Kingdom of Saudi Arabia

Ministry of Health

National eHealth Strategy and Change Management Office

(SCMO)

Enabling Standards-Based eHealth Interoperability

Discussion Notes on Domain Specific Health Information Exchange Rules

February 22, 2015

Version 1.0

Document Control Number: Discussion Notes on Domain Specific Health Information Exchange Rules

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

Confidentiality statement:

The Ministry of Health (MOH) of the Kingdom of Saudi Arabia grants to any user of this document, perpetual, royalty-free, nontransferable, nonexclusive, license under its copyrights to access and read the Saudi eHealth Specification. You may not reproduce or use this document or any portion of it, without prior written consent from the MOH. The licenses covered are only to those parts owned or controlled by the MOH itself. If parts of the Saudi eHealth Specification include materials owned or controlled by other parties, licenses to use those products would have to be obtained from that other party.

The MOH offers the licensed material as-is and as-available, and makes no representations or warranties of any kind concerning the licensed material, whether express, implied, statutory, or other. This includes, without limitation, warranties of title, merchantability, fitness for a particular purpose, non-infringement, absence of latent or other defects, accuracy, or the presence or absence of errors, whether or not known or discoverable. To the extent possible, in no event will the authors and licensor be liable on any legal theory (including, without limitation, negligence) or otherwise for any direct, special, indirect, incidental, consequential, punitive, exemplary, or other losses, costs, expenses, or damages arising out of this public license or use of the licensed material, even if the licensor has been advised of the possibility of such losses, costs, expenses, or damages.

Document Revision History

VERSION	DATE	TYPE OF UPDATE	PREPARED/ REVISED BY
1.0	February 22, 2015	First Release	eHealth Strategy Management Office – eHealth Standards Department

1. INTRODUCTION

During the Stakeholder Workshops on Interoperability Use Cases and Specifications, several discussions have been identified that impact rules and regulations for clinical practice as applied to the Health Information Exchange. These rules and regulations are called Domain Specific Health Information Exchange Rules.

Such rules are clearly in the *Policy Domain* rather than in the Technical Domain of interoperability. At the top of the Policy Domain are the Saudi Health Information Exchange Policies. These policies are applicable universally across all types and styles of health information exchange and are not specific to individual medical domains.

The Domain Specific Health Information Exchange Rules discussed here, resulting from the Stakeholder Workshops, are also in the Policy Domain but are at a more detailed or specific level than the Saudi Health Information Exchange Policies. These domain specific rules must not contradict the Saudi Health Information Exchange Policies. Specifically the Domain Specific Health Information Exchange Rules are:

1. Directly related to the way medicine is practiced, often specific to medical specialties or the setting in which the specialty is practiced.
2. Rules that are the result of formal regulation. These domain specific rules may evolve and be modified with changes in medical practice.
3. "Good practices" that are recognized by clinicians.

The above characteristics result in using the term Rules for these Domain Specific Health Information Exchange Rules rather than policies, thus reserving the term policies for the top-level Health Information Exchange Policies that are not specific to medical specialties.

This document records discussion notes about such rules as they were collected during stakeholder workshops held for the development of interoperability specifications. These notes offer only a starting point for needed or desired rules for the deployment of the Interoperability Specifications. They need to be evaluated and do not attempt to represent an exhaustive list.

2. DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES

The following categories are used to distinguish the following types of domain specific health information exchange rules:

1. **Domain Specific Health Information Exchange Rules that impose constraints:** These domain specific rules have been discussed because they impact the interoperability use case and result in technical constraints in the Interoperability Specification. Such rules are mentioned in the use case and have associated design characteristics in the Interoperability Specification. For example, 3.1.1 is a rule that imposes the constraint to identify authorized reviewers, but leaves the identification up to the implementer rather than specifying it in the IS. This constraint, if not met, will negatively impact the IS and the implementation.

2. **Domain Specific Health Information Exchange Rules with neutral impact on interoperability:** These domain specific rules have been discussed and impact the interoperability use case but have resulted in a neutral impact on the Interoperability Specification. In other words, the Interoperability Specification will be neutral as to the method of implementing the rule and may not even mention the rule. As a consequence, if there are variants in the rules there is no impact on the design of the IS. Such rules are not mentioned in the use case but some elements of design that enable their support may be discussed in the associated Interoperability Specifications. For example, 3.2.1 where the RIS/PACS system uses its own local codes but must map them to the KSA procedure names, the IS constraint is only on the need for mapping to the KSA procedures.

    There is a neutral impact on the RIS/PACS local implementations as there is no enforcement of local imaging procedure names. Another example of neutral impact on Interoperability specification is 3.2.6, where only reports that have been approved within the local RIS/PACS should be shared with the HIE Platform. The HIE Platform has no involvement in telling the RIS/PACS how to obtain this approval, so this rule has neutral impact on the IS, in other words: The Interoperability Specification mentions the requirement but is neutral on the implementation of this point. Rules that are critical to practitioners and the way the exchange and interact with information, but that have little impact to the design of an IS are considered Domain Specific Health Information Rules with Neutral Impact on Interoperability.

3. **Domain Specific Health Information Exchange Rules that only impact local system design:** These domain specific rules have been discussed and do not impact interoperability at all, but only local deployment of IT systems. Such rules are not mentioned in the use case or the Interoperability Specification at all. They are user requirements that may be specified in the interoperability requirements of a product's Request for Proposal (RFP). For example, 3.3.1 where the radiologist should be able to access prior images, this is left entirely up to the local implementation and not at all discussed in the Interoperability Specification since the requirement is left entirely up to the local system.

3. SHARING IMAGES AND IMAGING REPORTS

The following Domain Specific Health Information Exchange Rules are related to IS0005 *Saudi eHealth Core Interoperability Specification for Sharing of Images and Imaging Reports*. The rules have been discussed at some level with the stakeholders. This list may not be complete in representing all needed or desired rules for the deployment of this Core Interoperability Specification.

3.1 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT IMPOSE CONSTRAINTS

3.1.1 **The HIE Platform must have the ability to identify authorized reviewers of the imaging data. HIE does not define who is authorized, as that is based upon the business practices of the organization.**

3.1.2 **Point of Care systems (such as the local RIS/PACS) must store imaging and reports from an unknown or temporarily identified patients on the HIE Point of Care system. The patient's identity shall be reconciled with the National Health ID before being stored to the Imaging Repository.**

3.1.3 **RIS/PACS systems must use KSA Procedure Name and Body Part terminologies when publishing to or querying the Imaging Repository.**

3.1.4 **The local RIS/PACS or tele-radiology service that originally generated an imaging report or imaging manifest must be the only one allowed to generate an amendment to the initial imaging report.**

3.2 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES WITH NEUTRAL IMPACT ON INTEROPERABILITY

3.2.1 **RIS/PACS systems may use any local imaging procedure names in their local systems, but must map them to the KSA Procedure Name when publishing to the Imaging Repository.**

3.2.2 **The complete set of images for a patient's study that passed quality control must be sent to the Imaging Repository for every acquired imaging study.**

3.2.3 **It is recommended to publish the images, imaging manifest and report to the Imaging Repository at the same time. This allows for complete access of information for any consumer. HIE cannot require the above rule, as there are times when the images/imaging manifest may need to be published on HIE without a report being completed. This may happen in situations such as an emergency patient having images generated but needing to be immediately transferred to another hospital, etc. This exception will allow the other site to use the images from the original site and not repeat the image acquisition. If the emergency patient is an unknown patient, the images cannot be stored to HIE, therefore when the patent is transferred a CD or DVD should be created transported with the patient.**

3.2.4 It is recommended that local RIS/PACS systems automatically pre-fetch images from the Imaging Repository when a patient is scheduled for an imaging study.

3.2.5 It is recommended that local RIS/PACS support on-demand image/report fetch from the Imaging Repository for unscheduled cases or because an automatic pre-fetch may not always obtain the needed images/report.

3.2.6 It is a recommended for systems to support users only retrieving imaging reports from the Imaging Repository as not all users will wish to view the images. Only reports that have been approved within the local RIS/PACS or tele-radiology service should be shared to the HIE Platform. The HIE Platform does not define who is authorized to grant the approval, as that is based upon the business practices of the organization.

3.3 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT ONLY IMPACT LOCAL SYSTEM DESIGN

3.3.1 The radiologist, while reviewing a locally acquired study, should be able to access prior images in HIE without having to re-select the patient.

4. KSA-WIDE PATIENT DEMOGRAPHICS QUERY

The following Domain Specific Health Information Exchange Rules related to upon IS0001 *Saudi eHealth Core Interoperability Specification for KSA-Wide Patient Demographic Query*. The rules have been discussed at some level with the stakeholders. This list may not be complete in representing all needed or desired rules for the deployment of this Core Interoperability Specification.

4.1 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT IMPOSE CONSTRAINTS

4.1.1 **Information systems may use a local Patient Identifier in their local systems to manage the patient's records in its system. But must use the National Health Patient ID when publishing and/or accessing information to/from the HIE Platform.**

4.1.2 **Information systems must have the ability to generate new queries to refresh previously stored patient demographics data that may have been updated.**

4.2 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES WITH NEUTRAL IMPACT ON INTEROPERABILITY

4.2.1 **National rules may define constraints for combinations of attributes allowed during the query request. These rules are outside the scope of interoperability specifications. For example, one may define a rule such as a query for a Saudi citizen cannot search for a match with only the Citizen ID. Other parameters may be required, such as the Birth Date.**

4.3 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT ONLY IMPACT LOCAL SYSTEM DESIGN

None

5. TELE-RADIOLOGY ORDERS

The following Domain Specific Health Information Exchange Rules are related to IS0006 *Saudi eHealth Core Interoperability Specification for Tele-radiology Orders*. The rules have been discussed at some level with the stakeholders. This list may not be complete in representing all needed or desired rules for the deployment of this Core Interoperability Specifications.

5.1 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT IMPOSE CONSTRAINTS

5.1.1 **The HIE Platform must have the ability to identify authorized reviewers of the imaging reports. HIE does not define who is authorized, as that is based upon the business practices of the organization.**

5.1.2 **Point of Care systems (such as the national tele-radiology system) must store imaging and reports from an unknown or temporarily identified patients on the Point of Care system. The patient's identity shall be reconciled with the National Health ID before being stored to the Imaging Repository.**

5.1.3 **The national tele-radiology system must use KSA Procedure Name and Body Part terminologies when publishing to or querying the Imaging Repository.**

5.1.4 **The local national tele-radiology system that originally generated an imaging report or imaging manifest must be the only one allowed to generate an amendment to the initial imaging report.**

5.2 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES WITH NEUTRAL IMPACT ON INTEROPERABILITY

5.2.1 **The local national tele-radiology system may use any local imaging procedure names in their local systems, but must map them to the KSA Procedure Name when publishing to the Imaging Repository.**

5.2.2 **The complete set of images for a patient's study that passed quality control and has been reported must be sent to the Imaging Repository for every acquired imaging study.**

5.2.3 **It is recommended that the national tele-radiology system support on-demand image/report fetch from the Imaging Repository.**

5.2.4 **Only reports that have been approved within the tele-radiology service should be shared to the HIE Platform. The HIE Platform does not define who is authorized to grant the approval, as that is based upon the business practices of the tele-radiology service.**

5.2.5 **It is recommended that the acquisition technician and/or radiologist provide textual explanation to the tele-radiology service how the imaging procedure was performed.**

It could be simple text stating "acquisition completed normally" or a more detailed explanation of the procedure.

5.2.6 It is recommended that relevant if prior studies exist for a patient; this information is conveyed in an order.

5.3 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT ONLY IMPACT LOCAL SYSTEM DESIGN

5.3.1 The radiologist, while reviewing a locally acquired study, should be able to access prior images in HIE without having to re-select the patient.

6. SHARING LABORATORY RESULTS REPORTS

The following Domain Specific Health Information Exchange Rules are related to IS0003 *Saudi eHealth Core Interoperability Specification for Sharing Coded Laboratory Results*. The rules have been discussed at some level with the stakeholders. This list may not be complete in representing all needed or desired rules for the deployment of this Core Interoperability Specification. Please note that the terms: Point of care systems, Laboratory Information System (LIS), and Hospital Information System (HIS) are used interchangeably within this section.

6.1 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT IMPOSE CONSTRAINTS

6.1.1 **The HIE Platform must have the ability to identify reviewers of the laboratory results reports. However, the HIE platform does not define who is authorized to review the reports, as that is based upon the business practices of the organization.**

6.1.2 **Point of Care systems must store laboratory results reports from an unknown or temporarily identified patients on the Point of Care system. The patient's identity shall be reconciled with the National Health ID before being stored to the HIE Document Repository.**

6.1.3 **LIS systems may use any local codes, but must use KSA Laboratory Department codes, KSA Laboratory Orders and Results Codes, KSA Micro-organism codes, KSA Anti-microbial codes, as defined in the IS0200 Saudi eHealth Terminology Repository when publishing to or querying the HIE Document Repository.**

6.1.4 **The local LIS/HIS that originally generated a laboratory results report must be the only one allowed to generate an amendment to that report.**

6.1.5 **Laboratory results reports generated without coded laboratory orders may be stored to the HIE Document Repository.**

6.2 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES WITH NEUTRAL IMPACT ON INTEROPERABILITY

6.2.1 **A partial laboratory results report may be sent to the HIE Document Repository only after it has passed the laboratory quality control process, including verification.**

6.2.2 **A completed laboratory results report may be sent to the HIE Document Repository only after it has passed the laboratory quality control process, including verification.**

6.2.3 **A partial laboratory results report must include documentation on why a partial laboratory results report is being shared.**

6.2.4 An amended laboratory results report must include documentation on why the prior laboratory results report is being modified, and what part of the laboratory results report was changed. The HIE Platform does not define the content of the documentation, as that is based upon the business practices of the organization.

6.2.5 The documentation associated with the amendment of laboratory results report must state why the laboratory results report is being modified, and what part of the laboratory results report was changed.

6.2.6 Point of Care systems are responsible for rendering the laboratory results reports, including the branding (logo) of the reports, processing the coded laboratory data to use local codes and providing a user-friendly layout in context with other information needed to deliver care.

6.3 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT ONLY IMPACT LOCAL SYSTEM DESIGN

6.3.1 The Point of Care systems that originally generated the laboratory order is responsible for handling additional recipient notification on the availability of the laboratory results report(s).

6.3.2 The Point of Care systems that originally generated the laboratory order are responsible for verifying that the ordering Healthcare Provider/Organization has read the laboratory results report.

6.3.3 LIS systems are wholly responsible for any sub-contracted laboratory work and the subsequent reporting of any laboratory results reporting from the sub-contracted laboratory. However, The Author/Performer of the sub-contracted Laboratory work will always remain the Laboratory that actually did the work.

7. CODED LABORATORY ORDERS

The following Domain Specific Health Information Exchange Rules are related to IS0004 *Saudi eHealth Core Interoperability Specification for Coded Laboratory Orders*. The rules have been discussed at some level with the stakeholders. This list may not be complete in representing all needed or desired rules for the deployment of this Core Interoperability Specification. Please note that the terms: Point of care systems, Laboratory Information System (LIS), and Hospital Information System (HIS) are used interchangeably within this section.

7.1 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT IMPOSE CONSTRAINTS

7.1.1 **The HIE Platform must have the ability to identify authorized Laboratory Order Creators and Laboratory Order Fulfillers. However, the HIE platform does not define who is authorized to be an Order Creator or a Fulfiller, as that is based upon the business practices of the organization.**

7.1.2 **Point of Care systems must store laboratory orders from an unknown or temporarily identified patients on the Point of Care system. The patient's identity shall be reconciled with the National Health ID before being stored to the HIE Document Repository.**

7.1.3 **Point of Care systems may use local codes, but must use KSA Laboratory Department codes and KSA Laboratory Orders and Results codes, as defined in the IS0200 Saudi eHealth Terminology Repository when publishing to or querying the HIE Document Repository.**

7.1.4 **An individual shared laboratory order will contain requested tests for only one specialty area (laboratory department). If requested tests are required for multiple specialty areas, it is the responsibility of the Point of Care systems, which originally created the order, to split the laboratory order into shareable laboratory orders.**

7.2 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES WITH NEUTRAL IMPACT ON INTEROPERABILITY

7.2.1 **The documentation associated with a laboratory order that was cancelled by the ordering Healthcare Provider must include why the laboratory order is being cancelled.**

7.2.2 **The documentation associated to a laboratory order that was aborted by the Fulfiller must include why the laboratory order is being aborted.**

7.2.3 **Business practices of the organization will determine if a laboratory order can be modified, or additional requested tests can be added to an existed laboratory order already shared through the HIE Document Repository.**

7.3 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT ONLY IMPACT LOCAL SYSTEM DESIGN

7.3.1 **Specimen collection must occur at the location of the ordering Healthcare Provider or at the location of the Laboratory.**

7.3.2 **The addition of a specimen to a laboratory order that has already been started by the Laboratory is the responsibility of the Laboratory, even if the new specimen is collected by the Ordering Healthcare Provider and/or Organization.**

7.3.3 **LIS systems are wholly responsible for any sub-contracted laboratory work and the subsequent reporting of the status of laboratory tests performed by the sub-contracted laboratory.**

7.3.4 **Point of Care systems must link any local laboratory order number with the Placer Order Number to ensure a unique order identifier across the kingdom as defined in the IS0105 Saudi eHealth Laboratory Results and Orders Content Interoperability Specification.**

7.3.5 **Point of Care systems are required to maintain the linkage to the individual shareable laboratory orders and their statuses in order to determine the status of the original local laboratory order.**

8. MEDICATIONS

The following Domain Specific Health Information Exchange Rules are related to IS0008 *Saudi eHealth Core IS for ePrescriptions* and IS0009 *Saudi eHealth Core IS for eDispensation*. The rules have been discussed at some level with the stakeholders. This list may not be complete in representing all needed or desired rules for the deployment of this Core Interoperability Specification.

8.1 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT IMPOSE CONSTRAINTS

8.1.1 The HIE Platform must have the ability to identify reviewers of medication documents. The HIE platform does not define who is authorized to review medication documents, as that is based upon the business practices of the organization.

8.1.2 Point of Care systems must store medication documents from an unknown or temporarily identified patients on the Point of Care system. The patient's identity shall be reconciled with the National permanent Health ID or temporary Health ID before the documents are being stored to the HIE Document Repository.

8.1.3 In case of dispensation of Compound Medicine, Medicine name must contain a descriptor of the Compound Medicine, including active substance(s) and their strength(s).

8.1.4 Point of Care systems should allow recording of medication "documented by history" as part of the "Medication Reconciliation and Review" process. It shall be possible and allowed for authorized providers only (patient entry is not allowed since mixing of reliable and non-reliable sources is not recommended).

8.1.5 Patient Medication Instructions on an underlying prescription shall not be copied to the Dispensation record. Only new instructions shall be recorded.

8.1.6 Dispensations may exist either as a result of electronically available prescriptions, or from prescriptions that are not electronically available at the time of dispense. Dispensations in the latter case shall be recorded without reference to a prescription as it is the case for Over the Counter (OTC) medication.

8.1.7 A business rationale shall be documented for each change to a Dispensation Item.

8.1.8 Dispensers are allowed to change, stop or suspend Dispense Items only after consulting the prescriber.

8.1.9 Point of Care systems have to determine if Prescription Items are expired. A Prescription Item expires: (1) after the validity end date has passed, if no Dispensation has been taken place within the validity date range of the Prescription or (2) after the validity end date plus the duration of the treatment period have

passed, if at least one partial Dispensation has been taken place, within the validity date range of the Prescription, but the complete Dispensation of the Prescription Item has not been accomplished within the duration of treatment period prescribed for this Prescription Item.

8.1.10 **Point of Care systems may use any local code for medicinal products in their local systems, but when publishing to the HIE Document Repository must map them to the KSA Prescription Pharmacy Item Name or the KSA Dispensation Pharmacy Item Name, as defined in the *IS0200 Saudi eHealth Terminology Repository.***

8.1.11 **Inpatient Medication Administration is considered out of scope for this phase of the project. The patient's discharge summary is intended to provide the medications given during the hospital stay. The documentation of which medication(s) should be included in the discharge summary is based upon the business practices of the organization.**

8.1.12 **Communities Pharmacies are intended to be connected to the HIE Platform.**

8.1.13 **As a general rule, prescriptions can only include Generic Names. If a specific brand is desired, it should be recorded in the "Dispenser Notes".**

8.1.14 **Domain Specific Health Information Exchange Rules with Neutral Impact On InteroperabilityThe central Medication Interaction Checking service shall implement the following types of check in the following order:**

1. Medication – Allergy interaction
2. Medication – Medication interaction
3. Medication – Problem/Diagnosis checking
4. Medication dosage – age, weight
5. Medication – Lab checking

8.2 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT ONLY IMPACT LOCAL SYSTEM DESIGN

None

9. CLINICAL NOTES AND SUMMARIES

The following Domain Specific Health Information Exchange Rules are related to IS0007 *Saudi eHealth Core IS for Clinical Notes and Summaries*. The rules have been discussed at some level with the stakeholders. This list may not be complete in representing all needed or desired rules for the deployment of this Core Interoperability Specification.

9.1 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT IMPOSE CONSTRAINTS

9.1.1 Point of Care systems (such as the local Electronic Medical Record (EMR)/Health Information System (HIS)) are responsible for recording the Patient Demographics -Date of Birth as a Gregorian date. However, there are a number of data calculations which must be computed based upon the Hijri Calendar. This includes items such as eligibility for admission to the pediatric hospital and vaccination dates.

9.1.2 Point of Care systems are responsible for recording the Pain Assessment as a Vital Sign.

9.1.3 Point of Care systems are responsible for including the Recommendation/Plan of Care in a Discharge Summary, as defined by Central Board for Accreditation of Healthcare Institutions (CBAHI) and Joint Commission International (JCI). The content of the Plan of Care may include data elements such as educational material, discharge diet and who needs to follow-up on the plane of care.

9.1.4 Point of Care systems are responsible for documenting the following delivery outcomes in a Maternal Discharge Summary:

- Episiotomy (Y/N),
- Treatment for Rh factor incompatibility received? (Y/N), and
- Post-partum Complications.

9.1.5 Point of Care systems are responsible for recording the in-hospital administered medications. If a Hospital uses an internal system to prescribe/dispense medications, in order for the medications to be part of the patient's medication list they must be documented in a discharge summary.

9.1.6 Point of Care systems are responsible for documenting the following additional delivery outcomes in the case of a home, ambulance or unattended delivery in a Maternal Discharge Summary:

a. How was the cord handled (cut/clamped), and
b. (Sterile or not.).

9.1.7 Point of Care systems are responsible for documenting that a Clinical Discharge Summary should not be used for clinical purposes because it has been deprecated.

9.1.8 **Point of Care systems are responsible for documenting that a Clinical Outpatient Encounter Summary should not be used for clinical purposes because it has been deprecated.**

9.1.9 **Point of Care systems are responsible for documenting that a Clinical Note should not be used for clinical purposes because it has been deprecated**

9.2 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES WITH NEUTRAL IMPACT ON INTEROPERABILITY

9.2.1 **Point of Care systems are responsible for rendering the Clinical Notes and Summaries document, including the branding (e.g., logo) of the Clinical Notes and Summaries, processing the coded clinical data to use local codes and providing a user-friendly layout in context with other information needed to deliver care.**

9.3 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT ONLY IMPACT LOCAL SYSTEM DESIGN

9.3.1 **Newborn Delivery: Cord Blood Gas Analysis (Lab Testing) is typically done as a part of a Newborn delivery, as well as other newborn screening. Available test results are reviewed prior to discharge. It is expected that additional test results will need to be reviewed as part of the newborn follow-up appointments.**

10. EREFERRALS AND ETRANSFERS

The following Domain Specific Health Information Exchange Rules are related to IS0011 Saudi *eHealth Core IS for eReferral and eTransfer Workflows*. The rules have been discussed at some level with the stakeholders. This list may not be complete in representing all needed or desired rules for the deployment of this Core Interoperability Specification.

10.1 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT IMPOSE CONSTRAINTS

10.1.1 The Collaboration Circle participants should agree upon the rules that establish the business practices supported by the Collaboration Circle. The HIE Platform identifies the collaboration circle but does not impose such business practices. Each Collaboration Circle shall define:

10.1.1.1 If bidding for referrals and or transfers are allowed.

10.1.1.2 The constraints for the escalation process for scenarios when a referral or transfer is not accepted by the receiving referral/transfer systems.

10.1.1.3 An agreement on time-outs for responses to requests

10.1.1.4 Determination of the referral and transfer priorities supported (e.g., Elective, Emergency, Urgent, Stat) by requesters and receivers.

10.1.2 The Points of Care that create referrals may choose workflow variants such as to allow for patients to choose alternative receiving organizations with flexible referrals.

10.1.3 The Points of Care that accept referrals may choose or not to allow patient to walk-in for flexible referrals.

10.1.4 The system at referral/transfer receiving Point of Care must be able to abort a referral request it previously has accepted.

10.1.5 The HIE Platform must have the ability to identify any workflow participants. The HIE Platform only identifies as intended recipients:

- The Workflow Manager for each Collaboration Circle
- All other workflow participants are identified by the HIE platform for notifications.

10.2 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES WITH NEUTRAL IMPACT ON INTEROPERABILITY

10.2.1 How to determine if a patient is eligible for a medical referral or transfer is based upon the business practices of the Collaboration Circle(s) to which organizations belong. The HIE Platform does not manage these practices rules.

10.3 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT ONLY IMPACT LOCAL SYSTEM DESIGN

10.3.1 The bidding resolution process is a business rule that is specific to each Collaboration Circle and is entirely implemented by the Workflow Manager.

11. IMMUNIZATIONS

The following Domain Specific Health Information Exchange Rules are related to IS0010 *Saudi eHealth Core IS for Immunizations*. The rules, if any, have been discussed at some level with the stakeholders. This list may not be complete in representing all needed or desired rules for the deployment of this Core Interoperability Specification.

11.1 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT IMPOSE CONSTRAINTS

None

11.2 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES WITH NEUTRAL IMPACT ON INTEROPERABILITY

None

11.3 DOMAIN SPECIFIC HEALTH INFORMATION EXCHANGE RULES THAT ONLY IMPACT LOCAL SYSTEM DESIGN

None