

Quality Measures on FHIR
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Rosalyn Ryan, Facilitator (Dell consulting)
Rahul Dubey, SVP, AHIP Innovation Lab, host

Existential reasons for measurement – important enough that providers want and need to participate. Need to be important to providers so that participation is essential to their practice survival.

Maintain Revenue

Why FHIR and Why this Meeting:

HL7 believe in quality and in improving healthcare and believes FHIR can make an enormous difference in these areas. There are many types of alternative care possibilities occurring now and we need a better way to accomplish these changes. For example: a 90 minute colonoscopy start to finish with results in the EHR. FHIR allows creation of APIs and interoperability in a much more agile fashion and provides the ability to identify issues before they happen. The efforts are worldwide. We need to change processes to make them more efficient and solve the cost equation. In the past, data collection occurred post-fact as it is collected and everyone must have all information about each patient to be able to analyze in real time. FHIR enables the ability to ask a question and query for all information about a patient to help make decisions rather than having to have all data in each setting. The difference is monumental – allows questions in a standardized way and get a reasonably standardized response. The discovery problem – knowing where to go for information – the meta-discovery model does not exist in FHIR. All who want to get information from FHIR need to know the end points. Each participant must specify which resources it supports so others know how to find what is needed. FHIR clearinghouses will be needed – HIEs such as Michigan Health Information Network may serve this purpose. Each system will need to manage reconciliation to handle duplicates. Some HIEs will be able to help with aggregation and reconciliation.

When is FHIR in production?

- 1) FHIR Foundation is consolidating the various projects in the US and elsewhere. The Argonaut project is one example. There are at least a dozen FHIR applications in production in research and the biopharma industry. Some will be showcased later this month at Harvard.
- 2) FHIR has a specific maturity model so that each resource certifies its maturity. FHIR apps are generated all over the world.
- 3) From an engineering perspective, there are a lot of applications being developed and used. Some are in active production and use now. There are some BCBSA alpha and beta sites in pilots this year. Based on pilots, there may be broad applications in production in 2017. A FHIR server can be up in a day and in production in weeks. Mapping to back-end databases takes a bit more time. One payer has mapped 58 data tables into production in a period of weeks – something that is unusual with prior mechanisms. A

lot of opportunities in 2018-2019. Lots of payers and vendors are interested in the process. FHIR can be instantiated in a “slice” rather than “boiling the ocean” as with CDA.

Existential Measures

- 1) Access – accountable health communities grants
- 2) Who are provider organization/roles
- 3) Determining if markers are checked
- 4) Determining lifestyle / background
- 5) Necessary services
- 6) Preventive care
- 7) Cross-cutting measures built on outcomes as opposed to individual conditions (e.g., functional status, capabilities)
- 8) Based on outcomes
- 9) Quality of life
- 10) Managing hazards (e.g., opioid use)

We need to create a self-governing process to strategically sell the concept to our organizations – what is the value proposition? What can be measured that, in essence, improves patient care and outcomes. We are not looking for quality metrics for reporting, but rather elimination of waste, management of cross-cutting issues. Some are computed and do not need to be specifically collected.

Five measures that will prove the quality story:

Concerns:

- 1) Understanding data that are already there – some genetic information helps with treatment decisions (e.g., breast cancer) – assist with clinical decision support
- 2) Trust factor – what data do I trust? Who’s data do I trust (part of the reconciliation issue) – Are the data valuable (e.g., Fitbit data) – how do I manage it?
- 3) How to measure the patient’s understanding – does quality belong to an advocate for a patient as opposed to the patient directly? (Especially applicable to Medicaid populations?)
- 4) Clinical Decision Support

Define Use Cases:

- 1) Access to data (administrative data from insurer, dispensed medications)
- 2) Clinical Pathways
- 3) How might FHIR resources help

Challenge Statement:

- a. Care Pathway compliance
 - i. Care Plan / Care Goal
- b. Point of care (just-in-time) access to information to support decision-making
 - i. Information we have (clinical traditional information I should have)
 - ii. Non-traditional information such as social determinants, economic data

- c. Requirements
 - i. Provenance
 - ii. Interchangeability with 3rd parties
 - iii. Consumer wearables, self reportable, lab data

Consent and Security are orthogonal to FHIR – not part of the discussion here. Consent Management: Under Precision Medicine Initiative, Harvard has a contract to build a research cohort consent management app to manage consent for entry into the cohort (using FHIR). --- Could potentially support “opt-in” issue for states requiring opt-in for care management and sharing of behavioral health and other data.

Permission and who has the right to access data?

How do we implement within an organization strategically? Assume we are the leaders making the change – describe how it works. What are the protections and security features required? What are the parameters required?

FHIR Resources:

- A) Machine readable
- B) Measures
- C) Availability
- D) Core measures

New Data to help with Decision Making

- Credit score
- Health Risk Assessment
- Ability to Pay
- Behavioral Health Data
- Stress Score

Advantages:

- Faster development
- Less Staff
- Breadth of FHIR versatility
- Lightness of querying information – get the information you need and not extra (extraneous) information – high signal to noise ratio
- Real-time - CDA is a point-in-time document. FHIR can access data on demand – pull Vs push. (Can also push given a hook).
- Faster to learn, faster to develop, faster to implement

Messaging:

Instantaneous, Simple, Versatile

Not your mother’s box of chocolates – you actually know what you’re going to getting

Need a Use Case to illustrate and communicate the advantages. Diabetes was selected by the group as a relevant use case.

- Near Term – Access to information to manage what we “should” know now
- Intermediate Term – Identifying existing, validated information to support decision making that incorporates social determinants of health (information not available at the point of care today)
- Long Term – Template for providing information as needed to support decisions including actionable data to assist with improvement

Needed –

- 1) Visual diagram of infrastructure needs
- 2) Business case for each element
- 3) Show an example from other industries (just-in-time inventory management, Uber, telecom connectivity)

Senior Level Statements – Benefits (clinical and administrative):

Biopharma

1. Clinical Research Organizations (CROs) – Trial Vs Post-Market Surveillance
 - a. Data are based on initial thesis – quality of study is based on whether the data match the thesis – Clinical Trial Management Systems (CTMS) capture the information for the trials
 - b. FHIR-related data can help determine the cohort that might apply to a given trial
 - c. FHIR-related real time analysis for recruitment of individuals for clinical trials
 - d. Access to data in EHR and elsewhere
 - e. CDS hooks to determine potential adverse reaction data
 - f. Savings, staff

Health Systems and Clinicians

Liberate the data to enable all of the following – it doesn’t all have to be in the EHR. Moreover, as the data are incorporated into the EHR, some of the requisite metadata may not exist in the EHR. FHIR enables access to the source of the data and also includes data that are not traditionally present into EHRs. FHIR removes a significant amount of the cost, time and pain factors compared to previous methodology

1. FHIR – related data can help to determine cohorts with similar characteristics (potential risks)
2. FHIR-related real time analysis identifying potential individual patient risks
3. Help recruit for clinical trials
4. Identifying patient adherence/compliance with treatment recommendations