

The National General Practice Information Technology (GPIT) Group

General Practice Software Management Systems Requirements for Certification 2007

File Name: RFC_2007_v1_3.pdf

Version: 1.3

Date: 14/1/2008

Status: final document

Distribution: all stakeholders

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Document History

Date	Version	Author(s)	Change History
23/5/2007	1.0	Brian O'Mahony	First draft
28/6/2007	1.1	Brian O'Mahony	Added functions: Manage ante-natal and post-natal care, Data Portability; multiple changes to functions based on reviewer feedback;
26/9/2007	1.2	Brian O'Mahony	Inclusion of interoperability functions, multiple changes to functions based on reviewer feedback, changes to service level agreement, changes to process of certification and timescale,
14/12/2007	1.3	Brian O'Mahony	Changes made to Introduction; two new functions added: Establish Client Eligibility for Services (S.3.3.3) and Support the Irish Cervical Screening Programme (DC.2.5.3); changes to the following functions and conformance criteria: DC.1.1.1 criteria 9, 14, 15, 16; DC.1.1.2 criteria 2, 11; DC.1.1.3.1 criteria 16, 17; DC.1.2 criteria 4; DC.1.4.1 criteria 16; DC.1.4.3 criteria 2; DC.1.7.2.2. criteria 2, 9, 10; DC.1.7.2.4 criteria 11, 13; DC.1.8.2 criteria 1, 7; DC.3.1.3 criteria 1; S.1.3.4 criteria 3, 4; S.1.5 criteria 3; S.1.10 criteria 2; S.2.2.3 criteria 1; IN.1.6 criteria 1; IN.1.10 criteria 1; IN.2.2 criteria 27, 28, 29; IN.2.6 criteria 1, 3; IN.6 criteria 5, 10, 15, 20;

Document Review

Date	Version	Reviewer(s)*
June 2007	1.0	Dr Johnny Sweeney, Dr Kieran Murphy, Dr John McCarthy, Mr Cathal O'Reilly, Dr Brian Meade, Dr Anne Lynott, Dr Frank Hill, Dr Fergus McKeagney
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* Due to the complex nature of this document, reviewers assessed and commented on discrete sections.

Acknowledgements

The GPIT Group would like to acknowledge:

- 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 functional specification on Managing Appointments (S.1.9).
- All the reviewers who contributed to improving this document during the consultation process.

Introduction

Information systems facilitate quality healthcare. General Practice has been at the forefront of information system development in Irish healthcare over the last 10 years. Certification of general practice software systems took place in 1999 and 2003.

Certification is important 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 provides a roadmap for further development of the electronic health record.

This 'Requirements for Certification 2007' document draws on the following sources:

- Health Level Seven (HL7) Electronic Health Record – System Functional Model, Release 1, February 2007
- GPIT Requirements for Certification, August 2003;
- NHS Connecting For Health, GP Systems: Core Functionality Requirements v1.01, October 2006

The HL7 EHR System Functional Model provides a reference list of functions that may be present in an Electronic Health Record System (EHR-S). The function list is described from a user perspective with the intent to enable consistent expression of system functionality. This EHR-S Functional Model, through the creation of Functional Profiles for care settings and realms, enables a standardised description and common understanding of functions sought or available in a given setting (e.g., intensive care, cardiology, general practice in one country or primary care in another country).

The 'Requirements for Certification 2007', contains both core and interoperability functions. Interoperability is defined as the ability of two or more systems or components to exchange information and to use the information that has been exchanged.

The Health Information and Quality Authority (HIQA) is a key stakeholder in the area of certification and standards. HIQA will help drive health information in health and social care services by:

- Developing the standards for the collection and sharing of information across the health and social services.
- Developing standards for interoperability of information systems.
- Identifying gaps in the collection and sharing of information and making recommendations on the corrective action to be taken.
- Collaborating with key stakeholders to co-drive the development and implementation of Information and Communications Technology across the health system.
- Evaluating, interpreting and publishing available information on our health and social care services and on population health.

HIQA will collaborate with key stakeholders on the development and implementation of Electronic Health Records, clinical guidelines and protocols, information governance and a Unique Identifier for health and social care services in Ireland.

Many functions in this document refer to the use of guidelines, best practice, 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 use in general practice in Ireland.

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 2007	June to October 2008

A list of the products that have achieved certification will be released at the end of the certification period in October 2008.

Pre Test Documentation

The following documents will be required to support the functions described in the Requirements for Certification 2007:

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. Signed undertaking to develop and make available appropriate training for all system functions delivered within the scope of RFC2007.
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 and professional indemnity insurance.
11. Tax clearance certificate.
12. Details of registration as a data processor with the Data Protection Commissioner.

Testing

Testing will be carried out in 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.

In order to pass certification the practice management software must pass all mandatory functions: SHALL criteria which are ESSENTIAL NOW (please see page 11 for explanation of keywords). Four possible outcomes are possible following conformance testing:

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

Following conformance testing, a report will be prepared for the GPIT Group and this Group will make the decision to certify or not to 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 will be agreed 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 2007/2008 will be repeated in three years time.

Certification Flow Chart

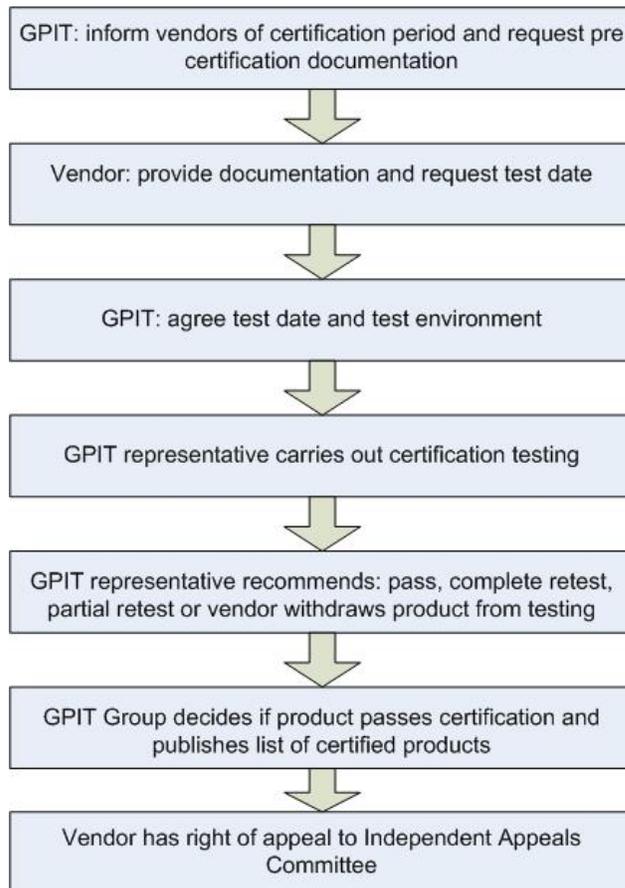


Figure 1 Certification Flow Chart

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.

Revocation of Certification

During the period between this and the next RFC, the GPIT Group reserve the right to revoke certification status should there be a major 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 with the vendor and the findings will be binding on both parties.

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.

Conformance Keywords

The following keywords SHALL be used to convey conformance requirements:

- SHALL – to indicate a mandatory requirement to be followed (implemented) in order 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 the importance and/or immediacy of a functional profile by associating a priority with a function. Three priorities have been defined, Essential Now, Essential Future, and Optional.

- Essential Now (EN) indicates that the implementation of the function 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. If the Essential Future priority is used a timeframe associated with implementing functions will be defined. This will be shown as follows: EF(YYYYMM) where EF(200906) means that the function SHALL be available for use by the end of June 2009. The implementation of functions which are Essential Future will be agreed with software vendors as part of the next 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:

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 1 Explanation of Acronyms

Service Level Agreement

Practice Responsibilities

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

- In respect of support, to use software and hardware as specified in the support contract, to install upgrades provided by the supplier and familiarise themselves with the relevant documentation.
- In respect of training, to commit the necessary time to ensure that practice staff benefit from the training offered and ensure that training levels are maintained in the practice.
- Make sure that the practice computers and network are fully covered for security measures such as: the operating system is up to date with security patches; anti-virus, anti-spam and anti-malware protection measures are in place; and hardware and software firewalls are in place. Practices will need to contract out these security measures and ensure they are audited on a regular basis.
- Ensure that good practice is maintained in respect of access control to patient records. Passwords should be secure, changed regularly and not shared.
- Take backups in line with guidance provided by their hardware/software support company. Specific areas of responsibility in relation to backups include ensuring regular backups are taken; validated; stored securely both on and off-site; and backup media are changed regularly.
- Ensure the practice is registered with the Data Protection Commissioner (<http://www.dataprivacy.ie>).

Support Contract

This section sets out the minimum levels of support and training deemed to be acceptable. It also sets out basic principles, which should be included in 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 are recommended).
- The contract SHALL include acceptable procedures for dealing with support and maintenance calls, applying levels of priority and resolution times to all calls, service levels in the case of serious system unavailability, agreed escalation policy for faults that persist for more than a specified number of days and policy in

relation to 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 to the business of the practice.
- The contract SHALL include an undertaking by the supplier to provide documentation.
- The contract SHALL include an undertaking by the supplier to provide training.
- The system SHALL be supported by a contractually binding agreement to upgrade systems with updates to clinical terms e.g. ICPC-2 or drug databases, where the relevant support or maintenance contract is held by the practice.
- The supplier SHALL provide an Escrow agreement, which must specify a nominated third party to hold all versions of the system source code and documentation. 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 supported by the supplier or a future owner of the copyright.

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 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 hard copy format and also in electronic format providing:

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

Quick Reference Guides SHALL be provided explaining how to carry out key 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 15 or more system users are interested in receiving ongoing training, the supplier SHOULD provide a resource person, free of charge, at least twice a year, to work with the GPIT facilitator in providing software specific training. The training can be arranged around user group meetings or in a location agreed by the supplier.
- Where the numbers of users is sufficient, the supplier SHOULD provide support to formalised local and national user group meetings at regular intervals.
- The supplier SHALL provide adequate further training as required for new releases.

Backup

Although it is acknowledged that backup is primarily the responsibility of the practice, GP Software Vendors have a responsibility to ensure that every practice management system they install SHOULD have an automated working backup system in place. Where the backup system is provided by a separate hardware vendor the GP Software vendor SHOULD communicate with the practice and the hardware vendor to ensure the importance of backup is understood and to explain which files need to be backed up in order 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 that regular backup is taking place and to verify that patient information can be restored from backup data. The restore procedures SHOULD be fully documented.

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 of operating systems and other methods or applications to ensure security of patient records. Vendors SHOULD establish ongoing information security contracts with practices to include twice yearly checks on practice information security.

User Groups

User Groups play an important part in helping to focus and co-ordinate 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 and hints and tips for less advanced users.

Document Outline

The table below indicates the hierarchy of functions defined in this document. Not all functions defined in the HL7 Electronic Health Record – System Functional Model are included because some are not relevant to Irish general practice. Because of this, you will notice that the numbering of functions in the body of the document 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 2 Outline of Functions

This RFC introduces eight additional functions over and above those included in the HL7 Electronic Health Record – System Functional Model, Release 1:

- DC.1.8.3.1 Manage Display of Results
- DC.1.8.7 Manage Ante-natal and Post-natal Care
- DC.2.5.3 Support the Irish Cervical Screening Programme
- S.1.9 Manage Appointments
- S.1.10 Manage Scanned Documents
- S.2.1.1.1 Support the Heartwatch Programme
- IN.1.10 Data Backup
- IN.2.6 Data Portability
- IN.2.7 Import of Primary Care Reimbursement Service Patient Listing

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, as well as 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 the process of creating a patient record, it is at times advantageous to replicate identical information across multiple records, so that such data does not have to be re-entered. For example, when a parent registers children as new patients, the address and contact details may be propagated in the children's records without having to re-enter them.

Conformance Criteria

1. The system SHALL create a single logical record for each patient.
2. The system SHALL provide the ability to store 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, Personal Public Services number) with each patient record.
4. The system SHALL provide the ability to uniquely identify a patient and tie the record to 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 recognizing the identity of the patient.
6. IF health information, for example a consultation note or a prescription, has been mistakenly associated with a patient, THEN the system SHALL provide the ability to mark the information as erroneous in the record of the patient in which it was mistakenly

associated and represent that information as erroneous in all outputs containing that information.

7. IF health information has been mistakenly associated with a patient, THEN the system SHOULD provide the ability to associate it with the correct patient.
8. The system SHALL provide the ability to retrieve parts of a patient record using a primary identifier, secondary identifiers, or other information which are not identifiers, but could be used to help identify the patient.
9. The system SHOULD provide the ability to inactivate, nullify, destroy and archive a patient's record in accordance with local policies and procedures, as well as applicable data protection laws and regulations.
10. IF related patients register with any identical 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 into the system that have been missed or who were seen during system downtime.
12. The system SHALL mandate minimum registration data.
13. The system SHALL ensure a new patient record is not accepted by the system unless all fields in the minimum data set have been completed.
14. The system SHALL ensure the user can report on incomplete records. These are records that contain the minimum data set but are missing useful 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 unique patient identifier.
16. IF a unique patient identifier is available from an external database, THEN the system SHOULD display that ID on all patient output and not (or in addition to) any system generated ID.

Data Attributes

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

Table 3 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, as well as key demographic information such as date of birth, gender, and other information is stored and maintained for unique patient identification, reporting purposes and for the provision of care. Patient demographics are captured and maintained 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 have the capability to collect the range of data shown in the table Patient Demographic Data below.
9. The system SHALL have the capability to collect the range of data shown in the table Next of Kin Demographic Data below.
10. The system SHALL have the capability to collect the range of data shown in the table Carer Demographic Data below.
11. The system SHALL have the ability to capture postal code as part of the address attributes.

Data Attributes

Family name
First name
Middle name or initial
Title (e.g. Dr or Mr or Ms, etc.)
Former family name
Alias
Date of birth
Gender
Address: address line 1, address line 2, city or town, county, postal code, country
Contact details: home phone, mobile phone, email,
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
Unique health service patient identifier (when available)
Occupation
Marital status
Religion
Ethnicity
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 normally sees the patient
The branch surgery normally attended
Dates of registration and deregistration with the practice
Reason for deregistration
Enrolment status with primary care team
Date of enrolment with primary care team
Date of death, cause(s) of death

Table 4 Patient Demographic Data

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

Table 5 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: date on which they gave permission for this information to be entered
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Table 6 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 incorporated through these mechanisms is presented alongside locally captured documentation and notes wherever appropriate. Health care messaging projects make available a range of HL7XML version 2.4 messages for general practitioners. Below are tables of final message standards and associated addenda and errata which are available on request from the GPIT Group.

Message Standard	File Name	Date
Laboratory & Radiology Reports	HeBE HL7 Message 1_5.pdf	31/07/2003
Referral/Discharge	HeBE Referral Discharge 1_5.pdf	27/11/2003
Admission, Discharge & Death Notification	HeBE Admission Discharge 1_2.pdf	27/01/2004
Appointment Scheduling	HeBE Appointment Scheduling 1_3.pdf	29/03/2004
Acknowledgement	HeBE Acknowledgement 1_2.pdf	01/06/2004
Batch File Protocol	HeBE Batch 1_4.pdf	21/12/2004
Laboratory Order	HSE Order 1_3.pdf	21/12/2005

Table 7 HSE Message Standards

Document	File Name	Date
Errata	Message Errata 1_5.pdf	14/11/2005
Addenda	Message Addenda 1_2.pdf	05/12/2005

Table 8 Message Errata and Addenda documents

Conformance Criteria

1. The system SHALL provide the ability to capture external data and documentation.
2. The system SHALL receive and store health care messages, in HL7XML version 2.4 format, into the patient record through an electronic interface.
3. The system SHALL display upon request health care messages received through an electronic interface.
4. The system SHALL integrate messages into the individual patient record.
5. The system SHALL have a capacity to 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 radiology 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 be capable of interacting with external systems using Web Services.
17. The system SHOULD be capable of capturing patient self assessments of health related behaviour such as smoking, alcohol, diet and exercise.

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 at the conclusion of an episode of care. Create service reports at the completion of an episode of care such as, but not limited to, discharge summaries 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.
2. The system SHOULD include at least the following in the summary: problem list, medication list, allergy and adverse reaction list.
3. The system MAY include the following in the summary:
 - Demographic information, including age
 - Allergies
 - Abnormal laboratory results
 - Current active medical problems
 - Past medical history
 - Current medications
 - Results awaited
 - Immunisations due
 - Recalls due
 - Previous visits
4. The system SHALL present the patient's smoking and alcohol status, with details of who entered the data and when.

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 the capture of pertinent positive and negative histories, patient reported or externally available patient clinical history.

Description

The history of the current illness and patient historical data related to previous medical diagnoses, surgeries and other procedures performed on the patient, 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 data may take the form of a pertinent positive such as: "The patient/family member has had..." or a pertinent negative such as "The patient/family member has not had..." 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 MAY provide the ability to capture the relationship between patient 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, the outcome and the date. For example, Father died Carcinoma of Oesophagus in 1988, age 56 years.

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	EF(200906)

Statement

Capture and maintain patient and family preferences.

Description

Patient and family preferences regarding issues such language, religion, spiritual practices and culture may be important to the delivery of care. It is important to capture these so that they will 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	EF(200906)

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 other responsible party, govern the actual care that is delivered or withheld.

Conformance Criteria

1. The system SHALL provide the ability to indicate that a patient has completed applicable 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 on line.
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 that are classifiable as a true allergy, intolerance, side effect or other adverse reaction to drug, dietary or environmental triggers. Notations indicating whether 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 considered to 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 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 provide the ability to capture a report of No Known Allergies (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 item on the list.
9. The system SHALL provide the ability to capture the reason for deactivation of an item on the list.
10. The system MAY present allergies, intolerances and adverse reactions that have been deactivated.
11. The system MAY provide the ability to display user defined sort order of list.
12. The system SHOULD provide the ability to indicate that the list of medications and other agents has been reviewed.
13. They system SHALL provide the ability to capture and display the date on which allergy information was entered.
14. The system SHOULD provide the ability to capture and display 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, whether over the course of a consultation, or the lifetime of a patient. All pertinent dates, including medication start, modification, and end dates are stored. The entire medication history for any medication, including alternative supplements and herbal medications, is viewable.

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 provide the ability to 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. The system SHALL present the medication, prescriber, and medication ordering dates when known.
10. The system SHALL provide the ability to mark a medication as erroneously captured and excluded from the presentation of current medications.
11. The system SHALL provide the ability to print a current medication list for patient use.
12. The system MAY provide the ability to capture information regarding the filling of prescriptions (dispensation of medications by pharmacies or other providers).

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 over the course of a consultation or the life of a patient, allowing documentation of historical information and tracking the changing character of problem(s) and their priority. The source (e.g. the provider, the system id, or the patient) of the updates should be documented. In addition all pertinent dates are stored. All pertinent dates are stored, including date noted or diagnosed, dates of any changes in problem specification or prioritisation, and date of resolution. This might include time stamps, where useful and appropriate. The entire problem history for any problem in the list 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 onset date of problem.
4. The system SHOULD provide the ability to capture the chronicity (chronic, acute/self-limiting, etc.) of a problem.
5. The system SHALL provide the ability to 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 provide the ability to manually order/sort the problem list.
10. The system MAY provide the ability to 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, whether over the course of a consultation, or the lifetime of a patient. 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 immunisations associated with a patient
2. The system SHALL record as discrete data elements data 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 day care centres
- 4.
5. The system SHOULD capture previous vaccination history from patients as:
 - Validated i.e. written records from other health agency, 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	EF(200906)

Statement

Create and maintain assessments.

Description

During an encounter with a patient, the provider will conduct an assessment that is 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. Wherever possible, this assessment should follow industry standard protocols. When a specific standard assessment does not exist, a unique assessment can be created, using the format and data elements of similar standard assessments whenever possible.

Conformance Criteria

1. The system SHALL provide the ability to create assessments.
2. The system SHOULD provide the ability to use standardised assessments where they exist.
3. The system SHOULD 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 SHOULD provide the ability to capture data relevant to standard assessment.
5. The system SHOULD provide the ability to 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 provide the ability to 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	EF(200906)

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 who are 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	EF(200906)

Statement

Provide administrative tools for healthcare organisations to build care plans, guidelines and protocols for use 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 of implementation or approval dates, modifications and relevancy to specific 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 for the creation of patient-specific plans of care and treatment.

3. The system SHALL provide the ability to use previously developed care plans as a basis for the creation of new plans of care and treatment.
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 in accordance with scope of practice, organisational policy and legislation.
5. The system SHALL provide the ability to transfer plans of care 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 compliance of medication orders with formularies.

Description

The purpose of this section is to make available to practices, good quality systems which 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 full medication regimen for their patients;
- Contraindications, cautions, interactions, side effects and active ingredient duplications;
- Sensitivities and allergies recorded for that patient;

Prescribing is an important activity for general practitioners. The practice management system facilitates the generation of prescriptions for all types of 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 common content for prescription details. Appropriate time stamps for all medication related activity are generated. Whether the order complies with the formulary should be communicated to the ordering clinician at an appropriate point to allow the ordering clinician to decide whether to continue with the order. Formulary compliant alternatives to the medication being ordered may also be presented.

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 prescriptions for GMS and private patients, for once off and repeat prescriptions on the appropriate stationary.
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 stamp 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 to then include both names 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 which is updated on a regular basis, at least every quarter.
9. The system MAY provide the ability for the ordering clinician to create prescription details as needed.
10. The system MAY make available common patient medication instruction content to be selected by the prescriber.
11. The system MAY 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 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 ordered.
15. 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 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 hand written 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 of Schedule 2 & 3 Controlled drugs which require prescribers own handwriting and other legislative requirements.

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, taking into account the increased liability issues for prescribing unlicensed medicines.

24. The drug database in use by the system SHOULD provide for the inclusion of a list of excipients contained within the medicine formulations. This would allow for potential allergic reactions to be identified and also assist where specific formulations are required e.g. sugar free formulations for diabetics.

25. The system SHOULD include an option for generating prescriptions which specify dispensing by instalments e.g. monthly issuing of prescription, but weekly dispensing required.

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	EF(200906)

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 appropriate detail, such as order identification, instructions and clinical information necessary to perform the test. Orders and supporting detailed documentation shall be communicated to the service provider for completion of the diagnostic test(s). Some systems may contain instructions, but in some settings, instructions may be provided from external sources (e.g., handouts).

Conformance Criteria

1. The system SHALL provide the ability to capture orders for diagnostic tests.
2. The system SHALL provide the ability to capture adequate order detail for correct diagnostic test fulfilment. This includes the order identification, instructions and clinical information necessary to perform the test.
3. The system SHALL provide the ability to track the status of diagnostic test(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 supporting detailed 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 which have not returned can be identified.
8. The system SHALL provide the ability to print Addressograph labels for fixing to 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.

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 is supported, whether the referred to or referring providers are internal or external to the healthcare organisation.

Conformance Criteria

1. The system SHALL provide the ability to capture and communicate referral(s) to other care provider (s), whether internal or external to the organisation.
2. The system SHALL provide the ability to capture clinical details as necessary for the referral.
3. The system SHALL provide the ability to 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 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 transfer of care according to organisational policy, scope of practice, and legislation.
9. The system SHALL create, in digital or printed format, a referral letter, either unstructured or structured, to a hospital, consultant, clinic or health professional.
10. The system SHOULD support the use of referral templates.

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 table below.
12. The system SHOULD provide the ability to track referrals and generate alerts for referrals that have not been acknowledged/addressed by the other care provider/consultant/hospital.
13. The system SHOULD provide the ability to generate a structured referral message to the HL7 version 2.4 XML referral message Standard.

Data Attributes

Patient Details: first name, surname, title, address, contact telephone number, date of birth, gender, Unique Patient ID (GMS, PPSN, MRN, etc.)
Referring Doctors Details: referring GP, practice address, practice contact telephone number, referring practice code, date of referral
Service Requested (orthopaedic, urology, oncology, etc.)
Medical Context: reason for referral, duration of symptoms, referral priority, suspected cancer flag
Referral Information: clinical presentation, relevant history, examination findings, current medication, investigations, additional information

Table 9 Referral Minimum Data Set

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	EF(200906)

Statement

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

Description

Where a GP or practice nurse administer a drug to a patient, by whatever route, including orally, by injection or by nebuliser, it is important to document that administration. The necessary information is presented including: the list of medication orders that are to be administered; administration instructions, times or other conditions of administration; dose and route, etc. The system shall securely relate medications to be administered to the unique identity of the patient (see DC.1.1.1). Additionally, the provider can record what actually was or was not administered, whether or not 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 a variety of providers' orders,

it may be useful 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, route of administration, and dose of all medications on the list.
3. The system SHOULD display instructions for administration of all medications on the list.
4. The system MAY notify the clinician when specific doses are due.
5. The system MAY 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 MAY 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. The system SHALL provide the ability to capture medication administration details – including timestamps, observations, complications, and reason if medication was not given – in accordance with organisational policy, scope of practice, and legislation.
8. The system SHALL securely relate interventions to be administered to the unique identity of the patient.

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 including date administered, type, manufacturer, lot number, and any allergic or adverse reactions. Facilitate the interaction with an immunisation registry to allow maintenance of a patient's immunisation history.

Description

During an encounter, recommendations based on accepted immunisation schedules are presented to the provider. Allergen and adverse reaction histories are checked prior to giving the immunisation. If an immunisation is administered, discrete data elements associated with the immunisation including date, type, manufacturer and lot 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 new guidelines will be published in 2008.

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 about to be given.
4. The system SHALL provide the ability to capture immunisation administration details, including date, type, batch number, manufacturer, expiry date, 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 provide the ability to associate standard codes with discrete data elements associated with an immunisation. This could include codes for data items should as product given, site given and method of administration.
8. The system SHALL provide the ability to capture and update the immunisation schedule produced by the national immunisation committee.
9. The system SHALL provide the ability to prepare a report of an individual patient's immunisation history upon request for 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 SHOULD hold a list of vaccines available for use in the practice, including type, manufacturer, batch number and expiry date.
15. It SHOULD be possible to inactivate any immunisations on this vaccine list and this should happen automatically when an expiry date for a product/batch has been reached.
16. If a health care provider attempts to perform vaccination with an expired vaccine the system SHOULD allow recording of the vaccination but flash a warning that an expired vaccination is being 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 which records new vaccines received, vaccines in stock, vaccines administered and vaccines returned for destruction.
19. The system SHOULD capture consent to vaccination or objection to vaccination.
20. The system SHOULD capture all adverse or allergic reactions associated with vaccination administration, including the reporting of such adverse events to the Irish Medicines Board.

21. The system SHOULD link vaccine administration with blood serology results where appropriate e.g. Hepatitis B vaccination.

Manage Results (DC.1.8.3)

ID#	Type	Name	Priority
DC.1.8.3	F	Manage 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. Flow sheets, 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. 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 provider.
3. The system SHALL provide the ability to 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 patient, visit patient, etc.
5. The system SHALL facilitate the management of patient communication of results, such as: inform 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 supports 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 provide the ability to group tests done on the same day.
12. The system SHOULD notify relevant providers (ordering, copy to) that new results have been received.
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 nurse, community nurse, 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 provide the ability for an authorised user to group results into clinically 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 SHOULD 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 over right original data in a result.
23. The system MAY display a link to an image associated with results.

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 Vendors SHOULD take into account the document “Display of Laboratory Results in GP Software Systems: a discussion paper” version 1.3, available from HSE South (Kilkenny).
3. The system SHALL provide an initial display of messages, prior to integration into the individual patient record.
4. 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.
5. The system SHOULD manage corrections to results in accordance with the document “Message Addenda 1_2.pdf” produced by the HSE messaging standards subgroup.

6. The system SHOULD manage ‘copy to’ requests in accordance with the document “Message Addenda 1_2.pdf” produced by the HSE messaging standards subgroup.

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 measures (such as expiratory flow rate, size of lesion, 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 SHALL 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 SHOULD compute and display percentile values when data with normative distributions are entered.
5. The system MAY provide normal ranges for data based on age and other parameters such as height, weight, ethnic background, gestational age.

Manage Clinical Documents and Notes (DC.1.8.5)

ID#	Type	Name	Priority
DC.1.8.5	F	Manage Clinical Documents and Notes	EF(200906)

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 amendment in order 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/or diagnoses.
7. The system SHALL provide the ability to update documentation prior to 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 finalizing 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 post-natal period;
- Record of six week check;
- Immunisation arrangements;

For full details please see the Irish College of General Practitioner's (ICGP) Combined Obstetric Card. In some regions user defined or locally developed shared care protocols are in place and should be supported.

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 Combine Obstetric Card.
2. The system SHALL capture user and date stamp for all assessments and interventions.
3. The system SHOULD alert the user when essential data items or expected interventions are incomplete.
4. The system SHOULD alert users when scheduled ante-natal visits have been missed.
5. The system SHOULD provide prompts based on practice standards to recommend additional assessment functions.
6. The system SHOULD provide the ability to correlate assessment data and the data in the patient specific problem list.
7. The system SHALL generate the required outputs following a visit, particularly claim forms for the Mother & Infant scheme.
8. The system SHOULD facilitate the capture of information on the 6 week check in the infant's electronic record.

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, still births, miscarriages, complications, relevant medical or surgical history
Family history
Medication
Allergies
General examination
LMP, EDD, Life
Intent to breast feed
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)

Table 10 Obstetric Care Data

Generate and Record Patient Specific Instructions (DC.1.9)

ID#	Type	Name	Priority
DC.1.9	F	Generate and Record Patient-Specific Instructions	EF(200906)

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, convalescence, 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 further 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	EF(200906)

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.

Conformance Criteria

1. The system SHALL provide the ability to document the standard assessment in the patient record.
2. The system SHALL provide the ability to access health standards and practices appropriate to the EHR user's scope of practice.
3. The system SHOULD provide the ability to compare elements of assessments captured by the clinician and those available as best practices and/or evidence based resources.
4. The system MAY provide the ability to 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 conduct of standard assessments.
7. The system SHOULD provide the ability to create standard assessments that correspond to the problem list.

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	EF(200906)

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, 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 of the 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 child bearing 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 in order 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	EF(200906)

Statement

Support the use of appropriate standard care plans, guidelines and/or protocols for the management of specific conditions.

Description

Before they can be accessed upon request (e.g., in DC 1.6.1), standard care plans, protocols, and guidelines must be created. 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. To facilitate retrospective decision support, variances from standard care plans, guidelines, and protocols can be identified and reported.

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 provide the ability to create and use site-specific care plans, protocols, and guidelines.
4. The system MAY provide the ability to 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	EF(200906)

Statement

Identify and present the appropriate care plans, guidelines and/or protocols for the management of patient specific conditions that are 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

evaluation of patient specific data such as age, gender, developmental stage, their health profile, and any site-specific considerations. These may be modified on the basis of 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 provide the ability to 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 provide the ability to 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	EF(200906)

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, socio-economic status that may impact care are identified for the clinician. The clinician is advised and assisted with management of 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 situation and functional accommodations of the patient that are required to provide appropriate 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.

Conformance Criteria

1. The system SHALL provide the ability to identify patients eligible for healthcare management protocols based on criteria identified within the protocol.
2. The system SHOULD provide the ability to include or exclude a patient from an existing healthcare management protocol group.

3. The system SHOULD provide the ability to audit compliance of selected populations and groups that are the subjects of healthcare management protocols.
4. The system SHOULD be able to identify patients who are on a specific drug, in the event of a drug recall.

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	EF(200906)

Statement

Identify drug interaction warnings at 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 with respect to 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 acknowledged a drug interaction warning.
4. The system SHALL provide the ability to prescribe a medication despite alerts for interactions and/or allergies being present.
5. The system SHOULD allow the prescriber to manually input a reason for prescribing, despite an alert.
6. The system SHALL 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.

8. 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 time period.
9. The system SHOULD check for drug-lab interactions, to indicate to the prescriber that certain lab test results may be impacted by a patient's drugs.
10. The system SHOULD provide the ability to check medications against a list of drugs noted to be ineffective for the patient in the past.
11. The system SHOULD identify contraindications between a drug and patient conditions at the time of medication ordering.

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	EF(200906)

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 e.g. pregnancy, breast-feeding or occupational risks, hepatic or renal insufficiency. The preferences of the patient may also be presented e.g. reluctance to use an antibiotic. Additional patient parameters, such as age, gestation, Ht, Wt, HbA1c, shall 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 ordering.
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 ability for the provider 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. IF the maximum daily doses are known, THEN the system SHALL apply the maximum dose per day in dosing decision support.
7. The system SHOULD compute drug doses, based on appropriate dosage ranges, using the patient's body weight.
8. The system SHOULD provide the ability to specify an alternative "dosing weight" for the purposes of 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	EF(200906)

Statement

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

Description

Offer alternative medications on the basis of 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 to be affected by the medication. Support expedited entry of series of medications 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 treatments in medications on the basis of 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 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 pertinent 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 present alerts for a result that is outside of a normal value range.
2. The system SHOULD provide the ability to trend results.
3. The system MAY provide the ability to evaluate pertinent results at the time of provider order entry (such as evaluation of lab results at the time of 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 pertinent 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 prior to referral may be presented.

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 provide the ability to 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 in support of routine preventive and wellness patient care standards.

Description

At the time of an encounter, the provider or patient is presented with due or overdue activities based on protocols for preventive care and wellness. 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 provide the ability to establish criteria for the identification of 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. These could include 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. The system SHOULD present recommended preventative or wellness services needed based upon clinical test results.
4. The system SHALL present alerts to the provider of all patient specific preventive services that are due.
5. The system MAY provide the ability to produce a list of all alerts along with the scheduled date and time for the preventive service.
6. The system MAY provide the ability to produce a history of all alerts that were generated for the patient in the record.

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/or appropriate provider of those preventive services, tests, or behavioural actions that are due or overdue.

Description

The provider can generate notifications to patients regarding activities that are due or overdue 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 notifications can be customised in terms of timing, repetitions and administration reports. E.g. a cervical smear test reminder might be sent to the patient two months prior to the test being 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 content of notifications, guidelines, reminders and associated reference materials.
7. The system MAY provide the ability to manage the lifecycle of the states of the notifications and reminders.

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 (<http://www.icsp.ie/>) is to reduce the incidence and mortality from cervical cancer. 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 44 years will be screened at three-yearly intervals and women aged 45 to 60 years will be recalled every five years for smear tests. Nationally, 1.2 million women will be eligible for cervical screening by medical practitioners in primary care settings.

As the national roll out of cervical screening commences, the Irish Cervical Screening Programme will engage with GP software vendors to discuss two way exchange of structured electronic messages. As a precursor to this the programme has produced templates for cervical cytology requests and colposcopy clinic referrals.

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.

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 11 Colposcopy Clinic Referral Data Set

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
Consent Given
Doctor/Smear taker 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 12 Cervical Cytology Request Data Set

Operations Management 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	EF(200906)

Statement

Schedule and manage tasks with appropriate timeliness.

Description

Since the electronic health record will replace the paper chart, tasks that were 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 a specific 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 signoff on a test result, that task should automatically be marked complete by the EHR-S 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	EF(200906)

Statement

Assignment, delegation and/or 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 assigned 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 task to review the result 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 manually modify and update task status (e.g. created, performed, held, cancelled, pending, 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 the assignment of, tasks to individuals or to clinical roles.
6. The system MAY provide the ability to manage workflow task routing to multiple individuals or roles in succession and/or in parallel.
7. The system SHALL provide the ability to prioritise tasks based on urgency assigned to the task.
8. The system MAY provide the ability to restrict task assignment based on appropriate role as defined by the entity.
9. The system MAY provide the ability to 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	EF(200906)

Statement

Linkage of tasks to patients and/or a relevant part of the electronic health record.

Description

Clinical tasks must include information or provide an electronic link to information that is required to complete the task. For example, this may include 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 examples of tasks might involve fulfilment of 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	EF(200906)

Statement

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

Description

In order to reduce the risk of errors during the care process due to missed tasks, the provider is able to view and track un-disposed tasks, current work lists, the status of each task, unassigned tasks or other tasks where a risk of omission exists. The timeliness of certain tasks can be tracked, or reports generated, in accordance with relevant law and accreditation standards. For example, a provider is able to create a report to show test results that have not been reviewed by the ordering provider 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 work lists.
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 exchanges. Support secure communication to protect the privacy of 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, fulfilment of 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 be able to 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 provide the ability to 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 SHOULD provide the ability to communicate 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.

Communication with Medical Devices (DC.3.2.5)

ID#	Type	Name	Priority
DC.3.2.5	F	Communication with Medical Devices	EF(200906)

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, bar coded artefacts (medicine, immunisations, demographics, history, and identification), etc.

Conformance Criteria

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

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	EF(200906)

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, 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 formatted demographic and clinical information to local disease specific registries (and other notifiable registries).
2. The system MAY provide the ability to automate the retrieval of formatted demographic and clinical information from local disease specific registries (and other notifiable registries).
3. The system SHOULD provide the ability to add, change, or remove 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 any 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. The system SHALL contain, in the provider access directory or staff database, the legal identifiers required for care delivery such as the doctor's medical council number and the nurses 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, in the provider access directory or staff database, the data items shown in the Provider Data table below.

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 fulfill more than one function, for example a Practice Manager who is also the Practice Nurse)
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 13 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 in order to direct patients or queries.

Description

General Practitioners may have multiple locations or offices where they practice. The system should maintain information on the primary location, any secondary locations, as well as the scheduled hours at each location. Information maintained may include web sites, 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
The unique national agency identifier code for the practice (if available)
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 14 Practice Data

The name of the organisation
The unique national agency identifier code (if available)
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 15 Related Organisation Data

De-identified Data Request Management (S.1.5)

ID#	Type	Name	Priority
S.1.5	F	De-identified Data Request Management	EF(200906)

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 that party requests de-identified data (or is not entitled to identified 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.

An auditable record of these requests and associated exports may be maintained by the system. This record could be implemented in any way that would allow the who, what, why and when of a request and export to be recoverable for review.

A random re-identification key may be added to the data, to support re-identification for the purpose of alerting providers of potential patient safety issues. For example, if it is discovered that a patient is a risk for a major cardiac event, the provider could be notified of 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 views of data in accordance with scope of practice, organisational policy and legislation.
2. The system SHOULD conform to IN.2.4 (Extraction of Health Record Information), Conformance Criteria #2 (The system SHOULD 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 for the purpose of 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 the ability to tailor the presentation of information for preferences of the user, department/area or user type.
2. The system SHOULD provide authorised users the ability 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

The purpose of this function is to allow the practice to operate an appointment system for all scheduled surgery sessions taking place within the practice's premises.

Description

A number of 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 clinician/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 a selected session.
- Sessions View: View showing multiple sessions across one day indicating 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 of 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 templates to be 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 select:
 - day(s) of a week within the date range (e.g. every day, every Wednesday, every other Thursday, every 3 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. for known staff leave).
8. When amending an individual session occurrence it SHOULD be possible to change any 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 re-booking.
10. It SHALL be possible to browse the appointments slots to find free slot in which to make patient appointments. When browsing, the system shall indicate as a minimum those slots which are free (and available to be booked), those which are booked and those which have a booking availability constraint in effect.
11. 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
12. The system SHALL allow multiple or partial slots to be booked for a patient. This may also be achieved by extending/reducing the length of the appointment (and amending neighbouring appointments).
13. The system SHALL allow an appointment to be booked for a patient that is not fully registered with the practice.
14. The system SHALL allow a previously booked appointment to be cancelled.
15. It SHALL be possible to mark an appointment as 'patient Did Not Attend' (DNA).
16. The system SHOULD allow all future booked appointments for a specified patient to be retrieved.
17. It SHOULD be possible to display all previous appointments for a specified patient.
18. The system SHALL NOT allow a booking to be made to an appointment list that has been cancelled.

19. The system SHOULD not allow a booking to be made into a slot which 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 in working hours). Systems may provide an override facility.
20. The system SHOULD allow a display of all future appointments sessions showing free and booked appointments where all patient details of booked appointments are suppressed. (Note: this is to allow a patient to select a free slot on the screen without seeing details of other patients).
21. The system SHALL provide facilities to track a patient's status throughout their appointment from arrival through 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.
22. 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
23. 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 having to use the appointments system functionality.
24. It SHALL be possible for the performer to make new appointments and amend or cancel existing appointments for the patient being seen.
25. 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 to create individual entries in each patient record using appropriate clinical codes.
26. If selection of entries for creation of attendance/DNA entries is automatic it SHOULD be possible to manually amend/remove items in the batch job, e.g. to remove items when a DNA entry is not required for a patient.
27. The system SHALL allow reporting and printing of appointment lists for one or more performers for a user specified range of dates.
28. It SHOULD be possible to identify all patients who have DNA'd within a date range and/or 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.
29. 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 the management of scanned documents is important for health care professionals and patients. The Vendor should facilitate the practice to fulfil the necessary criteria to be able to scan and then 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 patient electronic 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, for example: discharge letter, outpatient clinic letter, letter from speech and language therapist, etc.
 - The author of the original document, for example: Dr Michael Smith Consultant Cardiologist;
 - 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 the practice software SHOULD to 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 then the system SHALL facilitate the storage of 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 provide an alert if the storage space exceeds a threshold.
9. The system SHOULD be able to maintain large volumes of attached documents in an off-line manner, either on a separate hard disk or on tape/CD/DVD.
10. The system SHOULD be able to retrieve off-line documents in a simple and easy manner.

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	EF(200906)

Statement

Support the capture and subsequent export or retrieval of data necessary for the reporting on 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 provide for the export of data to external report generating software. The system may also provide the functionality to prompt for the collection of necessary information at the appropriate time in a patient encounter if such collection need can be properly defined in a supportive workflow. e.g. Requesting specific information for reporting of emergency services such as suspected abuse, communicable diseases etc, or for the collection of additional research data for specific a specific diagnosis.

Conformance Criteria

1. The system SHALL provide the ability to export or retrieve data required to evaluate patient outcomes.
2. The system SHALL provide data detailed by GP, practice nurse or other selection criteria.
3. The system SHALL provide the ability to define outcome measures for specific patient diagnosis.
4. The system SHOULD provide the ability to define outcome measures to meet various national requirements.
5. The system SHOULD provide for 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 the export of data. This formatted data could be viewed, transmitted electronically or printed.
7. The system MAY provide the ability to 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 a limited query access to data through a secure data service.

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 strategic national 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 examine 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 first patients seen in March 2003. It is currently funded for 20% of the population and now involves 450 general practitioners throughout Ireland.

Conformance criteria

1. The system SHALL provide the ability to collect patient data required for the Heartwatch programme
2. The system SHALL provide a user friendly interface for the collection of 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 available to the Heartwatch data return information collected in the clinical care setting.
5. The system SHALL generate monthly report files for the Heartwatch programme that are compatible with the Independent National Data Centre Requirements as specified in the document "INDC - File Generation Rel 0.2 25 March 2003.doc".

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

Description

Provide hardcopy and electronic output that fully chronicles the healthcare process, supports selection of specific sections of the health record, and allows healthcare organisations to define the report and/or documents that will comprise the formal health record for disclosure purposes. A mechanism should be provided for both chronological and specified record element output. An auditable record of these requests and associated exports may be maintained by the system. This record could be implemented in any way that would allow the who, what, why and when of a request and export to be recoverable for review. The system has the capability of providing a report or accounting of disclosures by patient that meets in accordance with scope of practice, 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 tools internal or external to the system, for the generation of 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, as well as 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/or unstructured text from the patient's health record. Users need to be able to sort and/or filter reports. For example, the user may wish to view only the diabetic patients on a report listing patients and diagnoses.

Conformance Criteria

1. The system SHALL provide the ability to generate reports of structured clinical and administrative data using either internal or external reporting tools.
2. The system MAY provide the ability to 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/or clinical data, which would allow sorting and/or 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 be able to 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 provide the facility to automatically generate a report based on set time parameters for the report to be run and input parameters for the specific report or reports.
10. The system SHOULD be capable of generating reports in a variety of 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 requirements for data measurement requirements. This requires that users be able to define their own 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 be reviewing whether or not the protocol for management of Diabetes Mellitus is being followed. If the protocol calls for a HbA1c test every 6 months at minimum, the investigator might need to run an across patient query locating patients with diabetes who do not show an HbA1c result within the last 6 months.

Conformance Criteria

1. The system SHALL provide the ability to support the processing of ad hoc query and reports 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/or clinical data, which would allow sorting and/or filtering of the data.
5. The system MAY provide the ability to save report parameters for generating subsequent reports.
6. The system MAY provide the ability to 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. Maximizing 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 of clinical terminologies in use 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 in the appropriate format 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	EF(200906)

Statement

Support remote health care services such as tele-health 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 or provider and provider. Promotes patient empowerment, self-determination and ability to maintain health status in the community. Promotes personal health, wellness and preventive care. For example, a diabetic pregnant Mom can self-monitor her condition from her home and use web TV to report to her provider. The same TV-internet connectivity allows her to get dietary and other health promoting information to assist her with managing her high-risk pregnancy. Such information flow would require transactions between the practice management system and patient support web sites.

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 the coding of diagnoses, procedures and outcomes based on provider specialty, care setting and other information that may be entered into the system during the encounter.

Administrative Transaction Processing (S.3.3)

ID#	Type	Name	Priority
S.3.3	H	Administrative Transaction Processing	

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 which allows a Primary Care Contractor (GP) to confirm client eligibility to the various health schemes including 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 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 own eligibility if you happen to be in the DPS scheme:

www.spcrs.ie/portal/checker.

The service is also available by SMS text message:

1. Create a new text message;
2. Enter in 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 any eligibility found;
5. Example response: "The client 999999A was born 09/02/2001 and has a valid GMS card starting from 09/04/2001 to 31/10/2009 and is assigned to Doctor 11111".

The PCRS also offers this facility as a web service for use by vendors if they wish to add value to their applications. This provides the ability to check if a patient is eligible for any of the 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 start and end dates of the cards 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 use, 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 to know what services to call and what the parameters mean etc.
- If a vendor wishes to include the service they simply need to make contact with PCRS to initiate the registration process. This will provide PCRS with contact details so that they can communicate regarding advance notice of changes or down time etc. The registration process will also include details of the normal 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 not available. However, GPs should be aware that early patient eligibility withdrawal can occur. In such cases a discrepancy between local and PCRS data may 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 for the retention of eligibility date(s) of service and expiry date for service rendering.

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/or 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. Users will have to be authenticated when they attempt to use the application, the applications must authenticate themselves before accessing EHR information managed by other applications or remote EHR-S'. Examples of entity authentication include: username/ password; digital certificate; secure token or biometrics.

Conformance Criteria

1. The system SHALL authenticate principals prior to 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 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	EF(200906)

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 source of the data record can not later deny that it is the source; that 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 utilizes a message transfer agent to create a digital receipt (providing confirmation that a message was sent and/or received) and
- Timestamp, which proves that a document existed at a certain date and time.

Conformance Criteria

1. The system SHALL time stamp initial entry, modification, or exchange of data, and identify the actor/principal taking the action as required by users' scope of practice, organisational policy, or legislation.
2. The system SHALL provide additional non-repudiation functionality where 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	EF(200906)

Statement

Secure all modes of EHR data exchange.

Description

Whenever an exchange of EHR information occurs, it requires appropriate security and privacy considerations, including data obfuscation as well as both destination and source authentication when necessary. For example, it may be necessary to encrypt data sent to remote or external destinations. A secure data exchange requires that there is an overall coordination regarding the information that is exchanged between EHR-S entities and how that exchange is expected to occur. The policies applied at different locations must be consistent or compatible with each other in order to ensure that the information 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	EF(200906)

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 is exchanging 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 setup are recordings of IP addresses or recordings of DNS names. For dynamic determination of known sources and destinations systems can use authentication mechanisms as described in IN.1.1. For example, the sending of 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 some kind of authentication process.

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

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	EF(200906)

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 applicable 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 function IN.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 properly 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 the implementation of 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 tangible economic or social losses on affected patients, as well as less tangible feelings of vulnerability and pain. Fear of potential violations discourages patients from revealing sensitive personal information that may be relevant to diagnostic and treatment services. Rules for the protection of privacy and confidentiality may vary depending upon the vulnerability of patients and the sensitivity of records. Strongest protections should apply to the records of minors and the records of patients with 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 provide the ability to fully comply with the requirements for patient privacy and confidentiality in accordance with a user's scope of practice, organisational policy, or legislation.
2. The system SHALL provide the ability to maintain varying levels of confidentiality in accordance with 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 scope of practice, organisational policy or legislation.
4. The system SHALL provide the ability to override a mask in emergency or other specific situations according to 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. It is important that practice management vendors 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 in place backup hardware and backup support contracts either with the practice software vendor themselves 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, then the practice could be up and running in 24 hours with all the information needed to continue to provide care. Retrieving data from crashed disks is expensive and often incomplete. It is critical to ensure the practice has a well defined working backup system. GPs should focus on the risks and the consequences and then develop a plan.

This plan should include:

- Daily backup of data;
- Keep the backup media off site in a secure location (e.g. locked cabinet) as sensitive confidential information is stored on the media.
- Taking a backup off site 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 in use such as templates, guidelines, protocols and configuration information.
2. The system SHALL have the ability to 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 do 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.

Health Record Information and Management (IN.2)

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

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 at which a record was created, modified, viewed, extracted, or deleted. Auditable records extend to information exchange, to audit of consent status management (to support DC.1.3.3) and to entity authentication attempts. Audit functionality includes the ability to generate audit reports and to interactively view change history for individual health records or for 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 to 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 certain 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 exiting from the clinical system;
- Remote access connections including 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 SHOULD 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 SHOULD 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 in accordance with 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 provide the ability to 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 where the clinical system allows this to be done.
19. The system SHOULD provide the ability to record system maintenance events for creating and restoring of backup.
20. The system SHOULD provide the ability to record system maintenance events for archiving any data.
21. The system SHOULD provide the ability to record system maintenance events for re-activating of an archived patient record.

22. The system SHOULD provide the ability to record system maintenance events for entry to and exit from the EHR system.
23. The system SHOULD provide the ability to record system maintenance events for remote access connections including those for system support and maintenance activities.
24. The system SHOULD utilise standardised time keeping (for example using the IHE consistent time profile).
25. The system SHOULD provide the ability to record and report 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. The system SHALL, given the appropriate Timestamp, userID and patientID, have the ability to redisplay all previous data views exactly as they were presented to the user (this is to capture the idea of being able to see the record as it existed at a particular point in 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 in accordance with analysis and reporting requirements. The extracted data may require 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, which corresponds to the health record or records that are needed for viewing, reporting, disclosure, etc. An EHR-S must support data extraction operations across the complete data set that constitutes the health record of an individual and provide an output that fully 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 the health record of an individual within the system.

4. The system MAY provide the ability to perform extraction operations whose output fully 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.

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, it is important that their investment in creating electronic patient records is not lost and so the patient data must be capable of being exported in a standard format so that it can 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.
 - A “CSV” type file where the field lengths, separators, content, column headings, definitions etc. that are used are fully described in documentation.
2. The export file SHALL contain all data stored in the system either, at the user’s discretion, for a selected individual patient or for the entire practice population.
3. The system export facility SHALL include the audit trail, scanned documents and attached documents.

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 standard format.

Description

When a practice is being computerised for the first time it is important to be able to import the demographic details of medical card patients using the download file available to GMS GPs on the Primary Care Reimbursement Service (PCRS) web site. 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 of the 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 16 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 rate of over 70 in private nursing home
70+ SM	Zero capitation payment since care received via state medical facility
New 70+ PN.Home	Payment at rate of over 70 in 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 17 Explanation of PCRS categories

2. The csv file starts with the column names in the first row.

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	EF(200906)

Statement

Enable the use of registry services and directories to uniquely identify, locate and supply links for retrieval of information related to:

- patients and providers for healthcare purposes;
- payers, health plans, sponsors, and employers for administrative and financial purposes;
- public health agencies for healthcare purposes, and
- healthcare resources and devices for resource management purposes.

Description

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

Conformance Criteria

1. The system SHOULD provide the ability to use registry services and directories.
2. The system SHOULD provide the ability to securely use registry services and directories.
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, to 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 uniquely identify patients for the provision of care.
7. The system SHOULD provide the ability to use registries or directories to uniquely identify providers for the provision of care.
8. The system MAY provide the ability to use registries or directories to retrieve links to relevant healthcare information regarding a patient.
9. The system MAY provide the ability to use registries to supply links to 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 provide the ability to use registries or directories to identify employers for administrative and financial purposes.
12. The system MAY provide the ability to use registries or directories to identify public health agencies for healthcare purposes.
13. The system MAY provide the ability to 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 to enable semantic interoperability (both within an enterprise and externally). Support a formal standard terminology model.

Description

Semantic interoperability requires standard terminologies combined with a formal standard information model. An example of an information model is the HL7 Reference Information model. 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 those for healthcare quality, administrative reporting, research, etc. Formal standard terminology models enable common semantic representations by describing relationships that exist between concepts within a terminology or in different terminologies, such as exemplified in the model descriptions contained in the HL7 Common Terminology Services specification. The clinical use of standard terminologies is greatly enhanced with the ability to perform hierarchical inference searches across coded concepts. Hierarchical Inference enables searches to be conducted across sets of coded concepts stored in an EHR-S. Relationships between concepts in the terminology are used in the search to recognize child concepts of a common parent. For example, there may be a parent concept, "penicillin containing preparations" which has numerous child concepts, each of which represents a preparation containing a specific form of penicillin (Penicillin V, Penicillin G, etc). Therefore, a search may be conducted to find all patients taking any form of penicillin preparation.

Clinical and other terminologies may be provided through a terminology service internal or external to an EHR-S. 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 ICD-10 to code elements of consultations and clinical care.
2. The system SHALL provide a user friendly interface to facilitate coding with ICPC-2 and IDC-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 for the entry of a local or temporary code.
5. The system SHOULD provide the ability to 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 exists in a current standard terminology.
7. The system SHOULD provide the ability to exchange healthcare data 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	EF(200906)

Statement

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

Description

Version control allows for multiple sets or versions of the same terminology to exist and be distinctly recognized 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, it is important that retrospective analysis and research maintains the ability to relate changing conceptual meanings. If the terminology encoding for a concept changes over time, it is also important that retrospective analysis and research can 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 use 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 allow preservation of interpretations over time.
4. The system SHOULD provide the ability to 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 provide the ability to 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	EF(200906)

Statement

Support the ability to operate seamlessly with other systems, either internal or external, 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 a number of interchange standards to meet its external and internal interoperability requirements. It is fundamental that there be a common understanding of rules regarding connectivity, information structures, formats and semantics. These are known as “interoperability or interchange standards”. Data exchange which may be between internal systems or modules, or external to the organisation, is to occur in a manner which is seamless 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.

Representation of EHR content is transmitted in a variety of 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 but may not be appropriate if the end-user is requesting an immediate response from a remote application.

A variety of interaction modes are typically supported such as:

- Unsolicited Notifications, e.g. 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 results of the test.
- 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

Standard terminology is a fundamental part of interoperability. 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 may need to 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/or local profiles, for example 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 in order to support the ability to operate seamlessly with other systems.
4. The system SHOULD provide the ability to exchange data 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	EF(200906)

Statement

Enable version control according to local policies to ensure maintenance of utilised interchange standards. Version control of an interchange standard implementation includes the ability to accommodate changes as the source interchange standard undergoes its natural update process.

Description

The life cycle of any given standard results in changes to its requirements. It is critical that an organisation know the version of any given standard it uses and what its requirements and capabilities are.

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

Standards typically evolve in such a way as to protect backwards compatibility. On the other hand, sometimes there is little, or no, backwards compatibility when an 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 who are using different versions. Version control ensures that those sending information in a later version of a standard consider the difference in information content that can be interchanged effectively with receivers, who are capable of processing only earlier versions. That is, senders need to be aware of the information that receivers are unable to capture and adjust their business processes accordingly. Version control enables multiple versions of the same interchange standard to exist and be distinctly recognised over time. Since interchange standards are usually periodically updated, concurrent use of different versions may be required. Large (and/or 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, it is important that retrospective analysis and research correlate and note gaps between the different versions' information structures to support the permanence of concepts over time. An example use 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) the way that data is transmitted as an interchange standard evolves over time and in accordance with business needs.
3. The system SHOULD provide the ability to deprecate an interchange standard.
4. The system SHOULD provide the ability to interoperate with other systems that use known earlier versions of an interoperability standard.

Interchange Agreements (IN.5.4)

ID#	Type	Name	Priority
IN.5.4	F	Interchange Agreements	EF(200906)

Statement

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

Description

Systems that wish to communicate with each other, 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 the entity registries to determine the security, addressing, and reliability requirements between partners. An EHR-S can use this information to define how data will be exchanged between the sender and the receiver. 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, the 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/or potential partners.
4. The system **MAY** provide the ability to automatically discover interchange services and capabilities.

Business Rules Management (IN.6)

ID#	Type	Name	Priority
IN.6	F	Business Rules Management	EF(200906)

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, as well as compliance to and overrides of applied business rules.

Description

EHR-S business rule implementation functions include: decision support, diagnostic support, workflow control, and access privileges, as well as system and user defaults and preferences. An EHR-S supports the ability of providers and institutions to 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 a 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
- Establishing user level preferences such as allowing the use of 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 provide the ability to 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 provide the ability to 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 provide the ability to inactivate, archive, or destroy 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 provide the ability to 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	EF(200906)

Statement

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

Description

Workflow management functions that an EHR-S supports include:

- Distribution of information to and from internal and external parties;
- Support for task-management as well as parallel and serial task distribution;
- Support for notification and task routing based on system triggers; and
- Support for task assignments, escalations and redirection in accordance with business rules.

Workflow definitions and management may be implemented by a designated application or distributed across an 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 provide the ability to manage workflow (task list) queues.
4. The system MAY provide the ability to manage human resources (i.e., personnel lists) for workflow queues.
5. The system MAY use system interfaces that support the management of human resources (i.e., personnel lists).
6. The system MAY use system interfaces that support the management of workflow (task lists) queues.
7. The system MAY provide the ability to distribute information to and from internal and external parties.
8. The system MAY provide the ability to 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.