Exploring FHIR to Reduce Burden for Quality Measurement

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Conflict of Interest

Samuel Sayer

Has no real or apparent conflicts of interest to report.

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Conflict of Interest

Floyd Eisenberg

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Agenda

- Introduction
- Overview of eCQM FHIR standards
- Interactive Discussion

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Learning Objectives

- Identify mechanisms for expressing clinical data based on its original source to avoid duplicate data entry for quality measurement
- Describe reasons for data-driven clinical burden associated with eCQMs
- Discuss tools and resources available to find information about and provide input on eCQM expressions
- Describe how FHIR may help improve data retrieval and reporting for electronic quality measurement
- List at least three factors to consider to successfully implement an eCQM

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Background

- MITRE delivered an electronic clinical quality measure (eCQM) strategy report to CMS with recommendations on increasing value and reducing burden of quality reporting.
- ESAC is leading work to harmonize eCQM standards and clinical decision support (CDS)
- ESAC and MITRE work together to develop technical architecture to support quality improvement

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Success factors to consider when implementing eCQMs

- Select measures that align with your institution's quality initiatives and is supported by your patient populations
- Evaluate clinical workflow – consider workflow for complex data concepts
- Address terminology – mapping eCQM value sets to local terms
- Understand Clinical Quality Language (CQL) – decoding eCQM expressions

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Findings

- QRDA format has matured, and vendors are now generally able to validate documents
  - Some quality programs (e.g. QPP) have moved away from QRDA and are using non-industry standard formats.
- QRDA relies on the Quality Data Model (QDM), which is only used for quality reporting
  - Issues remain ensuring EHR data correctly maps to QRDA.
- Submitters request real-time feedback on quality data submissions to increase value of quality reporting
  - FHIR® can improve the ability for receiving systems to meet this request.

Acronyms: FHIR – HL7 ® Fast Health Interoperability Resources
QPP – CMS Quality Payment Program
QRDA – Quality Reporting Document Architecture

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FHIR

- The Health IT industry is rapidly adopting HL7® Fast Health Interoperability Resources® (FHIR)
  - Many vendors have implemented Argonaut/US Core specifications
  - APIs remove manual step of submitting data through a website
  - Integration of clinical quality reporting with Health IT systems
  - FHIR is being included in health policy rules
- CMS Center for Clinical Standards and Quality (CCSQ) has begun exploring the use of HL7 FHIR for electronic clinical quality data and reporting

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QI-Core

- Quality Improvement focused implementation guide for FHIR, focused on data elements used in electronic clinical quality measures and clinical decision support. QI-Core provides a comprehensive list of resources (clinical data) to allow eCQMs and Clinical Decision Support (CDS) to express criteria for clinical care examples and use cases.
- Aligns with US Core where possible (e.g. Encounters)
  - Profiles FHIR where US Core doesn't specify (e.g. CommunicationRequest)
- Includes mappings from QDM to enable transition of existing quality measures
  - QDM has evolved to align with FHIR and QI-Core
- Adds additional constraints and extensions commonly used in measures
  - Value set additions
  - Negation Rationale
  - New profiles for authoring eCQMs/CDS

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QI-Core Content

QI-Core Profile	USCore Profile	Base Resource
QICoreAdverseEvent		AdverseEvent
QICoreAllergyIntolerance	USCoreAllergyIntolerance	AllergyIntolerance
QICoreBodyStructure		BodyStructure
QICoreCarePlan	USCoreCarePlan	CarePlan
QICoreCareTeam	USCoreCareTeam	CareTeam
QICoreClaim		Claim
QICoreCommunication		Communication
QICoreCommunicationNotDone		Communication
QICoreCommunicationRequest		CommunicationRequest
QICoreCondition	USCoreCondition	Condition
QICoreCoverage		Coverage
QICoreDevice		Device
QICoreDeviceNotRequested		DeviceRequest
QICoreDeviceRequest		DeviceRequest
QICoreDeviceUseStatement		DeviceUseStatement
QICoreDiagnosticReportLab	USCoreDiagnosticReportLab	DiagnosticReport
QICoreDiagnosticReportNote	USCoreDiagnosticReportNote	DiagnosticReport
QICoreEncounter	USCoreEncounter	Encounter
QICoreFamilyMemberHistory		FamilyMemberHistory
QICoreFlag		Flag
QICoreGoal	USCoreGoal	Goal
QICoreImagingStudy		ImagingStudy
QICoreImmunization	USCoreImmunization	Immunization
QICoreImmunizationEvaluation		ImmunizationEvaluation
QICoreImmunizationNotDone		Immunization
QICoreImmunizationRecommendation		ImmunizationRecommendation
	USCoreImplantableDevice	Device
QICoreLocation	USCoreLocation	Location
QICoreMedication	USCoreMedication	Medication

QI-Core Profile	USCore Profile	Base Resource
QICoreMedicationAdministration		MedicationAdministration
QICoreMedicationAdministrationNotDone		MedicationAdministration
QICoreMedicationDispense		MedicationDispense
QICoreMedicationDispenseNotDone		MedicationDispense
QICoreMedicationNotRequested		MedicationRequest
QICoreMedicationRequest	USCoreMedicationRequest	MedicationRequest
QICoreMedicationStatement		MedicationStatement
QICoreNutritionOrder		NutritionOrder
QICoreObservation		Observation
QICoreObservationNotDone		Observation
	FHIR Vital Signs	Observation
	USCore Smoking Status	Observation
	USCore Laboratory Result	Observation
	USCore Pediatric BMI for Age	Observation
	USCore Pediatric Weight for Height	Observation
	USCore Pulse Oximetry	Observation
QICoreOrganization	USCoreOrganization	Organization
QICorePatient	USCorePatient	Patient
QICorePractitioner	USCorePractitioner	Practitioner
QICorePractitionerRole	USCorePractitionerRole	PractitionerRole
QICoreProcedure	USCoreProcedure	Procedure
QICoreProcedureNotDone		Procedure
QICoreRelatedPerson		RelatedPerson
QICoreServiceNotRequested		ServiceRequest
QICoreServiceRequest		ServiceRequest
QICoreSpecimen		Specimen
QICoreSubstance		Substance
QICoreTask		Task

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QI-Core Example:

Medication Administration: QDM	**Encounter with Antithrombotic Therapy** "Ischemic Stroke Encounter" IschemicStrokeEncounter with ["Medication, Administered": "Antithrombotic Therapy"] Antithrombotic such that Antithrombotic.relevantPeriod starts 1 day or less on or after day of start of Global."Hospitalization"(IschemicStrokeEncounter)
Medication Administration: QI-Core	**"Encounter with Thrombolytic Therapy Medication or Procedures":** TJC."Ischemic Stroke Encounter" IschemicStrokeEncounter with "Thrombolytic Therapy Medication or Procedures" ThrombolyticTherapy Such that Coalesce(ThrombolyticTherapy.effective as dateTime, ThrombolyticTherapy.performed as dateTime) 24 hours or less before start of Global."HospitalizationWithObservation"(IschemicStrokeEncounter)

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FHIR Quality Measure Ecosystem:

	Through 2018 Reporting Period	Starting 2019 Reporting Period	Proposed Future State
Reporting	QRDA Category I & III		QI-Core / DEQM
Data Model	Quality Data Model (QDM)		QUICK / QI-Core
Measure Logic	QDM	Clinical Quality Language (CQL)	
Measure Structure	Health Quality Measure Format (HQMF)		FHIR Quality Measure IG
Programs	CMS Implementation Guide (QRDA)		CMS Implementation Guide (FHIR)
Transport			DEQM

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Interactive Session:

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1

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2

Go to www.menti.com

3

Enter the code 25 00 61 and vote!

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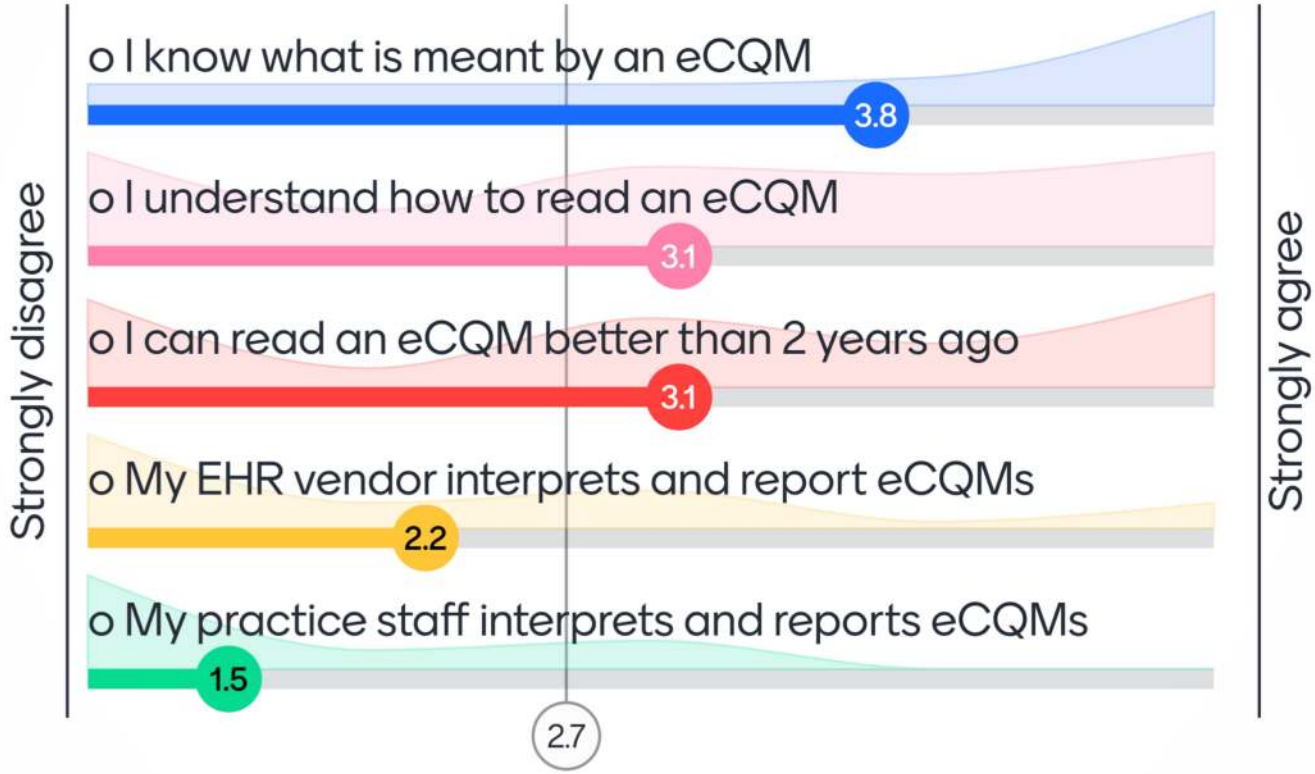
Regarding eCQMs:

Mentimeter



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My EHR currently uses the following FHIR version:

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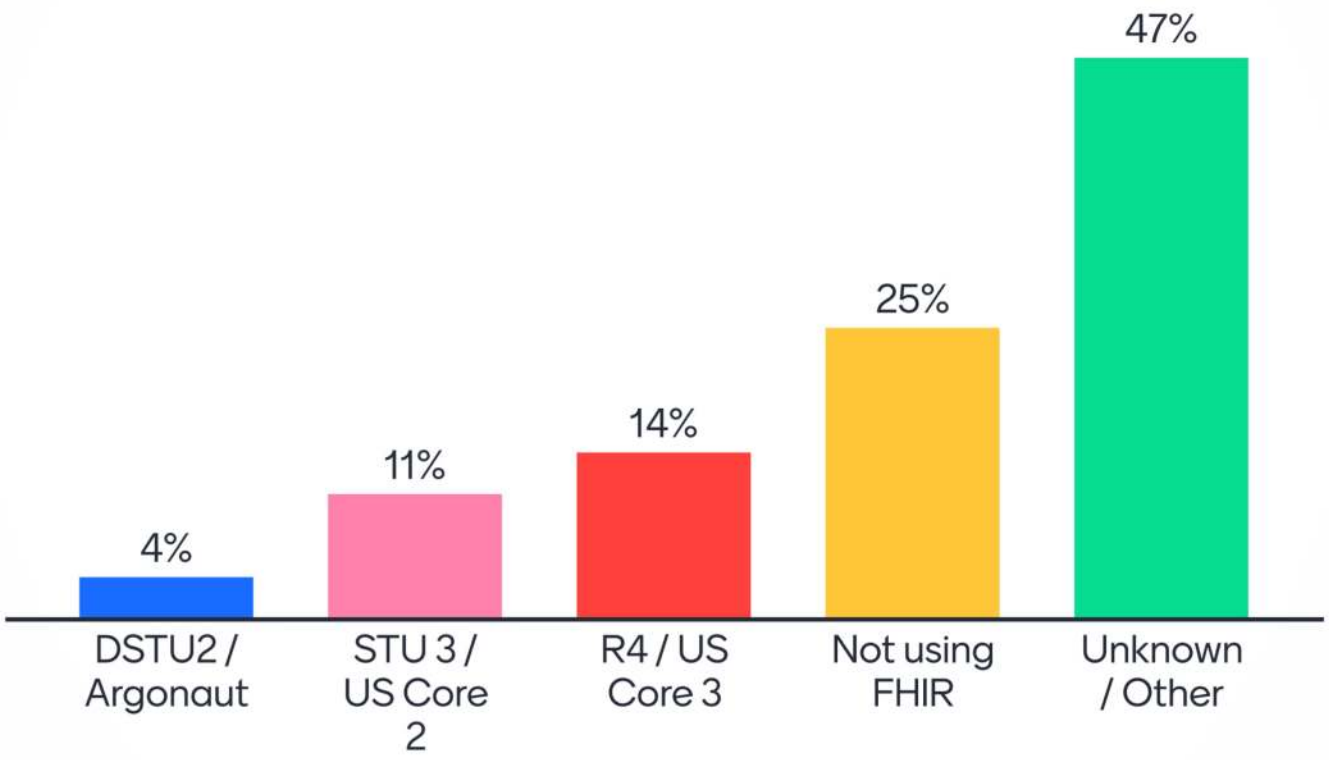

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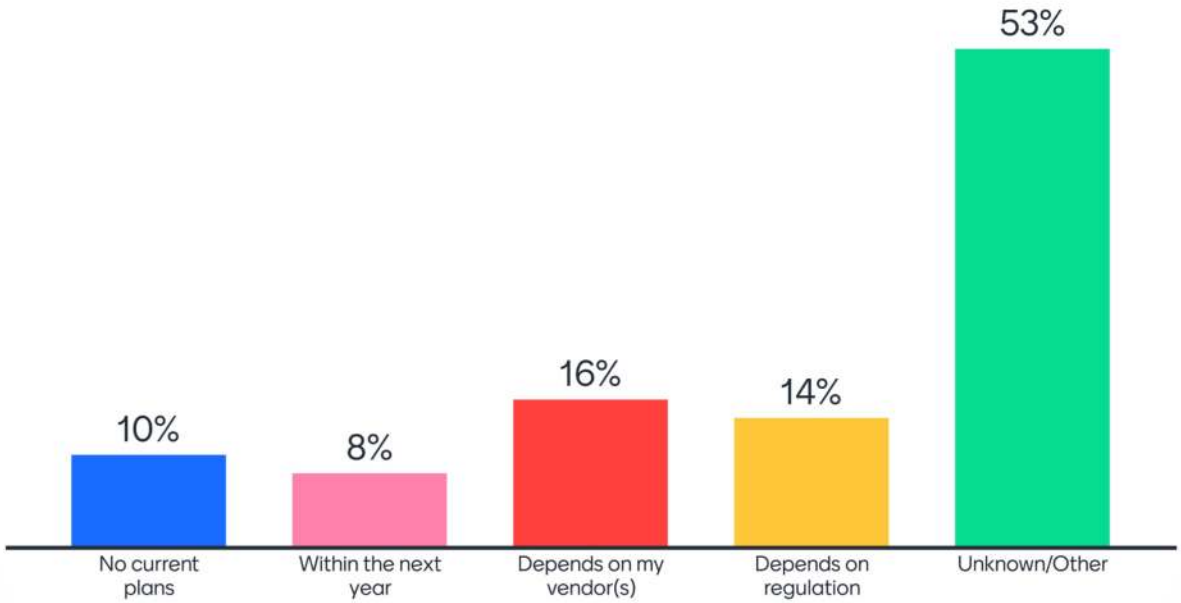
My practice /organization will upgrade to FHIR R4 and US Core STU 3 (choose 1 answer)

Mentimeter



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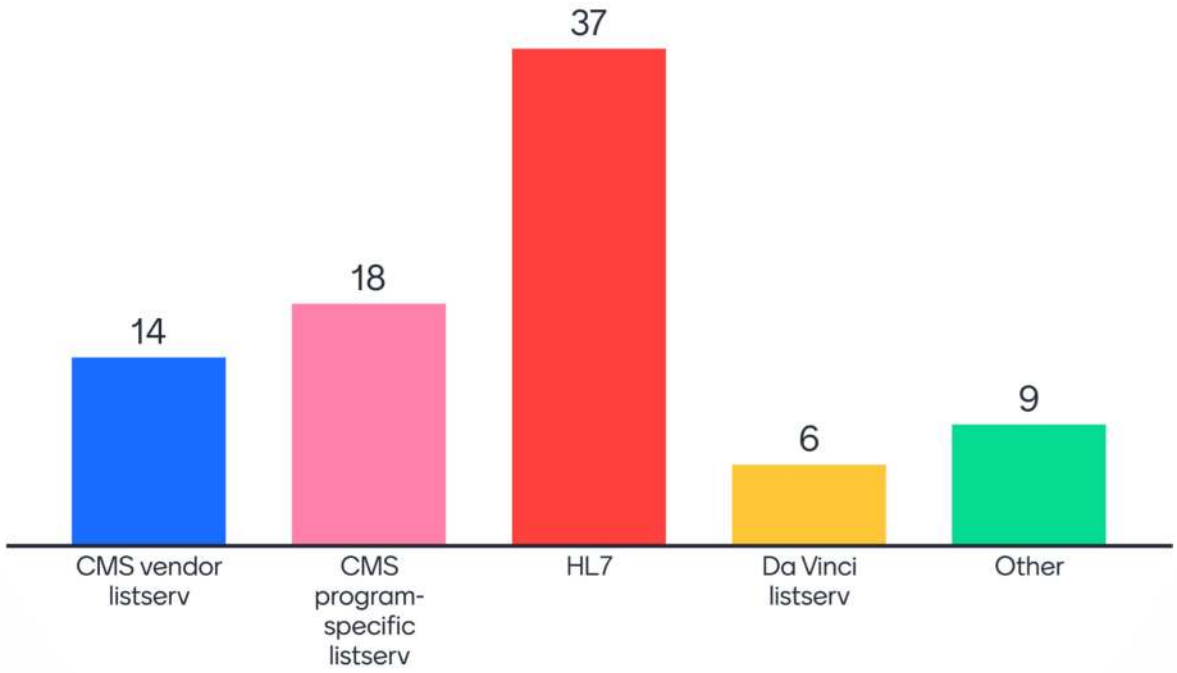
What communication avenues do you rely on to stay up to date on FHIR activities?

Mentimeter



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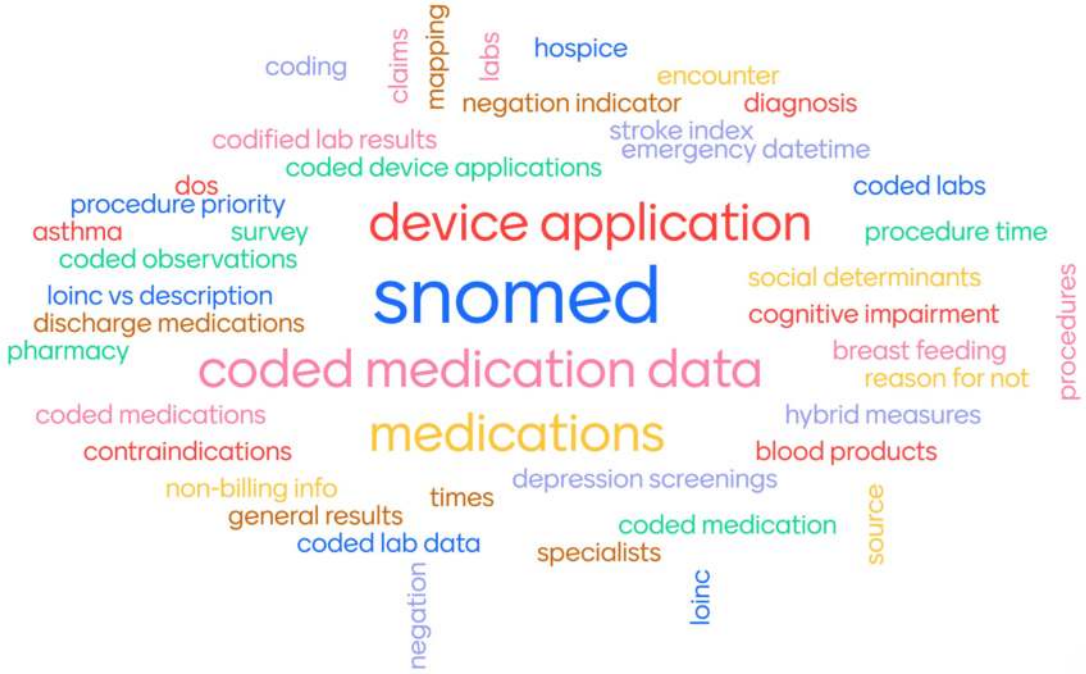
List the most challenging kinds of data to find (I.e., requiring additional entry to support the eCQMs)

Mentimeter



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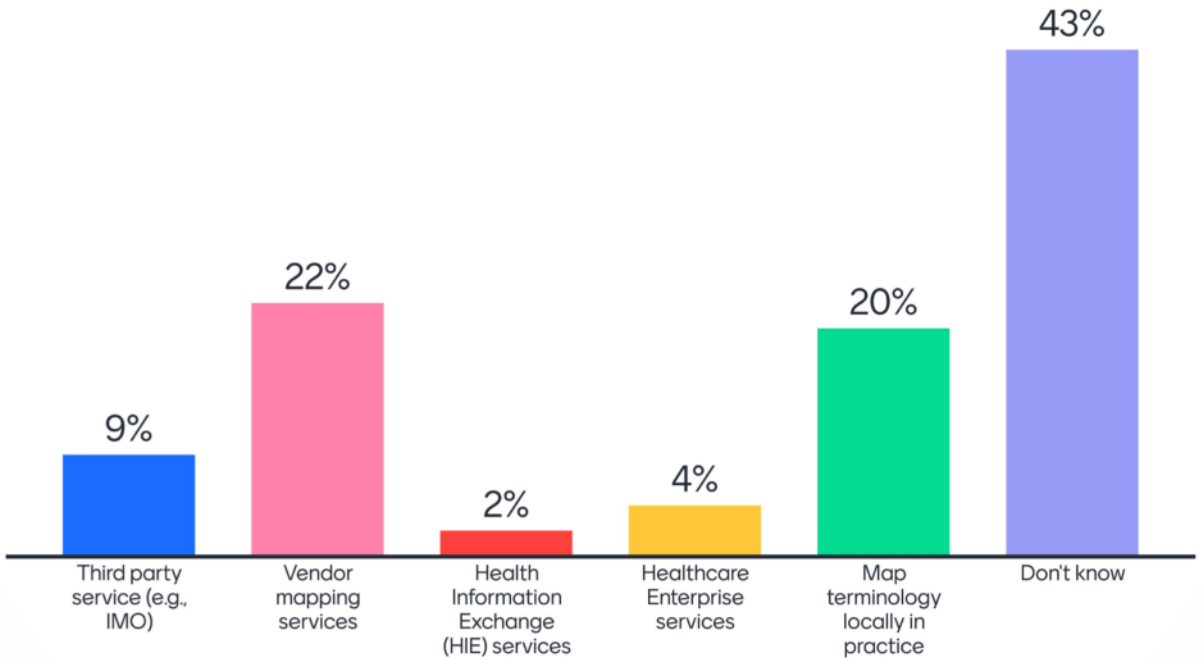
My practice maps terminology (e.g., local terms to SNOMED) as follows:

Mentimeter



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Considering possible eCQM-related burden, rank all 5 of the following (1 = most burden, 5 = least burden):

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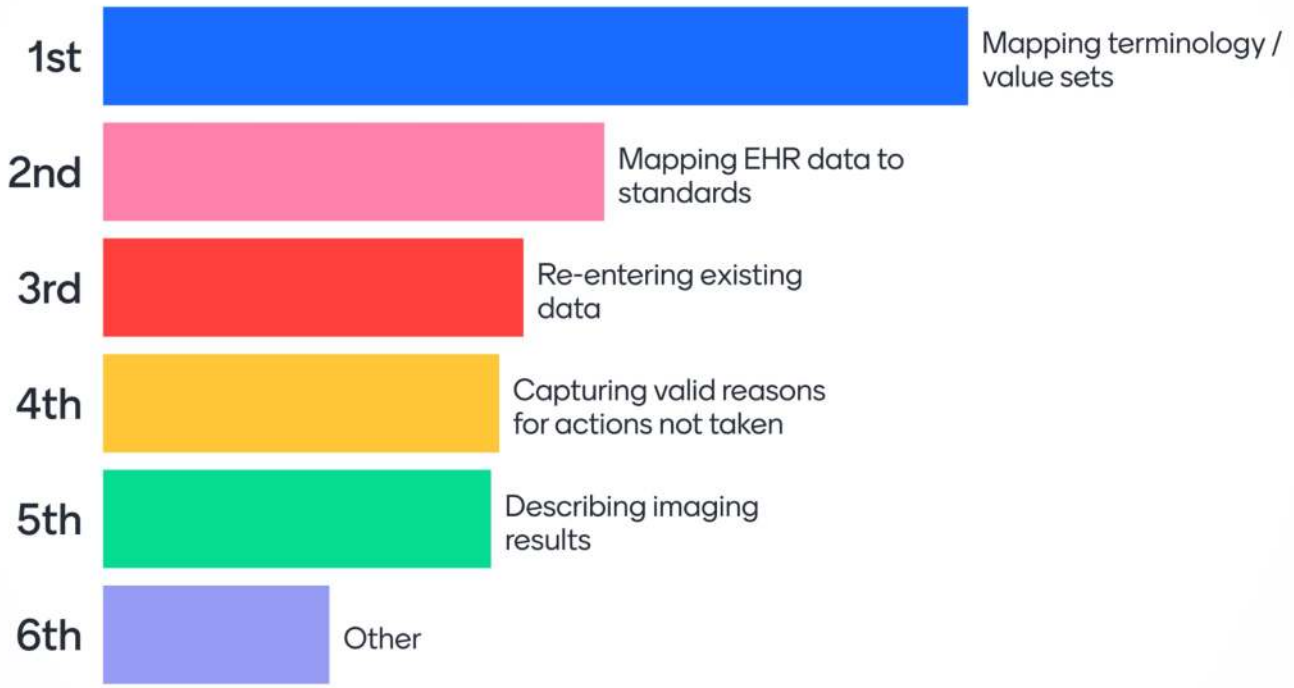

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Re-entering existing data: What types of data are problematic and why are these challenging?

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- Intent
- Pathology
- Everything non-billing. All coded data used for measurement is a total afterthought. Negation is especially urealistic.
- there is little uniformity in practice mapping clinical actions and clinical data between different health care orgs and EHRs..... A lot of clinical activities and patient care is also difficult to codify....
- International dates (USA vs UK) and more.
- Unstructured to structured
- NA
- Older hl7 put required data in anywhere
- Non standard source data
- NA
- Less granular to more granular

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EHR data mapping to standards: Describe why this activity is burdensome

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N/A

Collection burden

NA

It requires deep ontology expertise (staff don't understand it), there's no direct financial benefit, so it's not funded, vendors exploit this for $, there's a general disbelief in the benefit

it has to be done manually and may not be accurate

Sometimes it's not clear where to map the EHR data to the QRDA

Standards suggests a standard - why are there different combinations?

Standards often Lack appropriate clinical detail

Interoperability barriers; not a one stop shop for all.

PSV

Frequently requires clinical input which is expensive or hard to get for an IT team

Skill set of vendors is variable

Unstructured data often can't be mapped without omitting some content

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Terminology and value set mapping: Describe why this activity is burdensome

Mentimeter

- Perhaps vsac can be the only necessary authority
- NA
- It requires deep ontological expertise, constant upkeep, and licensing $ (CPT, etc. are extremely expensive). Typically, it's not deemed as mission critical for actual hospital/practice operation.
- again - inaccurate and manual
- Searching for the correct Terminology and finding or creating the value set.
- Mapping local code to value set
- Taking unstructured content to coded is often cumbersome
- na
- na
- na

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Valid reasons for actions not taken - What is your current method and why is it burdensome?

Mentimeter

X

Again, limit expertise, time, and money. Vendors are exploiting the situation for $, and the organizations like AMA and NCQA are particularly troubling in their exploitation for $.

You have a data transfer - it should not be rocket science - if you send abc123 you do not expect to receive xyz321, and then have to manipulate it.

NA

well, theres a lot of measure developers on this call - I don't know

X

It's changing.

It is difficult to learn and map the Negation Indicators

na

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Other: Describe burdens you experience due to eCQMs

Mentimeter

- X
- Cost, expertise, and limited buy-in relative to value. I want to specifically call out NCQA's very troubling approach to now licensing the algorithm and value sets. It's criminal.
- NCQA eCQM certification
- na
- clinician time to enter
- does not apply
- Clinician time to enter
- Learning curve and changes from draft to publish
- Validating data prior to submission
- Results within OBXbox segment

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Imaging result data capture: What imaging results are most problematic and why?

Mentimeter

NA

N/a

results! codified interpretation that can be used for quality

All of them. There's significant technical burden and cost to store and process results. Typically we only receive billing results relative to the imaging.

Imaging results are mostly free text

na

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Questions?

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