eligibility Request can be shared. Depending on the purpose of the request like validation, discovery, auth-requirement, and benefit data can be included in the entries of a bundle.
	Claim Eligibility Response Bundle	The Coverage Eligibility Response Bundle is a Bundle profile with type collection. The bundle profile provides the response and plan details from the processing of an Coverage Eligibility Request resource.
	Insurance Plan Bundle	This profile is based on a Bundle of type collection, providing a description of a health insurance package that consists of a comprehensive list of covered benefits (referred to as the product), associated costs (known as the plan), and supplementary details regarding the offering, such as ownership and administration, coverage area, contact information, and more.

Category	Core	Head	EMR	Type	Technical
Core e.	The system supports ICD 10/11 or SNOMED CT covering clinical terminologies for diagnosis, morbidity and mortality data accurately				
Interpretation	The system shall support ICD 10/11 or SNOMED CT codes. The system should have the capability to prompt and recommend the relevant ICD 10/11 or SNOMEDCT codes. Implementation of ICD 10/11 or SNOMEDCT can be done through application user interface, backend matching services, or through dedicated medical coding service modules. The system shall support following coding capabilities: • Implement upload, upgrade and deprecation and storage of codes by version into the system				

	• Populate applicable outbound FHIR data exchange messages with system supported codes

Category	Commitment	Head	EMR	Type	Technical
Commitment f.	The system supports laboratory tests and observations terminologies and implement coding of lab with LOINC codes				
Interpretation	The system shall support laboratory tests and observations terminologies and implement coding of lab with LOINC codes. Logical Observation Identifiers Names and Codes LOINC is a standardized coding system used to identify and exchange laboratory test results and clinical observations across different healthcare settings and information systems. By integrating LOINC codes into its data architecture, the system ensures that laboratory data is uniformly coded and can be easily exchanged and interpreted by healthcare professionals, regardless of the healthcare facility or system where the tests were performed. NRCeS (National Resource Centre for EHR Standards) maintains a list of LOINC codes for the most common laboratory tests conducted in India. Implement of coding of laboratory results and observations can be done through application user interface, backend matching services or through dedicated medical coding service modules The system should support the following LOINC related capabilities: • Implement upload, upgrade and deprecation and storage of LOINC codes by version into the system • Populate applicable outbound FHIR data exchange messages with system supported LOINC codes				

Category	Achievement	Head	EMR	Type	Technical
Achievement g.	The system supports DICOM (Digital Imaging and Communications in Medicine) standards for imaging datasets.				
Interpretation	The system shall provide the functionality for medical professionals to view captured images from multiple modalities, radiologist reports, readings and annotations relevant to the encounter and historical images. Medical imaging plays an instrumental role in diagnostics and quality of care. With increasing use of medical imaging, access to medical images along with clinical data of patients helps physicians provide better care. The system shall support following DICOM related capabilities • Support imaging visualization and storage of medical images.				

🟥	Core	🟦	Commitment	🟪	Achievement	🟩	Excellence

- System should support modalities relevant to the medical specialties e.g., Ultrasound for mother and childcare, X-Rays/MRI/CT for orthopedics (viewing capabilities required for regular PC/laptop screens)
- Implement the following ABDM imaging resource profiles
  a) DisgnosticreportImaging
  b) Imaging Study

Reference: https://www.nrces.in/standards/dicom

Category	Excellence	Head	EMR	Type	Technical
Excellence h.	The system supports SNOMED CT or NRCeS Drug Registry for coding of drugs and devices				
Interpretation	The systems shall support use of SNOMEDCT or NRCeS Drug Registry for coding of drugs and devices. These terminologies enable healthcare systems to accurately identify and exchange information about medications and medical devices. The system shall support following Drugs and Devices coding related capabilities: - Implement upload, upgrade and deprecation and storage of drug codes by version into the system - Implement coding of prescriptions through application user interface, backend matching services or through dedicated medical coding service modules - Populate applicable outbound FHIR data exchange messages with system supported drug codes				

IMS.2	The system has the capability to support NABH defined key performance indicators and analytical dashboards

Objective Elements

Category	Commitment	Head	Common	Type	Technical
Commitment a.	The system electronically computes and publishes Key Performance Indicators (KPIs) per NABH accreditation standards for hospitals and healthcare organizations				
Interpretation	The system captures relevant patient and administrative data, and computes KPIs as per NABH accreditation standards for hospitals. The system must have the ability to compute the KPIs based on end-user defined periods (start/end dates) and export the KPIs and underlying computation to end-users for further analysis (in .csv, .xml, .xls, .pdf formats).				

Core	Commitment	Achievement	Excellence

Category	Commitment	Head	HIS	Type	Technical
Commitment b.	The system electronically computes and publishes Key Performance Indicators (KPIs) per NABH Digital Health Standard (DHS)				
Interpretation	The system has the capability of capturing relevant patient and administrative data, and computing KPIs as per NABH Digital Health Standard (DHS). The system must have the ability to compute the KPIs based on end-user defined periods (start/end dates) and export the KPIs and underlying computation to end-users for further analysis (in .csv, .xml, .xls, .pdf formats).				

Category	Commitment	Head	Common	Type	Technical
Commitment c.	The system has the capability to publish NABH KPIs data every quarter as per format defined by NABH.				
Interpretation	The system shall also publish the KPIs to be sent to NABH every quarter, as per format defined by NABH. This ability to publish NABH KPIs will provide significant benefit to healthcare organizations and substantially reduce the effort needed by them to comply with NABH report needs. Similarly, by receiving NABH KPIs across thousands of hospitals in a pre-defined electronic format will save NABH significant effort in compiling and aggregating this information.				

IMS.3	The system complies with Information Security (ISO 27001:2022) and Safety and Security of Health Software Products (ISO 82304) standards

Category	Excellence	Head	Common	Type	Technical
Excellence a.	The system complies with ISO 27001 – 2022 information security standards				
Interpretation	With digital healthcare delivered in a connected model, healthcare information requires a comprehensive approach to privacy and cybersecurity. ISO 27001 provides the requirements for establishing, implementing, maintaining and continually improving an information security management system within the context of the organization. 1. The system should be built in adherence to applicable chapter 8 – Technological controls of ISO 27001-2022 standards. These include- • Secure Development lifecycle • Application security requirements • Secure system architecture and engineering • Secure coding				

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• Outsourced development
• Separation of Development, test and production environments

2. The system should support implementation of the following security requirements-
   • Tracking of user endpoint devices
   • Implementation of privileged access rights
   • Information access rights
   • Access to source code
   • Secure authentication
   • Protection against malware
   • Management of technical vulnerabilities
   • Configuration management – HIS/EMR security configuration
   • Information deletion
   • Data Masking
   • Data leakage prevention
   • Information backup
   • Redundancies of Information processing facilities
   • Monitoring activities
   • Clock Synchronization
   • Use of privileged utility programs
   • Installation of system on operational systems
   • Use of Cryptography
   • Separation of development, test and production environment
   • Change management
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Category	Excellence	Head	Common	Type	Technical
Excellence b.	The system adheres to ISO 82304 health software standards				
Interpretation	ISO 82304 provides standards to enable the safety and security of health software products designed to operate on general computing platforms and intended to be placed on the market without dedicated hardware. The standard provides common requirements for health software manufacturers to ensure quality and safety of healthcare software. The software manufacturers should demonstrate testing and validation of HIS/EMR has been performed in adherence to ISO 82304 standard and guidelines • Demonstrate that organization has defined quality processes, procedures and controls defined and implemented • Demonstrate the software has been developed in adherence to the defined quality processes. The documentary evidence of adherence, implemented controls / stage-gates should be produced with appropriate authority approvals • Demonstrate documentary evidence of risk assessment, mitigation planning and implementation • Documented evidence of testing with traceability to requirements and design				

	Core		Commitment		Achievement		Excellence

Core   Commitment   Achievement   Excellence