The National General Practice Information Technology (GPIT) Group

General Practice Software Management Systems Requirements for Certification 2022

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Section 1: General Specifications Required to Operate a GP Practice Management Software System

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Document History

Date	Version	Author(s)	Change History
08/01/2022	1.0	John Sweeney	First draft
28/01/2022	1.0	John Sweeney, Changes to RFC_2014	*Dates updated *RFC_2014 retitled RFC1_2022 and elsewhere in the document. (RFC_2022 when completed single document.) *Include Dr Brian O'Mahony in thanks for work on previous certification documents. (P7) *Feedback form updated returned to Dr John Sweeney. (P8) *Change GP at the forefront from 10 to 25 years, including certification in 2014 and 2018 on documents drawn to date. (P9) *Certification timetable changed to May-December 2022. The need to register with the Data Commissioner changed to compliance with GDPR. Data Protection Agreement changed to Data Sharing Agreement. (P10) *Time for re-testing from three now five years. (P11) *GPIT Certified logo changed to include 2022. (P12) *Remove the need to register with Data Commissioner. (P14) *With Zoom and online tutorial videos availability, no need to provide in-person user workshops. (P15) *Include a web link to the gov.ie GDPR and ICGP GDPR document for GPs. (P16) *Functional Profile dates updated and throughout the document. (P18) *The specifics of EN from EF were removed (P20) *Include the IHI as a demographic identifier. Ethnicity will capture the fields used in the CDM program from the 2016 census. (P24) *Ensure moble phone number and email are captured to aid IHI matching. (P26) *Include the Slainte Care agreed fields for the SCR remove non agreed fields. (P27) *All EF(2015) removed from the document and replaced with EN. (P28) *Prescription for controlled drugs to include 2015 PSI update. (P37) *Provide a link to HIQA GP referral data fields. (P39)

			*Remove reference to the GP/Obstetric White card. (P47) *Add in medication prescribed/discontinued and vaccines given in the last year will be sent for medication reconciliation to the hospital. (P47) *Add sections (DC.2.2.3) and (DC.2.2.4) Support Protocols Relative to Individual Patient Care and Support Self-Care to comply with the CDM Program. (P55) *Support for Cervical Screening moved to RFC2_2022. (P60) * Add in section (DC.2.6.1) Support for Population Health for CDM Program (P60) *Removed the messaging standards for prescriptions in the US etc., as not relevant to ePrescription transfer or ePrescribing. (P67) *Heartwatch details moved to RFC2_2022. (P78) *The section on checking patient eligibility with the PCRS moved to RFC2_2022. (P85) *Add in cloud-based backup to augment Hard-drive/tape backup. (P93) *Import of PCRS patient listing moved to RFC2_2022. Position of CSV file sample moved. (P99)
03/02/2022	1.0	John Sweeney Changes to RFA_2018	*Change the file name from RFA_2018_v1_0.pdf to RFC_2022.pdf.(P1) *eHealth Ireland launch date Dec 2013. (P3) *Include reference to the 11 agreed eHealth and data transfer projects from the amended 2019 GP contract. (P3) * Change RFC_2007 to RFC_2014. (P3) * Existing or new software will be certified in the second half of 2022 by satisfying the RFC_2022 components. (P3) *Remove section 6 on testing, revocation of Certification, scope etc., as defined already in RFC1_2022. (P3) *IHI advisory note change reference to RFC_2022. (P7) *Includes COVID Hub/Swab referrals on the specialist integrated browser referrals. (P7)

05/02/2022	1.0	John Sweeney	*Add explanation on the difference between RFC_2022 and previous versions, dividing functionality into general and those explicitly needed to operate in Ireland. *Addition of sections 2.9-2.13, including specifications on- -Integration of Healthmail to the PMS -ePrescription transfer -DEASP sick cert submissions -The Chronic Disease Program -COVID vaccine submissions
21/02/22	1.1	Dr Conor O'Shea	*Include Data Protection Act 2018 and update web link. (P19) *Weblink for Irish Statute Book. (P20) *Remove need to mask the PPS number on point 16, 17. (P26) *Include Healthmail functionality for secure email and electronic prescription transfer. (P28) *Include Healthmail electronic prescription transfer on Managing prescriptions. (P38) *Updated Controlled Drug Prescriptions. (P39) *Manage Lab Results, remove reference to discussion paper from HSE South (P46) *Include conformance to integrate with MN-CMS (P49) *Remove example of pregnant diabetic tele-health monitoring (P82) *Remove title on Administrative Transaction Processing. (P83) *Include reference to GPIT doccument 'IT security for Irish General Practice'. (P90) *Updated cervical screening ages. (P107)
04/04/2022	1.2	Karen Wynne	Add in section 2.0 on general working relationship between GP software vendors and Healthlink. New Vendors would require message testing prior to accreditation. Existing vendors should test messaging functionality prior to releasing updates to GPs.

05/05/22	1.3	Dr Frank Hill	*Improve clarity on marking a statement that patient information filed in another's record can be marked as so. (P24) *Include the details required on providing a vaccination record for schools etc. (P35) *Increase the needed data capture fields to conform to the CDM program. (P36) *Differentiate the scope for paper versus electronic referrals. (P42) *In section 2, all conformance criteria specifying MUST changed to SHALL
12/06/22	1.4	Dr Brian Meade	* Include childhood vaccination strategy and the Chronic Disease Management Program in the description. (P56) *DC 3.2.2. Criteria point 4 should be a SHALL rather than a MAY (P67)

Document Review

Date	Version	Reviewer(s)*
20/02/22 04/04/22 05/05/22 12/06/22 24/06/22	1.1 1.2 1.3 1.4 1.4	Dr Conor O'Shea Karen Wynne Healthlink Dr Frank Hill Dr Brian Meade Dr Brian Blake

* Due to the complex nature of this document, reviewers assessed and commented on discrete sections.

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- The Health Level Seven organisation (www.hl7.org) for permission to use material sourced from the HL7 Electronic Health Record – System Functional Model, Release 1 February 2007. This material is copyright HL7 Inc.
- NHS Connecting For Health, GP Systems: Core Functionality Requirements V1.01 for a functional specification on Managing Appointments (S.1.9).
- Dr Brian O'Mahony for drawing up the RFC_2014 and RFA_2018 documents.
- All the reviewers who contributed to improving this document during the consultation process.

This document is available for download from the GPIT website at http://www.gpit.ie.

Feedback Form

The National GPIT Group is happy to have comments, corrections, and feedback on this document. You can feedback by email or post using the template provided below to:

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PLEASE TYPE OR USE BLOCK CAPITALS.

Name:	
Address:	
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Title of document:	Requirement for Certification 2022
Version number:	
Date of feedback:	

General comments:

Specific comments:		
Page no.	Function ID#	Recommended changes and reason

Thanks for your help.

Introduction

Information systems facilitate quality healthcare. General Practice has been at the forefront of information system development in Irish healthcare over the last 25 years. Certification of general practice software systems occurred in 1999, 2003, 2008, 2014 and 2018. Certification is necessary because:

- It ensures that practice management systems support the requirements of general practice.
- It helps to coordinate the development of general practice systems with developments in health service information systems.
- It promotes interoperability between general practice systems and Health Service Executive (HSE) systems.
- It provides a roadmap for further development of the electronic health record.

This 'Requirements for Certification 2022' (RFC_2022) document draws on the followingsources:

- Health Level Seven (HL7) Electronic Health Record – System Functional Model, Release 1, February 2007
- NHS Connecting For Health, GP Systems: Core Functionality Requirements v1.01, October 2006
- GPIT Requirements for Certification 2014 and GPIT Requirements for Accreditation 2018;

The HL7 EHR System Functional Model provides a reference list of functions in an Electronic Health Record System (EHR-S). The function list is describedfrom a user perspective to enable consistent expression of system functionality. Through the creation of Functional Profiles for care settings and realms, this EHR-S Functional Model allows a standardised description and shared understanding of functions sought or available in a given setting (e.g., intensive care, cardiology, general practice).

This RFC_2022 contains both core and interoperability functions. Interoperability is defined as the ability of two or more systems or components to exchange information and use the information exchanged.

The RFC_2022 differs from previous RFC/RFA versions as it divides the software specifications into two general sections 1. The core requirements to function as a practice management system and 2. Specifications required for specific IT in operation in Ireland.

The Health Information and Quality Authority (HIQA) is crucial in certification and standards. HIQA will collaborate with key stakeholders to develop and implement Electronic Health Records, clinical guidelines and protocols, information governance, and a Unique Identifier for Ireland's health and social care services. An essential HIQA standard is the GP Messaging Standard, available from http://www.hiqa.ie/standards/information-governance/health-information-technical-standards.

Many functions in this document refer to guidelines, best practices, standard assessments or evidence-based protocols. These refer to guidelines drawn up or endorsed by the Irish

College of General Practitioners or the Health Information and Quality Authority for general practice in Ireland. The ICGP Quality and Safety in Practice Committee produces quick reference guides on clinical and non-clinical topics relevant to general practice. Quick reference guides, available for download at https://www.icgp.ie/go/in_the_practice/quick_reference_guides

Process of Certification

Certification Timetable

The timetable for certification is as follows:

Event	Date
New and existing GP Software products certified against Requirements for Certification 2022	May 2022 to December 2022

Table 1 Certification timetable

A list of the products that have achieved certification will be released after the certification period in 2023.

Pre-Test Documentation

The following documents will be required to support the functions described in the Requirements for Certification 2022:

1. A copy of a legally binding written contract between the vendor and the general practitioner, clearly defining a minimum level of support, maintenance and training.
2. A statement of the vendor's approach to confidentiality.
3. Internal procedures covering access to patient data and the business of the practice.
4. A signed undertaking to develop and make available appropriate training for all system functions delivered within the scope of RFC2022.
5. A partnership agreement for training, for signature by both the supplier and the practice, which specifies the basis on which training will be carried out.
6. A licence for any drug database used.
7. A contractually binding agreement to supply users with updates to the drug database.
8. An Escrow agreement setting out how the source code, data structure and the documentation are to be made available to users.
9. Evidence of registration as a company.
10. Evidence of current business insurance (public liability and employer's liability) and professional indemnity insurance.
11. Tax clearance certificate.
12. Ensure respecting role as a data processor to comply with GDPR.
13. A copy of the Data Sharing Agreement between the Vendor and GPs.
14. Details of the methodology in place to ensure the quality of their development work, including the project management and control processes for analysis, coding and testing.

Self Assessment

Each vendor is required to submit a self-assessment of their product and services against the certification test plan. This self-assessment should form part of the pre-test documentation and identify areas for improvement, timelines, and priorities for development work to attain the required standard. The accreditation team will compare this vendor self-assessment against their testing of the requirements for certification.

Testing

Testing will be carried out on the vendor's premises by a representative of the GPIT Group. The vendor will provide three networked computers, a laser and dot matrix printer and a data backup system. The practice management software will be preloaded with at least two hundred test patients.

To pass the certification process, the practice management software must pass all mandatoryfunctions: SHALL criteria which are ESSENTIAL NOW (please see page 20 for an explanation of keywords). Four possible outcomes are possible following conformance testing:

- Pass;
- Complete retest;
- Partial retest;
- Withdrawal from testing by vendor;
- Fail;

Following conformance testing, a report will be prepared for the GPIT Group, and this Group will decide to certify or not certify a software product. GP software vendors have a right of appeal to an Independent Appeals Committee made up of an IT expert, a GP and an independent chairperson. The make-up of the appeals committee willbe agreed upon with the vendor, and the findings will be binding on both parties.

Certification will apply to a particular version of a product. Subsequent version releases will not be re-certified, but new products coming to market will be certified with the Requirements for Certification in use at the time. This certification cycle underway in 2022 will be repeated in five years.

Certification Flow Chart

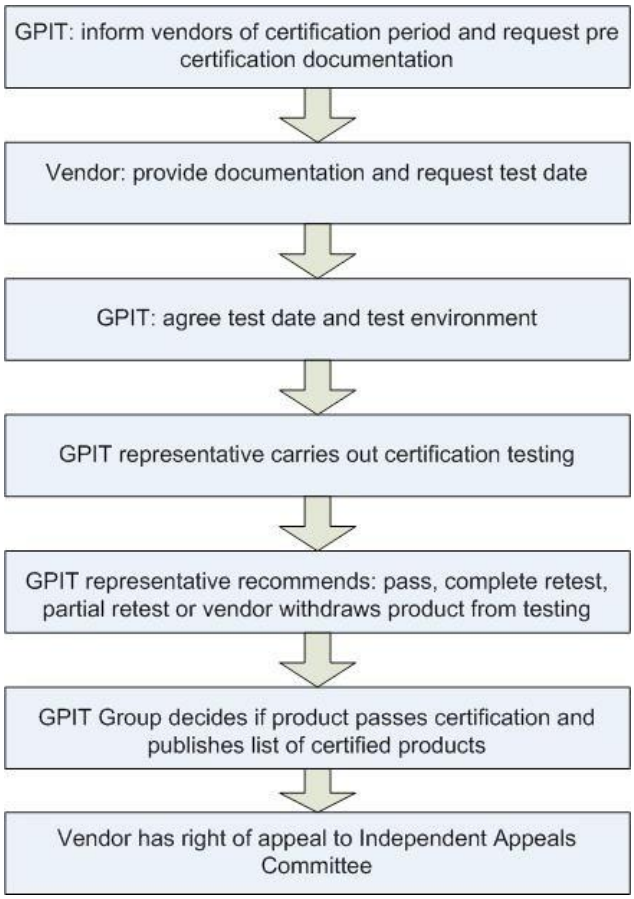

Figure 1 Certification Flow Chart

The certification testing only ensures that the software product is compliant with the specification being tested. It is up to the software vendor to ensure that their software product is fit for purpose and clinically safe for use in a general practice environment.

A "National GPIT Group Certified" logo is available by certified software products.

Figure 2 'Certified' logo for software products

Revocation of Certification

During the period between this and the subsequent RFC, the GPIT Group reserve the right to revoke certification status should there be a significant degradation of the system or supplier performance that would result in the system no longer meeting the RFC standard. Examples of this would include: where the GP software vendor no longer

supports the system or ceases trading, where critical system failures related to patient safety are documented or where core requirements such as access control and audit are shown to be inadequate.

Right of Appeal

If certification is revoked, the GP software vendor has a right of appeal to an Independent Appeals Committee made up of an IT expert, a GP and an independent chairperson. The make-up of the appeals committee will be agreed upon with the vendor, and the findings will bebinding on both parties.

Cessation of Previous Certification

Once the certification testing process for RFC 2022 becomes available, the previous certification ceases.

Roll Out

The GP practice software product's certified version must be rolled out to GP users. The GPIT Group will look for evidence that at least 50% of a practice software product users have the certified version installed within the six months following the certification.

Scope

This certification document relates only to general practice software management systems. It does not include the functionality required for a multi-professional primary care team.

Service Level Agreement

Practice Responsibilities

General practice users need to be supported appropriately by their suppliers to benefit from their investment in computer systems. However, although this RFC sets out requirements for suppliers, the practice also has specific responsibilities:

- To use software and hardware as specified in the support contract, install upgrades provided by the supplier and familiarise themselves with the relevant documentation.
- Regarding training, commit the necessary time to ensure that practice staff benefit from the training offered and ensure that training levels are maintained in the practice.
- Ensure that the practice computers and network are fully covered for security measures. The operating system is up to date with security patches; anti-virus, anti-spam and anti-malware protection steps are in place; and hardware and software firewalls are installed in place. Practices will need to identify a staff member responsible for implementing these security measures and regularly audited.

- Ensure that good practice is maintained regarding access control to patient records. Passwords should be secure, changed regularly and not shared.
- Take backups in line with the guidance provided by their hardware/software support company. Specific areas of responsibility concerning backups include ensuring regular backups are taken, validated, stored securely both on and off-site, and changed backup media regularly.

Support Contract

This section sets out the minimum levels of support and training deemed acceptable. It also sets out basic principles, including a training partnership agreement between the practice and the supplier.

The functions described within the scope of Requirements for Certification SHALL be supported by a legally binding written contract between the supplier and the practice, clearly defining a minimum level of support, maintenance and training for each application.

- The contract SHOULD be for an initial period of one year with a provision for review after that period, by either party, with 30 days notice of termination (90 days recommended).
- The contract SHALL include acceptable procedures for dealing with support and maintenance calls. Applying priority and resolution times to all calls service levels in the case of severe system unavailability, agreed on escalation policy for faults that persist for more than a specified number of days and procedure concerning on-site support/maintenance. Examples of problem resolution priorities are:
    - Priority 1 – be able to view the records – same day resolution or on-site vendor personnel until resolved;
    - Priority 2 – be able to edit the records and print prescriptions – 3-day resolution;
    - Priority 3 – letter, appointment and billing functions – 5-day resolution;
- The contract SHALL include a clause to protect the confidentiality of all data relating to patients and the practice's business.
- The contract SHALL include the supplier's undertaking to provide documentation, including user manuals.
- The contract SHALL include the supplier's undertaking to provide training to GPs and practice support staff.
- The system SHALL be supported by a contractually binding agreement to upgrade systems with updates to clinical terms, e.g. ICD- 10 or drug databases,where the practice holds the relevant support or maintenance contract.
- The supplier SHALL provide an Escrow agreement, which must specify a nominated third party to hold all system source code and documentation versions. This guarantee should set out reasonable terms under which source codes and documentation are made available to users, their agents or a nominated third party if the product becomes no longer commercially supportedby the supplier or a future copyright owner.

Help Desk and Fault Logging

- The supplier SHALL operate a help desk facility between the hours of 09.00 and 17.30 Monday to Friday, excluding Bank Holidays.
- The supplier SHALL have a system for logging calls outside operational hours. This could consist of voicemail, email, fax, SMS text or a Web-based fault logging facility.
- The supplier SHALL offer a facility for supporting and maintaining the system remotely.
- The supplier SHALL be able to provide documentation on known faults detailing when they became known, the nature and significance of the fault, plans to correct the fault and dates for the release of corrections.
- The supplier SHALL use appropriate Web and Internet-based facilities to extend their support services to provide FAQ and user manuals.

Documentation

The system SHALL be delivered with a set of User Manuals in an electronic format provides:

- A general introduction to the design and how to get started.
- The detailed functions of the system, covering all modules.
- The system's required security measures describe the installation, user administration, backup, and audit.

Quick Reference Guides SHALL be provided explaining how to carry out essential functions.The supplier SHALL supply adequate Release Notes as each new system upgrade is provided, detailing what facilities have been added or amended and how they can be accessed and used.

Training

- The supplier SHALL provide a signed undertaking to develop and make available appropriate training for all system functions.
- The supplier SHALL draw up a "partnership agreement" for training, for signature by both the supplier and the practice, which shall specify the basis on which the training will be carried out.
- Where the number of users is sufficient, the supplier SHOULD support formalised local and national user group meetings at regular intervals, either in person or an online forum.
- The supplier SHALL provide adequate further training as required for new releases.

Backup

Although it is acknowledged that backup is primarily the practice's responsibility, GP Software Vendors are responsible for ensuring that every practice management system they install SHOULD have an automated working backup system in place. Where a separate hardware vendor proves the backup system, the GP Software vendor SHOULD communicate with the practice and the hardware vendor to ensure the importance of

backup is understood and explain which files need to be backed up to be in a position to restore the database. The software or hardware vendor SHOULD train at least one named practice staff member in the workings of the backup system and SHOULD provide documentation on the backup process. Vendors SHOULD establish ongoing data backup contracts with practices to ensure a regular backup and verify that patient information can be restored from backup data. The restore procedures SHOULD be fully documented. The GP Software Vendor SHALL provide documentation to assist a user in doing a test restore.

Information Security

Vendors SHOULD advise on appropriate information security measures for the practice to protect against viruses, worms, malware and other threats. The advice SHOULD cover antivirus software, hardware and software firewalls, updating operating systems and other methods or applications to ensure the security of patient records. Vendors SHOULD establish ongoing information security contracts with practices to include twice-yearly checks on practice information security.

GDPR 2018

The introduction of GDPR in 2018 and the Irish Data Protection Act 2018 have made it the responsibility of any GP that acts as a data controller to take the appropriate steps needed to be responsible to look after patient records. Further information on GDPR in Ireland https://www.gov.ie/en/organisation-information/26c38c-data-protection-and-the-general-data-protection-regulation-gdpr/
Information on the roles and responsibilities for GPs to be GDPR compliant can be found on http://www.icgp.ie/data

Data Sharing Agreement

The Vendor, as a data processer, SHALL put in place a Data Sharing Agreement between the Vendor Company and the General Practitioner.

User Groups

User Groups play an essential part in helping to focus and coordinate user requests and often provide a stimulus for future software development. These users are committed to the development of their Practice Management System. Vendors SHOULD encourage and support User Groups. User Groups often provide invaluable expert advice, hints,and tips for less advanced users.

General Functions

Medical Practitioners Act 2007

The requirement to include a Medical Council registration number on all prescriptions, reports, and other documents is part of the Medical Practitioners Act 2007, section 43/8,which states-

'A registered medical practitioner shall, as soon as may be after

the person has received the certificate referred to in subsection (5), cause the registration number stated on that certificate to be included on all medical prescriptions and all other documentation and records, whether in paper or electronic format, relating to that practitioner's practice as a registered medical practitioner.'

The act is available at https://www.irishstatutebook.ie/eli/2007/act/25/enacted/en/html

This is a statutory requirement from 16th March 2009. A registration number is a six-digit number, and proceeding zeros should be displayed, e.g. 004167.

Understanding Conformance

Conformance Keywords

The following keywords SHALL be used to convey conformance requirements:

- SHALL – to indicate a mandatory requirement to be followed (implemented) to conform. Synonymous with 'is required to'.
- SHALL NOT – to indicate a prohibited action. Synonymous with 'prohibited'.
- SHOULD - to indicate an optional recommended action, one that is particularly suitable, without mentioning or excluding others. Synonymous with 'is permitted and recommended'.
- MAY - to indicate an optional, permissible action. Synonymous with 'is permitted'.

Priority of Functions

Functional profiles indicate a functional profile's importance and/or immediacy by associating a priority with a function. Three priorities have been defined, Essential Now, Essential Future, and Optional.

- Essential Now (EN) indicates that the function's implementation is mandatory as of the profile issuance date.
- Essential Future (EF) indicates that the implementation of the function is currently optional but will be mandatory at some future time, which is specified by the functional profile
- Optional (O) indicates that the implementation of the function is optional.

Any or all of these priorities SHALL be used in a functional profile. A timeframe associated with implementing functions will be defined if the Essential Future priority is used. This will be shown as follows: EF(YYYYMM), where EF(202306) means that the function SHALL be available for use by the end of June 2023. Essential Future functions will be implemented with software vendors as part of the following certification cycle. They are described here so that vendors may include them in their development plans and plan for their future implementation.

Description of Tables

Each function is associated with a table that looks like this:

ID#	Type	Name	Priority

The columns have the following meanings:

- **ID#** is the reference number of the header or function in the HL7 EHR Functional Model, Release 1;
- **Type** can be either Header or Function;
- **Name** is the description of the Header or Function;
- **Priority** can be Essential Now (EN), Essential Future (EF) or Optional (O);

Acronyms

Acronym	**Meaning**
EHR	Electronic Health Record
EHR-S	Electronic Health Record - System
EN	Essential Now
EF	Essential Future
GP	General Practitioner
GPIT	General Practice Information Technology
HIQA	Health Information and Quality Authority
HSE	Health Service Executive (Ireland)
NHS	National Health Service (UK)
O	Optional
PCRS	Primary Care Reimbursement Service
RFC	Requirements For Certification

Table 2 Explanation of Acronyms

Document Outline

The table below indicates the hierarchy of functions defined in this document. Not all tasks defined in the HL7 Electronic Health Record – System Functional Model are included because some are irrelevant to Irish general practice. Because of this, you will notice that the numbering of functions in the document's body is not sequential.

Direct Care	Functions employed in the provision of care to individual patients. Direct care functions are the subset of functions that enable delivery of healthcare or offer clinical decision support.
DC.1	Care Management
DC.2	Clinical Decision Support
DC.3	Operations Management and Communication
Supportive Functions	Functions that support the delivery and optimisation of care, but generally do not impact the direct care of an individual patient. These functions assist with the administrative and financial requirements associated with the delivery of healthcare.
S.1	Clinical Support
S.2	Measurement, Analysis, Research and Reports
S.3	Administrative and Financial
Information Infrastructure	Functions that define the heuristics of a system necessary for reliable, secure and interoperable computing. These functions are not involved in the provision of healthcare, but are necessary to ensure that the practice management system provides safeguards for patient safety, privacy and information security, as well as operational efficiencies and minimum standards for interoperability.
IN.1	Security
IN.2	Health Record Information and Management
IN.3	Registry and Directory Services
IN.4	Standard Terminologies and Terminology Services
IN.5	Standards – based Interoperability
IN.6	Business Rules Management
IN.7	Workflow Management

Table 3 Outline of Functions

Care Management (DC.1)

ID#	Type	Name	Priority
DC.1	H	Care Management	

Record Management (DC.1.1)

ID#	Type	Name	Priority
DC.1.1	H	Record Management	

Identify and Maintain a Patient Record (DC.1.1.1)

ID#	Type	Name	Priority
DC.1.1.1	F	Identify and Maintain a Patient Record	EN

Statement
Identify and maintain a single patient record for each patient.

Description
A single record is needed for legal purposes and to organise it unambiguously for the provider. Health information is captured and linked to the patient record. Static data elements, as well as data elements that will change over time, are maintained. The patient is uniquely identified, after which the record is tied to that patient. Combining information on the same patient, or separating information where it was inadvertently captured for the wrong patient, helps maintain health information for a single patient. In creating a patient record, it is advantageous to replicate identical information across multiple records so that such data does not have to be re-entered. For example, when a parent registers children as new patients, the address and contact details may be propagated in the children's records without re-entering them.

Conformance Criteria
1. The system SHALL create a single logical record for each patient.
2. The system SHALL allow storing more than one identifier for each patient record.
3. The system SHALL associate key identifier information (e.g., system ID, medical record number, GMS number) with each patient record.
4. The system SHALL uniquely identify a patient and tie the recordto a single patient.
5. The system SHALL provide the ability, through a controlled method, to merge or link dispersed information for an individual patient upon recognising the patient's identity.
6. Suppose health information, for example, a consultation note or a prescription, has been mistakenly associated with a patient. In that case, the system SHALL mark the information as erroneous in the patient's record.
7. If health information has been mistakenly associated with a patient, THEN thesystem SHALL provide the ability to associate it with the correct patient.
8. The system SHALL allow retrieving parts of a patient record using a primary identifier, secondary identifiers, or other information that are not identifiers but could be used to help identify the patient.

9. The system SHALL provide the ability to tag as obsolete, inactivated or nullified, to store in archives and to remove a patient's record per local policies and procedures, as well as applicable data protection laws and regulations.
10. If related patients register with any identical demographic data, then the system SHOULD provide the ability to propagate that data to all their records.
11. The system SHALL provide a means to enter patients who have been missed or seen during system downtime.
12. The system SHALL mandate minimum registration data.
13. The system SHALL ensure a new patient record is not accepted unless all fields in the minimum data set have been completed.
14. The system SHALL ensure the user can report on incomplete records. These records contain the minimum data set but are missing valuable fields such as phone numbers, identifiers, patient type, medical card details, etc.
15. The system SHOULD have the capability of accepting the unique patient identifier provided by an external database and of documenting the external database as the source of the individual patient identifier.
16. Suppose a unique patient identifier is available from an external database like the IHI (Individual Health Identifier). In that case, the system SHOULD display that ID on all patient output and not (or in addition to) any system generated ID.
17. Suppose a patient changes practice, and their electronic health care record is integrated into the new practice system. In that case, the practice management system SHOULD have the abilityto log and report on this integration.
18. The system SHOULD allow editing of the clinical record within a set period after the record was created, for example, 12 hours. This enables users to edit or expand the patient record when they have the time available after the surgery session.
19. The system SHOULD have an agreed protocol for registering a patient who is unknown or unconscious, and this would allow documentation of a patient seen at a RoadTraffic Accident.

Data Attributes

Family name
First name
Date of Birth
Gender
Address – at least two lines of address
Registered Doctor

Table 5 Minimum Registration Data

Manage Patient Demographics (DC.1.1.2)

ID#	Type	Name	Priority
DC.1.1.2	F	Manage Patient Demographics	EN

Statement
Capture and maintain demographic information. Where appropriate, the data should be clinically relevant and reportable.

Description
Contact information, including addresses and phone numbers and key demographic information such as date of birth, gender, and other information is stored and maintained for unique patient identification, reporting purposes, and care provision. Patient demographics are captured and preserved as discrete fields (e.g., patient names and addresses) and may be enumerated, numeric or codified. Key patient identifiers are shown on all patient information output (such as name and ID# on each screen of a patient's record). The system will track who updates demographic information and when the demographic information is updated.

Conformance Criteria
1. The system SHALL capture demographic information as part of the patient record.
2. The system SHALL store and retrieve demographic information as discrete fields.
3. The system SHALL provide the ability to retrieve demographic data as part of the patient record.
4. The system SHALL provide the ability to update demographic data.
5. The system SHOULD provide the ability to report demographic data.
6. The system SHOULD store historical values of demographic data over time.
7. The system SHALL present a set of patient identifying information at each interaction with the patient record.
8. The system SHALL collect the data range shown in the Patient Demographic Data table below.
9. The system SHALL collect the data range shown in the Next of Kin Demographic Data table below.
10. The system SHALL collect the data range shown in the Carer Demographic Data table below.
11. The system SHALL capture postal code as part of the address attributes.
12. The system SHOULD provide the ability to capture and maintain multiple addresses.
13. The system SHOULD provide the ability to capture and maintain multiple phone numbers.
14. The system SHOULD provide the ability to capture and maintain multiple email addresses.
15. The system SHOULD capture and maintain multiple contact details for Internet-related services, e.g. Skype, Twitter, Facebook, etc.

16. The system SHALL control entry and updates PPSN numbers using permissions for designated users.
17. The system SHALL capture the information defined in the HIQA National Standard Demographic Dataset.

Data Attributes

Family name
First name
Middle name or initial
Title (e.g. Dr or Mr or Ms, etc.)
Former family name
Alias
Birth surname
Mother's maiden name
Date of birth
Gender
Address: address line 1, address line 2, city or town, county, Eircode, country
Contact details: home phone, mobile phone, email, (mobile/email mandatory for IHI matching)
Patient Type: Private, GMS, Doctor Visit Card, Other
Medical Card details: GMS number, GMS review date, GMS doctor number, GMS distance code, GMS dispensing status
Doctor Visit Card details: DV number, DV review date, DV doctor number, DV distance code
Drug Payment Scheme details: DPS number, expiry date
Private Health Insurance Details: company, membership number, cover type
Company medical schemes: An Post, Garda, others
Personal Public Service number
Internal patient identification number (system generated)
Patient identifier numbers from hospitals and laboratories
IHI number
Occupation
Marital status
Religion
Ethnicity- As per census 2016 list (White Irish, Irish Travelers, other White, Black Irish or African, other Black, Chinese, other Asian, Other, Not stated)
Preferred language
Interpreter required
Transport needs (free text field)
Advocacy needs (free text field)
The GP who the patient is registered with
The GP who usually sees the patient
The branch surgery is normally attended
Dates of registration and deregistration with the practice
Reason for deregistration
Enrolment status with a primary care team
Date of enrolment with a primary care team
Date of death, cause(s) of death

Table 6 Patient Demographic Data

Family name, first name, title, gender, address, contact details, relationship to patient

Table 7 Next of Kin Demographic Data

Family name, first name, title, gender, date of birth, address, contact details, relationship to patient cared for, and in the case of carers who are not patients registered with the practice. The date on which they permitted for this information to be entered

Table 8 Carer Demographic Data

Data and Documentation from External Sources (DC.1.1.3)

ID#	Type	Name	Priority
DC.1.1.3	H	Data and Documentation from External Sources	

Capture Data and Documentation from External Clinical Sources (DC.1.1.3.1)

ID#	Type	Name	Priority
DC.1.1.3.1	F	Capture Data and Documentation from External Clinical Sources	EN

Statement
Incorporate clinical data and documentation from external sources.

Description
Mechanisms for incorporating external clinical data and documentation (including identification of source) such as image documents and other clinically relevant data are available. Data included through these mechanisms is presented alongside locally captured documentation and notes wherever appropriate. The HIQA GP Messaging Standard defines the structure and syntax of messages exchanged with GPs in the HL7 XML version 2.4 format. It is available from HIQA at http://www.hiqa.ie/publications.asp.

Conformance Criteria
1. The system SHALL provide the ability to capture external data and documentation.
2. The system SHALL receive and store the full range of health care messages available from Healthlink, in HL7XML version 2.4 format, into the patient record through an electronic interface. For the full range of healthcare messages, please see the Healthlink Online Message Specification, version 2.18 or higher.
3. The system SHALL display health care messages received through an electronic interface upon request.
4. The system SHALL integrate messages into the individual patient record.
5. The system SHALL facilitate manual integration of messages into patient records.

6. The system SHALL have the ability to correct matching errors during message integration.
7. The system SHALL provide the ability to receive, store and display scanned documents as images.
8. The system SHOULD provide the ability to store imaged documents or reference the imaged documents via links to imaging systems.
9. The system SHOULD provide the ability to receive, store and present text-based externally-sourced documents and reports.
10. The system SHOULD provide the ability to receive, store and display clinical result images (such as photographic images) received from an external source.
11. The system SHOULD provide the ability to receive, store and display other forms of clinical results (such as wave files of ECG tracings) received from an external source.
12. The system SHOULD provide the ability to receive, store and present medication details from an external source.
13. The system SHOULD provide the ability to receive, store and present structured text-based reports received from an external source.
14. The system SHOULD provide the ability to receive, store and present standards-based structured, codified data received from an external source.
15. Where required, the system SHOULD return acknowledgements to the sending system that messages have been safely received.
16. The system SHALL incorporate Healthmail functionality into the patients records to aid in secure email referral and electronic prescription transfer.
17. The system SHALL be capable of interacting with external systems using Web Services.
18. The system SHOULD capture patient self-assessments of health-related behaviour such as smoking, alcohol, diet and exercise.
19. The system SHALL create and consume structured messages in compliance with the HIQA GP Messaging Standard and the Healthlink Specification.

Produce a Summary Record of Care (DC.1.1.4)

ID#	Type	Name	Priority
DC.1.1.4	F	Produce a Summary Record of Care	EN

Statement
Present a summarised review of a patient's comprehensive EHR.

Description
Create summary views and reports after an episode of care. Create service reports after an episode of care, such as, but not limited to, discharge summaries and public health reports, without additional input from clinicians.

Conformance Criteria
1. The system SHALL present summarised views and reports of the patient's comprehensive EHR (Electronic Health Record).
2. The system SHOULD include at least the following in the summary: demographic information, prescribed medication, allergies, known health conditions, significant procedures and vaccination information.

3. The system MAY include the following in the summary:
- Abnormal laboratory results
- Results awaited
- Immunisations due
- Recalls due
- Previous visits

4. The system SHALL present the patient's smoking and alcohol status, with who entered the data and when.
5. It SHOULD be possible to restrict summary reports to particular date ranges.

Manage Patient History (DC.1.2)

ID#	Type	Name	Priority
DC.1.2	F	Manage Patient History	EN

Statement

Capture and maintain medical, surgical, social and family history, including pertinent positive and negative histories of patient-reported or externally available patient clinical history.

Description

The history of the current illness and patient historical data related to previous medical diagnoses, surgeries and other procedures performed on the patient, and relevant health conditions of family members is captured through such methods as patient reporting (for example, interview, medical alert band) or electronic or non-electronic historical data. This and similar information is captured and presented alongside locally captured documentation and notes wherever appropriate.

Conformance Criteria

1. The system SHALL provide the ability to capture, update and present current patient history, including pertinent positive and negative elements.
2. The system SHOULD provide the ability to capture and present previous external patient histories.
3. The system SHOULD provide the ability to capture the relationship between patients and others.
4. The system SHOULD capture the complaint, presenting problem or other reason(s) for the visit or encounter.
5. The system SHOULD capture the reason for visit/encounter from the patient's perspective.
6. The system SHALL capture family history, including pertinent positive and negative histories, the relationship to the patient, the age of onset of illness or age of death, both the outcome and the date. For example, Father died Carcinoma of the Oesophagus in 1988, age56 years.
7. The system SHALL indicate if a medical condition is active or not.

Preferences, Directives, Consents and Authorisations (DC.1.3)

ID#	Type	Name	Priority
DC.1.3	H	Preferences, Directives, Consents and Authorisations	

Manage Patient and Family Preferences (DC.1.3.1)

ID#	Type	Name	Priority
DC.1.3.1	F	Manage Patient and Family Preferences	EN

Statement
Capture and maintain patient and family preferences.

Description
Patient and family preferences regarding language, religion, spiritual practices and culture may be important to the delivery of care. It is essential to capture these to be available to the provider at the point of care.

Conformance Criteria
1. The system SHALL provide the ability to capture, present, maintain and make available for clinical decisions patient preferences such as language, religion, spiritual practices and culture.

Manage Consents and Authorisations (DC.1.3.3)

ID#	Type	Name	Priority
DC.1.3.3	F	Manage Consents and Authorisations	EN

Statement
Create, maintain, and verify patient decisions such as informed consent for treatment and authorisation/consent for disclosure when required.

Description
Decisions are documented and include the extent of information, verification levels and exposition of treatment options. This documentation helps ensure that decisions made at the discretion of the patient, family, or another responsible party, govern the actual care delivered or withheld.

Conformance Criteria
1. The system SHALL provide the ability to indicate that a patient has completed appropriate consents and authorisations.

2. The system SHALL provide the ability to indicate that a patient has withdrawn applicable consents and authorisations.
3. The system SHOULD provide the ability to view and complete consent and authorisation forms online.
4. The system MAY provide the ability to generate printable consent and authorisation forms.
5. The system MAY display the authorisations associated with a specific clinical activity, such as treatment or surgery, along with that event in the patient's electronic chart.
6. The system MAY provide the ability to display consents and authorisations chronologically.
7. The system SHOULD provide the ability to document an assent for patients legally unable to consent.
8. The system SHALL provide the ability to document the source of each consent, such as the patient or the patient's personal representative, if the patient is legally unable to provide it.
9. The system SHOULD provide the ability to document the patient's personal representative's level of authority to make decisions on behalf of the patient.

Summary Lists (DC.1.4)

ID#	Type	Name	Priority
DC.1.4	H	Summary Lists	

Manage Allergy, Intolerance and Adverse Reaction List (DC.1.4.1)

ID#	Type	Name	Priority
DC.1.4.1	F	Manage Allergy, Intolerance and Adverse Reaction List	EN

Statement
Create and maintain patient-specific allergy, intolerance and adverse reaction lists.

Description
Allergens, including immunisations and substances, are identified and coded (whenever possible), and the list is captured and maintained over time. All pertinent dates, including patient-reported events, are stored, and the description of the patient allergy and adverse reaction is modifiable over time.
The entire allergy history, including reaction, for any allergen, is viewable. The list(s) includes all reactions, including those classifiable as a true allergy, intolerance, side effect, or other adverse reaction to drug, dietary or environmental triggers. Notations indicating whether an item is patient-reported and/or provider verified are maintained.
When a patient is allergic to, e.g. penicillins, any drug which may cause an allergic reaction must be picked up. It is not sufficient for the software to provide a specific drug as an allergen. All drugs in this category must be recognised as possible allergens, and the correct alert activated. Thus a patient who is allergic to penicillin should also be allergic to cloxacillin and co-amoxiclav.

Conformance Criteria

1. The system SHALL provide the ability to capture true allergy, intolerance, and adverse reaction to drug, dietary or environmental triggers as unique, discrete entries.
2. The system SHOULD provide the ability to capture the reason for the entry of the allergy,intolerance or adverse reaction.
3. The system SHALL provide the ability to capture the reaction type.
4. The system SHOULD provide the ability to capture the severity of a reaction.
5. The system SHALL capture a No Known Allergies report(NKA) for the patient.
6. The system SHOULD provide the ability to capture a report of No Known Drug Allergies (NKDA) for the patient.
7. The system SHOULD provide the ability to capture the source of allergy, intolerance, and adverse reaction information.
8. The system SHALL provide the ability to deactivate an allergy item on the list.
9. The system SHALL capture the reason for deactivating an item on the list.
10. The system MAY present allergies, intolerances and adverse reactions that have been deactivated.
11. The system MAY display user-defined sort order of the list.
12. The system SHOULD provide the ability to indicate that the list of medications and other agents has been reviewed.
13. The system SHALL provide the ability to capture and display the date on which allergy information was entered.
14. The system SHOULD allow the capture and display of the approximate date of the allergy occurrence.
15. The system SHOULD utilise a recognised and established database of adverse reactions, including their severity, incidence and relevance.
16. The system SHOULD provide the ability to capture the identity of the person who deactivated an item on the allergy or adverse reaction list and the date/time this occurred.

Manage Medication List (DC.1.4.2)

ID#	Type	Name	Priority
DC.1.4.2	F	Manage Medication List	EN

Statement

Create and maintain patient-specific medication lists.

Description

Medication lists are managed over time, throughout a consultation or a patient's lifetime. All pertinent dates, including medication start, modification, and end dates, are stored. The entire medication history for any medication, including alternative supplements and herbal medicines, is viewable.

Conformance Criteria

1. The system SHALL provide the ability to capture patient-specific medication lists.
2. The system SHALL display and report patient-specific medication lists.
3. The system SHALL provide the ability to capture the details of the medication such as ordering date, dose, route, and description of the prescription, such as the quantity when known.
4. The system SHOULD provide the ability to capture other dates associated with medications, such as start and end dates.
5. The system SHALL capture medications not reported on existing medication lists or medication histories.
6. The system SHOULD provide the ability to capture non-prescription medications, including over the counter and complementary medications such as vitamins, herbs and supplements.
7. The system SHALL present the current medication lists associated with a patient.
8. The system SHOULD present the medication history associated with a patient.
9. When known, the system SHALL present the medication, prescriber, and medication ordering dates.
10. The system SHALL mark a medication as erroneously captured and excluded from the presentation of current medications.
11. The system SHALL allow print of a current medication list for patient use.
12. The system MAY capture information regarding filling prescriptions (dispensing of medications by pharmacies or other providers).
13. When the display of the medication list exceeds the current screen or printed page, the system SHALL indicate that the list continues.
14. The system SHALL change/order medication directly from the medication list. The same clinical decision support, alerts, and interaction checking occurring during order entry also occur.
15. The system SHOULD include drugs that are not in the IPU/ National agreed drug database in the medication list.

Manage Problem List (DC.1.4.3)

ID#	Type	Name	Priority
DC.1.4.3	F	Manage Problem List	EN

Statement

Create and maintain patient-specific problem lists.

Description

A problem list may include but is not limited to: chronic conditions, diagnoses, symptoms, social problems or functional limitations.

Problem lists are managed over time, whether throughout a consultation or a patient's life, allowing documentation of historical information and tracking the changing character of the problem(s) and their priority. The source (e.g. the provider, the system id, or the patient) or the updates should be documented. In addition, all pertinent dates are stored. All relevant dates are stored, including date noted or diagnosed, dates of any changes in problem specification or prioritisation, and date of resolution. This might

include timestamps, where useful and appropriate. The entire problem history for any problem in thelist is viewable.

Conformance Criteria
1. The system SHALL capture, display and report all active problems associated with a patient.
2. The system SHALL capture, display and report a past history of all problems associated with a patient.
3. The system SHALL provide the ability to capture the onset date of the problem.
4. The system SHOULD provide the ability to capture the chronicity (chronic, acute/self-limiting, etc.) of a problem.
5. The system SHALL capture the source, date and time of all updates to the problem list.
6. The system SHALL provide the ability to deactivate a problem.
7. The system MAY provide the ability to re-activate a previously deactivated problem.
8. The system SHALL provide the ability to display inactive and/or resolved problems.
9. The system SHOULD manually order/sort the problem list.
10. The system MAY associate encounters, orders, medications, notes with one or more problems.

Manage Immunisation List (DC.1.4.4)

ID#	Type	Name	Priority
DC.1.4.4	F	Manage Immunisation List	EN

Statement
Create and maintain patient-specific immunisation lists.

Description
Immunisation lists are managed over time, throughout a consultation ora patient's lifetime. Details of immunisations administered are captured as discrete data elements, including date, type, batch number, manufacturer, expiry date, site given, method of administration and dose. The entire immunisation history is viewable.

Conformance Criteria
1. The system SHALL capture, display, and report all patient immunisations.
2. The system SHALL record as discrete data elements associated with any immunisation given, including date, type, batch number, manufacturer, expiry date, site given, method of administration and dose.
3. The system SHALL prepare a report of an individual patient‘s immunisation history upon request for appropriate authorities such as schools or daycare centres, including date, type, batch number, manufacturer, expiry date, site given, method of administration and dose.
4. The system SHOULD capture previous vaccination history from patients as:

- Validated, i.e. written records from other health agencies, country or
- Un-validated, i.e. verbal patient-reported.

This previous vaccination history should be recorded with as much detail as possible for each vaccination, including date, type, batch number, manufacturer, expiry date, site given, method of administration, dose and health agency location.

Manage Assessments (DC.1.5)

ID#	Type	Name	Priority
DC.1.5	F	Manage Assessments	EN

Statement

Create and maintain assessments.

Description

During an encounter with a patient, the provider will conduct an assessment relevant to the age, gender, developmental or functional state, medical and behavioural condition of the patient. Such as growth charts, developmental profiles, and disease-specific assessments, e.g. diabetes, asthma, chronic heart failure. Wherever possible, this assessment should follow industry-standard protocols. When a standard specific evaluation does not exist, a unique assessment can be created, using similar standard assessments' format and data elements whenever possible.

Conformance Criteria

1. The system SHALL provide the ability to create assessments.
2. The system SHALL provide the ability to use standardised assessments where they exist.
3. The system SHALL provide the ability to document using standard assessments relevant to the age, gender, developmental state, and health condition as appropriate to the EHR user's scope of practice.
4. The system SHALL provide the ability to capture data relevant to the standard assessment.
5. The system SHOULD capture additional data to augment the standard assessments relative to variances in medical conditions.
6. The system SHOULD provide the ability to link data from a standard assessment to a problem list.
7. The system SHOULD provide the ability to link data from a standard assessment to an individual care plan.
8. The system MAY link data from external sources, laboratory results, and radiographic results to the standard assessment.
9. The system SHALL provide the ability to compare documented data against standardised curves.
10. The system SHALL provide the ability to display trends, including centile charts, Peak Expiratory Flow Rates charts, Body Mass Index charts and disease-specific assessment charts.

Care Plans, Treatment Plans, Guidelines and Protocols (DC.1.6)

ID#	Type	Name	Priority
DC.1.6	H	Care Plans, Treatment Plans, Guidelines and Protocols	

Present Guidelines and Protocols for Planning Care (DC.1.6.1)

ID#	Type	Name	Priority
DC.1.6.1	F	Present Guidelines and Protocols for Planning Care	EN

Statement
Present organisational guidelines for patient care as appropriate to support planning of care, including treatment plans and clinical documentation.

Description
Guidelines and protocols presented for planning care may be site-specific, community or industry-wide standards.

Conformance Criteria
1. The system SHALL provide the ability to present current guidelines and protocols to clinicians creating plans for treatment and care.
2. The system SHOULD provide the ability to search for a guideline or protocol based on appropriate criteria (such as problem).
3. The system SHOULD provide the ability to present previously used guidelines and protocols for historical or legal purposes.

Manage Patient-Specific Care and Treatment Plans (DC.1.6.2)

ID#	Type	Name	Priority
DC.1.6.2	F	Manage Patient – Specific Care and Treatment Plans	EN

Statement
Provide administrative tools for healthcare organisations to build care plans, guidelines and protocols during patient care planning and care.

Description
Care plans, guidelines or protocols may contain goals or targets for the patient, specific guidance to the providers, suggested treatment plans, and nursing interventions, among other items. Tracking implementation or approval dates, modifications and relevancy to particular domains or context is provided. Transfer of treatment and care plans may be implemented electronically using, for example, templates or by printing plans to paper.

Conformance Criteria
1. The system SHALL provide the ability to capture patient-specific plans of care and treatment.
2. The system SHALL conform to DC.1.6.1 (Present Guidelines and Protocols for Planning Care) and provide the ability to use locally or non-locally developed templates, guidelines, and protocols to create patient-specific plans of care and treatment.
3. The system SHALL provide the ability to use previously developed care plans to create new care and treatment plans.
4. The system SHALL provide the ability to track updates to a patient's plan of care and treatment, including authors, creation date, version history, references, local sources, and non-local sources according to the scope of practice, organisational policy, and legislation.
5. The system SHALL provide the ability to transfer care plans and treatment to other care providers.

Orders and Referrals Management (DC.1.7)

ID#	Type	Name	Priority
DC.1.7	H	Orders and Referrals Management	

Manage Prescriptions (DC.1.7.1)

ID#	Type	Name	Priority
DC.1.7.1	F	Manage Prescriptions	EN

Statement
Create prescriptions with all the details required for correct dispensing and administration. Provide information regarding the compliance of medication orders with formularies.

Description
This section aims to make available to practices sound quality systems that will assist the practice in safe and effective prescribing. This depends upon prescribers having available to them information on:

- The medicinal products (e.g. drugs) and appliances which they can prescribe;
- The entire medication regimen for their patients;
- Contraindications, cautions, interactions, side effects and active ingredient duplications;
- Sensitivities and allergies recorded for that patient;

Prescribing is an essential activity for general practitioners. The practice management system facilitates the generation of prescriptions for all patients as part of a consultation or to fill a request for a repeat prescription. The correct details are recorded for each situation. Administration or patient instructions are available for selection by the ordering clinicians, or the ordering clinician is facilitated in creating such instructions.

The system may allow for the creation of standard content for prescription details. Appropriate time stamps for all medication-related activity are generated. The ordering clinician should communicate whether the order complies with the formulary at an appropriate point to allow the ordering clinician to decide whether to continue with the order. Formulary compliant alternatives to the medication being ordered may also be presented.

The system should have the function to transfer the prescription securly to the pharmacist using Healthmail prescription transfer. Details on section 2.10 Electronic Prescription Transfer.

Conformance Criteria

1. The system SHALL provide the ability to create prescriptions with the details adequate for correct filling and administration captured as discrete data.
2. The system SHALL generate GMS and private patients for once-off and repeat prescriptions on the appropriate stationery.
3. For children under 12 years, the age in years and months SHALL be displayed on the prescription.
4. The system SHALL capture user and date stamps for all prescription-related events.
5. The system SHALL conform to function DC.1.4.2 (Manage Medication List) and update the appropriate medication list with the prescribed medications.
6. The system SHALL provide the ability to search a list of medications by brand name or generic name and include both terms in the results.
7. The system SHALL provide the ability to maintain a discrete list of orderable medications.
8. The system SHALL utilise a recognised and established drug database updated regularly every quarter.
9. The system MAY allow the ordering clinician to create prescription details as needed.
10. The system MAY make available typical patient medication instruction content to be selected by the prescriber.
11. The system SHOULD provide the ability to select drugs by therapeutic class and/or indication.
12. The system SHALL provide the ability to re-prescribe medication by allowing a prior prescription to be reordered without re-entering previous data (e.g. administration schedule, quantity).
13. The system SHOULD provide the ability to re-prescribe a medication from a prior prescription using the same dosage but allow for editing of details adequate for correct filling and administration of medication (e.g. dose, frequency, body weight).
14. The system SHALL conform to function DC.2.3.1.1 (Support for Drug Interaction Checking) and check and report allergies, drug-drug interactions, and other potential adverse reactions when new medications are ordered.
15. The system SHALL conform to function DC.2.3.1.2 (Support for Patient-Specific Dosing and Warnings) and check and report other potential adverse reactions when new medications are ordered.
16. The system SHOULD provide the ability to create prescriptions in which the weight-specific dose is suggested.
17. For repeat prescriptions, the system SHALL alert the prescriber when the maximum number of repeat prescriptions has been issued, or the review date has been reached.

18. The system SHOULD provide a list of patients on repeat prescriptions who need review.
19. The system SHALL have a facility to record handwritten scripts without printing.
20. The system SHOULD indicate the legal category of drugs as prescription or non - prescription.
21. The system SHOULD alert the prescriber to use Schedule 2 & 3 Controlled drugs that require prescribers own handwriting and other legislative requirements. Please see the text box below, Figure 2.
22. The system SHOULD indicate whether the medication selected is reimbursable under the Community Drugs Schemes (includes GMS Scheme, Drug Payment Scheme, Long Term Illness Scheme, High Tech Drugs Scheme and other schemes).
23. If a medication selected is unlicensed, the system SHOULD alert the prescriber. This will allow the prescriber to make an informed choice of drug, considering the increased liability issues for prescribing unlicensed medicines.
24. The system's drug database SHOULD include a list of excipients contained within the medicine formulations. This would allow for potential allergic reactions to be identified and assist where specific formulations are required, e.g. sugar-free formulations for people with diabetes.
25. The system SHOULD include an option for generating prescriptions that specify dispensing by instalments, e.g. monthly issuing of prescription, but weekly dispensing required.
26. The system SHALL support practice specific formularies.
27. The system SHALL allow end-users to search for medications by generic or brand name.
28. The system SHOULD check for dose ranges based on patient age.
29. The system SHOULD provide the ability to display patient-specific dosing recommendations based on age and weight.
30. The system SHALL include the prescriber's six-digit Medical Council registration number on all prescriptions.
31. The system SHALL NOT display advertising for any product that can be prescribed.
32. The system SHOULD identify contra-indicated medications that may pose problems in sport.
33. The system SHOULD automatically update the drug database where a subscription to this is in place.

Controlled Drug Prescriptions- Misuse of Drug Regulations 2017, amended 2020

Prescription of Controlled Drugs is covered under The Misuse of Drug Regulations 2017 https://www.thepsi.ie/gns/Pharmacy_Practice/PracticeUpdates/MisuseofDrugsRegulations2017.aspx which outlines the precise format that must be used for the writing of Controlled Drug prescriptions

This was amended in 2020 to permit the electronic transfer of prescription of controlled drugs https://www.irishstatutebook.ie/eli/2020/si/99/made/en/print Schedule 2, 3 and 4 part 1. Controlled Drug prescription writing format requirements still apply, however these do not need to be in the prescriber's own handwriting.

3 Prescription of Controlled Drugs

Non-Medication Orders and Referral Management (DC.1.7.2)

ID#	Type	Name	Priority
DC.1.7.2	H	Non-Medication Orders and Referral Management	

Manage Orders for Diagnostic Tests (DC.1.7.2.2)

ID#	Type	Name	Priority
DC.1.7.2.2	F	Manage Orders for Diagnostic Tests	EN

Statement
Enable the origination, documentation, and tracking of orders for diagnostic tests.

Description
Orders for diagnostic tests (e.g. diagnostic radiology, blood test) are captured and tracked, including new, renewal and discontinue orders. Each order includes relevant detail, such as order identification, instructions and clinical information necessary to perform the test. Orders and supporting detailed documentation shall be communicated to the service provider to complete the diagnostic test(s).

Conformance Criteria
1. The system SHALL provide the ability to capture orders for diagnostic tests.
2. The system SHOULD provide the ability to capture adequate order detail for proper diagnostic test fulfilment. This includes the order identification, instructions and clinical information necessary to perform the test.
3. The system SHOULD track diagnostic test status (s).
4. The system SHOULD provide the ability to capture and present patient instructions relevant to the diagnostic test ordered.
5. The system SHOULD communicate orders to the service provider of the diagnostic test.
6. The system SHOULD communicate detailed supporting documentation to the correct service provider of the diagnostic test.
7. The system SHALL provide matching of outgoing requests against incoming results so that test results that have not returned can be identified.
8. The system SHALL print Addressograph labels to fix laboratory request forms and specimen sample containers.
9. The system SHALL provide the ability to generate an order message according to the HL7 version 2.4 XML order message Standard.
10. The system SHALL provide a Placer Order Number when communicating an order to the laboratory service fulfilling the order.
11. The system SHALL provide a view of active orders for an individual patient.
12. The system SHALL provide a view of orders by like or comparable type, e.g., all radiology or lab orders.
13. The system SHALL provide the ability to display outstanding orders for multiple patients (as opposed to outstanding orders for a single patient).

Manage Referrals (DC.1.7.2.4)

ID#	Type	Name	Priority
DC.1.7.2.4	F	Manage Referrals	EN

Statement

Enable the origination, documentation and tracking of referrals between care providers or healthcare organisations, including clinical and administrative details of the referral and consents and authorisations for disclosures as required.

Description

Documentation and tracking of a referral from one care provider to another are supported, whether the referred to or referring providers are internal or external to the healthcare organisation.

Conformance Criteria

1. The system SHALL allow capture and communication referral(s) to other care providers, whether internal or external to the organisation.
2. The system SHALL capture clinical details as necessary for the referral.
3. The system SHALL capture administrative details (such as insurance information, consents and authorisations for disclosure) as necessary for the referral.
4. The system SHALL present captured referral information.
5. The system SHOULD provide the ability to capture the completion of a referral appointment.
6. The system SHOULD provide diagnosis based clinical guidelines for making a referral.
7. The system SHOULD provide diagnostic workup details for referral preparation.
8. The system SHOULD provide the ability to document the transfer of care according toorganisational policy, the scope of practice, and legislation.
9. In digital or printed format, the system SHALL create a referral letter, either unstructured or structured, to a hospital, consultant, clinic or health professional.
10. The system SHALL support the use of referral templates, including the HIQA/ICGP GP Referral Template https://www.hse.ie/eng/services/list/3/acutehospitals/patientcare/protocol-for-the-management-of-outpatient-services-and-guidance-documents/guidance-003-the-hiqa-mds-for-outpatient-referral.pdf
11. The system SHOULD ensure that the minimum data required for a referral is entered before the referral can be saved or sent. Please see the HIQA/ICGP GP Referral Dataset.
12. The system SHALL track electronic referrals and generate alerts for referrals that the hospital has not acknowledged.

13. The system SHALL generate a structured referral message to the HL7 version 2.4 XML referral message Standard.
14. The system SHALL generate and return an acknowledgement message to the hospital after receiving the referral response message.
15. The system SHALL track response messages and generate alerts for electronic referrals thathave not received a response within an agreed time.
16. The system SHALL provide a view of electronic referrals by practice or individual GP so that an overview of electronic referrals is available showing referrals sent, acknowledged andresponse messages received.

Documentation of Care, Measurements and Results (DC.1.8)

ID#	Type	Name	Priority
DC.1.8	H	Documentation of Care, Measurements and Results	

Manage Medication Administration (DC.1.8.1)

ID#	Type	Name	Priority
DC.1.8.1	F	Manage Medication Administration	EN

Statement
Present providers with the list of medications to be administered to a patient, necessary administration information, and capture administration details.

Description
When a GP or practice nurse administers a drug to a patient, by whatever route, including orally, by injection or by a nebuliser, it is essential to document that administration. The necessary information is presented, including the list of medication orders to be administered; administration instructions, times or other conditions of administration; dose and route, etc. The system shall securely relate medications to be issued to the patient's unique identity (see DC.1.1.1). Additionally, the provider can record what was or was not administered and whether these facts conform to the order.
Appropriate time stamps for all medication-related activity are generated. For some settings that administer complete sets of medications from various providers' orders, it may be helpful to provide an additional check for possible drug-drug or other interactions.

Conformance Criteria
1. The system SHALL present the list of medications to be administered.
2. The system SHALL display the timing, administration route, and dose of all medications on the list.
3. The system SHOULD display instructions for administering all medications on the list.
4. The system MAY notify the clinician when specific doses are due.

5. The system SHOULD conform to function DC.2.3.1.1 (Support for Drug Interaction Checking) and check and report allergies, drug-drug interactions, and other potential adverse reactions when new medications are about to be given.
6. The system SHOULD conform to function DC.2.3.1.2 (Support for Patient-Specific Dosing and Warnings) and check and report other potential adverse reactions when new medications are about to be given.
7. According to organisational policy, the scope of practice, and legislation, the system SHALL capture medication administration details – including timestamps, observations, complications, and reason if the medication was not given.
8. The system SHALL securely relate interventions to be administered to the patient's unique identity.
9. The system SHOULD capture the batch number and expiry date for administering medications.
10. The system SHOULD provide the ability to capture the product data using barcode scanning technology automatically.

Manage Immunisation Administration (DC.1.8.2)

ID#	Type	Name	Priority
DC.1.8.2	F	Manage Immunisation Administration	EN

Statement
Capture and maintain discrete data concerning immunisations given to a patient, includingdate administered, type, manufacturer, batch number, and any allergic or adverse reactions. Facilitate the interaction with an immunisation registry to allow maintenance of a patient's immunisation history.

Description
Recommendations based on accepted immunisation schedules are presented to the provider during an encounter. Allergen and adverse reaction histories are checked beforegiving the immunisation. If immunisation is administered, discrete data elements associated with the immunisation, including date, type, manufacturer and batch number, are recorded. Any new adverse or allergic reactions are noted. If required, a report is made to the public health immunisation registry.

Conformance Criteria
1. The system SHALL provide the ability to recommend required immunisations, as and when they are due, during an encounter, based on the national immunisation guidelines. The national immunisation guidelines are available from http://www.immunisation.ie/ and are updated regularly.
2. The system SHOULD provide the ability to recommend required immunisations based on patient profile and risk factors. These include age, time since last vaccination (e.g. pneumococcal), risk groups for influenza vaccination and occupational risk groups such as healthcare workers, firefighters, Gardai and poultry workers.
3. The system SHALL perform checking for potential adverse or allergic reactions for all immunisations when they are given.

4. The system SHALL provide the ability to capture immunisation administration details, including date, type, batch number, manufacturer, expiry date, the site given, method of administration and dose.
5. The system SHOULD provide the ability to capture other clinical data pertinent to the immunisation administration (e.g. vital signs).
6. The system SHALL record as discrete data elements data associated with any immunisation.
7. The system SHOULD associate standard codes with discrete data elements related to immunisation. This could include codes for data items such as product given, site given and method of administration.
8. The system SHALL capture and update the immunisation schedule produced by the National Immunisation Advisory Committee.
9. The system SHALL provide the ability to prepare a report of an individual patient's immunisation history upon request from appropriate authorities such as schools or day-care centres.
10. The system SHALL provide the ability to make a detailed printed return to the appropriate agency to facilitate an immunisation fee claim.
11. The system SHOULD transmit required immunisation information to a public health immunisation registry.
12. The electronic transfer file for each vaccination given SHOULD include patient surname, forename, date of birth, address, PPSN, GP identifier, Medical Card Number, GP name and address, product given, batch number, expiry date, dose, site given and method of administration.
13. The system SHOULD receive immunisation histories from a public health immunisation registry.
14. The system SHALL hold a list of vaccines available for the practice, including type, manufacturer, batch number, and expiry date.
15. The system SHALL has the functionality to inactivate any immunisations on this vaccine list. This should happen automatically when an expiry date for a product/batch has been reached.
16. Suppose a health care provider attempts to perform vaccination with an expired vaccine. In that case, thesystem SHOULD allow recording the vaccination but flash a warning that an expired immunisation has been administered.
17. The system SHOULD produce electronic vaccine request orders for the cold chain delivery service.
18. The system SHOULD manage an inventory of vaccines that records new vaccines received, vaccines in stock, vaccines administered, and vaccines returned for destruction.19. The system SHALL capture consent to vaccination or objection to vaccination.
20. The system SHOULD capture all adverse or allergic reactions associated with vaccination administration, including reporting such adverse events to the Irish Medicines Board.
21. The system SHOULD link vaccine administration with blood serology results, e.g. Hepatitis B vaccination.
22. The system SHOULD provide the ability to remove the notification for BCG vaccination.

23. The system SHOULD have a 'vaccination refused' or 'vaccinated by other provider' entry for influenza vaccination which will stop the notification to the GP or practice nurse of the requirement to vaccinate.
24. The system SHOULD have a facility to record that a patient held record was completed and given to this patient.
25. The system SHOULD have the ability to capture details (name and identifier) of both the person who prescribed and administered the vaccine.

Manage Electronic Results (DC.1.8.3)

ID#	Type	Name	Priority
DC.1.8.3	F	Manage Electronic Results	EN

Statement
Present, annotate and route current and historical test results to appropriate providers or patients for review. Provide the ability to filter and compare results.

Description
Results of tests are presented in an easily accessible manner to the appropriate providers. Flowsheets, graphs, or other tools allow care providers to view or uncover trends in test data over time. In addition to making results viewable, it is often necessary to send results to appropriate providers using electronic messaging systems, pagers, or other mechanisms. Documentation of notification is accommodated, and results may also be routed to patients electronically or by letter.

Conformance Criteria
1. The system SHALL provide the ability to present numerical and non-numerical current and historical test results to the appropriate provider.
2. The system SHALL provide the ability to filter the results by the provider.
3. The system SHALL filter abnormal results where an abnormal result flag is displayed in the message.
4. The system SHALL facilitate the management of tasks by providers associated with results such as: seen, signed off, delegate to named GP or Practice Nurse, phone patient, write to the patient, visit patient, etc.
5. The system SHALL facilitate patient communication of results, such as information by phone, letter, SMS text or email, that result is: normal, needs repeat, needs review appointment.
6. The system SHALL provide the ability to filter results for a unique patient.
7. The system SHALL provide the ability to filter results by factors that support results management, such as type of test and date range.
8. The system SHOULD indicate normal and abnormal results depending on the data source.
9. The system SHOULD provide the ability to filter lab results by range, e.g. critical, abnormal or normal.
10. The system SHOULD display numerical results in flow sheets graphical form and allow comparison of results.
11. The system SHALL allow group tests done on the same day.

12. The system SHOULD notify relevant providers (ordering, copy to) that received new results.
13. The system SHOULD provide the ability for the user, to whom a result is presented, to acknowledge the result.
14. The system SHOULD provide the ability to route results to other appropriate care providers, such as practice nurses, community nurses, etc.
15. The system MAY route results to patients by methods such as phone, fax, electronically or letter.
16. The system SHOULD provide the ability for providers to pass on the responsibility to perform follow up actions to other providers.
17. The system MAY allow an authorised user to group results into logical sections.
18. The system SHOULD trigger decision support algorithms from the results.
19. If the system contains the electronic order, THEN the results SHALL be linked to a specific order.
20. The system SHALL provide the ability for providers to annotate a result.
21. An annotation or comment on a result by practice staff SHALL be clearly identified as originating from a defined user and not a part of the original result.
22. The system SHALL NOT allow a user to overwrite original data in a result.
23. The system SHOULD display a URL to an image associated with a radiology result, stored on central servers as part of the National Integrated Medical Imaging System (NIMIS) project.

Manage Display of Results (DC.1.8.3.1)

ID#	Type	Name	Priority
DC.1.8.3.1	F	Manage Display of Results	EN

Statement
There needs to be clinical equivalence between the printed laboratory or radiology report and the initial display in the GP software system.

Description
Some pathology laboratories require clinical equivalence between the printed report and the initial display in the GP software system. This is to fulfil their clinical responsibilities and satisfy laboratory accreditation requirements. There is a need for agreement at a national level on display standards and a process to audit compliance with this by laboratories, message brokers and GP software vendors.

Conformance Criteria
1. Where a requirement for clinical equivalence exists, the Vendors SHALL work with the laboratory to attain this standard. An example of this is the audit process in place around the regional pathology laboratory in Waterford.

2. The system SHALL provide an initial display of messages before integrating them into theindividual patient record.
3. The initial display SHALL be of the data provided in the message according to the display guidelines or XML stylesheet provided by the message sender.
4. The system SHOULD manage corrections to results per the document"Message Addenda 1_2.pdf" produced by the HSE messaging standards subgroup.
5. The system SHOULD manage 'copy to' requests per the document"Message Addenda 1_2.pdf" produced by the HSE messaging standards subgroup.
6. The system SHOULD provide the ability to receive and store general laboratory results (includes the ability to differentiate preliminary results and final results and the ability to process a corrected result) using the HL7 v2.4 XML ORU message standard.
8. The system SHALL indicate normal and abnormal results based on data supplied from the original source.
9. The system SHALL flag results have been received but have not been reviewed.
10. Laboratory and Radiology results SHOULD be displayed in a fixed-width font.

Manage Patient Clinical Measurements (DC.1.8.4)

ID#	Type	Name	Priority
DC.1.8.4	F	Manage Patient Clinical Measurements	EN

Statement
Capture and manage patient clinical measures, such as vital signs, as discrete patient data.

Description
Patient measures such as vital signs are captured and managed as discrete data to facilitate reporting and provision of care. Other clinical criteria (expiratoryflow rate, lesion size, etc.) are captured and managed and may be discrete data.

Conformance Criteria
1. The system SHALL capture patient vital signs such as blood pressure, temperature, heart rate, respiratory rate, and severity of pain as discrete elements of structured or unstructured data.
2. The system SHOULD capture psychiatric symptoms and daily functioning as structured or unstructured data.
3. The system SHOULD capture other clinical measures such as peak expiratory flow rate, size of lesions, oxygen saturation, height, weight, and body mass index as discrete elements of structured or unstructured data.
4. The system SHALL compute and display percentile values when data with normative distributions are entered.
5. The system MAY provide normal data ranges based on age and other parameters such as height, weight, ethnic background, and gestational age.
6. The system SHOULD provide the ability to display growth charts that include growth data (weight, length or height and head circumference) on a graph that includes normative data plotted against population-based normative curves. By age ranges and gender of the respective normative data (e.g. females 0-36 months).

7. The system SHALL display height and weight in Imperial and S.I. units, configurable by the user.

Manage Clinical Documents and Notes (DC.1.8.5)

ID#	Type	Name	Priority
DC.1.8.5	F	Manage Clinical Documents and Notes	EN

Statement

Create, addend, correct, authenticate and close, as needed, transcribed or directly-entered clinical documentation and notes.

Description

Clinical documents and notes may be unstructured and created in a narrative form, which may be based on a template, graphical, audio, etc. The documents may also be structured documents that result in the capture of coded data. Each of these forms of clinical documentation is important and appropriate for different users and situations.

Conformance Criteria

1. The system SHALL provide the ability to capture clinical documentation (henceforth "documentation") including original, update by an amendment to correct, and addenda.
2. The system SHALL provide the ability to capture free-text documentation.
3. The system MAY present documentation templates (structured or free text) to facilitate creating documentation.
4. The system SHALL provide the ability to view other documentation within the patient's logical record while creating documentation.
5. The system SHOULD provide the ability to associate documentation for a specific patient with a given event, such as a surgery visit, phone communication, e-mail consult, lab result, etc.
6. The system SHOULD provide the ability to associate documentation with problems and diagnoses.
7. The system SHALL provide the ability to update documentation before finalising it.
8. The system SHALL provide the ability to finalise a document or note.
9. The system SHALL provide the ability to attribute, record and display the identity of all users contributing to or finalising a document or note, including the date and time of entry (see appropriate criteria in IN.2.2 (Auditable Records)).
10. The system SHALL present captured documentation.
11. The system MAY provide the ability to filter, search or sort notes.

Manage Ante-natal and Post-natal Care (DC.1.8.7)

ID#	Type	Name	Priority
DC.1.8.7	F	Manage Ante-natal and Post-natal Care	EN

Statement

Manage the provision of ante-natal and post-natal care and associated services.

Description
The system should support the provision of shared ante-natal care. This includes the documentation of:

- Details of consultant obstetrician, midwife and maternity hospital;
- Previous obstetric and relevant medical history;
- Family history, medication and allergies;
- Smoking and alcohol habits;
- General examination;
- Record of pregnancy;
- Record of confinement;
- Record of the post-natal period;
- Record of six-week check;
- Immunisation arrangements;

Conformance Criteria
1. The system SHALL provide the ability to capture all data relevant to ante-natal and post-natal care. As an example, the table below shows the data items captured in the ICGP Combined Obstetric Card.
2. The system SHALL integrate with the hospital MN-CMS IT system, further details in section 2.6 Discharge Summaries for Maternity and Newborn Clinical Management System (MN-CMS)
3. The system SHALL capture user and date stamps for all assessments and interventions.
4. The system SHOULD alert the user when essential data items or expected interventions are incomplete.
5. The system SHOULD alert users when scheduled ante-natal visits have been missed.
6. The system SHOULD provide prompts based on practice standards to recommend additional assessment functions.
7. The system SHALL capture all medication prescribed/discontinued and vaccinations given in the past year to aid medication reconciliation in the hospital IT system.
8. The system SHOULD provide the ability to correlate assessment data and the patient-specific problem list.
9. The system SHALL generate the required output for antenatal and postnatal care, particularly the maternity claim form, as shown below.
10. The system SHOULD facilitate capturing information on the 6-week-check in the infant's electronic record.
11. The system SHOULD alert users when a woman has not attended a 6-week-check.

Data Attributes

Mother's demographic details
Maternity Hospital: name, address, contact details, hospital number
Obstetrician: name, address, contact details, outpatients/rooms
Midwife: name, address, contact details
Family doctor: name, address, contact details
Previous obstetric history: live births, stillbirths, miscarriages, complications, relevant medical or surgical history

Family history
Allergies
General examination
LMP, EDD, Life
Intent to breastfeed
Smoking status, alcohol intake
Blood tests: blood group, rhesus, antibodies, VDRL, other blood tests
Ultrasound: measurements, dates
Ante-natal visit: date, scan, fundus, weight, urine (albumin, glucose, other), oedema, blood pressure, presentation, foetal heart, other, Hb, notes, date of next visit (GP and hospital)
Confinement: delivery, date, gender, weight, method, place, head circumference, comments, feeding (breast/bottle), puerperal problems, BCG (yes/no, date), PKU (yes/no, date)
Post-natal examination: GP/hospital, details, dates, immunisation recommendation, family planning, developmental checks (GP/Clinic)
Medication

Table 9 Obstetric Care Data

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Claim Form for Provision of Services under Maternity and Infant Scheme: please submit signed form to your Local Health Office

Mother's Forename	
Mother's Surname	
Address Line 1	
Address Line 2	
Address Line 3	
Address Line 4	
Mother's DOB	
Mother's PPS No.	
Maternity Ref. No.	

GP's Forename	
GP's Surname	
Practice Address Line 1	
Practice Address Line 2	
Practice Address Line 3	
Practice Address Line 4	

Gravida	
LMP	

Date	**Antenatal Service Provided**
	Antenatal first visit
	Antenatal care
	Antenatal care
	Antenatal care
	Antenatal care
	Antenatal care
	Antenatal care (2nd and subsequent pregnancies)

Date	**Additional Service Provided and Reason**

Date	**Postnatal Service Provided**
	Date of Birth
	Baby at two weeks
	Mother and Baby at six weeks

GP Signature	
Date	

Figure 4 Maternity Claim Form

Generate and Record Patient Specific Instructions (DC.1.9)

ID#	Type	Name	Priority
DC.1.9	F	Generate and Record Patient-Specific Instructions	EN

Statement
Generate and record patient-specific instructions related to pre-and post-procedural and chronic care requirements.

Description
When a patient is scheduled for a test, procedure, or ongoing chronic care review, specific instructions about diet, clothing, transportation assistance, recovery, follow-up with physician, etc., may be generated and recorded, including the timing relative to the scheduled event.

Conformance Criteria
1. The system SHALL provide the ability to generate instructions pertinent to the patient for standardised procedures.
2. The system SHALL provide the ability to generate instructions pertinent to the patient based on clinical judgment.
3. The system SHALL provide the ability to include details on further care such as follow up, return visits and appropriate timing of additional care.
4. The system SHALL provide the ability to record that instructions were given to the patient.
5. The system SHALL provide the ability to record the actual instructions given to the patient or reference the document(s) containing those instructions.

Clinical Decision Support (DC.2)

ID#	Type	Name	Priority
DC.2	H	Clinical Decision Support	

Manage Health Information to Provide Decision Support (DC.2.1)

ID#	Type	Name	Priority
DC.2.1	H	Manage Health Information to Provide Decision Support	

Support for Standard Assessments (DC.2.1.1)

ID#	Type	Name	Priority
DC.2.1.1	F	Support for Standard Assessments	EN

Statement
Offer prompts to support the adherence to treatment plans, guidelines, and protocols at the point of information capture.

Description
When a clinician fills out an assessment, data entered triggers the system to prompt the assessor to consider issues that would help assure a complete/accurate assessment. A simple demographic value or presenting problem (or combination) could provide a template for data gathering that represents best practice in this situation, e.g. Type II diabetic review, fall and 70+, rectal bleeding, etc. Also, support for standard assessment may include the ability to record and store the value for the answers to specific questions in standardised assessment tools or questionnaires.

Conformance Criteria
1. The system SHALL document the standard assessment in the patient record.
2. The system SHALL provide access to health standards and practice appropriate to the EHR user's scope of practice.
3. The system SHOULD allow the clinician to compare elements of assessments captured and those available as best practices and evidence-based resources.
4. The system MAY derive supplemental assessment data from evidence-based standard assessments, practice standards, or other generally accepted, verifiable, and regularly updated standard clinical sources.
5. The system SHOULD provide prompts based on practice standards to recommend additional assessment functions.
6. The system SHOULD conform to function DC.1.4.3 (Manage Problem List) and provide the ability to update the problem list by activating new problems and deactivating old problems as identified by standard assessments.
7. The system SHOULD provide the ability to create standard assessments that correspond to the problem list.
8. The system SHOULD interact with the Irish Primary Care Research Network (iPCRN) (http://www.ipcrn.ie) to facilitate audit and research.

Support for Patient Context-Driven Assessments (DC.2.1.2)

ID#	Type	Name	Priority
DC.2.1.2	F	Support for Patient Context Driven Assessments	EN

Statement
Offer prompts based on patient-specific data at the point of information capture for assessment purposes.

Description
When a clinician fills out an assessment, the data entered is matched against data already in the system to identify potential linkages. For example, the system could scan the medication list and the knowledge base to see if any symptoms are side effects of medication already prescribed. Important diagnoses could be brought to the doctor's attention, for instance, ectopic pregnancy in a woman of childbearing age who has abdominal pain.

Conformance Criteria

1. The system SHALL provide the ability to access health assessment data in the patient record
2. The system SHOULD provide the ability to compare assessment data entered during the encounter and the accessed health evidence-based standards and best practices
3. The system SHOULD provide the ability to compare health data and patient context-driven assessments to practice standards to prompt additional testing, possible diagnoses, or adjunctive treatment
4. The system SHOULD provide the ability to correlate assessment data and the data in the patient-specific problem list

Care and Treatment Plans, Guidelines and Protocols (DC.2.2)

ID#	Type	Name	Priority
DC.2.2	H	Care and Treatment Plans, Guidelines and Protocols	

Support for Condition Based Care and Treatment Plans, Guidelines, Protocols (DC.2.2.1)

ID#	Type	Name	Priority
DC.2.2.1	H	Support for Condition Based Care and Treatment plans, Guidelines, protocols	

Support for Standard Care Plans, Guidelines, Protocols (DC.2.2.1.1)

ID#	Type	Name	Priority
DC.2.2.1.1	F	Support for Standard Care Plans, Guidelines, Protocols	EN

Statement
Support the use of appropriate standard care plans, guidelines and protocols to manage specific conditions.

Description
Standard care plans, protocols, and guidelines must be created before they can be accessed upon request (e.g., in DC 1.6.1). These documents may reside within the system or be provided through links to external sources and can be modified and used on a site-specific basis. Variable variances from standard care plans, guidelines, and protocols can be identified and reported to facilitate retrospective decision support.

Conformance Criteria
1. The system SHALL conform to function DC.1.6.1 (Present Guidelines and Protocols for Planning Care) and provide the ability to access standard care plans, protocols and guidelines when requested within the context of a clinical encounter.
2. The system SHALL use national immunisation guidelines to manage immunisation administration as part of planned care and opportunistically.
3. The system MAY create and use site-specific care plans, protocols and guidelines.

4. The system MAY make site-specific modifications to standard care plans, protocols, and guidelines obtained from outside sources.
5. The system SHOULD identify, track and provide alerts, notifications and reports about variances from standard care plans, guidelines and protocols.
6. The system SHOULD provide the capability to generate an alert in a patient's record notifying the provider of the recent death of a family member.

Support for Context-Sensitive Care Plans, Guidelines, Protocols (DC.2.2.1.2)

ID#	Type	Name	Priority
DC.2.2.1.2	F	Support for Context Sensitive Care Plans, Guidelines, Protocols	EN

Statement
Identify and present the appropriate care plans, guidelines, and protocols for managing patient-specific conditions identified in a patient clinical encounter.
Description
At the time of the clinical encounter (problem identification), recommendations for tests, treatments, medications, immunisations, referrals and evaluations are presented based on the assessment of patient-specific data such as age, gender, developmental stage, their health profile and any site-specific considerations. These may be modified based on new clinical data at subsequent encounters.

Conformance Criteria
1. The system SHALL provide the ability to access care and treatment plans that are sensitive to the context of patient data and assessments.
2. The system MAY capture care processes across the continuum of care.
3. The system MAY present care processes from across the continuum of care.
4. The system MAY document the choice of action in response to care plan suggestions.
5. The system SHOULD identify, track and provide alerts, notifications and reports about variances from standard care plans, guidelines and protocols.

Support Consistent Healthcare Management of Patient Groups or Populations (DC.2.2.2)

ID#	Type	Name	Priority
DC.2.2.2	F	Support Consistent Healthcare Management of Patient Groups or Populations	EN

Statement
Provide the ability to identify and consistently manage healthcare, over time and across populations or groups of patients, that share diagnoses, problems, functional limitations, treatment, medications, and demographic characteristics. That may impact care, e.g. population management, disease management, wellness management or care management.

Description
Populations or groups of patients that share diagnoses (such as diabetes or hypertension), problems, functional limitations, treatment, medication, and demographic characteristics such as race, ethnicity, religion, a socio-economic status that may impact care are identifiedfor the clinician. The clinician is advised and assisted with managing these patients to optimise the clinician's ability to provide appropriate care. For example, a clinician is alerted to racial, cultural, religious, socio-economic, living situations and functional accommodations to provide proper care. A further example-- the clinician may be notified of eligibility for a particular test, therapy, or follow-up; availability of supportive resources in the community; or results from audits of compliance of these populations with disease management protocols. Used in example the childhood vaccination program and the Chronic Disease Management Program.

Conformance Criteria
The system SHALL identify patients eligible for healthcare management protocols based on criteria specified within the protocol.
1. The system SHALL allow including or excluding a patient from an existing healthcare management protocol group.
2. The system SHALL provide the ability to audit compliance of selected populations and groups that are the subjects of healthcare management protocols.
3. The system SHALL identify patients who are on a specific drug in theevent of a drug recall.

Support for Research Protocols Relative to Individual Patient Care (DC.2.2.3)

ID#	Type	Name	Priority
DC.2.2.3	F	Support for Research Protocols Relative to Individual Patient Care	

Statement
Provide support for the management of patients enrolled in research protocols.

Description
The clinician is presented with appropriate protocols for patients participating in research studies and is supported in the arrangement and tracking of study participants. This is important for the patients participating in the Chronic Disease Management Program.

Conformance Criteria
1. The system SHALL provide the ability to present protocols for patients enrolled in research studies.
2. The system SHALL provide the ability to maintain research study protocols.
3. The system SHALL conform to function S 2.2.2 (Standard Report Generation).
4. If research protocols require the standardised data transmission to/from a registry or directory, THEN the system SHALL conform to function IN.3 (Registry and Directory Services).

Support Self-Care (DC.2.2.4)

ID#	Type	Name	Priority

DC.2.2.4	F	Support Self-Care	

Statement
Provide the patient with decision support for self-management of a condition between patient-provider encounters.

Description
Patients with specific conditions need to follow self-management plans that may include schedules for home monitoring, lab tests, clinical check-ups; recommendations about nutrition, physical activity, tobacco/alcohol use etc.; and guidance or reminders about medications. Information to support self-care may be appropriately provided to:

1. The patient.
2. A surrogate (parent, spouse, guardian), or.
3. Others are involved directly in the patients self-care.

Conformance Criteria

1. The system SHALL provide the ability to present patient guidance and reminders appropriate for self-management of clinical conditions.
2. The system SHALL provide the ability to manage and develop patient guidance and reminders related to specific clinical conditions.
3. The system SHOULD conform to function DC.1.1.3.2 (Capture of Patient Originated Data).
4. The system SHOULD conform to function IN.1.4 (Patient Access Management).
5. The system SHOULD conform to function IN.3 (Registry and Directory Services).

Medication and Immunisation Management (DC.2.3)

ID#	Type	Name	Priority
DC.2.3	H	Medication and Immunisation Management	

Support for Medication and Immunisation Ordering (DC.2.3.1)

ID#	Type	Name	Priority
DC.2.3.1	H	Support for Medication and Immunisation Ordering	

Support for Drug Interaction Checking (DC.2.3.1.1)

ID#	Type	Name	Priority
DC.2.3.1.1	F	Support for Drug Interaction Checking	EN

Statement
Identify drug interaction warnings at the time of prescribing.

Description
The clinician is alerted to drug-drug, drug-allergy, and drug-food interactions at levels appropriate to the health care setting and concerning the patient condition. These alerts may be customised to suit the user or group.

Conformance Criteria

1. The system SHALL check for and alert providers to interactions between prescribed drugs and medications on the current medication list.
2. The system SHALL relate medication allergies to medications to facilitate allergy checking decision support for medication orders.
3. The system SHOULD provide the ability to document that a provider was presented with and acknowledge a drug interaction warning.
4. The system SHALL provide the ability to prescribe a medication despite alerts for interactions or allergies.
5. Despite an alert, the system SHOULD allow the prescriber to input a reason for prescribing manually.
6. The system SHOULD provide the ability to set the severity level at which warnings should be displayed.
7. The system SHOULD provide the ability to check for duplicate therapies.
5. The system MAY check for interactions between prescribed drugs and food detailing changes in a drug's effects potentially caused by food (including beverages) consumed during the same period.
6. The system SHOULD check for drug-lab interactions to indicate to the prescriber that a patient's drugs may impact specific lab test results.
7. The system SHOULD provide the ability to check medications against a list of drugs noted to be ineffective for the patient in the past.
8. The system SHOULD identify contraindications between a drug and patient conditions at the time of medication orders.

Support for Patient-Specific Dosing and Warnings (DC.2.3.1.2)

ID#	Type	Name	Priority
DC.2.3.1.2	F	Support for Patient Specific Dosing and Warnings	EN

Statement
Identify and present appropriate dose recommendations based on known patient conditions and characteristics at the time of prescribing.

Description
The clinician is alerted to drug-condition interactions and patient-specific contraindications and warnings—for example, pregnancy, breastfeeding or occupational risks, hepatic or renal insufficiency. The patient's preferences may also be presented, e.g. reluctance to use an antibiotic. Additional patient parameters, such as age, gestation, Ht, Wt, and HbA1c, will also be incorporated.

Conformance Criteria
1. The system SHALL provide the ability to identify an appropriate drug dosage range, specific for each known patient condition and parameter at the time of medication orders.
2. The system SHALL provide the ability to automatically alert the provider if contraindications to the ordered dosage range are identified.
3. The system SHALL provide the provider's ability to override a drug dosage warning.

4. The system SHOULD provide the ability to document reasons for overriding a drug alert or warning at the time of ordering.
5. The system SHOULD transmit documented reasons for overriding a drug alert to the pharmacy to enable communication between the clinician and the pharmacist.
6. The system SHALL alert the user while prescribing when the dosage exceeds the recommended dosage for the indication or any indication.
7. The system SHOULD compute drug doses based on appropriate dosage ranges based on the patient's body weight.
8. The system SHOULD provide the ability to specify an alternative "dosing weight" for dose calculation.
9. The system SHOULD perform drug dosage functions using any component of a combination drug.
10. The system SHOULD provide the ability to record the factors used to calculate the future dose for a given prescription.

Support for Medication Recommendations (DC.2.3.1.3)

ID#	Type	Name	Priority
DC.2.3.1.3	F	Support for Medication Recommendations	EN

Statement
The system should provide recommendations and options in medication and monitoring based on patient diagnosis, cost, local formularies or therapeutic guidelines and protocols.

Description
Offer alternative medications based on practice standards (e.g. cost or adherence to guidelines), a generic brand, a different dosage, a different drug, or no drug (watchful waiting). Suggest lab order monitoring as indicated by the medication or the medical condition affected by the medication. Support expedited entry of a series of medicines that are part of a treatment regimen, i.e. renal dialysis, Oncology, transplant medications, etc.

Conformance Criteria
1. The system SHOULD present recommendations for medication regimens based on findings related to the patient diagnosis.
2. The system SHALL present alternative medications treatments based on practice standards, cost, formularies, or protocols.
3. The system SHOULD present suggested lab monitoring as appropriate to a particular medication.

Orders, Referrals, Results and Care Management (DC.2.4)

ID#	Type	Name	Priority
DC.2.4	H	Orders, Referrals, Results and Care Management	

Support for Result Interpretation (DC.2.4.3)

ID#	Type	Name	Priority
DC.2.4.3	F	Support for Result Interpretation	EN

Statement

Evaluate results and notify the provider of results within the context of the patient's healthcare data.

Description

Possible result interpretations include but are not limited to: abnormal result evaluation/notification, trending of results (such as discrete lab values), evaluation of relevant results at the time of provider order entry (such as evaluation of lab results at the time of ordering a radiology exam), evaluation of incoming results against active medication orders and prompting for additional tests as appropriate.

Conformance Criteria

1. The system SHALL alert for a result outside of a standard value range.
2. The system SHOULD provide the ability to trend results.
3. The system MAY provide the ability to evaluate relevant results at the time of provider order entry (such as assessing lab results when ordering a radiology exam).

Support for Referrals (DC.2.4.4)

ID#	Type	Name	Priority
DC.2.4.4	H	Support for Referrals	

Support for Referral Process (DC.2.4.4.1)

ID#	Type	Name	Priority
DC.2.4.4.1	F	Support for Referral Process	EN

Statement

Evaluate referrals within the context of a patient's healthcare data.

Description

When a healthcare referral is made, health information, including relevant clinical and behavioural health results, demographic and insurance data elements (or lack thereof), are presented to the provider. Standardised or evidence-based protocols for appropriate workup before referral may be offered.

Conformance Criteria

1. The system SHALL provide the ability to include clinical and administrative data (e.g. insurance information) as part of the referral process.
2. The system SHALL provide the ability to include test and procedure results with a

referral.
3. The system MAY include standardised or evidence-based protocols with the referral.
4. The system SHOULD allow clinical, administrative data, and test and procedure results to be transmitted to the referral clinician.

Support for Health Maintenance: Preventive Care and Wellness (DC.2.5)

ID#	Type	Name	Priority
DC.2.5	H	Support for Health Maintenance: Preventive Care and Wellness	

Present Alerts for Preventative Services and Wellness (DC.2.5.1)

ID#	Type	Name	Priority
DC.2.5.1	F	Present Alerts for Preventative Services and Wellness	EN

Statement
At the point of clinical decision making, identify patient-specific suggestions/reminders, screening tests/exams, and other preventive services supporting routine preventive and wellness patient care standards.

Description
At an encounter, the provider or patient is presented with due or overdue activities based on preventive care and wellness protocols. Examples include but are not limited to routine immunisations, adult and well child care, age and gender appropriate screening exams, such as cervical smears. The provider may wish to provide reminders to the patient based on the alert.

Conformance Criteria
1. The system SHALL establish criteria for identifying preventive care and wellness services based on patient demographics (e.g. age, gender). For example, recommend required immunisations based on patient profile and risk factors, including age, time since last vaccination (e.g. pneumococcal) and risk groups for influenza vaccination.
2. The system SHOULD provide the ability to modify the established criteria that trigger the alerts.
3. Based on clinical test results, the system SHOULD present recommended preventative or wellness services.
4. The system SHALL present alerts to the provider of all patient-specific preventive services that are due.
5. The system MAY produce a list of all alerts and the scheduled date and time for the preventive service.
6. The system MAY produce a history of all alerts generated for the patient in the record.
7. The system SHALL provide an alert or prompt when smoking status is not recorded in the patient record or was recorded more than a year ago.

Notifications and Reminders for Preventive Services and Wellness (DC.2.5.2)

ID#	Type	Name	Priority
DC.2.5.2	F	Notifications and Reminders for Preventive Services and Wellness	EN

Statement

Between healthcare encounters, notify the patient and appropriate provider of those preventive services, tests, or behavioural actions that are due or overdue.

Description

The provider can generate notifications to patients regarding due or overdue activities, and these communications can be captured. Examples include but are not limited to time-sensitive patient and provider notification of follow-up appointments, laboratory tests, immunisations or examinations. The information can be customised in timing, repetitions and administration reports. For e.g. a cervical smear test reminder might be sent to the patient two months before the test is due, repeated at three-month intervals, and then reported to the administrator or clinician when nine months overdue.

Conformance Criteria

1. The system SHOULD generate timely notifications to patients, including services, tests or actions that are due or overdue.
2. The system SHOULD capture a history of notifications.
3. The system SHOULD provide the ability to track overdue preventive services.
4. The system SHOULD provide notification of overdue preventative services in the patient record.
5. The system MAY provide the ability to configure patient notifications (such as repetitions or timing of the activity).
6. The system SHOULD provide the ability to update the content of notifications, guidelines, reminders and associated reference materials.
7. The system MAY manage the life cycle of the notifications and reminders states.

Support for Population Health (DC.2.6)

ID#	Type	Name	Priority
DC.2.6	H	Support for Population Health	

Support for Epidemiological Investigations of Clinical Health Within a Population (DC.2.6.1)

ID#	Type	Name	Priority
DC.2.6.1	F	Support for Epidemiological Investigations of Clinical Health Within a Population	

Statement

Support internal and external epidemiological investigations of aggregate patient data clinical health to identify health risks from the environment and population following jurisdictional law.

Description
Aggregating data from multiple input mechanisms can identify standardised surveillance performance measures based on known patterns of disease presentation. For example, elements include but are not limited to patient demographics, resource utilisation, presenting symptoms, acute treatment regimens, laboratory and imaging results.

Conformance Criteria
1. The system SHALL allow aggregate patient information based on user-identified criteria.
2. The system SHALL apply local privacy and confidentially rules when assembling aggregate data to prevent the identification of individuals by unauthorised parties.
3. The system MAY present aggregate data in an electronic format for other analytical programs.
4. The system MAY provide the ability to derive statistical information from aggregate data.

OperationManagement and Communication (DC.3)

ID#	Type	Name	Priority
DC.3	H	Operations Management and Communication	

Clinical Workflow Tasking (DC.3.1)

ID#	Type	Name	Priority
DC.3.1	F	Clinical Workflow Tasking	EN

Statement
Schedule and manage tasks with appropriate timeliness.

Description
Since the electronic health record will replace the paper chart, tasks based on the paper artefact must be effectively managed in the electronic environment. Functions must exist in the EHR-S that support electronically any workflow that previously depended on the existence of a physical artefact (such as the paper chart, a phone message slip) in a paper-based system.
Tasks differ from other more generic communication among participants in the care process because they are a call to action and target completion of a specific workflow in the context of a patient's health record (including one particular component of the record). Tasks also require disposition (final resolution). The initiator may optionally require a response. For example, in a paper-based system, physically placing charts in piles for review creates a physical queue of tasks related to those charts. This queue of tasks (for example, a set of patient phone calls to be returned) must be supported electronically so that the list (of patients to be called) is visible to the appropriate user or role for disposition. Tasks are time-limited (or finite).

The state transition (e.g. created, performed and resolved) may be managed by the user explicitly or automatically based on rules. For example, if a user has a task to sign off on a test result, the EHR-S should automatically be marked complete when the test result linked to the task is signed in the system. Patients will become more involved in the care process by receiving tasks related to their care. Examples of patient-related tasks include acknowledgement of receipt of a test result forwarded from the provider or a request to schedule an appointment for a cervical smear (based on age and frequency criteria) generated automatically by the EHR-S on behalf of the provider.

Clinical Task Assignment and Routing (DC.3.1.1)

ID#	Type	Name	Priority
DC.3.1.1	F	Clinical Task Assignment and Routing	EN

Statement

Assignment, delegation and transmission of tasks to the appropriate parties.

Description

Tasks are at all times assigned to at least one user or role for disposition. Whether the task is assignable and to whom the task can be given will be determined by the specific needs of practitioners in a care setting. Task-assignment lists help users prioritise and complete assigned tasks; for example, after receiving communication (e.g. a phone call or e-mail) from a patient, the triage nurse routes or assigns a task to return the patient's call to the physician who is on call. Task creation and assignment may be automated, where appropriate. An example of a system-triggered task is when lab results are received electronically; a review task is automatically generated and assigned to a clinician. Task assignment ensures that all tasks are disposed of by the appropriate person or role and allows efficient interaction of entities in the care process.

Conformance Criteria

1. The system SHALL provide the ability for users to create manual clinical tasks.
2. The system SHALL provide the ability to automate clinical task creation.
3. The system SHALL provide the ability to modify and update task status manually (e.g. created, performed, held, cancelled, pended, denied, and resolved).
4. The system MAY provide the ability to automatically modify or update the status of tasks based on workflow rules.
5. The system SHOULD provide the ability to assign and change tasks to individuals or clinical roles.
6. The system MAY manage workflow task routing to multiple individuals or roles in succession and in parallel.
7. The system SHALL provide the ability to prioritise tasks based on urgency assigned to the task.
8. The system MAY restrict task assignment based on the entity's appropriate role.
9. The system MAY escalate clinical tasks as appropriate to ensure timely completion.
10. If the system is used to enter, modify, or exchange data, THEN the system SHALL conform to IN.1.5 (Non-Repudiation) to guarantee that the sources and receivers of data cannot deny that they entered/sent/received the data.

Clinical Task Linking (DC.3.1.2)

ID#	Type	Name	Priority
DC.3.1.2	F	Clinical Task Linking	EN

Statement
Linking tasks to patients and relevant parts of the electronic health record.

Description
Clinical tasks must include information or provide an electronic link to information required to complete the task. For example, this may consist of a patient's contact information or a link to new lab results in the patient's EHR. An example of a well-defined task is "Dr Jones must review Mr Smith's blood work results." Efficient workflow is facilitated by navigating to the appropriate area of the record to ensure that the appropriate test result for the correct patient is reviewed. Other tasks might involve fulfilling orders or responding to patient phone calls.

Conformance Criteria
1. The system SHALL provide the ability to link a clinical task to the component of the EHR required to complete the task.
2. Conversely, the system SHALL provide a link between a patient's record and any outstanding tasks for that patient.

Clinical Task Tracking (DC.3.1.3)

ID#	Type	Name	Priority
DC.3.1.3	F	Clinical Task Tracking	EN

Statement
Track tasks to facilitate monitoring for timely and appropriate completion of each task.

Description
To reduce the risk of errors during the care process due to missed tasks, the provider can view and track un-disposed tasks, current worklists, the status of eachtask, unassigned tasks or other tasks where a risk of omission exists. The timeliness of specific tasks can be tracked or reports generated following relevant law and accreditation standards. For example, a provider can create a report to show test results that the ordering provider has not reviewed based on an interval appropriate to the care setting.

Conformance Criteria
1. The system SHALL provide the ability to track the status of tasks. This includes attributes such as completed, outstanding, assigned and unassigned.
2. The system SHALL provide the ability to notify providers of the status of tasks.
3. The system SHOULD provide the ability to sort clinical tasks by status.
4. The system MAY provide the ability to present current clinical tasks as worklists.
5. The system SHOULD provide the ability to define the presentation of clinical task lists.
6. IF the system is used to enter, modify, or exchange data, THEN the system SHALL conform to IN.1.5 (Non-Repudiation) to guarantee that the sources and receivers of data cannot deny that they entered/sent/received the data.

Support Clinical Communication (DC.3.2)

ID#	Type	Name	Priority
DC.3.2	H	Support Clinical Communication	

Support for Inter-provider Communication (DC.3.2.1)

ID#	Type	Name	Priority
DC.3.2.1	F	Support for Inter-provider Communication	EN

Statement

Support exchange of information between providers as part of the patient care process and the appropriate documentation of such interactions. Support secure communication to protect the privacy of the information as required by organisational policy or legislation.

Description

Communication among providers involved in the care process can range from real-time communication (for example, fulfilling an injection while the patient is in the exam room) to asynchronous communication (for example, consult reports between physicians). Some forms of inter-practitioner communication will be paper-based, and the EHR-S must produce appropriate documents. The system should provide for both verbal and written communication. These exchanges would include but not limited to consults and referrals, as well as possible exchanges within the office as part of the provision and administration of patient care (for example, the communication of new information obtained within the office environment during the process of administration of a tetanus shot while the patient is in the exam room). The system should support the creation and acceptance of paper artefacts where appropriate.

Conformance Criteria

1. The system SHALL provide the ability to document, in text format, in the patient record verbal/telephone communication between providers.
2. The system SHALL incorporate scanned documents from external providers into the patient record.
3. The system MAY provide the ability to communicate using real-time messaging.
4. The system SHALL provide the ability to share clinical information (e.g.referrals) via secure email or other electronic means.
5. The system MAY provide the ability to transmit electronic multi-media data types representing pictures, sound clips, or video as part of the patient record.

Support for Provider - Pharmacy Communication (DC.3.2.2)

ID#	Type	Name	Priority
DC.3.2.2	F	Support for Provider - Pharmacy Communication	EN

Statement

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

Description
When a medication is prescribed, the order is routed to the pharmacy or other intended recipient of pharmacy orders. This information is used to avoid transcription errors and facilitate the detection of potential adverse reactions. If there is a question from the pharmacy. That communication can be presented to the provider with their other tasks. The transmission of prescription data between systems should conform to acceptable messaging standards.

Conformance Criteria
1. The system SHALL electronically communicate orders between the prescriber, provider and pharmacy, as necessary, to initiate, change, or renew a medication order.
2. The system SHALL receive any acknowledgements, prior authorizations, renewals, inquiries and fill notifications provided by the pharmacy or other participants in the electronic prescription and make it available for entry in the patient record.
3. The system SHOULD provide the ability to communicate current realm-specific standards to pharmacies electronically.
4. The system SHOULD provide the ability for providers and pharmacies to communicateclinical information via e-mail or other electronic means on both general and specificorders.
5. The system MAY provide the ability to use secure real-time messaging.
6. The system MAY provide the ability to include workflow tasks as part of communication to the provider.
7. IF the system is used to enter, modify, or exchange data, THEN the system SHALL conform to IN.1.5 (Non- Repudiation) to guarantee that the sources and receivers of data cannot deny that they entered/sent/received the data.

Communication with Medical Devices (DC.3.2.5)

ID#	Type	Name	Priority
DC.3.2.5	F	Communication with Medical Devices	EN

Statement
Support communication and presentation of data captured from medical devices.

Description
Communication with medical devices is supported as appropriate to the care setting, such as a surgery or a patient's home. Examples include vital signs/pulse-oximeter, ambulatory blood pressure monitor, home diagnostic devices for chronic disease management, laboratory machines, barcoded artefacts (medicine, immunisations, demographics, history, identification), etc.

Conformance Criteria

1. The system SHALL provide the ability to collect accurate electronic data from medical devices according to realm specific applicable regulations or requirements.
2. The system SHOULD allow the information collected from medical devices as appropriate as part of the medical record.

Functional Outline – Supportive

Supportive	S.1	Clinical Support
	S.2	Measurement, Analysis, Research and Reports
	S.3	Administrative and Financial

Clinical Support (S.1)

ID#	Type	Name	Priority
S.1	H	Clinical Support	

Registry Notification (S.1.1)

ID#	Type	Name	Priority
S.1.1	F	Registry Notification	EN

Statement

Enable the automated transfer of formatted demographic and clinical information to and from local disease-specific registries (and other notifiable registries) for patient monitoring and subsequent epidemiological analysis.

Description

The user can export personal health information to disease-specific registries and other notifiable registries such as immunisation registries through standard data transfer protocols or messages. The user can update and configure communication for new registries.

Conformance Criteria

1. The system SHOULD automatically transfer demographic and clinical information to local disease-specific registries (and other notifiable registries).
2. The system MAY automate retrieving formatted demographic and clinical information from local disease-specific registries (and other notifiable registries).
3. The system SHOULD allow adding, changing, or removing user access to registries.

Provider Information (S.1.3)

ID#	Type	Name	Priority
S.1.3	H		

Provider Access Levels (S.1.3.1)

ID#	Type	Name	Priority
S.1.3.1	F	Provider Access Levels	EN

Statement

Provide a current registry or directory of practitioners that contains data needed to determine levels of access required by the system.

Description

Provider information may include any credentials, certifications, or other information that may be used to verify that a practitioner is permitted to use or access authorised data.

Conformance Criteria

1. The system SHALL provide a registry or directory of all personnel who currently use or access the system.
2. In the provider access directory or staff database, the system SHALL contain the legal identifiers required for care delivery, such as the doctor's medical council number and the nurse's registration number with An Bord Altranais.
3. The system SHALL provide the ability to add, update, and inactivate entries in the directory so that it is current.
4. The system SHOULD contain, in the directory, the information necessary to determine levels of access required by the system security functionality.
5. The system SHOULD provide a directory of clinical personnel external to the organisation that are not users of the system to facilitate communication and information exchange.
6. The system SHALL contain the data items shown in the Provider Data table below in the provider access directory or staff database.

Data Attributes

Staff name (family name, first name, middle initial or name, title)
Staff title
Staff address
Staff contact details: phone, mobile, email
Staff role(s), (staff may fulfil more than one function, for example, a Practice Manager who is also the Practice Nurse)
Healthcare Practitioner Identifier (HPI) as per HIQA report
Professional body registration number (for example, Medical Council number, An Bord Altranais registration number, and others)
Prescriber identifier number (if available, for nurse prescribing)
Doctor's GMS number
Details of contractual arrangements such as full-time or part-time
Start and end dates (there may be more than one of these for each member of staff as arrangements change)

Table 12 Provider Data

Practice Location(s) or Office(s) (S.1.3.4)

ID#	Type	Name	Priority
S.1.3.4	F	Provider's Location(s) or Office(s)	EN

Statement

Provide locations or contact information for the provider to direct patients orqueries.

Description

General Practitioners may have multiple locations or offices where they practice. The system should maintain information on the primary site, any secondary locations, and the scheduled hours at each location. Information held may include websites, maps, office locations, etc.

Conformance Criteria

1. The system SHALL contain the information shown in the Practice Data table below.
2. The system SHALL contain information necessary to identify primary and secondary practice locations or offices of providers to support communication and access.
3. The system SHALL provide the ability to add, update and archive information on the provider's primary and secondary practice locations or offices.
4. The system SHALL provide the ability to add, update and archive information on related organisations.

Data Attributes

The name of the practice
Healthcare Organisation Identifier (HOI)
The address(es) of practice premises, including branch surgeries
Telephone, mobile, fax number, email address(es) associated with the practice
The name and code of the primary care team associated with the practice (if available)

Table 13 Practice Data

The name of the organisation
Healthcare Organisation Identifier (HOI)
Identifiers for electronic health care messaging (if available)
The address(es) of the organisation
Telephone, fax, email (at least one of each) and other contact numbers for the organisation
Names, departmental addresses and telephone, mobile, fax numbers and email addresses for departments or persons within the organisation with whom the practice makes direct contact
Days and times the organisation operates

Table 14 Related Organisation Data

De-identified Data Request Management (S.1.5)

ID#	Type	Name	Priority
S.1.5	F	De-identified Data Request Management	EN

Statement
Provide patient data in a manner that meets local requirements for de-identification.

Description
When an internal or external party requests patient data and requests de-identified data. (Or is not entitled to identify patient information, either by law or custom), the user can export the data in a fashion that meets requirements for de-identification in that locale or realm.

The system may maintain an auditable record of these requests and associated exports. This record could be implemented. They allow the who, what,why and when of a request and export recoverable for review.

A random re-identification key may be added to the data to support re-identification to alert providers of potential patient safety issues. For example, suppose it is discovered that a patient is a risk for a major cardiac event. In that case, the provider could be notifiedof this risk, allowing the provider to identify the patient from the random key.

Conformance Criteria
1. The system SHALL conform to IN.1.9 (Patient Privacy and Confidentiality) and provide de-identified data views per scope of practice, organisational policy and legislation.
2. The system SHALL conform to IN.2.4 (Extraction of Health Record Information), Conformance Criteria #2 (The system SHALL provide the ability to de-identify extracted information).
3. The system SHOULD provide the ability to add a random re-identification key to the data. To support re-identification, alerting providers of potential patient safety issues.

Information View (S.1.8)

ID#	Type	Name	Priority
S.1.8	F	Information View	EN

Statement
Support user-defined information views.

Description
Views of the information can be tailored for or by the user (or department or "job classification") for their presentation preferences, within local or facility established rules.

Conformance Criteria
1. The system SHOULD provide authorised administrators with the ability to tailor the presentation of information for preferences of the user, department/area or user type.
2. The system SHOULD allow authorised users to tailor their presentation of information for their preferences.

Manage Appointments (S.1.9)

ID#	Type	Name	Priority
S.1.9	F	Manage Appointments	EN

Statement
This function aims to allow the practice to operate an appointment system for all scheduled surgery sessions within the practice's premises.

Description
Several specific terms are used in the specification. These are defined below:

- Session Template: A clinic/session/surgery template containing a name, a session start time and end time, a number of appointment slots of definable length with start and duration (or end times) for each, a performer (clinician) and a location.
- Slot availability: a means of controlling when a slot can be booked, e.g. at any time, within 48 hours of the appointment, within 12 hours, etc
- Slot Type: user-defined, e.g. routine, asthma review, minor surgery, etc.
- Performer: GP, Nurse or other clinicians/HCP/AHP who is the person the patient has the appointment with
- Location: a room or other location within the GP practice or elsewhere
- Session List: List of appointment slots for a selected performer for an established session.
- Sessions View- View showing multiple sessions across one day.Indicating the status of each slot within a session (e.g. free, booked, not yet available for booking).
- Waiting Room View: For each active session, the view shows whether patients are late to arrive, have arrived, are being seen, have been seen.

Conformance Criteria
1. The system SHOULD be able to create, amend and delete session templates with the following information
- Session name
- Session type (e.g. routine surgery, ante-natal clinic)
- Start Time (of session)
- End Time or duration (of session)
- Slots times – each slot within a session may be fixed or variable length.
- Slot availability
- Slot type
- Performer (linked to partner/staff or related person)
- Location

2. It SHALL be possible for users to define session types and locations.
3. It SHOULD be possible to add free-text notes to a session template.
4. It SHOULD be possible to define resource requirements for a session template, e.g. must be held in a treatment room, requires ultrasound equipment.
5. The system SHOULD allow a session template assigned to individual days or specified days within a date range to create an empty appointment list for a selected performer on one or more calendar dates at a particular location.
6. When selecting 'specified days,' it SHOULD be possible to choose:
- day(s) of a week within the date range (e.g. every day, every Wednesday, every other Thursday, every three weeks on a Friday)
- day(s) of a month within the date range (e.g. 2nd Friday of every month, 3rd Tuesday of every month)
7. Once a session has been applied to the appointments system, it SHOULD be possible to amend or remove individual occurrences (e.g., known staff leave).
8. When amending an individual session occurrence, it SHOULD be possible to changeany attribute, e.g. start time, performer, individual slots, etc.
9. The system SHOULD not allow sessions to be cancelled if patients are booked into the session. Until either the bookings have been moved to another session or marked as waiting for re-booking.
10. It SHALL be possible to browse the appointments slots to find a free slot to make patient appointments when browsing
11. The system SHALL indicate as a minimum free slot (and available to be booked): those which are booked and those which have a booking availability constraint in effect.
12. It SHOULD be possible to find/search for free slots by searching on any or all of the following selection criteria:
- date/date range
- day (e.g. Wed or Fri)
- time (range or period, e.g. am, pm, eve)
- session type
- location
- slot type
- length of slot(s)
- performer
13. The system SHALL allow multiple or partial slots to be booked for a patient. This may also be achieved by extending/reducing the appointment length (and amending neighbouring appointments).
14. The system SHALL allow an appointment to be booked for a patient that is not fully registered with the practice.
15. The system SHALL allow a previously booked appointment to be cancelled.
16. It SHALL be possible to mark an appointment as 'patient Did Not Attend' (DNA).
17. The system SHOULD allow all future booked appointments for a specified patient to be retrieved.
18. It SHOULD be possible to display all previous appointments for a specified patient.
19. The system SHALL NOT allow a booking to be made to an appointment list that has been cancelled.

20. The system SHOULD not allow a booking to be made into a slot that is not yet available, i.e. it shall not be possible to book into a slot that should only be made available within twelve hours if it is one week before the slot time. (Note: availability periods can be in whole elapsed time or working hours). Systems may provide an override facility.
21. The system SHOULD display all future appointments sessions showing free and booked appointments where all patient details of booked appointments are suppressed. (Note: this allows a patient to select a free slot on the screen without seeing details of other patients).
22. The system SHALL provide facilities to track a patient's status throughout their appointment from arrival to departure. This shall include the following states:
- Not yet arrived
- Overdue (the appointment time has passed, and the patient has not arrived)
- Arrived and waiting to be seen
- Being seen
- Appointment ended.

23. The system SHOULD provide a view of a performer's current session list showing the status of patients whose appointment has not ended, i.e. the patient being seen, those arrived and waiting, those late and those yet to arrive
24. It SHOULD be possible for the performer to record the commencement of the appointment and the completion of the appointment. This should be done automatically, e.g. upon confirmation/opening of the patient record to commence the consultation, upon closing/ending the consultation rather than using the appointments system functionality.
25. It SHALL be possible for the performer to make new appointments and amend or cancel existing appointments for the patient being seen.
26. It SHOULD be possible to record attendances and non-attendances (DNA) in the patient record using a batch process from the appointments module. e.g. after recording DNAs in the appointments module, create individual entries in each patient record using appropriate clinical codes.
27. Suppose the selection of entries to create attendance/DNA entries is automatic. In that case, it SHOULD be possible to manually amend/remove items in the batch job, e.g., when a DNA entry is not required for a patient.
28. The system SHALL allow reporting and printing appointment lists for one or more performers for a user-specified range of dates.
29. It SHOULD be possible to identify all patients who have DNA'd within a date range and have DNA'd more than a user-defined number of times. It shall then be possible to use this cohort of patients to automatically generate letters to those patients informing them of their repeated DNAs.
30. Reports SHOULD be available showing utilisation statistics, e.g. % of past or future slots booked by session type, by performer, by time.

Manage Scanned Documents (S.1.10)

ID#	Type	Name	Priority
S.1.10	F	Manage Scanned Documents	EN

Statement
Manage scanned documents to ensure adequate attribution, workflow management, file storage standards and audit trail.

Description
In the transition from paper to electronic records, managing scanned documents is essential for health care professionals and patients. The Vendor should facilitate the practice to fulfil the necessary criteria to scan and shred documents.
Attention is drawn to the discussion document issued by the GPIT Group entitled Scan_Shred_v0_3.pdf, dated 9/1/2008, version 0.3 or later.

Conformance Criteria
1. Each scanned document SHALL be linked to an entry in the electronic patient record.
2. The entry SHALL facilitate the collection of the following attribution information:
   - The date of the original document;
   - The nature of the original document includes a discharge letter, outpatient clinic letter, a letter from a speech and language therapist, etc.
   - The author of the original document, for example, Dr Michael Smith, ConsultantCardiologist:
   - The institution of the original document, for example, Department of Cardiology, St Elsewhere's Hospital, Dublin;
   - Any note or comment that the doctor or nurse wishes to make about the document;
   - The date the document was scanned;
   - The identity of the person scanning the document;
3. To facilitate rapid and efficient capture of the complete attribution information, thepractice software SHOULD provide a user-friendly interface.
4. The system SHOULD facilitate review, comment and sign off on the scanned document by the appropriate provider(s).
5. The system SHALL store the image file in an appropriate file format, such as Tag Image File Format (TIFF) or Joint Photographic Experts Group (JPEG).
6. If optical character recognition (OCR) is used, the system SHALL facilitate storing the original scanned image file.
7. The system SHALL maintain a comprehensive audit trail of the scanned image, including what additions or deletions or changes, are made, when and by whom.
8. The system SHOULD manage document storage space and alert if the storage space exceeds a threshold.
9. The system SHOULD maintain large volumes of attached documents offline, either on a separate hard disk or on tape/CD/DVD.
10. The system SHOULD retrieve offline documents simply and easily.

Measurement, Analysis, Research and Reports (S.2)

ID#	Type	Name	Priority
S.2	H	Measurement, Analysis, Research and Reports	

Measuring, Monitoring and Analysis (S.2.1)

ID#	Type	Name	Priority
S.2.1	H	Measuring, Monitoring and Analysis	

Outcome Measures and Analysis (S.2.1.1)

ID#	Type	Name	Priority
S.2.1.1	F	Outcome Measures and Analysis	EN

Statement

Support the capture and subsequent export or retrieval of data necessary for reporting the patient outcome of care by population, facility, provider or community.

Description

The system needs to provide the report generating capability to easily create reports or export data to external report generating software. The system may also provide the functionality to prompt collecting the necessary information at the appropriate time in a patient encounter if such collection need can be adequately defined in a supportive workflow. e.g. Requesting specific information for reporting emergency services such as suspected abuse, infectious diseases, etc., or collecting additional research data for a particular diagnosis.

Conformance Criteria

1. The system SHALL export or retrieve data collected overspecified time intervals required to evaluate patient outcomes.
2. The system SHALL provide data detailed by GP, practice nurse or other selection criteria.
3. The system SHALL define outcome measures for specific patient diagnoses.
4. The system SHOULD provide the ability to define outcome measures to meet various national requirements.
5. The system SHOULD provide the acceptance and retrieval of unique outcome data defined to meet national requirements.
6. The system SHOULD provide the ability to define report formats for data export. This formatted data could be viewed, transmitted electronically or printed.
7. The system MAY define prompts in the clinical care setting that would request information needed to comply with regional requirements when specific triggers are met.

8. The system MAY export data or provide limited query access to data through a secure data service.

Performance and Accountability Measures (S.2.1.2)

ID#	Type	Name	Priority
S.2.1.2	F	Performance and Accountability Measures	EN

Statement

Support the capture and subsequent export or retrieval of data necessary to provide quality, performance, and accountability measurements to which providers, facilities, delivery systems, and communities are held accountable.

Description

Many health programmes require regular reporting on the healthcare provided to individuals and populations. These reports may include processes, outcomes, costs of care that may be used in 'pay for performance' monitoring and adherence to best practice guidelines. The system needs to provide the report generating capability to create or export data to external report generating software easily.

Software systems need the capacity to record and report data, which will benefit both at the practice level for patient management and service provision and the national level for policy, planning, and research.

Conformance Criteria

1. The system SHALL provide the ability to export or retrieve data required to assess health care quality, performance and accountability.
2. The system SHOULD provide the ability to define multiple data sets required for performance and accountability measures.
3. The system MAY provide the data export in a report format that could be displayed, transmitted electronically or printed.
4. The system MAY export data or provide limited query access to data through a secure data service.
5. The system SHALL produce an anonymous report for all patients diagnosed in a specified timeframe.
6. The system SHALL support:
    - Anonymous data (de-identified);
    - Practice level reporting (all consultations);
    - The ability to custom report in terms of dates covered and diagnoses (all or specify);
    - The ability to select data fields for inclusion or require a minimum dataset;
7. The minimum dataset SHALL include the following variables:
    - ID, age, sex, GMS status, county/postcode, date of consultation, diagnosis code and text;
8. The system SHALL allow the following additional data to be selected for inclusion:
    - Symptoms, reason for encounter, medications prescribed, procedures, treatments, investigations, referrals, tests ordered;

Report Generation (S.2.2)

ID#	Type	Name	Priority
S.2.2	H	Report Generation	

Health Record Output (S.2.2.1)

ID#	Type	Name	Priority
S.2.2.1	F	Health Record Output	EN

Statement

Support the formal health record definition, a partial record for referral purposes,or sets of records for other necessary disclosure purposes.

Description

Provide hardcopy and electronic output that thoroughly chronicles the healthcare process supports selecting specific sections of the health record, and allows healthcare organisations to define the report and documents that will comprise the formal health record for disclosure purposes. A mechanism should be provided for both chronological and specified record element output. The system may maintain an auditable record of these requests and associated exports. This record could be implemented in any way that would allow the -who, what, why and when of a request and export to be recoverable for review. The system can provide a report or accounting of disclosures by a patient that meets per scope of practice, organisational policy, and data protection legislation.

Conformance Criteria

1. The system SHALL provide the ability to generate reports consisting of all and part of an individual patient's record.
2. The system SHOULD provide the ability to define the records or reports that are considered the formal health record for disclosure purposes.
3. The system SHOULD provide the ability to generate reports in both chronological and specified record elements order.
4. The system SHOULD provide the ability to create hardcopy and electronic report summary information (procedures, medications, labs, immunisations, allergies, vital signs).
5. The system MAY provide the ability to specify or define reporting groups (i.e. print sets) for specific types of disclosure or information sharing.
6. The system SHOULD provide the ability to include patient identifying information on each page of reports generated.
7. The system SHOULD provide the ability to customise reports to match mandated formats.

Standard Report Generation (S.2.2.2)

ID#	Type	Name	Priority
S.2.2.2	F	Standard Report Generation	EN

Statement
Provide report generation features using internal or external tools to generate standard reports.

Description
Providers and practice managers need access to data in the EHR for clinical, administrative, financial decision-making, audit trail and metadata reporting, and to create reports for patients. Many systems may use internal or external reporting tools to accomplish this (such as Crystal Report). Reports may be based on structured data and unstructured text from the patient's health record. Users need to be able to sort and filter reports. For example, the user may wish to view only the diabetic patients on a report listing patients and diagnoses.

Conformance Criteria
1. The system SHALL generate structured clinical and administrative data reports using internal or external reporting tools.
2. The system MAY include information extracted from unstructured clinical and administrative data in the report generation process, using internal or external tools.
3. The system SHALL provide the ability to export reports generated.
4. The system SHALL provide the ability to specify report parameters based on patient demographic and clinical data, which would allow sorting and filtering of the data.
5. The system (or an external application, using data from the system) SHOULD provide the ability to save report parameters for generating subsequent reports.
6. The system (or an external application, using data from the system) SHOULD provide the ability to modify one or more parameters of a saved report specification when generating a report using that specification.
7. The system SHOULD generate reports showing lists of patients who need preventative care, for example, patients over 65 years of age who need influenza vaccination.
8. The reports thus generated SHOULD integrate with mail merge facilities to generate letters of invitation to patients of the practice to attend for assessment or treatment.
9. The system SHOULD allow the facility to automatically generate a report based on the set time parameters to run and input parameters for the specific report.
10. The system SHOULD generate reports in various formats, including CSV, Excel, Word, PDF, and XML.

Ad Hoc Query and Report Generation (S.2.2.3)

ID#	Type	Name	Priority
S.2.2.3	F	Ad Hoc Query and Report Generation	EN

Statement

Provide support for ad hoc query and report generation using tools internal or external to the system.

Description

Providers and administrators need to respond quickly to new data measurement requirements. This requires that users define their query parameters and retain them. The data may be found in both structured and unstructured data. Providers and administrators also need to query for the absence of specific clinical or administrative data. For example, a practice audit may review whether or not the protocol for the management of Diabetes Mellitus is being followed. If the protocol calls for an HbA1c test every six months at a minimum, the investigator might need to run an across patient query locating patients with diabetes who do not show an HbA1c result within thelast six months.

Conformance Criteria

1. The system SHALL provide the ability to support the processing of ad hoc queries andreports of structured clinical and administrative data through either internal or external reporting tools.
2. The system MAY provide the ability to include information extracted from unstructured clinical and administrative
3. The system SHOULD provide the ability to export reports generated.
4. The system SHOULD provide the ability to specify report parameters based on patient demographic and clinical data, which would allow sorting and filtering of the data.
5. The system MAY save report parameters for generating subsequent reports.
6. The system MAY modify one or more parameters of a saved report specification when generating a report using that specification.
7. The system MAY provide the ability to produce reports using internal or external reporting tools, based on the absence of a clinical data element (e.g., a lab test has not been performed in the last year).

Administrative and Financial (S.3)

ID#	Type	Name	Priority
S.3	H	Administrative and Financial	

Encounter/Episode of Care Management (S.3.1)

ID#	Type	Name	Priority
S.3.1	H	Encounter/Episode of Care Management	

Automatic Generation of Administrative and Financial Data from Clinical Record (S.3.1.3)

ID#	Type	Name	Priority
S.3.1.3	F	Automatic Generation of Administrative and Financial Data from Clinical Record	EN

Statement
Provide patients clinical data to support administrative and financial reporting.

Description
A user can generate a bill based on health record data. Maximising the extent to which administrative and financial data can be derived or developed from clinical data will lessen provider reporting burdens and the time it takes to complete administrative and financial processes such as claim reimbursement. This may be implemented by mapping clinical terminologies to administrative and financial terminologies.

Conformance Criteria
1. The system SHOULD provide the ability to define the data required for each external administrative and financial system.
2. The system SHOULD export appropriate data to administrative and financial systems.
3. The system SHOULD print data appropriately to facilitate returns to the HSE, Department of Social and Family Affairs and other government agencies.
4. The system SHOULD have the ability to:
   - define services;
   - assign costs ;
   - define debtors;
   - generate invoices and bills;
   - track outstanding balances;
   - generate financial reports and
   - allow the user to update the above.

Support Remote Healthcare Services (S.3.1.4)

ID#	Type	Name	Priority
S.3.1.4	F	Support Remote Healthcare Services	EN

Statement
Support remote health care services such as telehealth and remote device monitoring by integrating records and data collected by these means into the patient's record for care management, billing and public health reporting purposes.

Description
Enables remote treatment of patients using monitoring devices and two-way communications between provider and patient. Promotes patient empowerment, self-determination and ability to maintain health status in the community. Promotes personal health, wellness and preventive care.

Conformance Criteria
1. The system SHOULD provide the ability to capture patient data from remote devices and integrate that data into the patient's record.
2. The system SHOULD provide authorised users two-way communication between local practitioner and remote patient, or local practitioner to remote practitioner.

Information Access for Supplemental Use (S.3.2)

ID#	Type	Name	Priority
S.3.2	H	Information Access for Supplemental Use	

Rules Driven Clinical Coding Assistance (S.3.2.1)

ID#	Type	Name	Priority
S.3.2.1	F	Rules Driven Clinical Coding Assistance	EN

Statement
Make available all pertinent patient information needed to support coding of diagnoses, procedures and outcomes.

Description
The user is assisted in coding information for clinical reporting reasons.

Conformance Criteria

1. The system SHALL provide the ability to access pertinent patient information needed to support coding of diagnosis, procedures and outcomes.
2. The system MAY assist with coding diagnoses, procedures, and outcomes based on provider speciality, care setting, and other information that may be entered into the system during the encounter.

Functional Outline – Information Infrastructure

Information Infrastructure	IN.1	Security
	IN.2	Health Record Information and Management
	IN.3	Registry and Directory Services
	IN.4	Standard Terminologies & Terminology Services
	IN.5	Standards-based Interoperability
	IN.6	Business Rules Management
	IN.7	Workflow Management

Security (IN.1)

ID#	Type	Name	Priority
IN.1	H	Security	

Entity Authentication (IN.1.1)

ID#	Type	Name	Priority
IN.1.1	F	Entity Authentication	EN

Statement
Authenticate EHR-S users and entities before allowing access to an EHR-S.

Description
Both users and applications are subject to authentication. The EHR-S must provide mechanisms for users and applications to be authenticated, and users will have to be authenticated when they attempt to use the application. The applications must authenticatethemselves before accessing EHR information managed by other applications or remote EHR-S'. Entity authentication includes username/ password, digital certificate, secure token, or biometrics.

Conformance Criteria
1. The system SHALL authenticate principals before accessing an EHR-S application or EHR-S data.
2. The system SHALL prevent access to EHR-S applications or EHR-S data to all non-authenticated principals.

3. IF other appropriate authentication mechanisms are absent, THEN the system SHALL authenticate principals using at least one of the following authentication mechanisms: username/password, digital certificate, secure token or biometrics.

Entity Authorisation (IN.1.2)

ID#	Type	Name	Priority
IN.1.2	F	Entity Authorisation	EN

Statement

Manage the sets of access-control permissions granted to entities that use an EHR-S (EHR-S Users). Enable EHR-S security administrators to give users authorisations, roles, and contexts. A combination of these authorisation categories may be applied to control access to EHR-S functions or data within an EHR-S, including at the application or the operating system level.

Description

EHR-S Users are authorised to use the components of an EHR-S according to their identity, role, work assignment, location, the patient's present condition, and the EHR-S User's scope of practice within a legal jurisdiction.

- User-based authorisation refers to the permissions granted or denied based on an individual's identity. An example of User-based authorisation is a patient defined denial of access to all or part of a record to a particular party for privacy-related reasons. Another user-based permission is for a telemonitoring device or robotic access to an EHR-S for prescribed directions and other input.

- Role-based authorisation refers to the responsibility or function performed in a particular operation or process. Example roles include an application or device (tele-monitor or robotic), nurse, dietician, administrator, legal guardian, and auditor.

- Context-based Authorization is defined by ISO 10181-3 Technical Framework for Access Control Standard as security-relevant properties of the context in which an access request occurs, explicitly time, location, route of access, and authentication quality. For example, an EHR-S might only allow supervising providers' context authorisation to attest to entries proposed by residents under their supervision.

In addition to the ISO standard, context authorisation for an EHR-S is extended to satisfy particular circumstances such as work assignment, patient consents and authorisations, or other healthcare-related factors. A context-based example is a patient-granted authorisation to a specific third party for a limited period to view detailed EHR records.

Another example is a right granted for a limited period to view those, and only those, EHR records connected to a specific topic of investigation.

Conformance Criteria

1. The system SHALL provide the ability to create and update sets of access-control permissions granted to principals.
2. The system SHALL provide EHR-S security administrators with the ability to grant authorisations to principals according to the scope of practice, organisational policy, or jurisdictional law.
3. The system SHALL provide EHR-S security administrators with the ability to grant authorisations for roles according to the scope of practice, organisational policy, or jurisdictional law.
4. The system SHOULD provide EHR-S security administrators with the ability to grant authorisations within contexts according to the scope of practice, organisational policy, or jurisdictional law.
5. The system MAY provide the ability to define the context for principal authorisation based on identity, role, work assignment, present condition, location, patient consent, or patient's present condition.
6. The system MAY define context-based on legal requirements or disaster conditions.

Entity Access Control (IN.1.3)

ID#	Type	Name	Priority
IN.1.3	F	Entity Access Control	EN

Statement
Verify and enforce access control to all EHR-S components, EHR applications, sites, etc., to prevent unauthorised use of a resource.

Description
Entity Access Control is a fundamental function of an EHR-S. To ensure that access is controlled, an EHR-S must perform authentication and authorisation of users or applications for any operation that requires it and enforce the system and information access rules that have been defined.

Conformance Criteria
1. The system SHALL define system and data access rules.
2. The system SHALL enforce system and data access rules for all EHR-S resources (at component, application, or user level, either local or remote).

Non-Repudiation (IN.1.5)

ID#	Type	Name	Priority
IN.1.5	F	Non-Repudiation	EN

Statement
Limit an EHR-S user's ability to deny (repudiate) the origination, receipt, or authorisation of a data exchange by that user.

Description
An EHR-S allows data entry and data access to a patient's electronic health record, and it can be a sender or receiver of healthcare information. Non-repudiation guarantees that the data record source can not later deny that it is the source; the sender or receiver of a message cannot later deny having sent or received the message. For example, non-repudiation may be achieved through the use of a
- Digital signature, which serves as a unique identifier for an individual (much like a written signature on a paper document).
- Confirmation service, which utilises a message transfer agent to create a digital receipt (providing confirmation that a message was sent or received) and
- The timestamp proves that a document existed at a specific date and time.

Conformance Criteria
1. The system SHALL timestamp initial entry, modification, or data exchange and identify the actor/principal taking action required by users' scope of practice, organisational policy, or legislation.
2. The system SHALL provide additional non-repudiation functionality required by users' scope of practice, organisational policy, or legislation.

Secure Data Exchange (IN.1.6)

ID#	Type	Name	Priority
IN.1.6	F	Secure Data Exchange	EN

Statement
Secure all modes of EHR data exchange.

Description
Whenever an exchange of EHR information occurs, it requires appropriate security and privacy considerations, including data obfuscation and both destination and source authentication when necessary. For example, it may be necessary to encrypt data sent to remote or external destinations. A secure data exchange requires overall coordination regarding the information exchanged between EHR-S entities and how that exchange is expected to occur. The policies applied at different locations must be consistent or compatible to ensure that the data is protected when it crosses entity boundaries within an EHR-S or external to an EHR-S.

Conformance Criteria
1. The system SHALL secure all modes of EHR data exchange over which it has control.
2. The system MAY provide the ability to obfuscate (make impossible to read) data.
3. The system SHOULD encrypt and decrypt EHR data that is exchanged over a non-secure link.
4. The system SHOULD support standards-based encryption mechanisms when encryption is used for secure data exchange.

Secure Data Routing (IN.1.7)

ID#	Type	Name	Priority
IN.1.7	F	Secure Data Routing	EN

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

Description
An EHR-S needs to ensure that it exchanges EHR information with the entities (applications, institutions, directories) it expects. This function depends on entity authorisation and authentication to be available in the system.
To accomplish this, the application must use a secure routing method, which ensures that both the sender and receiving sides are authorised to engage in the information exchange. Known sources and destinations can be established in a static setup, or they can be dynamically determined. Examples of a static structure are recordings of IP addresses or DNS names. For dynamic determination of known sources and destinations, systems can use authentication mechanisms described in IN.1.1. For example, sending a lab order from the EHRS to a lab system within the same organisation usually uses a simple static setup for routing. In contrast, sending a lab order to a reference lab outside of the organisation will involve an authentication process.

The simple static setup is used when the underlying network infrastructure is secure (e.g. secure LAN or VPN).

Conformance Criteria
1. The system SHALL automatically route electronically exchanged EHR data only from and to known sources and destinations and only over secure networks.
2. The system SHOULD route electronically exchanged EHR data only to and from authenticated sources and destinations (conform to function IN.1.1 (Entity Authentication)).
3. The system SHOULD conform to function IN.2.2 (Auditable Records) to provide audit information about additions and changes to the status of destinations and sources.

Information Attestation (IN.1.8)

ID#	Type	Name	Priority
IN.1.8	F	Information Attestation	EN

Statement
Manage electronic attestation of information, including the retention of the signature of attestation (or certificate of authenticity) associated with incoming or outgoing information.

Description

The purpose of attestation is to show authorship and assign responsibility for an act, event, condition, opinion, or diagnosis. Every entry in the health record must be identified with the author and should not be made or signed by someone other than the author. Attestation is required for (paper or electronic) entries such as narrative or progress notes, assessments, flow sheets, and orders. Digital signatures may be used to implement document attestation. For an incoming document, the record of attestation is retained if included. Attestation functionality must meet applicable legal, regulatory and other relevant standards or requirements.

Conformance Criteria

1. The system SHALL provide the ability to associate any attestable content added or changed to an EHR with the content's author (for example, by conforming to functionIN.2.2 (Auditable Records).
2. The system SHALL provide the ability for attestation of attestable EHR content by the content's author.
3. The system SHALL indicate the status of attestable data which has not been attested.
4. The system MAY provide the ability for attestation of EHR content by adequately authenticated and authorised users different from the author as required by users' scope of practice, organisational policy, or legislation.
5. The system MAY provide the ability to use digital signatures as the means for attestation.

Patient Privacy and Confidentiality (IN.1.9)

ID#	Type	Name	Priority
IN.1.9	F	Patient Privacy and Confidentiality	EN

Statement

Enable the enforcement of the applicable legislative and organisational patient privacy rules as they apply to various parts of an EHR-S through security mechanisms.

Description

Patients' privacy and the confidentiality of EHRs are violated if access to EHRs occurs without authorisation. Violations or potential violations can impose actual economic or social losses on affected patients, as well as less tangible feelings of vulnerability and pain. Fear of potential violations discourages patients from revealing sensitive personal information relevant to diagnostic and treatment services. Rules for protecting privacy and confidentiality may vary depending upon the vulnerability of patients and the sensitivity of records. The most robust protection should apply to minors and the records of patients with stigmatised conditions. Authorisation to access the most sensitive parts of an EHR is most definitive if made by the explicit and specific consent of the patient.

Conformance Criteria

1. The system SHALL fully comply with patient privacy and confidentiality requirements according to a user's scope of practice, organisational policy, or legislation.
2. The system SHALL provide the ability to maintain varying levels of confidentiality according to users' scope of practice, organisational policy, or legislation.
3. The system SHALL provide the ability to mask parts of the electronic health record (e.g. medications, conditions, sensitive documents) from disclosure according to the scope of practice, organisational policy or legislation.
4. The system SHALL provide the ability to override a mask in an emergency or other specific situations according to the scope of practice, organisational policy or legislation.

Data Backup (IN.1.10)

ID#	Type	Name	Priority
IN.1.10	F	Data Backup	EN

Statement

Back-up is a practice responsibility. It is recognised that the GP practice management software vendor may not be the provider of backup hardware or software systems to the practice. Practice management vendors must inform GPs of the absolute necessity for good data backup procedures and practices. GP software vendors are responsible for making backup possible in their software systems so that data can be safeguarded and, if necessary, restored to an alternative computer in a disaster situation. GP software vendors should strongly encourage general practitioners to put backup hardware and backup support contracts either with the practice software vendor or with a separate backup hardware/software vendor.

Description

Three things in a practice are irreplaceable: the staff, the patients and the data. If a general practice was to have a catastrophic fire or flood and these three elements were saved, the practice could be up and running in 24 hours with all the information needed to continue providing care.
Retrieving data from crashed disks is expensive and often incomplete.
Ensuring the practice has a well-defined working backup system is critical. GPs should focus on the risks and the consequences and then develop a plan such as proposed in the GPIT document "IT Security for Irish General Practice" 2020 https://www.icgp.ie/go/in_the_practice/it_in_the_practice/gpit/publications_reports/2F49C961-76A9-41B4-A05407E67EAF1239.html.
This plan should include:

- Daily backup of data;
- As well as considering using a cloud-based daily backup, it is worth considering a tape or portable hard-drive media for local physical backups.
- Keep the backup media off-site in a secure location (e.g. locked cabinet) as sensitive, confidential information is stored on the media.
- Taking an off-site backup daily;
- Having a backup routine that allows the user to go back a day, a week or a month,

in case the data gets corrupted;
- Assigning one person in the practice with responsibility for backup;
- Contracting with a company to provide a backup system, teach the staff how to monitor it and verify that it works;
- Having the ability to restore the complete system to an alternative computer in a disaster situation.

Conformance Criteria

1. The system SHALL have the capacity to backup data. This includes patient data and associated information such as templates, guidelines, protocols and configuration information.
2. The system SHALL initiate backup as part of a semi-automatic or automatic routine.
3. The GP Software Vendor SHOULD provide training in data backup to a designated practice staff member.
4. The GP Software Vendor SHOULD provide a training, instruction and troubleshooting manual to support the data backup.
5. The user interface to the backup routine SHOULD be easy to use.
6. It SHOULD be possible to verify that a full backup has taken place.
7. It SHOULD be possible to confirm that the backup contains all the data needed to restore.
8. The restore procedure SHOULD be fully documented.
9. It SHOULD be possible to make a point in time recovery.
10. A contract SHOULD be in place between the practice and a hardware/software support company to provide a backup system.
11. A contract SHOULD be in place between the practice and a hardware/software support company to support, monitor and verify the backup system.
12. The GP Software Vendor SHALL provide documentation to assist a user in doing a test restore.

Health Record Information and Management (IN.2)

ID#	Type	Name	Priority
IN.2	H	Health Record Information and Management	

Data Retention, Availability and Destruction (IN.2.1)

ID#	Type	Name	Priority
IN.2.1	F	Data Retention, Availability and Destruction	EN

Statement

Retain, ensure availability, and destroy health record information according to the scope of practice, organisational policy, or jurisdictional law. This includes:

-Retaining all EHR-S data and clinical documents for the time designated by policy or legal requirement;

-Retaining inbound documents as received initially (unaltered);

-Ensuring availability of information for the legally prescribed time to users and patients;

and
-Providing the ability to systematically destroy EHR data/records according to policy and after the legally prescribed retention period.

Description
Discrete and structured EHR-S data, records and reports must be:
-Made available to users in a timely fashion;
-Stored and retrieved in a semantically intelligent and useful manner (for example, chronologically, retrospectively per a given disease or event, or business requirements, local policies, or legal requirements);
-Retained for a legally prescribed time; and
-Destroyed systematically with the applicable retention period.

An EHR-S must also allow an organisation to identify data/records to be destroyed and review and approve destruction before it occurs. In such a case, it should pass along record destruction date information and existing data when providing records to another entity.

Conformance Criteria
1. The system SHALL allow storing and retrieving health record data and clinical documents for the legally prescribed time.
2. The system SHALL provide the ability to retain inbound data or documents (related to health records) as received. Initially (unaltered, inclusive of the method received). The legally organisationally prescribed time per users' scope practice, organisational policy, or jurisdictional law.
3. The system SHALL retain the inbound data content (related to health records) originally received for the legally prescribed time.
4. The system SHOULD provide the ability to retrieve both the information and business context data within which that information was obtained.
5. The system SHOULD provide the ability to retrieve all the elements included in a legal, medical record definition.
6. The system MAY identify specific EHR data/records for destruction, review and confirm destruction before it occurs and implement function IN.2.2 (Auditable Records).
7. The system MAY provide the ability to destroy EHR data/records so that all traces are irrecoverably removed according to policy and legal retentions periods.
8. When providing records to another entity, the system SHOULD pass along record destruction date information (if any) and existing data.

Auditable Records (IN.2.2)

ID#	Type	Name	Priority
IN.2.2	F	Auditable Records	EN

Statement
Provide audit capabilities for system access and usage indicating the author, the modification (where pertinent), and the date and time a record was created, modified,

viewed, extracted, or deleted. Auditable records extend to information exchange, audit of consent status management (to support DC.1.3.3), and entity authentication attempts. Audit functionality includes generating audit reports and interactively viewing change history for individual health records or an EHR-S.

Description

Audit functionality extends to security audits, data audits, audits of data exchange, and the ability to generate audit reports. Audit capability settings should be configurable to meet the needs of local policies. Examples of audited areas include:

- Security audit, which logs access attempts and resource usage including user login, file access, other various activities, and whether any actual or attempted security violations occurred;
- Data audit, which records who, when, and by which system an EHR record was created, updated, translated, viewed, extracted, or (if local policy permits) deleted. Audit-data may refer to system set-up data or clinical and patient management data;
- Information exchange audit, which records data exchanges between EHR-S applications (for example, sending application; the nature, history, and content of the information exchanged); and information about data transformations (for example, vocabulary translations, reception event details, etc.);
- Audit reports should be flexible and address various users' needs. For example, a legal authority may want to know how many patients a given healthcare provider treated while the provider's license was suspended. Similarly, in some cases, a report detailing all those who modified or viewed a particular patient record;
- Security audit trails and data audit trails are used to verify enforcement of business, data integrity, security, and access-control rules;
- There is a requirement for system audit trails for the following events:
    - Loading new versions of, or changes to, the clinical system;
    - Loading new versions of codes and knowledge bases;
    - Taking and restoring of backup;
    - Changing the date and time where the clinical system allows this to be done;
    - Archiving any data;
    - Re-activating of an archived patient record;
    - Entry to and exit from the clinical system;
    - Remote access connections include those for system support and maintenance activities.

Conformance Criteria

1. The system SHALL provide audit capabilities for recording access and usage of systems, data, and organisational resources.
2. The system SHALL conform to function IN.1.1 (Entity Authentication).
3. The system SHALL provide audit capabilities indicating the time stamp for an object or data creation.
4. The system SHALL provide audit capabilities indicating the time stamp for an object or data modification.
5. The system SHALL provide audit capabilities indicating the time stamp for an object or data extraction.

6. The system SHALL provide audit capabilities indicating the time stamp for an object or data exchange.
7. The system SHALL provide audit capabilities indicating the time stamp for an object or data view.
8. The system SHALL provide audit capabilities indicating the time stamp for an object or data deletion.
9. The system SHALL provide audit capabilities indicating the author of a change.
10. The system SHALL provide audit capabilities indicating the viewer of a data set.
11. The system SHALL provide audit capabilities indicating the data value before a change.
12. The system MAY provide audit capabilities to capture system events at the hardware and software architecture level.
13. The system SHALL conform to function IN.1.3 (Entity Access Control) to limit access to audit record information to appropriate entities.
14. The system SHALL provide the ability to generate an audit report.
15. The system SHALL provide the ability to view change history for a particular record or data set according to users' scope of practice, organisational policy, or legislation.
16. The system SHOULD provide the ability to record system maintenance events for loading new versions of, or changes to, the clinical system.
17. The system SHOULD record system maintenance events for loading new versions of codes and knowledge bases.
18. The system SHOULD provide the ability to record changing the date and time the clinical system allows this.
19. The system SHOULD provide the ability to record system maintenance events for creating and restoring a backup.
20. The system SHOULD record system maintenance events forarchiving any data.
21. The system SHOULD provide the ability to record system maintenance events to re-activate an archived patient record.
22. The system SHOULD record system maintenance events for entry and exit from the EHR system.
23. The system SHOULD record system maintenance events for remote access connections, including system support and maintenance activities.
24. The system SHOULD utilise standardised timekeeping (for example, using the IHE consistent time profile).
25. The system SHOULD allow recording and reporting upon audit information using a standards-based audit record format (for example, RFC 3881).
26. The system SHALL maintain a comprehensive audit trail of scanned image files to facilitate the shredding of documents by practices.
27. Given the appropriate Timestamp, user ID and patient ID, the system SHOULD redisplay all previous data views precisely as they were presented to the user. (this is to capture the idea of seeing the record as it existed at a particular time).
28. The system MAY provide a means to iterate through all previous data views showing the details (time, user, nature of change) of changes to an EHR as they occurred.
29. The system SHOULD record timestamps associated with system crashes or malfunctions and (where possible) the interaction that caused them.

Extraction of Health Record Information (IN.2.4)

ID#	Type	Name	Priority
IN.2.4	F	Extraction of Health Record Information	EN

Statement

Manage data extraction per analysis and reporting requirements. The extracted data may require the use of more than one application, and it may be pre-processed(for example, by being de-identified) before transmission. Data extractions may be used to exchange data and provide reports for primary and ancillary purposes.

Description

An EHR-S enables an authorised user, such as a clinician, to access and aggregate the distributed information corresponding to the health record or records needed for viewing, reporting, disclosure, etc. An EHR-S must support data extraction operations across the complete data set that constitutes an individual's health record and provide an output that comprehensively chronicles the healthcare process. Data extractions are used as input to patient care coordination between facilities, organisations and settings. In addition, data extractions can be used for administrative, financial, research, quality analysis, and public health purposes.

Conformance Criteria

1. The system SHALL provide the ability to extract health record information.
2. The system SHALL provide the ability to de-identify extracted information.
3. The system SHOULD provide the ability to perform extraction operations across the complete data set that constitutes an individual's health record within the system.
4. The system MAY perform extraction operations whose output comprehensively chronicles the healthcare process.
5. The system SHOULD provide the ability to extract data for administrative purposes.
6. The system SHOULD provide the ability to extract data for financial purposes.
7. The system SHOULD provide the ability to extract data for research purposes.
8. The system SHOULD provide the ability to extract data for quality analysis purposes.
9. The system SHOULD provide the ability to extract data for public health purposes.
10. The system SHOULD produce a hard copy of all the data held on the system for a patient.

Data Portability (IN.2.6)

ID#	Type	Name	Priority
IN.2.6	F	Data Portability	EN

Statement

Provide the capacity to export patient records in standard formats.

Description

If a practice decides to change practice software systems, their investment in creating electronic patient records mustn't be lost. So the patient data must be exported in a standard format to be imported into a different software system.

Conformance Criteria

1. The system SHALL have the facility to allow export of patient-related information into:
- A text file, and
- A "CSV" type file where the field lengths, separators, content, column headings, definitions etc., that are used are fully described in the documentation.

2. The export file SHALL contain all data stored in the system either for a selected individual patient or the entire practice population at the user's discretion.
3. The system export facility SHALL include the audit trail, scanned documents and attached documents.

Sample File
Here is a sample CSV file containing three records.

Distance Code,Age Group,Category,Medical Card,Surname,Firstname,Sex,Date of Birth,Address 1,Address 2,Address 3,Address 4,PPSN,Dispensing Code,Card Type,Expiry Date
A,0 to 4,Not Categorised,123456D,BLOGGS,JOSEPH,Male,20/04/2006,5 PRIVET COURT,STILLORGAN,CO. DUBLIN,,9876544J,N,MC,01/06/2010
A,0 to 4,Not Categorised,123455E,BLOGGS,JOSEPH,Male,19/11/2005,61 PRIVET DRIVE, STILLORGAN,CO. DUBLIN,,Not Available,N,MC,01/06/2008
A,5 to 15,Not Categorised,123444E,BLOGGS,JOSEPH,Male,07/04/2000,25 PRIVET ROAD,STILLORGAN,CO DUBLIN,,9876543Q,N,MC,01/06/2009

Registry and Directory Services (IN.3)

ID#	Type	Name	Priority
IN.3	F	Registry and Directory Services	EN

Statement
Enable the use of registry services and directories to uniquely identify, locate and supply links for retrieval of information related to:
- patients and providers for healthcare purposes;
- payers, health plans, sponsors, and employers for administrative and financial purposes;
- public health agencies for healthcare purposes, and
- healthcare resources and devices for resource management purposes.

Description
Registry and directory service functions are critical to successfully managing the health record data's security, interoperability, and consistency across an EHR-S. These services enable linking relevant information across multiple information sources to an EHR-S for use within an application. Directories and registries support communication between EHR Systems and may be organised hierarchically or federated. For example, a patient being treated by a primary care physician for a chronic condition may become ill while out of town. The new provider's EHR-S interrogates a local, regional, or national registry to find the patient's previous records.
A remote EHR-S retrieves relevant information from the primary care record in conformance with applicable patient privacy and confidentiality rules. An example of local registry usage is an EHR-S application sending a query message to the Hospital Information System to retrieve a patient's demographic data.

Conformance Criteria

1. The system SHOULD provide the ability to use registry services and directories.
2. The system SHOULD provide the ability to use registry services and directories securely.
3. The system SHOULD conform to function IN.5.1 (Interchange Standards) to provide standard data interchange capabilities for using registry services and directories.
4. The system SHOULD communicate with local registry services through standardised interfaces.
5. The system SHOULD communicate with non-local registry services (that is, registry services that are external to an EHR-S) through standardised interfaces.
6. The system SHOULD provide the ability to use registries or directories to identify patients for the provision of care uniquely.
7. The system SHOULD provide the ability to use registries or directories to identify providers for the provision of care uniquely.
8. The system MAY use registries or directories to retrieve links to relevant healthcare information regarding a patient.
9. The system MAY use registries to link relevant healthcare information regarding a patient.
10. The system MAY provide the ability to use registries or directories to identify payers, health plans, and sponsors for administrative and financial purposes.
11. The system MAY use registries or directories to identify employers for administrative and financial purposes.
12. The system MAY use registries or directories to identify publichealth agencies for healthcare purposes.
13. The system MAY use registries or directories to identify healthcare resources and devices for resource management purposes.

Standard Terminologies and Terminology Services (IN.4)

ID#	Type	Name	Priority
IN.4	H	Standard Terminologies and Terminology Services	

Standard Terminologies and Terminology Models (IN.4.1)

ID#	Type	Name	Priority
IN.4.1	F	Standard Terminologies and Terminology Models	EN

Statement

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

Description

Semantic interoperability requires standard terminologies combined with a formal standard information model. An example of an information model is the HL7 Reference Information model. Examples of terminologies that an EHR-S may support include:

ICPC-2, ICD-10, LOINC and SNOMED.

A terminology provides semantic and computable identity to its concepts. Terminologies are use-case dependent and may or may not be realm dependent. For example, terminologies for public health interoperability may differ from healthcare quality, administrative reporting, research, etc. Formal standard terminology models enable common semantic representations by describing relationships between concepts within a terminology or in different terminologies, such as exemplified in the model descriptions in the HL7 Common Terminology Services specification. The clinical use of standard terminologies is greatly enhanced with the ability to perform hierarchical inference searches across coded concepts. Hierarchical Inference enables searches to be conducted across sets of coded concepts stored in an EHR-S. Relationshipsbetween concepts in the terminology are used in the search to recognise child concepts of a common parent. For example, there may be a parent concept, "penicillin containing preparations", which has numerous child concepts, each of which represents a preparation containing a specific form of penicillin (Penicillin V, Penicillin G, etc.). Therefore, a search may be conducted to find all patients taking any form of penicillin preparation.

Clinical and other terminologies may be provided through internal or external terminology service to an EHR-S. An example of a terminology service is described in the HL7 Common Terminology Services specification.

Conformance Criteria

1. The system SHALL provide the ability to use ICPC-2 and either SNOMED CT or ICD-10 to code consultations and clinical care elements.
2. The system SHALL provide a user-friendly interface to facilitate coding with ICPC-2and either SNOMED CT or ICD-10.
3. The system SHOULD include facilities to allow the entry of clinical codes by the following methods:
- typing the first few characters of the clinical term;
- entering the hierarchy from the top level, where the coding scheme is hierarchical;
- selecting the term from a list displayed on the screen;
- searching through a list of preferred terms.
4. Where appropriate codes are not available, the system SHALL provide facilities to enter a local or temporary code.
5. The system SHOULD use standard terminologies to communicate with other systems (internal or external to the EHR-S).
6. The system SHOULD provide the ability to validate that clinical terms and coded clinical data exist in current standard terminology.
7. The system SHOULD allow healthcare data exchange using formal standard information models and standard terminologies.
8. The system SHOULD provide the ability to use a formal standard terminology model.
9. The system SHOULD provide the ability to use a terminology service (internal or external to the EHR-S).
10. If there is no standard terminology model available, THEN the system MAY provide a formal, explicit terminology model.

Maintenance and Versioning of Standard Terminologies (IN.4.2)

ID#	Type	Name	Priority
IN.4.2	F	Maintenance and Versioning of Standard Terminologies	EN

Statement

Enable version control according to customised policies to ensure maintenance of utilised standards. This includes changing terminology sets as the source terminology undergoes its natural update process (new codes, retired codes, redirected codes). As determined by local policy, such changes need to be cascaded to clinical content embedded in templates, custom formularies, etc.

Description

Version control allows for multiple sets or versions of the same terminology to exist and be distinctly recognised over time. Terminology standards are usually periodically updated, and concurrent use of different versions may be required. Since the meaning of a concept can change over time, retrospective analysis and research must maintain the ability to relate changing conceptual definitions. Suppose the terminology encoding for a concept changes over time. In that case, it is also essential that retrospective analysis and research correlate the different encodings to ensure the permanence of the concept. This does not necessarily imply that complete older versions of the terminology be kept in the EHR-S. Only access to the changes needs to be maintained.

It should be possible to retire deprecated versions when applicable business cycles are completed while maintaining obsolescent code sets. An example of this is for possible claims adjustment throughout the claim's lifecycle.

Conformance Criteria

1. The system SHALL provide the ability to use different versions of terminology standards.
2. The system SHALL provide the ability to update terminology standards.
3. The system MAY relate modified concepts in the different versions of a terminology standard to preserve interpretations over time.
4. The system SHOULD interoperate with systems that use known different versions of a terminology standard.
5. The system SHOULD provide the ability to deprecate terminologies.
6. The system MAY provide the ability to deprecate individual codes within a terminology.
7. The system SHALL allow cascade terminology changes where coded terminology content is embedded in clinical models (for example, templates and custom formularies) when the cascaded terminology changes can be accomplished unambiguously.
8. Changes in terminology SHALL be applied to all new clinical content (via templates, custom formularies, etc.).

Standards-based Interoperability (IN.5)

ID#	Type	Name	Priority
IN.5	H	Standards – based Interoperability	

Interchange Standards (IN.5.1)

ID#	Type	Name	Priority
IN.5.1	F	Interchange Standards	EN

Statement
Support the ability to operate seamlessly with other internal or external systems that adhere to recognised interchange standards. "Other systems" include other EHR Systems, applications within an EHR-S, or other authorised entities that interact with an EHR-S.

Description
An organisation typically uses several interchange standards to meet its external and internal interoperability requirements. There is a common understanding of rules regarding connectivity, information structures, formats and semantics, known as "interoperability or interchange standards". Data exchange between internal systems or modules, or external to the organisation, occurs seamlessly to the user. For example, if data interchange involves double-entry or manual cut-and-paste steps by the user, it is not considered seamless.

EHR content is represented in various interchange formats such as HL7 Messages, Clinical Document Architecture (CDA) and other HL7 Structured Documents, X12N healthcare transactions, and Digital Imaging and Communication in Medicine (DICOM) format.

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

A variety of interaction modes are typically supported, such as:
-Unsolicited Notifications, e.g. a patient has arrived for an appointment
-Query/Response, e.g., Is Adam Everyman known to the system? Yes, MRN is 12345678.
-Service Request and Response, e.g., Laboratory Order for "Fasting Blood Sugar" and a response containing the test results.
-Information Interchange between organisations (e.g. general practice and Primary Care Reimbursement Service)
-Structured/discrete clinical documents, e.g., Consultation Note
-Unstructured clinical document, e.g., dictated referral letter

Terminology is a fundamental part of interoperability, and using a formal, explicit information model further optimises interoperability. An example of an information

model is the HL7 Reference Information Model (RIM). Organisations typically need to deal with more than one information model and develop a mapping or a meta-model.

Conformance Criteria
1. The system SHALL provide the ability to use interchange standards as required by realm-specific and local profiles, such as laboratory messaging and out-of-hours messaging.
2. The system SHOULD provide the ability to seamlessly perform interchange operations with other systems that adhere to recognised interchange standards.
3. IF there is no standard information model available, THEN the system MAY provide a formal, explicit information model to support the ability to operate seamlessly with other systems.
4. The system SHOULD allow data exchange using an explicit and formal information model and standard, coded terminology.

Interchange Standards Versioning and Maintenance (IN.5.2)

ID#	Type	Name	Priority
IN.5.2	F	Interchange Standards Versioning and Maintenance	EN

Statement
Enable version control according to local policies to ensure maintenance of utilised interchange standards. Version control of a standard interchange implementation includes accommodating changes as it undergoes its natural update process.

Description
The life cycle of any given standard results in changes to its requirements. An organisation must know the version of any given standard it uses and its needs and capabilities.

For example, if the organisation migrates to an HL7 v2.5 messaging standard, it may use new capabilities such as specimen or blood bank information. The organisation may find that specific fields have been retained for backwards compatibility only or withdrawn altogether. The EHR-S needs to be able to handle all of these possibilities.

Standards typically evolve in such a way as to protect backwards compatibility. On the other hand, sometimes there is little or no, backwards compatibility when an organisation may need to replace an entire standard with a new methodology. An example of this is migrating from HL7 v2 to HL7 v3.

Interchange standards that are backward compatible support exchange among senders and receivers using different versions. Version control ensures that those sending information in a later version of a standard consider the difference in information content that can be interchanged effectively with receivers, capable of processing only earlier versions. Senders need to be aware of the information that receivers cannot capture and adjust their business processes accordingly. Version control enables multiple versions of the same interchange standard to exist and be distinctly recognised over time. Since interchange

standards are usually periodically updated, concurrent use of different versions may be required. Large (and federated) organisations typically need to use different versions of an interchange standard to meet internal organisational interoperability requirements. For example, the enterprise-wide standard might use HL7 v2.5 for Lab messages, but some regions of the enterprise might be at a lower level. It should be possible to retire deprecated interchange standards versions when applicable business cycles are completed while maintaining obsolete versions.

When interchange standards change over time, retrospective analysis and research must correlate and note gaps between the different versions' information structures to support the permanence of concepts. An example of this is the calculation of outcome or performance measures from persisted data stores where one version of a relevant interchange standard, e.g., CDA Release 1, captures the relevant data, e.g., discharge data, differently than CDA Release 2.

Conformance Criteria
1. The system SHOULD provide the ability to use different versions of interchange standards.
2. The system SHOULD provide the ability to change (reconfigure) how data is transmitted as an interchange standard evolves and follows business needs.
3. The system SHOULD provide the ability to deprecate an interchange standard.
4. The system SHOULD interoperate with other systems that useknown earlier versions of an interoperability standard.

Interchange Agreements (IN.5.4)

ID#	Type	Name	Priority
IN.5.4	F	Interchange Agreements	EN

Statement
Support interactions with entity directories to determine known and potential partners' addresses, profiles, and data exchange requirements. Use the rules of interaction specified in the partner's interchange agreement when exchanging information.

Description
Systems that wish to communicate must agree on the parameters associated with that information exchange. Interchange Agreements allow an EHR-S to describe those parameters/criteria.

An EHR-S can use entity registries to determine partners' security, addressing, and reliability requirements. An EHR-S can use this information to definehow data will be exchanged between the sender and the receiver. The discovery of interchange services and capabilities can be automatic.

For example:
- A new application can automatically determine a patient demographics source using a Universal Description and Discovery Integration (UDDI) for source discovery and retrieve the Web Services Description Language (WSDL) specification for binding

details.
- Good Health Hospital is a member of National LabNet, for sharing laboratory results with other partners. Good Health Hospital periodically queries LabNet's directory (UDDI) to determine if additional information providers have joined LabNet. When new information providers are discovered, Good Health IT establishes the appropriate service connections based upon the Service Description (WSDL).

Conformance Criteria
1. The system SHALL use interchange agreement descriptions when exchanging information with partners.
2. The system SHOULD use interchange agreement description standards (when available).
3. The system MAY conform to function IN.3 (Registry and Directory Services) to interact with entity directories to determine the address, profile and data exchange requirements of known and potential partners.
4. The system MAY provide the ability to discover interchange services and capabilities automatically.

Business Rules Management (IN.6)

ID#	Type	Name	Priority
IN.6	F	Business Rules Management	EN

Statement
Manage the ability to create, update, delete, view, and version business rules, including institutional preferences. Apply business rules from necessary points within an EHR-S to control system behaviour. An EHR-S audits changes made to business rules and compliance to and overrides of applied business rules.

Description
EHR-S business rule implementation functions include decision support, diagnostic support, workflow control, access privileges, and system and user defaults and preferences. An EHR-S supports the ability of providers and institutions to customise decision support components such as triggers, rules, or algorithms, as well as the wording of alerts and advice to meet realm specific requirements and preferences. Examples of applied business rules include:
- Suggesting diagnosis based on the combination of symptoms;
- Classifying a pregnant patient as high risk due to factors such as age, health status, and prior pregnancy outcomes;
- Sending an update to an immunisation registry when vaccination is administered;
- Limiting access to mental health information to authorised providers;
- Establishing system level defaults such as for vocabulary data sets to be implemented.; and
- Specifying user-level preferences such as allowing health information for research purposes.

Conformance Criteria
1. The system SHALL provide the ability to manage business rules.

2. The system SHOULD provide the ability to create, import, or access decision support rules to guide system behaviour.
3. The system SHOULD provide the ability to update decision support rules.
4. The system SHOULD provide the ability to customise decision support rules and their components.
5. The system SHOULD provide the ability to inactivate, archive, or destroy decision support rules.
6. The system SHOULD conform to function IN.2.2 (Auditable Records) to audit all changes to decision support rules.
7. The system SHOULD create diagnostic support rules to guide system behaviour.
8. The system SHOULD provide the ability to update diagnostic support rules.
9. The system MAY provide the ability to customise diagnostic support rules and their components.
10. The system SHOULD provide the ability to inactivate, archive, or destroy diagnostic support rules.
11. The system SHOULD conform to function IN.2.2 (Auditable Records) to audit all changes to diagnostic support rules.
12. The system SHOULD create workflow control rules to guide system behaviour.
13. The system SHOULD provide the ability to update workflow control rules.
14. The system MAY provide the ability to customise workflow control rules and their components.
15. The system SHOULD allow inactivating, archiving, or destroying workflow control rules.
16. The system SHOULD conform to function IN.2.2 (Auditable Records) to audit all changes to workflow control rules.
17. The system MAY create access privilege rules to guide system behaviour.
18. The system MAY provide the ability to update access privilege rules.
19. The system MAY provide the ability to customise access privilege rules and their components.
20. The system MAY provide the ability to inactivate, archive, or destroy access privilege rules.
21. The system MAY conform to function IN.2.2 (Auditable Records) to audit all changes to access privilege rules.
22. The system SHOULD conform to function IN.2.2 (Auditable Records) to audit all changes to other business rules.
23. The system SHOULD support the ability to selectively export business rules.

Workflow Management (IN.7)

ID#	Type	Name	Priority
IN.7	F	Workflow Management	EN

Statement
Support workflow management functions, including the management and set up of work queues, personnel lists, and system interfaces and the implementation functions that use workflow-related business rules to direct the flow of work assignments.

Description
Workflow management functions that an EHR-S supports include:
- Distribution of information to and from internal and external parties;
- Support for task management as well as parallel and serial task distribution;
- Support for notification and task routing based on system triggers; and
- Support for task assignments, escalations and redirection per businessrules.

Workflow definitions and management may be implemented by a designated application or distributed across an EHS-S.

Conformance Criteria
1. The system SHOULD use workflow-related business rules to direct the flow of work assignments.
2. The system SHOULD provide the ability to create workflow (task list) queues.
3. The system SHOULD manage workflow (task list) queues.
4. The system MAY manage human resources for workflow queues (i.e., personnel lists).
5. The system MAY use system interfaces that support human resources management (i.e., personnel lists).
6. The system MAY use system interfaces that support the management of workflow (task lists) queues.
7. The system MAY distribute information to and from internal and external parties.
8. The system MAY route notifications and tasks based on system triggers.
9. The system MAY dynamically escalate workflow according to business rules.
10. The system MAY dynamically redirect workflow according to business rules.
11. The system MAY dynamically reassign workflow according to business rules.

Section 2: Programs specific to operate Practice Management Systems in Ireland

The eHealth program of 2013 was altered significantly by the 2019 changes to the GMS contract that incorporates eHealth and data management projects, providing timelines for the project's development. agreement-2019.pdf (hse.ie)

The eleven contracted components from the 2019 GP contract affecting eHealth and data transfer include-

1. Chronic Disease Management Program (CDM)
2. Individual Health Identifier (IHI)
3. eReferrals
4. ePrescribing
5. National Integrated Medical Imaging System (NIMIS)
6. Summary and Shred Care Records
7. Integrated Immunisation System
8. Healthlink
9. Healthmail
10. Use of PCRS application Suite
11. MedLIS

The changes in General Practice needed to work through the COVID 19 pandemic has caused some of the contracted programmes to be delayed in their development and others to get a welcome acceleration. The development of the COVID vaccination messages has built the skeleton needed for all vaccination messages to transfer to the HSE and PCRS from GP software.
Though not proper ePrescribing, the electronic prescription transfer through Healthmail was a welcome addition to GP working by providing seamless prescription transfer without the need for printing and signing prescriptions.

2.0 Support and Integration with Healthlink

Most national IT projects involve integrating HL7 v2.4 messages to and from GP IT systems through the National Message Broker Healthlink. Any new projects and work with new vendors will involve a close working relationship between Healthlink and the GP vendor programmers.

For new GP software coming to the Irish market, approval must be received from GPIT before collaborating with Healthlink for integration. Healthlink enables integration and facilitates testing of the submission and exporting of reports through Healthlink's API services. This process may amount to intensive work but should be broken down into phases

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1. Basic functionality (based on Section 1 of RFC_2022): Integration with Healthlink, downloading hospital reports, and processing Acknowledgements.
2. Referrals: Submissions of referrals, both general and specialist.
3. National programmes (based on Section 2 RFC_2022): e.g. CDM, Sick Cert, Vaccination reports, MN-CMS. This process would require engagement and scheduling with all stakeholders for each project.

It is imperative that prior to releasing updates to GP practice software, testing has been conducted across the suite of Healthlink web services. Healthlink must be aware of the testing taking place and confirm the updates do not negatively impact the brokering system.

Practice vendors must authenticate GPs MCN details against the Health Directory service prior to submitting reports to Healthlink.

2.1 Support the Irish Cervical Screening Programme (DC.2.5.3)

ID#	Type	Name	Priority
DC.2.5.3	F	Support the Irish Cervical Screening Programme	EN

Statement

Provide the capacity for two way exchange of structured electronic messages with the Irish Cervical Screening Programme

Description

Although this function relates to cervical screening, it is clear that GP software systems will need to interact with a range of screening services as these are established nationally. The aim of the Irish Cervical Screening Programme (https://www.cervicalcheck.ie/health-professionals.3800.html) is to reduce theincidence and mortality from cervical cancer, and Cervical Screening is a worthwhile preventative health measure. Smear tests can detect early changes in the neck of the womb; the earlier a change is found, the easier it is to treat. Women aged 25 to 29 years will be screened at three-yearly intervals, and women aged 30 to 65 years will be recalled every five years for smear tests.

Conformance Criteria

1. The system SHOULD have the capacity to use templates for cervical cytology request forms and colposcopy clinic referral forms.
2. The system SHOULD populate these request and referral forms with demographic and clinical information available from the electronic health record.
3. The system SHOULD identify specific groups of patients within the practice populationwho require cervical screening, including:
   - Identify from the practice population all women who have not had cervical screening aged between 25 and 65.
   - Identify all women who have had a hysterectomy (total or subtotal) aged between 25 and 60 and unscreened.

Data Attributes

Colposcopy Clinic
Date
Woman's Details: first name, middle name, surname, address, contact telephone number, date of birth, PPS number, Cervical Screening Programme ID, mother's maiden name, surname at birth
ICSP Smear: yes or no
Referral Smear Details: cytology lab accession number, reporting lab
Past Smear History
Medical/Surgical History
Medications
Doctor's Comment

Table 10 Colposcopy Clinic Referral Data Set

date of birth, PPS number, Cervical Screening Programme ID, mother's maiden name, surname at birth
Consent Given
Doctor/Smeartaker Details: name, address, contact telephone number, CSP ID,
Smear Details: date of smear, Last Menstrual Period, Status (hormones/HRT, pregnant, post colposcopy smear, IUCD, post-menopausal)
Relevant Clinical Details
Previous Smear/Treatment History: cytology lab accession number, reporting lab, test date, result

Table 11 Cervical Cytology Request Data Set

2.2 Establish Client Eligibility for Services (S.3.3.2)

ID#	Type	Name	Priority
S.3.3.2	F	Establish Client Eligibility for Services	EN

Statement

Provide the capacity to check client eligibility using web services.

Description

The HSE Primary Care Reimbursement Service (PCRS) provides a service that allows a Primary Care Contractor (GP) to confirm client eligibility to the various health schemes, including a medical card and drugs payment scheme (DPS). It is a real-time service and will tell a GP whether or not the eligibility data will allow PCRS to pay or not pay for claims at the point in time. It also provides the eligibility end date so that a GP will know if eligibility is about to expire. You can see it in action by following the link below, and you can check your eligibility if you happen to be in the DPS scheme: www.sspcrs.ie/portal/checker.

The service is also available by SMS text message:

1. Create a new text message;
2. Enter the word check followed by a space, then the client identifier, i.e. medical card number and client code letter with no spaces. For Example, check 999999A
3. Send this message to 087 9097867
4. Within a few seconds, you will receive a response containing details on anyeligibility found;
5. Example response: "The client 999999A was born 09/02/2001 and had a validGMS card starting from 09/04/2001 to 31/10/2025 and is assigned to Doctor 11111".

The PCRS also offers this facility as a web service for vendors to add value to their applications. This provides the ability to check if a patient is eligible for any HSE schemes based on their Scheme Id. In addition to returning their validity, the user can also get information on the client's date of birth, the cards' start and end dates, and the doctor number they are assigned, if applicable. The WSDL (Web Service descriptive Language), which describes this web service, is available from the PCRS.
The following points in relation to the use of this web service should be noted:

- PCRS will not mandate its use, have no plans to charge for its service, and will not pay for any costs associated with using it from a vendor's perspective.
- It is intended to offer additional web services for inclusion by vendors in future to deal with issues such as integrated claiming and other aspects of the interaction between GPs and HSE PCRS.
- A reasonable level of support will be offered to vendors who wish to integrate, i.e. helping them know what services to call, what the parameters mean, etc.
- Suppose a vendor wishes to include the service. They need to contact PCRS to initiate the registration process. This will provide PCRS with contact details to communicate regarding advance notice of changes or downtime. The registration process will also include details of the usual type of terms and conditions which would be expected to accompany this service.
- Where possible, the GP software system should always check eligibility in real-time. It is reasonable for the GP system to store eligibility data locally to provide for situations where the communications network is down or the web service is unavailable. However, GPs should be aware that early patient eligibility withdrawal can occur. In such cases, a discrepancy between local and PCRS datamay exist and where this happens, the PCRS data will be considered as correct.

Conformance Criteria

1. The system SHOULD provide a facility to establish client eligibility for services with the PCRS using a web services interface.
2. The system SHOULD provide the retention of service eligibility date(s) and expiry date for service rendering.

2.3 Import of Primary Care Reimbursement Service Patient Listing (IN.2.7)

ID#	Type	Name	Priority
IN.2.7	F	Import of Primary Care Reimbursement Service Patient Listing	EN

Statement

Provide the capacity to import Primary Care Reimbursement Service (PCRS) patient listing in a standard format.

Description

When a practice is being computerised for the first time, it is essential to import the demographic details of medical card patients using the download file available to GMS GPs on the Primary Care Reimbursement Service (PCRS) website. The PCRS download file is in CSV format and contains the fields shown in the table below.

Conformance Criteria

1. The supplier SHALL provide a facility to import a GPs full GMS patient panel, including all relevant details.

Data Attributes

The proposed file structure is as follows:

Column Name	Description	Comment
Distance Code	Letter, A to E	Distance from the GP's principal practice centre to the patient's home
Age Group	0 to 4, 5 to 15, 16 to 44, 45 to 64, 65 to 69, 70+	Patient age group
Category	Not Categorised, Asylum Seeker, Discretionary Medical Card, New 70+, 70+ PN.Home, 70+ SM, New 70+ PN.Home,	Patient category (see notes below)
Medical Card	123456A	Includes letter
Surname	TEST	
Firstname	JOHN	
Sex	Male or Female	
Date of Birth	DD/MM/YYYY	
Address 1	4 PRIVET DRIVE	
Address 2	FOXROCK	
Address 3	DUBLIN 18	
Address 4		May contain text, be empty or contain XXXXX
PPSN	1234567A or 1234567AB or Not Available	Personal Public Service Number
Dispensing Code	Letter, Y or N	Yes or No

Card Type	MC or DVC	Medical Card or Doctor Visit Card
Expiry Date	DD/MM/YYYY	Date of expiry of eligibility

Table 15 Structure of PCRS Patient Listing File

Notes

1. Explanation of terms used in category column:

Value	Description
Not Categorised	Payment based on age group, distance code and gender
New 70+	Acquired medical card eligibility automatically on age grounds as opposed to means
Asylum Seeker	Payment on age group, distance code and gender but has triggered once only registration fee payment for Asylum seeker
70+ PN.Home	Payment at the rate of over 70 in a private nursing home
70+ SM	Zero capitation payment since care received via state medical facility
New 70+ PN.Home	Payment at the rate of over 70 in a private nursing home
Discretionary Medical Card	Payment based on age group, distance code and gender but has received eligibility for reasons other than within strict means guidelines

Table 16 Explanation of PCRS categories

2.4 Support the Heartwatch Programme (S.2.1.1.1)

ID#	Type	Name	Priority
S.2.1.1.1	F	Support the Heartwatch Programme	EN

Statement

Support the Heartwatch programme to tackle the problem of cardiovascular disease in Ireland.

Description

The Heartwatch Programme sets out to tackle the problem of cardiovascular disease in Ireland by establishing a national strategic approach to the implementation of internationally recognised cardiovascular prevention guidelines ('Prevention of Coronary Disease in Clinical Practice 1988' Second Joint Task Force of European and other Societies on Coronary Prevention).

The overall aim of Heartwatch is to reduce the morbidity and mortality of patients on the programme. The interim objectives of the programme are:

- To examine the baseline levels of risk factors and therapeutic interventions relevant to secondary prevention and their trends over time;
- To explore the processes involved in implementing the programme, including the referral process and patient retention;
- To record the incidence of cardiovascular events in patients participating in the programme.

The set-up of Heartwatch commenced in September 2002, with the first patients seen in March 2003. At its heyday, the program was funded for 20% of the population and involved 450 general practitioners throughout Ireland.
The Chronic Disease Management Program has now absorbed most of the Heartwatch patients, and it will absorb all in time, and it will not require new software to support the Heartwatch Program.

Conformance criteria
1. The system SHOULD provide the ability to collect patient data required for theHeartwatch programme
2. The system SHOULD provide a user-friendly interface for collecting Heartwatch data.
3. The system SHOULD provide the ability to define prompts in the clinical care setting that would request information needed to complete Heartwatch patient returns.
4. The system SHOULD automatically make the Heartwatch data return information collected in the clinical care setting.
5. The system SHOULD generate monthly report files for the Heartwatch programme compatible with the Independent National Data Centre Requirements as specified in the document “INDC Heartwatch - File Generation v1_0.doc”.

2.5 GP Data Returns for Under 6s and Diabetes and Asthma Cycles of Care

Statement
Support the return of electronic data for Under 6s periodic assessments and cycles of care for diabetes and asthma.

Description
There is significant data collection at the general practice level for contracts and agreements related to Under 6s and Cycles of Care. It is essential that this data be generated as part of the assessment of children and patients with chronic diseases and returned electronically from the GP systems via Healthlink to the Primary Care Reimbursement Service (PCRS). The format used is HL7 version 2.4 with XML encoding. The aim is to ensure data quality and avoid double entry of data.

Specification Reference
"Diabetes_Data_Returns_v2_5.pdf" & "Under6s_Message_Construction_v1_2.pdf" or later versions, available from Healthlink.

Conformance Criteria
1. The GP (practice software management) system SHALL interface, via web services, with PCRS to check patient registration before data return.
2. The GP system SHALL provide an efficient and user-friendly method for the GP or

practise staff to input the whole dataset as part of periodic assessments or cycle of care consultations. In particular, there SHALL NOT be a need for double entry or transcribing of data by staff.

3. The GP system SHALL only allow data returns to the schedule agreed in the contract.
4. The GP system SHALL NOT allow partial returns of data to PCRS.
5. The GP system SHALL implement data validation for height and weight entries to prevent GP or practice nurse data input errors.
6. The GP system SHALL automatically include relevant laboratory results in the data returns for the diabetes care cycle.
7. The GP system SHALL support real-time and batch data returns for periodic assessments and cycles of care.
8. The GP system SHALL receive and process an ACK message for each patient data return submitted.
9. The GP system SHALL display error messages from ACK messages and support the system user in interpreting and resolving these errors.
10. The GP system SHALL support identifying and recalling patients due the periodic assessments or cycle of care reviews.

2.6 Discharge Summaries for Maternity and Newborn Clinical Management System (MN-CMS)

Statement
Support the display of discharge summaries from MN-CMS

Description
The MN-CMS Project is designing and implementing an electronic health record (EHR) for all women and babies in maternity services in Ireland. The first electronic sharing of information between MN-CMS and GP systems will enable the receipt and display of a discharge summary message.

Specification Reference
"Discharge_Spec_Messaging-v0_4.pdf" or later versions, available from Healthlink

Conformance Criteria

1. The GP (practice software management) system SHALL display discharge summary messages from MN-CMS using the Healthlink style sheet.
2. The GP system SHALL support the HIQA 'National Standard for Patient Discharge Summary Information' (03/07/2013).
3. The GP system SHALL display the patient identifiers contained in the discharge summary messages from MN-CMS.
4. The GP system SHALL display, in a readable format, the free-text comments contained in the discharge summary messages from MN-CMS
5. The GP system SHOULD use the Baby discharge summary message to generate a new record in the GP system.

6. The GP system SHOULD use the mother's identifier in the Baby discharge summary to link the mother and baby records.

2.7 Individual Health Identifiers (IHI)

Statement
Support the pre-seeding of the Individual Health Identifier (IHI) for GMS patients in General Practice.

Description
eHealth Ireland implements an Individual Health Identifier (IHI) Register at a national level. Through the COVID pandemic, over 90% of IHI's have been matched to patients using the PPS number in COVID swab and COVID vaccinations. A facility will be provided to allow GPs to seed IHIs for GMS patients via a monthly extract provided by PCRS and accessible via the existing PCRS GP portal.
This project is a collaboration between the IHI project team, the Primary Care Reimbursement Service (PCRS) and GP practice software system vendors. It should be noted that this facility is purely to allow pre-seeding for GMS clients and does not relate to the full functionality required for IHI.

Specification Reference
"IHI GP, GMS Seeding Process, V0.1" available from the IHI Project Team.

Conformance Criteria
1. The GP (practice software management) system SHALL import the modified GMS panel list from PCRS.
2. The GP system SHALL decrypt the IHI number.
3. The GP system SHALL validate the IHI number (position 17 modulus 11 check digit and position 18 GS1 check digit).
4. The complete decrypted IHI number (18 digits) SHALL be stored in a single field in the GP practice software management system database.
   The previous IHI number should also be reserved where an existing IHI number is replaced as part of the GMS seeding process. This is to facilitate the identification of returned IHI numbers and assist subsequent business processes.
5. When sending electronically to other information systems, for example, in an eReferral or barcode, the GP system SHOULD transmit the complete decrypted IHI number, that is, the entire 18 digits.
6. When displaying the IHI on-screen or printing a document, the GP system SHALL show the decrypted core number, i.e. nine digits plus modulus 11 check digit in positions 8 to 17 of the complete IHI number in the format 3-3-4.
7. The IHI number, where it is available, SHALL be consistently displayed at all times with the GP system.

8. The GP system SHALL have the capacity to purge or clear out all IHI numbers seeded to GPs in a practice.

Advisory Note
While providing a dedicated field for consistently displaying the IHI number, whether it contains a value or is blank, it is not part of the GPIT RFC_2022. It will be required for accreditation by the Health Identifiers Programme (HIDs).

2.8 eReferrals

Statement
Support the use of eReferrals.

Description
Electronic referrals (eReferrals) allow GPs to generate detailed referrals within their practice software system and transmit them electronically to all public hospitals via the Healthlink messaging broker. The initial implementation was for cancer referrals, followed by general electronic and specialist referrals using integrated browser technology.

Specification Reference
"General_Referral_Message_Construction_v1_10.pdf" or later version, available from Healthlink. https://www.healthlink.ie/media/py1lkhfk/healthlinkonline-message-specification.pdf
Healthlink referral response messages
https://www.healthlink.ie/media/dnvpog5u/general_referral_message_construction_v1_10.pdf

Conformance Criteria
1. The GP (practice software management) system SHALL support electronic cancer referrals for breast, lung, ovarian and prostate cancer.
2. The GP system SHALL support general electronic referrals.
3. The GP system SHALL support specialist referrals using the integrated browser technology. These include pigmented skin lesions, endoscopy and ophthalmology referrals, COVID Hub/Swab referrals.
4. The GP system SHALL integrate eReferrals and associated structured messages into the individual patient electronic record.
5. The GP system SHALL conform to the Healthlink message specifications for Cancer, General and Specialist referrals.

2.9 Integration of Healthmail into Practice Management Systems

Statement
Support the integration of secure email through Healthmail.

Description
Healthmail is a secure email service maintained through the A2I offices of the Chief Clinical Information Office within the HSE. Healthmail use for general practice started in 2014.
Because the email transmits through the HSE infrastructure, it offers more security than conventional email, allowing clinicians to share sensitive clinical data. Healthmail was designed to bridge a communications link with our hospital colleagues and other allied health professionals permitted to use Healthmail. It bypasses the difficulties of getting a clinician on the phone to answer a specific query. Healthmail can send detailed clinical attachments to augment referrals as the information transfer is secure.
GPs find Healthmail beneficial for sending copies of patients' notes when they move practice, avoiding printing out complete clinical records.
Enabling the General Practioner to send a secure clinical email to another healthcare provider from within the patient's medical record is essential. It needs to be integrated with the GP software to perform this function.
The COVID pandemic in 2019 enabled the use of Healthmail for electronic prescription transfer to limit the footfall through GP surgeries and the pharmacy (Covered in detail in section 2.10).

Specific Reference
For specifics on Healthmail and an index to many frequently asked questions, got to www.healthmail.ie.

Conformance Criteria

1. The system SHALL enable a link to a general practitioners/practice Healthmail account. The sign-in details will be automated at subsequent attempts to send Healthmail messages when the clinician is signed in.
2. When Healthmail integration to practice management software is used to transmit an electronic prescription, sending the email SHALL only be possible with licensed staff to prescribe medication, i.e. the GPs and Nurse prescribing staff.
3. The system SHALL provide an auditable trace of who was logged into a workstation when a Healthmail message is sent.
4. The link to a Healthmail account and the logged-in user SHALL only be made when the user clinician is signed into the practice management software.
5. Healthmail SHOULD be accessible while in the software section where letters are usually generated.
6. Essential demographic fields of the patient SHOULD be captured when sending a Healthmail message from within the medical records, including name, address, date of birth, health identifiable numbers like the hospital MRN or IHI number.
7. When composing a letter or referral through the system, there SHALL be a function

of attaching files like letters, photographs, ECGs, etc.

8. The system SHOULD provide a directory for contacting a specific allied health professional, where the health professional can be searched by speciality and geographic location.

2.10 Electronic Prescription Transfer

Statement

To reduce the footfall through GP surgeries and Pharmacies and support social distancing through the COVID 19 pandemic. A system was adapted for the GPs sending prescriptions directly to the pharmacist through the Healthmail email platform.

Description

It required legislation changes to existing prescription rules to allow a prescription to be sent as an email through the Healthmail platform only and not have to be signed in ink. The legislation enacted in April 2020 also allowed GMS prescriptions to be printed out on A4 paper. The maximum validity of a prescription was increased from six to nine months.
All staff signed into the GP software can produce a prescription, but it can only be sent to the pharmacist after review by a prescribing clinician.

The electronic prescription transfer is a welcome process for GPs that no longer have to use inefficient dot-matrix printers on multilayered paper scripts. This system is not proper ePrescribing as the GP selects the pharmacy to which the prescription is to be sent. It is hoped that incorporating the benefits of ePrescription transfer, eventually, the scripts will go to a central repository where the patient can choose which pharmacies to dispense their medication.

Specific Reference

For more information on the legislative changes to bring in ePrescription transfer, see the document from the PSI- Pharmacy Regulatory Guidance for prescribers and pharmacists on legislation

Conformance Criteria

1. The system SHALL ensure that only Healthmail can be used for electronic prescription transfer.
2. The system SHALL enable a link to a general practitioners/practice Healthmail account. The sign-in details will be automated at subsequent attempts to send Healthmail electronic prescriptions when signed in.
3. When Healthmail integration to practice management software is used to transmit an electronic prescription, functionality SHALL only be possible with staff licensed to prescribe medication, i.e. the GPs and Nurse Prescribers.
4. The system SHALL provide an auditable trace of who was logged into a workstation when a Healthmail prescription is sent.
5. Prescriptions generated for electronic prescription transfer MUST display the patient's date, name, address, and GMS number (if applicable).
6. The dispensed items SHALL display the quantity and dosing rate.

7. The prescription image SHOULD indicate whether this is a single or repeat prescription
8. The prescription image SHALL contain the name, address and IMC number of the prescriber
9. Opiate Substitution Treatment prescriptions can not be generated through ePrescription transfer. They need to be completed on their proper prescription pads but can then be scanned and emailed to the pharmacy using Healthmail.

2.11 Submission of electronic Social Welfare Sickness Certificates

Statement
Support sending electronic sick certificates to the Department of Employment Affairs and Social Protection (DEASP).

Description
The illnesses should be coded in either ICPC2, ICD-10 or SNOMED-CT format. The message standard and version is the same as is used in GP messaging nationally, Health Level Seven (HL7) version 2.4 with XML encoding, in conformance with the Health Information and Quality Authority (HIQA) GP Messaging standard.

Specific Reference
Further information can be found on the Healthlink specifications https://www.healthlink.ie/media/edypwvic/deasp_sick_cert_specification.pdf and the Department of Health guideline document.
Closed Certification Guidelines for General Practitioners.

Conformance Criteria
1. The system SHALL enable sickness certification messaging to the DEASP through HL7_V2.4 messages.
2. The illness SHOULD be coded in either ICPC2, ICD-10 or SNOMED-CT format.
3. The system SHALL allow the user to select the time of illness in the number of weeks.
4. The system SHOULD enable a sickness certificate to be printed off for the patient to give to their employer, outlying the dates that certification is to/from withholding the clinical details of why they are sick.
5. The system SHALL record a log of sickness certificates given out to include the clinician, certification dates and the illness in the patient clinical notes.
6. The system SHOULD maintain a log of submitted/accepted and rejected certificates for practice validation.
7. The patient also has to fill out and send in the IB1 cert to complete the sickness certification process.

2.12 The Chronic Disease Program

Statement
Support the sending of anonymised health information on chronic diseases from primary care GMS patients to an HSE data repository while simultaneously submitting claim messages to the PCRS for agreed payment. The process is carried out from within the patient clinical notes.

Description
A significant change to GP workflow from the 2019 amended GP contract involved GPs sending serial clinical information on three groups of patients -

1. Those with a known diagnosis of one or more chronic diseases. Including- Type II diabetes, asthma, COPD, heart failure, ischaemic heart disease, cerebrovascular disease and atrial fibrillation. (Patients over 18years).
2. High-risk patients for developing a chronic disease based on very high blood pressure or moderate hypertension with a Qrisk>20% and pre-diabetics. (Currently over 65yo)
3. The program also allows sending messages on opportunistic risk cases with features, putting them at an increased risk of developing one of the listed chronic diseases. (Currently over 65 yo).

A clinical collaboration has agreed on the fields collected and messaged to the HSE and PCRS from public health and the ICGP clinical leads over the specific diseases.
Features of the CDM program:

- The Chronic Disease Management (CDM) program alerts the clinician to relevant clinical/biochemical data gathering.
- Guides the clinician to improve patient education.
- Incorporate preventative care.
- Structured medication review- ensuring the patient is happy with prescribed medications.
- Relevant physical examination findings are captured for all the CDM diseases.
- Scheduled investigations are prompted, again relevant to each disease the patient is coded with.
- Prompts the clinician for a referral to specialist services
- Provided an individual care plan that can be assessed at follow-up visits.

It was influential in the CDM program design that much of the information gathered would be routinely captured in regular GP consultations. If the clinical information was recorded in the appropriate baseline section of the patient's notes, it would be automatically captured to populate most of the required data fields on the CDM message return. Baseline information that would be automatically taken into the CDM message includes Demographic details, height, weight, BMI, waist circumference, pulse rate and character, blood pressure, lung peak flow, alcohol and smoking status, exercise frequency. Likewise, required blood tests done in the previous six months would also be routinely captured. The automatic capture of this clinical data reduces the number of visits for both the GP and the patient. It improves the concept of improving healthcare by ensuring every consultation counts.

The elements of the scheduled care reviews are divided into six sections

1. Identification and demographic details (GMS No., Patient ID, IHI, Name, Address, Eircode, DOB, Age, Sex, Ethnicity, Primary diagnosis, Co-morbidities, Disease register status)
2. Clinical Assessment

    2.1 Medical Assessment (PMH, Medication, Pneum/Flu vaccination, self-management review)
    2.2 Risk Factors (Smoking, alcohol, BMI, Nutrition status, physical activity)
    2.3 Symptoms (Resp Sx, Exercise tolerance, Cardiac Sx, PVD, eye Sx, mental health)
    2.4 Social Assessment (Family, community)
3. Physical Examination (pulse rate and character, blood pressure, weight, height, waist circumference, Heart/lung auscultation, foot exam)
4. Investigations (Clinically appropriate for listed disease)
5. Referral to Specialist Services (Retinopathy, respiratory/cardiac rehabilitation, smoking cessation, addiction services, dietician, podiatry, Mental health services)
6. Care Planning (Agreed care plan)

Specific Reference

Healthlink message specifications on CDM messages for vendors are available at https://www.healthlink.ie/media/rdgdtq1y/gpcontract_v2_final-version.pdf
More information on the CDM program can be obtained from the 2019 amended GP contract link- agreement-2019.pdf (hse.ie)

Conformance Criteria

1. The GP (practice software management) system SHALL interface, via web services, with PCRS to check the registration status before data return.
2. The system SHALL collect the data fields required for the CDM returns and send the data as HL7 V2.4 message through Healthlink. Two parallel messages will be automatically generated containing the demographic data to the PCRS to stimulate GP reimbursement. The anonymised clinical data will go to an HSE data repository.
3. The system will ensure that agreed clinical fields SHALL be collected from the patient's baseline details to populate the CDM message automatically.
4. If relevant blood tests have been recorded in the previous six months, their results SHALL be populated in the investigation fields of the CDM message.
5. The message SHALL NOT be transmitted until all agreed clinical fields have been captured.
6. The CDM module SHALL build an individual patient care plan that can be reviewed/updated and printed off for the patient.
7. The system SHALL incorporate relevant clinical calculators, like QRISK, CHADsVASC2 etc. and auto-populate, where possible, any data fields within the calculators.

8. The system SHOULD prompt the GP if any of their patients are already registered with CDM diseases from the patients summary screen. It would be an advantage if this were colour coded for ease of understanding.
   Green- Returns are complete and up to date,
   Orange- Return has been started but not completed, and
   Red- The patient is due to start a follow-up CDM return.
9. The GP system SHALL receive and process an ACK message for each patient data return submitted.
10. The GP system SHALL display error messages from ACK messages and support the system user in interpreting and resolving these errors.
11. The system SHALL maintain a log of what messages have been submitted and accepted or rejected.
12. The system SHOULD provide a list of all CDM reports that have been partially completed to aid in practice planning.
13. The system SHOULD prompt the clinicians that patients satisfy the criteria for CDM messaging. Initially, from those already disease coded. The auto prompting could elaborate to set clinical/biochemical ranges to trigger alerts; for example, an HbA1C >6.5mmol/l should be classed as diabetic, and HbA1C between 6-6.5mmol/l should initiate a high-risk patient registration. Likewise, high recorded blood pressure readings should prompt either High-risk return submission or need to perform QRISK score.

2.13 COVID vaccination messaging

Statement
Support COVID vaccination messages to the National CoVax database and simultaneously message the PCRS for reimbursement payment.

Description
When vaccines became available through the COVID-19 pandemic, General Practice was identified as a significant provider of COVID vaccines for Ireland. The State acquired the National CoVax system for both archiving vaccinations and an improved Customer Related Management solution for improving demographic capture and follow-up vaccine requirements and integration with the COVID travel passport.
The model designed for the Chronic Disease Management Program was used but adapted slightly where an HL7_V2.4 message is sent through the Healthlink message broker. The required data fields are sent to the CoVax system while a parallel message is sent to the PCRS to generate payment.
Specific patient cohorts were identified clinically with a higher risk of complications/death from contracting COVID. Those cohorts had to be identified as vaccines were administered in order of priority of patient groups.
The mRNA vaccines differ from other vaccinations as their use-by date is determined from the date they come out of the deep freeze rather than the expiration date on the vaccine vials. The use by date must be used for vaccine information transfer.

Specific Reference
Healthlink specifications on COVID vaccination messaging is available from
https://www.healthlink.ie/media/c3sh3nhz/covid-vaccinations-specification.pdf

Conformance Criteria

1. The system SHALL capture the PPS number for contracted payments and improve the IHI matching.
2. For patients with no designated PPS number, there SHALL be the option of alerting in the message the patient has no PPS number.
3. The system SHALL enable capture of the mRNA vaccine's use-by dates and the vials batch number and expiration dates.
4. The system SHOULD limit errors of inserting the wrong expiration dates when registering the vaccines in the software usable vaccines.
5. The system SHOULD capture informed consent from the patients and provide a log if patients refuse to consent.
6. The system SHOULD capture any absolute or relative contraindications to administering COVID vaccines.
7. The dose number SHALL be captured and differentiated if an increased number of vaccines are required to attain primary immunity instead of follow-up booster doses.
8. The dose-volume SHOULD be collected as it differs for different vaccines and children under 12.
9. The system SHOULD alert when a follow-up dose is required as protocols change to improve subsequent vaccination rates.
10. The system SHALL collect either a mobile phone number for the patient or an email address to facilitate Department of Health distrubiting COVID vaccine passports.