

# Arizona Health Information Exchange (HIE) Technical Infrastructure Working Group

September 27, 2010



**Governor's Office of  
Health Information Exchange**  
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# Agenda

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- Updates
  - Strategic Plan/Federal Feedback
- Role of the Workgroup
- Meaningful Use
- Three key deliverables
  - E-Prescribing
  - Receipt of Structured Lab Results
  - Patient Care Summaries
- Interim Final Rule (IFR) Issues Addressed
- System Components
- Next Steps

# Strategic and Operational Plans

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- Federal approach/process for review
- Internally made updates
- Federal feedback
  - Further gap analysis
    - Plan to address additional gaps identified

# Role of the Workgroup

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- Make recommendations on HIE infrastructure
  - Technical Infrastructure – “open architecture” and “standards-compliant”
  - Issues/Risks and Mitigation Plans
    - Meeting Scheduled for Wednesday, October 6<sup>th</sup> 1-3PM

# Introduction

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- Ryan Sommers, PMP
- Governor's Office of Economic Recovery
- Governor's Office of Health Information Exchange
- Background
  - Business Systems Analyst
  - IT Project Management

# What is Meaningful Use?

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- Adoption and meaningful use of certified electronic health record (EHR) technology by eligible providers and hospitals participating in Medicare and Medicaid programs.
- Eligible providers and hospitals will receive incentive payments for meeting the meaningful use objectives.
  - Estimated \$500M for Arizona
- Total of 28 objectives to be implemented in 3 Stages

# Meaningful Use

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- Stage 1 meaningful use objectives have been purposefully set to be achievable by providers and hospitals.
- Most Stage 1 meaningful use objectives stand on their own without an HIE dependency.
- Stages 2 and 3 will have many more requirements that will rely on robust HIE availability within the community.
  - Expansion on objectives/measurements
  - Move from capability/functionality to actual submission/transmission

# Meaningful Use Analysis

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- Review 28 Objectives
- Eligible Provider and Hospital Requirements/Measurements
- Healthcare Information and Management Systems Society (HIMSS) Analysis - Published in March 2010
- Manatt, Phelps & Phillips, LLP – Final rule on Standards, Implementation specifications, and Certification Criteria for EHR Technology

# Meaningful Use Objectives

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- No HIE Required – Stage 1
  - Maintain active medication allergy list
  - Record demographics
  - Record vital signs
  - Record smoking status for patients age 13 and over
  - Generate lists of patients by specific conditions to use for quality improvement, reduction of disparities, and outreach
  - Provide a clinical summary for each visit

# Meaningful Use Objectives

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- No HIE Required – Stage 1
  - Protect health information
  - Computerized practitioner order entry (CPOE)
  - Drug screening
  - Maintain problem list in ICD-9-CM or SNOMED-CT
  - Maintain active medication list
  - Report quality measures to CMS or states
  - Send reminders to patients based on patient preferences and selected by specific criteria for preventive/ follow-up care

# Meaningful Use Objectives

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- No HIE Required – Stage 1
  - Implement five clinical decision rules, other than drug-drug interactions and drug-allergy contraindications, based on demographic data, diagnosis, conditions, test results, and/or medication list
  - Provide patients with an electronic copy of their information upon request
  - Provide patients with an electronic copy of their discharge instructions and procedures at time of discharge

# Meaningful Use Objectives

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- No HIE Required – Stage 1
  - Provide patients with timely electronic access to their information
  - Exchange clinical information electronically with other providers and patient authorized entities
  - Perform medication reconciliation at relevant encounters and each transition of care
  - Electronic prescribing
  - Incorporate clinical lab test results into EHR as structured data

# Meaningful Use Objectives

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- Potential HIE Implications – Stage 1
  - Check insurance eligibility electronically from public and private payers
  - Submit claims electronically to public and private payers
  - Submit data to immunization registries
  - Submit reportable lab results to public health agencies
  - Submit syndromic surveillance data to public health agencies
  - Protect health information
  - Provide summary care record for each transition of care and referral

# 2011 Key Deliverables & Objectives



E-Prescribing



Receipt of  
Structured Lab  
Results



Patient Care  
Summaries

**HIE Fundamental Capabilities**

# Manatt Analysis: Key Issues (E-Prescribing)

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- NCPDP SCRIPT 10.6 as an Alternate Standard
  - Certified EHR Technology would be compliant with this certification criterion if it has the capability of generating and transmitting prescription and prescription –related information according to NCPDP SCRIPT 8.1 or NCPDP SCRIPT 10.6 while also using the adopted vocabulary standard.
- RxNorm as a Vocabulary Standard
  - ONC reiterates that, as it had outlined in the IFR, it believes the health IT industry would benefit from a certain degree of flexibility with respect to coding of medications. To provide such flexibility while also establishing what it calls a “glide path to full adoption of RxNorm,” ONC elects to adopt a standard that permits the use of many different vocabulary standards.

# Manatt Analysis: Key Issues (E-Prescribing)

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- Pharmacies Not Capable of Receiving Electronic Prescriptions
  - ONC responds that while it recognizes that some pharmacies are not currently able to receive electronic prescriptions, the agency does not believe this limitation should affect the capability that Certified EHR Technology must provide.
- Inpatient Electronic Prescribing Requirements
  - The capability will be required to be enabled in all Certified EHR Technology, inpatient or ambulatory, seeking certification for Stage 1 meaningful use but that the extent to which health care providers must use those capabilities falls outside the scope of this rule.

# Manatt Analysis: Key Issues (Lab Tests)

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- Requirements for Laboratories
  - ONC clarifies that for purposes of demonstrating compliance with this certification criterion, when laboratory results are received in a structured format by Certified EHR Technology, the technology must be capable of incorporating the results.
- LOINC
  - ONC clarifies that it does not expect Certified EHR Technology to natively (or internally) support LOINC in its entirety, which is why the agency has chosen not to specify a subset of common LOINC codes.
- CLIA
  - ONC expresses understanding for the concern expressed by commenters but reiterates that the scope of the Final Rule applies only to the required capabilities of Certified EHR Technology and does not provide the agency with the authority to grant the regulatory relief requested by commenters.

# Manatt Analysis: Key Issues (CCD vs CCR)

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- Use of Both Continuity of Care Document (CCD) and Continuity of Care Record (CCR) as Acceptable Standards
  - ONC reaffirms its decision to include both standards, CCD and CCR, as patient summary record standards and believes that at the present time, each standard could be equally used to satisfy the requirements for Stage 1 meaningful use. ONC disagrees with commenters who suggested the CCR was not widely used and instead states the belief that a significant segment of the health IT industry currently uses the CCR standard and that some providers prefer the use of CCR over CCD.
  - ONC states that it did not want to mandate at such an early stage that all early adopters adopt a different summary record standard for the purposes of Stage 1 meaningful use given that electronic health information exchange is not required.

# Manatt Analysis: Key Issues (CCD vs CCR)

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- Clarification of Receiving and Display Requirements
  - ONC clarifies that compliance with this certification criterion can be achieved by demonstrating the Certified EHR Technology is capable of receiving and displaying patient summary records that comply with either the CCR or CCD standard (and if the alternative standard is used, displaying the non-natively implemented patient summary record in human readable format) and generating and transmitting a patient summary record according to one of the patient summary record standards populated with the specific data types and their applicable standard(s).
- Discharge Summaries
  - Commenters noted that neither the CCD nor CCR standard contain an applicable section for discharge summary. ONC agrees with commenters' concerns and revises associated certification criterion to reflect that while other data elements can be conveyed using the patient summary records (CCR or CCD), the agency will not require the use of any standards for discharge summaries.

# MEANINGFUL USE OBJECTIVES

# Electronic prescribing

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- Eligible Provider
  - Generate and transmit permissible prescriptions electronically (e-prescribing).
- Eligible Hospital
  - N/A
- Measurement (Numerator and Denominator)
  - HIMSS: Must send 75% of non-controlled drug prescriptions electronically.
  - Manatt: More than 40% of all permissible prescriptions written by the EP are transmitted electronically using certified EHR technology.

# Electronic prescribing

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- Stage 1 MU Implication
  - HIMSS Analysis: The requirement to transmit an E-Prescribing requires information exchange to a pharmacy data receiver which can be achieved either direct or through a third party. An HIE entity is not required.
  - Manatt Analysis: Enable a user to electronically generate and transmit prescriptions and prescription-related information.

# Maintain active medication list

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- Eligible Provider & Hospital
  - Enable user to manage an active medication list.
  - Enable user to manage a medication history that spans multiple visits.
- Measurement (Numerator and Denominator)
  - HIMSS: Must be done for 80% of unique patients.
  - Manatt: More than 80% of unique patients seen by the EP or admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) have at least one entry (or an indication that the patient is not currently prescribed any medication) recorded as structured data.

# Maintain active medication list

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- Stage 1 MU Implication
  - HIMSS Analysis: No direct HIE requirement. Many providers who are already participating in E-Prescribing already have access to medication lists from the pharmacy benefits manager and/or other retail/commercial pharmacy. While the criteria focuses on management of the active medication list within the EHR, the criteria on reconciliation suggests that HIE may be included in the future rule making activities.
  - Manatt Analysis: Enable a user to electronically record, modify, and retrieve a patient's active medication list as well as medication history for longitudinal care.

## Incorporate clinical lab test results into EHR as structured data

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- Eligible Provider & Hospital
  - Receive structured results and display in readable format.
  - Display results containing LOINC codes.
  - Enable user to change a patient's record based on a lab result.
- Measurement (Numerator and Denominator)
  - HIMSS: At least 50% of test results whose result can be expressed as positive/negative or as a number are stored in the EHR as structured data. The denominator is the number of lab tests ordered.
  - Manatt: More than 40% of all clinical lab tests results ordered by the EP or by an authorized provider of the eligible hospital or CAH for patients admitted to its inpatient or emergency department (POS 21 or 23) during the EHR reporting period whose results are either in a positive/negative or numerical format are incorporated in certified EHR technology as structured data.

# Incorporate clinical lab test results into EHR as structured data

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- Stage 1 MU Implication
  - HIMSS Analysis: The requirement “receive structured results” implies, but does not require HIE from the laboratory services supplier to the ordering physician. What is required is that the results be entered into the chart in a structured format which would be time consuming and error prone if done manually, so it is clear that this requirement should be addressed through data exchanged activities. In the case of a hospital that is performing laboratory testing, there is an implied requirement to be an electronic data supplier to their ordering provider community.
  - Manatt Analysis: Electronically receive clinical laboratory test results in a structured format and display such results in human readable format. Electronically display all the information for a test report to specifications. Electronically attribute, associate, or link a laboratory test result to a laboratory order or patient record.

Send reminders to patients based on patient preferences and selected by specific criteria for preventive/ follow-up care

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- Eligible Provider
  - Patient Demographics, Medication List, Specific Conditions
- Eligible Hospital
  - N/A
- Measurement (Numerator and Denominator)
  - HIMSS: Reminders sent to at least 50% of unique patients seen in the practice who are age 50 and over.
  - Manatt: More than 20% of all unique patients 65 years or older or 5 years or younger were sent an appropriate reminder during the EHR reporting period.

Send reminders to patients based on patient preferences and selected by specific criteria for preventive/ follow-up care

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- Stage 1 MU Implication

- HIMSS Analysis: The term “based on patient preferences” could imply electronic delivery. Interpretation can be that these preferences are more directed at the patient’s choice of receiving or not receiving reminders. Avenues that do not utilize health data exchange avenues may easily fulfill Stage I requirement.
- Manatt Analysis: Enable a user to electronically generate a patient reminder list for preventive or follow-up care according to patient preferences based on, at a minimum, the data elements included in: problem list, medication list, medication allergy list, demographics, and laboratory test results.

# Check insurance eligibility electronically from public and private payers

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- Eligible Provider & Hospital
  - Submit electronic eligibility query and receive a response
- Measurement (Numerator and Denominator)
  - HIMSS: Check eligibility electronically for at least 80% of patients seen (practice) or admitted (hospital).
  - Manatt: N/A

# Check insurance eligibility electronically from public and private payers

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- Stage 1 MU Implication

- HIMSS Analysis: HIE requirement to perform a query/response according to CORE rules using X12n 271/270. Note that the requirement does not speak to timing which opens up possibilities for batched transactions. This will depend upon the provider's workflow to determine the most efficient usage. Also, many providers currently have direct access to the eligibility systems through portals and online access.
- Manatt Analysis: N/A

# Submit claims electronically to public and private payers

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- Eligible Provider & Hospital
  - To public and private payers
- Measurement (Numerator and Denominator)
  - HIMSS: File at least 80% of claims electronically. Denominator is the total number of claims filed.
  - Manatt: N/A

# Submit claims electronically to public and private payers

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- Stage 1 MU Implication
  - HIMSS Analysis: HIE requirement to perform claims push electronically using X12n 837. There is no requirement to transmit directly to payers or adjudication third parties; consequently existing EDI arrangements are still in play.
  - Manatt Analysis: N/A

# Provide summary care record for each transition of care and referral

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- Eligible Provider & Hospital
  - Provide summary care record for each transition of care and referral including, at a minimum, diagnostic test results, problem list, medication list, medication allergy list, immunizations, and procedures. IP: add discharge summary.
- Measurement (Numerator and Denominator)
  - HIMSS: Provide summary of care record for at least 80% of transitions of care and referrals. Denominator is the number of transitions of care for which the practice or hospital was the transferring or referring provider.
  - Manatt: The EP, eligible hospital or CAH who transitions or refers their patient to another setting of care or provider of care provides a summary of care record for more than 50% of transitions of care and referrals.

# Provide summary care record for each transition of care and referral

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- Stage 1 MU Implication

- HIMSS Analysis: HIE is required. Data suppliers must be able to generate an electronic visit summary and transmit it. Data receivers must be able to receive the electronic summary and display it in human-readable form. There is not a requirement in Stage 1 to actually incorporate the received data into the receiver's EHR. This can be accomplished through data exchange activities but does not require an HIE entity.

# Provide summary care record for each transition of care and referral

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- Stage 1 MU Implication

- Manatt Analysis: Electronically receive and display a patient's summary record from other providers and organizations including, at a minimum, diagnostic test results, problem list, medication list, medication allergy list, and procedures in accordance with the standard (and applicable implementation specifications). Upon receipt of a patient summary record formatted according to the alternative standard, display it in human readable format. Enable a user to electronically transmit a patient's summary record to other providers and organizations including, at a minimum, diagnostic test results, problem list, medication list, medication allergy list, and procedures in accordance with the standard (and applicable implementation specifications).

# Submit data to immunization registries

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- Eligible Provider & Hospital
  - Capability to submit electronic data to immunization registries and actual submission where required and accepted. (Record in EHR, retrieve, and transmit.)
- Measurement (Numerator and Denominator)
  - HIMSS: Perform at least one test of submitting immunization data. Can be done at any time, including prior to the reporting period. State Medicaid requirements may supersede. Group practices only need to perform one test per EHR.
  - Manatt: Performed at least one test of certified EHR technology's capacity to submit electronic data to immunization registries and follow-up submission if the test is successful (unless none of the immunization registries to which the EP, eligible hospital or CAH submits such information have the capacity to receive the information electronically).

# Submit data to immunization registries

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- Stage 1 MU Implication
  - HIMSS Analysis: HIE may be required if the registries are capable of receiving electronic data (which most state registries are). If not, then the proven capability must at least be available in the EHR. The phrase ‘where required and accepted’ is ambiguous and requires clearer definition for provider follow-up with their local immunization registry.
  - Manatt Analysis: Electronically record, modify, retrieve, and submit immunization information with the standard (and applicable implementation specifications).

# Submit reportable lab results to public health agencies

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- Eligible Provider
  - N/A
- Eligible Hospital
  - Capability to provide electronic submission of reportable lab results (as required by state or local law) to public health agencies and actual submission where it can be received (record in EHR, retrieve, and transmit).
- Measurement (Numerator and Denominator)
  - HIMSS: Perform at least one test of submitting reportable lab results. Can be done at any time, including prior to the reporting period. State Medicaid requirements may supersede. Group practices only need to perform one test per EHR.
  - Manatt: Performed at least one test of certified EHR technology's capacity to provide electronic submission of reportable lab results to public health agencies and follow-up submission if the test is successful (unless none of the public health agencies to which eligible hospital or CAH submits such information have the capacity to receive the information electronically).

# Submit reportable lab results to public health agencies

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- Stage 1 MU Implication

- HIMSS Analysis: HIE may be required if the Public Health agencies are capable of receiving electronic data. If not, then the proven capability must at least be available in the EHR. Note that there are likely already procedures in place today at the hospital to electronically transmit such data, if the Public Health agency has the capability, so this may not be an additional burden. This may also be accomplished through registries with data capturing and reporting if electronic data exchange function is available with the registries.
- Manatt Analysis: Electronically record, modify, retrieve, and submit reportable clinical lab results in accordance with the standard (and applicable implementation specifications).

# Submit syndromic surveillance data to public health agencies

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- Eligible Provider & Hospital
  - Capability to provide electronic syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice (record in EHR, retrieve, and transmit).
- Measurement (Numerator and Denominator)
  - HIMSS: Perform at least one test of submitting electronic syndromic surveillance data. Can be done at any time, including prior to the reporting period. State Medicaid requirements may supersede. Group practices only need to perform one test per EHR.
  - Manatt: Performed at least one test of certified EHR technology's capacity to provide electronic syndromic surveillance data to public health agencies and follow-up submission if the test is successful (unless none of the public health agencies to which an EP, eligible hospital or CAH submits such information have the capacity to receive the information electronically).

# Submit syndromic surveillance data to public health agencies

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- Stage 1 MU Implication

- HIMSS Analysis: HIE may be required if the PH agencies are capable of receiving electronic data. If not, then the proven capability must at least be available in the EHR.
- Manatt Analysis: Electronically record, modify, retrieve, and submit syndrome-based public health surveillance information in accordance with the standard (and applicable implementation specifications).

# Computerized Practitioner Order Entry (CPOE)

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- Eligible Provider
  - Enter orders for medications, laboratory, radiology, and provider referrals.
- Eligible Hospital
  - Enter orders for medications, laboratory, radiology, blood bank, PT, OT, RT, rehab, dialysis, provider consults, and discharge and transfer. Use of CPOE for orders (any type) directly entered by authorizing provider (e.g., MD, DO, RN, PA, NP)
- Measurement (Numerator and Denominator)
  - HIMSS – Numerator: number of CPOE orders entered for all patients. Denominator: total number of orders issued. Practices must enter 80% of orders by CPOE. Hospitals must enter 10%.
  - Manatt – More than 30% of unique patients with at least one medication in their medication list seen by the EP or admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) have at least one medication order entered using CPOE.

# CPOE

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- Stage 1 MU Implication

- HIMSS Analysis: No HIE requirement to achieve MU. The implied functionality is to combine the ordering process with certain rules that are reviewing the patient's data and advising the ordering care provider on the need for and potential adverse implications of the order. There is no specification at this time for electronic movement of the order.
- Manatt Analysis: Enable a user to electronically record, store, retrieve, and modify, at a minimum, the following order types: medications, laboratory, and radiology/imaging.

# Drug Screening

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- Eligible Provider & Hospital
  - Real-time alerts for drug-drug interactions and drug allergy contraindications
  - Electronic formulary check
  - Enable user to maintain drug-drug and drug-allergy warnings.
  - Track number of alerts that were responded to
- Measurement (Numerator and Denominator)
  - HIMSS: Functionality is enabled
  - Manatt: N/A

# Drug Screening

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- Stage 1 MU Implication
  - HIMSS Analysis: No HIE requirement. The presence of a “formulary check” requirement does imply acquisition of a target formulary which is most often delivered externally through download of that information from a data supplier. This is functionality usually built into the EHR E-Prescribing capability.
  - Manatt Analysis: N/A

## Maintain problem list in ICD-9-CM or SNOMED-CT

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- Eligible Provider & Hospital
  - Enable user to manage problem lists that span multiple visits.
- Measurement (Numerator and Denominator)
  - HIMSS: Must be done for 80% of unique patients.
  - Manatt: More than 80% of all unique patients seen by the EP or admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) have at least one entry or an indication that no problems are known for the patient recorded as structured data.

# Maintain problem list in ICD-9-CM or SNOMED-CT

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- Stage 1 MU Implication

- HIMSS Analysis: No HIE requirement. It should be noted the presence of an ICD or SNOMED coding / reference table implies acquisition from an external source. This is most often be supplied through the practice management or hospital software application, but may also be part of the core EHR software application.
- Manatt Analysis: Enable a user to electronically record, modify, and retrieve a patient's problem list for longitudinal care in accordance with the standard.

# Maintain active medication allergy list

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- Eligible Provider & Hospital
  - Enable user to record, modify, and retrieve an active medication allergy list.
  - Enable user to manage an allergy history that spans multiple visits.
- Measurement (Numerator and Denominator)
  - HIMSS: Must be done for 80% of unique patients.
  - Manatt: More than 80% of all unique patients seen by the EP or admitted to the eligible hospital or CAH's inpatient or emergency department (POS 21 or 23) have at least one entry (or an indication that the patient has no known medication allergies) recorded as structured data.

# Maintain active medication allergy list

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- Stage 1 MU Implication
  - HIMSS Analysis: No HIE requirement.
  - Manatt Analysis: Enable user to electronically record, modify, and retrieve a patient's active medication allergy list as well as medication allergy history for longitudinal care.

# Record demographics

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- Eligible Provider & Hospital
  - Enable user to manage patient demographic data (Preferred language, Insurance type, Gender, Race, Ethnicity, Date of Birth)
    - For EH, Date and Cause of Death too
- Measurement (Numerator and Denominator)
  - HIMSS: Must be done for 80% of unique patients, including ALL data elements. Denominator is the number of patients seen (practice) or admitted as inpatients (hospital).
  - Manatt: More than 50% of all unique patients seen by the EP or admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) have demographics recorded as structured data.

# Record demographics

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- Stage 1 MU Implication
  - HIMSS Analysis: No HIE requirement.
  - Manatt Analysis: Enable a user to electronically record, modify, and retrieve patient demographic data including preferred language, gender, race, ethnicity, and date of birth (inpatient setting includes date and preliminary cause of death in the event of mortality). Enable race and ethnicity to be recorded in accordance with the standard specified.

# Record Vital Signs

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- Eligible Provider & Hospital
  - Height, weight, blood pressure, calculate and display body mass index (BMI), plot and display growth charts for patients 2-20 years old incl. BMI
- Measurement (Numerator and Denominator)
  - HIMSS: Must be recorded for 80% of patients seen (practice) or admitted (hospitals) age 2 and over, including ALL data elements. Denominator is the total number of unique patients age 2 and over seen (practice) or admitted (hospital).
  - Manatt: For more than 50% of all unique patients age 2 and over seen by the EP or admitted to eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23), height, weight, and blood pressure are recorded as structured data.

# Record Vital Signs

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- Stage 1 MU Implication
  - HIMSS Analysis: No HIE requirement.
  - Manatt Analysis: Enable a user to electronically record, modify, and retrieve a patient's vital signs including, at a minimum, height, weight, and blood pressure. Automatically calculate and display body mass index (BMI) based on patient's height and weight. Plot and electronically display, upon request, growth charts for patients 2-20 years old.

# Record smoking status for patients age 13 and over

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- Eligible Provider & Hospital
  - Current smoker, former smoker, and never smoked
- Measurement (Numerator and Denominator)
  - HIMSS: Must be recorded for 80% of unique patients seen (practice) or admitted (hospital) age 13 or older. Denominator is the number of unique patients age 13 and older seen (practice) or admitted (hospital).
  - Manatt: More than 50% of all unique patients 13 years old or older seen by the EP or admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) have smoking status recorded as structured data.

# Record smoking status for patients age 13 and over

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- Stage 1 MU Implication
  - HIMSS Analysis: No HIE requirement.
  - Manatt Analysis: Enable a user to electronically record, modify, and retrieve the smoking status of a patient. Smoking status types must include: current every day smoker; current some day smoker; former smoker; never smoker; smoker, current status unknown; and unknown if ever smoked.

Generate lists of patients by specific conditions to use for quality improvement, reduction of disparities, and outreach

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- Eligible Provider & Hospital
  - Patient Demographics
  - Medication List
  - Specific Conditions
- Measurement (Numerator and Denominator)
  - HIMSS: Generate at least one report listing patients of the EP or eligible hospital with a specific condition.
  - Manatt: Same as above.

Generate lists of patients by specific conditions to use for quality improvement, reduction of disparities, and outreach

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- Stage 1 MU Implication

- HIMSS Analysis: No HIE requirement.
- Manatt Analysis: Enable a user to electronically select, sort, retrieve, and generate lists of patients according to, at a minimum, the data elements included in: problem list, medication list, demographics, and laboratory test results.

# Report quality measures to CMS or States

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- Eligible Provider & Hospital
  - Calculate and display as specified based on specialty / type of physician practice
- Measurement (Numerator and Denominator)
  - HIMSS: Numerator and denominator provided by attestation.
  - Manatt: For 2011, provide aggregate numerator, denominator, and exclusions through attestation. For 2012, electronically submit the clinical quality measures.

# Report quality measures to CMS or States

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- Stage 1 MU Implication
  - HIMSS Analysis: No HIE requirement for year 1 of Stage 1 (attestation is sufficient). In 2012 MU measures will need to be electronically submitted; however, the standards and processes for electronic submission have not yet been specified which the government will readdress. For 2011, eligible providers may provide aggregate numerator and denominator through attestation as noted in section II(A)(3) of the proposed rule. For 2012, measures may be electronically submitted as noted in the proposed rule. The NPRM does not specify the standards or process of electronic communications of quality measures which will commence in 2012. This will be addressed later.

# Report quality measures to CMS or States

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- Stage 1 MU Implication
  - Manatt Analysis: Electronically calculate all of the core clinical measures specified by CMS for eligible professionals. Additionally, electronically calculate, at a minimum, three clinical quality measures specified by CMS for eligible professionals. Electronically calculate all of the clinical quality measures specified by CMS for eligible hospitals and critical access hospitals. Enable a user to electronically submit calculated clinical quality measures in accordance with the standard and implementation specifications.

Implement five clinical decision rules, other than drug-drug interactions and drug-allergy contraindications, based on demographic data, diagnosis, conditions, test results, and/or medication list

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- Eligible Provider & Hospital
  - Real-time alerts based on rules and evidence
  - Track number of alerts that were responded to
- Measurement (Numerator and Denominator)
  - HIMSS: Implement 5 clinical decision support rules relevant to specialty or high clinical priority (EP), or related to a high priority hospital condition (hospital), including diagnostic test ordering, along with the ability to track compliance with those rules.
  - Manatt: Implement one clinical decision support rule.

Implement five clinical decision rules, other than drug-drug interactions and drug-allergy contraindications, based on demographic data, diagnosis, conditions, test results, and/or medication list

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- Stage 1 MU Implication

- HIMSS Analysis: No HIE requirement. This is dependent on the final interpretation of the rule. One interpretation is that HIE is not required for Stage 1. Other interpretations may involve access to external clinical rules and related rule triggers. These external sources could be accessible through portals or HIEs. Example includes using Web service over an HIE to determine rule triggers.
- Manatt Analysis: Implement automated, electronic clinical decision support rules (in addition to drug-drug and drug-allergy contraindication checking) based on the data elements included in: problem list, medication list, demographics, and laboratory test results. Automatically and electronically generate and indicate in real-time, notifications and care suggestions based upon clinical decision support rules.

# Provide patients with an electronic copy of their information upon request

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- Eligible Provider & Hospital
  - Test Results, Problem List, Medication List, Medication Allergy List, Immunizations, Procedures
    - For EH, Discharge Summary too
- Measurement (Numerator and Denominator)
  - HIMSS – Numerator: information provided to patients electronically within 48 hours. The denominator is the number of patients who request the information.
  - Manatt – More than 50% of all patients of the EP or the inpatient or emergency department of the eligible hospital or CAH (POS 21 or 23) who request an electronic copy of their health information are provided it within 3 business days.

# Provide patients with an electronic copy of their information upon request

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- Stage 1 MU Implication
  - HIMSS Analysis: No HIE requirement for Stage 1. The supply of information can be done locally through creation of any electronicMedia1 (eMedia) that can be given to the patient. eMedia is defined as any form of physical media that can be provided to the patient including CD or a memory stick/USB drive. eMedia may also include use of a local Web site/portal to deliver the information to the patient. Note: Appropriate encryption must be used with physical media to ensure that if the media is lost or stolen, the data is protected. There is implied HIE functionality if the provider uses an external non-tethered PHR.
  - Manatt Analysis: Enable a user to create an electronic copy of a patient's clinical information, including, at a minimum, diagnostic test results, problem list, medication list, medication allergy list and procedures (include discharge summary for inpatient setting) in human readable format and on electronic media or through some other electronic means in accordance with the standard (and applicable implementation specifications).

# Provide patients with timely electronic access to their information

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- Eligible Provider
  - Lab Results, Problem List, Medication List, Medication Allergy List, Immunizations, Procedures
- Eligible Hospital
  - N/A
- Measurement (Numerator and Denominator)
  - HIMSS: Provide timely electronic access to health information for at least 10% of unique patients. The denominator is the number of patient seen.
  - Manatt: More than 10% of all unique patients seen by the EP are provided timely (available to the patient within four business days of being updated in the certified EHR technology) electronic access to their health information subject to the EP's discretion to withhold certain information.

# Provide patients with timely electronic access to their information

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- Stage 1 MU Implication
  - HIMSS Analysis: No HIE requirement. Supply of information can be done locally through creation of any electronic Media2 (eMedia) that can be given to the patient. eMedia is defined as any form of physical media that can be provided to the patient including CD or a memory stick/USB drive. eMedia may also include use of a local Web site/portal to deliver the information to the patient. Note: Appropriate encryption must be used with physical media to assure that if the media is lost or stolen, the data is protected. There is implied HIE functionality if the provider uses an external non-tethered PHR. Note: While there is not a strictly derived HIE requirement, when one considers the implication of providing patients with an electronic copy of their outpatient lab results, an electronic push to a protected mailbox becomes a very cost-effective method for widespread results distribution. Consequently, providers will need to carefully consider whether or not they want to rely only on local eMedia for providing access.

# Provide patients with timely electronic access to their information

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- Stage 1 MU Implication
  - Manatt Analysis: Enable a user to provide patients with online access to their clinical information, including, at a minimum, lab results, problem list, medication list, and medication allergy list.

# Provide a clinical summary for each visit

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- Eligible Provider
  - Diagnostic Test Results, Problem List, Medication List, Medication Allergy List, Immunizations, Procedures
- Eligible Hospital
  - N/A
- Measurement (Numerator and Denominator)
  - HIMSS: Clinical summaries are provided for at least 80% of office visits. The denominator is the number of unique patients seen.
  - Manatt: Clinical summaries provided to patients for more than 50% of all office visits within 3 business days.

# Provide a clinical summary for each visit

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- Stage 1 MU Implication
  - HIMSS Analysis: No HIE requirement.
  - Manatt Analysis: Enable a user to provide clinical summaries to patients for each office visit that include, at a minimum, diagnostic test results, problem list, medication list, and medication allergy list. If the clinical summary is provided electronically it must be provided in human readable format and on electronic media or through some other electronic means in accordance with the standard (and applicable implementation specifications).

# Exchange clinical information electronically with other providers and patient authorized entities

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- Eligible Provider & Hospital
  - Receive: Diagnostic Test Results, Problem List, Medication List, Medication Allergy List, Immunizations, Procedures
  - In addition, EH to send: Diagnostic Test Results, Problem List, Medication List, Medication Allergy List, Immunizations, Procedures
- Measurement (Numerator and Denominator)
  - HIMSS: Perform at least one test of exchanging key clinical information. Can be done at any time, including prior to the reporting period. Group practices only need to perform one test per EHR.
  - Manatt: Performed at least one test of certified EHR technology's capacity to electronically exchange key clinical information.

## Exchange clinical information electronically with other providers and patient authorized entities

- Stage 1 MU Implication

- HIMSS Analysis: No HIE requirement for Stage 1. There is a requirement for the EHR to have the capability to exchange (requires the EHR to both send and receive data). The requirement in Stage 1, however, is limited to performing a valid test of the EHR functionality, and does not require a data trading partner to be at the sending or receiving end.

# Exchange clinical information electronically with other providers and patient authorized entities

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- Stage 1 MU Implication

- Manatt Analysis: Electronically receive and display a patient's summary record from other providers and organizations including, at a minimum, diagnostic test results, problem list, medication list, medication allergy list, and procedures in accordance with the standard (and applicable implementation specifications). Upon receipt of a patient summary record formatted according to the alternative standard, display it in human readable format. Enable a user to electronically transmit a patient's summary record to other providers and organizations including, at a minimum, diagnostic test results, problem list, medication list, medication allergy list, and procedures in accordance with the standard (and applicable implementation specifications).

# Perform medication reconciliation at relevant encounters and each transition of care

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- Eligible Provider & Hospital
  - Compare and merge two or more lists into a single list.
- Measurement (Numerator and Denominator)
  - HIMSS: Medication reconciliation is performed for at least 80% of relevant encounters and transitions of care. The denominator is the number of relevant encounters and transitions of care.
  - Manatt: The EP, eligible hospital or CAH performs medication reconciliation for more than 50% of transitions of care in which a patient is transitioned into the care of the EP or admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23).

# Perform medication reconciliation at relevant encounters and each transition of care

---

- Stage 1 MU Implication
  - HIMSS Analysis: No HIE requirement. However, performing medication reconciliation manually on paper can be very time consuming, and manual entry of patient prescriptions into the provider's EHR can be error-prone and also is time consuming. Providers should carefully consider the impact of this requirement on their intake workflow, and weigh that against the cost and effort involved with using an E-Prescribing vendor that can supply active medication lists for prescription drugs dispensed. Eligible providers may have access to medication lists from the pharmacy benefits manager vendor and/or other retail/commercial pharmacy networks. Both cases involve a request for the information using the third party network.

# Perform medication reconciliation at relevant encounters and each transition of care

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- Stage 1 MU Implication
  - Manatt Analysis: Enable a user to electronically compare two or more medication lists.

# Protect Health Information

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- Eligible Provider & Hospital
  - Protect electronic health information created or maintained by the certified EHR technology through the implementation of appropriate technical capabilities.
- Measurement (Numerator and Denominator)
  - HIMSS: Conduct or review a security risk analysis per 45 CFR 164.308 (a)(1) and implement security updates as necessary.
  - Manatt: Conduct or review a security risk analysis per 45 CFR 164.308 (a)(1) and implement security updates as necessary and correct identified security deficiencies as part of its risk management process.

# Protect Health Information

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- Stage 1 MU Implication
  - HIMSS Analysis: No HIE requirement. However, what HIE is implemented in response to the above requirements must adhere to the security requirements of this section.

# Protect Health Information

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- Stage 1 MU Implication
  - Manatt Analysis: Assign a unique name and/or number for identifying and tracking user identity and establish controls that permit only authorized users to access electronic health information. Permit authorized users (who are authorized for emergency situations) to access electronic health information during an emergency. Terminate an electronic session after predetermined time of inactivity. Verify that a person or entity seeking access to electronic health information is the one claimed and is authorized to access such information. Encrypt and decrypt health information in accordance with the standard specified unless the Secretary determines that the use of such algorithm would pose a significant security risk for Certified EHR Technology. Encrypt and decrypt electronic health information when exchanged in accordance with the standard specified.

# Protect Health Information

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- Eligible Provider & Hospital
  - Provide transparency of data sharing to patient.
- Measurement (Numerator and Denominator)
  - HIMSS: Record treatment, payment, and healthcare operations disclosures
  - Manatt: Conduct or review a security risk analysis per 45 CFR 164.308 (a)(1) and implement security updates as necessary and correct identified security deficiencies as part of its risk management process.

# Protect Health Information

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- Stage 1 MU Implication
  - HIMSS Analysis: No HIE requirement.
  - Manatt Analysis: Record actions related to electronic health information in accordance with the standard specified. Enable a user to generate an audit log for a specific time period and to sort entities in the audit log according to any of the elements specified in the standard. Create a message digest in accordance with the standard specified. Verify in accordance with the standard specified upon receipt of electronically exchanged health information that such information has not been altered. Detect the alteration of audit logs. For each meaningful use objective with a percentage-based measure, electronically record numerator and denominator and generate a report including the numerator, denominator, and the resulting percentage associated with each applicable meaningful use measure.

# TECHNICAL SYSTEM COMPONENTS

# Master Patient Index

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- GOHIE Strategic Plan
  - The exchange will have the capability to support any third-party MPI that provides connection via PIX/PDQ, and HL7 ADT transaction sets. Alternatively, the native MPI provides the functionality required to uniquely identify individuals and support the translation of their identifiers between contributing and consuming systems.
- Additional Clarification/Definitions
  - Index referencing all patients known to an area, enterprise or organization. The terms Patient Master Index (PMI) and Master Person Index are used interchangeably and many vendors use the term Enterprise Master Patient Index or EMPI. (Source: wikipedia.com)

# Provider Identity Management

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- GOHIE Strategic Plan
  - The solution will include a Community Master Entity Index (CMEI) that manages the identification of providers and their respective organizations. It allows for provider identification in GOHIE, multiple organizations, management of multiple locations for a provider, and supports multiple hierarchies for relationships between organizations and entities (e.g. IPA to practices, providers to patients).
- Additional Clarification/Definitions
  - N/A

# Document Registry

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- GOHIE Strategic Plan
  - GOHIE will provide a fully IHE compliant XDS.b Document Registry or Record Locator Service (RLS).
- Additional Clarification/Definitions
  - Maintains metadata about each registered document in a document entry. This includes a link to the Document in the Repository where it is stored. The Document Registry responds to queries from Document Consumer actors about documents meeting specific criteria. It also enforces some healthcare specific technical policies at the time of document registration.

# Document Repository

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- GOHIE Strategic Plan
  - Clinical documents are supported by the fully IHE compliant XDS.b Document Repository and “optional” multi-tenant Clinical Data Repository (CDR). Depending on the requirements of the central and /or distributed HIE services, either or both may be utilized.
- Additional Clarification/Definitions
  - Responsible for both the persistent storage of these documents as well as for their registration with the appropriate Document Registry. It assigns a URI to documents for subsequent retrieval by a Document Consumer.

# Clinical Data Repository (CDR)

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- GOHIE Strategic Plan
  - Clinical documents and discrete values are supported by the fully IHE compliant multi-tenant Clinical Data Repository (CDR). This repository provides for full virtual isolation of each contributing entities information. Each contributor may designate rules related to the consent, data sharing, and authorization. Full logging and audit is available to review who accessed which data elements for a individual. This proposed solution provides all of the security of an Edge device without the cost, overhead, restrictions, and complexity.
- Additional Clarification/Definitions
  - Real-time database that consolidates data from a variety of clinical sources to present a unified view of a single patient. In a hospital this is a repository for clinical data from the various departmental systems or a data warehouse, which provides access to a patient's health information through a single log in.

# Edge Devices

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- GOHIE Strategic Plan
  - The state infrastructure will allow for both physical and virtual edge devices depending on the needs of the contributing and consuming organizations. Each edge device may be configured with a full copy of the messaging layer, including the CMEI and CDR, the Document Registry and Repository or both. By providing these services virtually through a multi-tenant CDR, the cost for smaller organizations can be managed without sacrificing the ability to have an entity control the rules under which its information is shared.
- Additional Clarification/Definitions
  - Routers, routing switches, integrated access devices (IADs), multiplexers, and a variety of metropolitan area network (MAN) and wide area network (WAN) access devices that provide entry points into enterprise or service provider core networks. Edge devices also provide connections into carrier and service provider networks.

# Integration Framework

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- GOHIE Strategic Plan
  - GOHIE will ensure a robust set of integration solutions to allow connection to any contributing or consuming system that support standards based messaging. Supported communications protocols and message formats include: HL7 V2.x, HL7 V3.x, IHE, NHIN, PIX/PDQ, XDS.b, CCR, CCD, CDA, NCPDP, X.12 and DIACOM.
- Additional Clarification/Definitions
  - See GOHIE Strategic Plan Definition

# Authentication and Authorization

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- GOHIE Strategic Plan
  - Is provided by an integrated module that supports multi-factor authentication, support single sign-on to multiple partner solutions, and maintains multiple profiles to ensure that authorized users have access to only the functions and information to which they have rights.
- Additional Clarification/Definitions
  - See GOHIE Strategic Plan Definition

# Consent Management

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- GOHIE Strategic Plan
  - Full support for opt-in/opt-out consent management is provided by the solution. The ability to configure the selection by contributing source provides augments the flexibility to manage consent centrally, via the Consult portal by authorized individuals in the provider organization, via transactions that specify consent status, and by the patient from their Personal Health Record.
- Additional Clarification/Definitions
  - See GOHIE Strategic Plan Definition

# Subscription Management

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- GOHIE Strategic Plan
  - The HIE solution aims provide a sophisticated subscription management (publish / subscribe) functionality that is fully integrated into the provider's workflow. Interest in a patient can be declared by transactions (e.g. Admission Discharge Transfers (ADT)), provider selection or patient selection. Published information, or a notification, can be automatically delivered, within the limits of consent and authorization, to the subscribing providers.
- Additional Clarification/Definitions
  - See GOHIE Strategic Plan Definition

# Logging and Audit

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- GOHIE Strategic Plan
  - All actions (request, viewing, changes, information entry) related to authorization, authentication, consent, contributing messages, consuming messages, searches for patients, viewing of information on specific patients, and “break glass,” may be logged (note: this is not an exhaustive list). Audits may be performed on any of the logged information by individuals authorized access to the log files. This audit activity is also subject to logging.
- Additional Clarification/Definitions
  - See GOHIE Strategic Plan Definition

# Nomenclature Normalization

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- GOHIE Strategic Plan
  - The nomenclature services provides the ability accept specific or custom clinical terminologies from contributing systems, convert them to accepted standard terminologies (e.g. RxNorm, LOINC) where available, and convert them to the terminology required/preferred by the consuming systems as required. This ability is described by the industry as “semantic interoperability” and is available to each of the contributing and consuming systems.
- Additional Clarification/Definitions
  - See GOHIE Strategic Plan Definition

# Portal / EMR-Lite / EMR

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- GOHIE Strategic Plan
  - The HIE can provide a full range of provider interactions depending on the specific instantiation. The HIE can be configured as a portal to provide the ability to select and view information contained in the contributing systems for a specific patient. The portal respects all authorization and consent policies and can push selected information to consuming systems on demand. Additional functionality may be configured to handle e-Prescribing, document problem lists and allergies, record vital signs, order tests, referrals, and document encounters. In its fullest configuration, the EMR is a CCHIT certified EMR that support all of the ONC/ARRA meaningful use criteria for 2011.
- Additional Clarification/Definitions
  - See GOHIE Strategic Plan Definition

# Personal Health Record (PHR)

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- GOHIE Strategic Plan
  - The solution assumes the importance to provide for connection to third-party PHRs such as Google Health and Microsoft HealthVault via CCD, CCR, or CDA patient summaries. Patient information can be contributed to or consumed by these PHRs limited only by patient consent and the capabilities of the respective PHR. The solution also includes a fully integrated PHR that can be personalized. The PHR is provided as a web-based service and support, a broad range of clinical and administrative transactions.
- Additional Clarification/Definitions
  - See GOHIE Strategic Plan Definition

# NEXT STEPS



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