Alliance for Pediatric Quality

Quality Reporting HIT Standards Project

The Quality Reporting Document Architecture: Phase I

November 2007

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

Child Health Corporation of America

NACHRI
National Association of Children's Hospitals and Related Institutions

1. Overview
2. Sample from Phase I Project
3. Key Finding, Next Steps

Quality Reporting Document Architecture

Develop an electronic data standard for healthcare information systems to use in communicating patient level quality measurement data across disparate systems

Participants: A Private Collaborative

Founders

PeDS SIG

Alliance for Pediatric Quality

AHIMA American Health Information Management Association®

Iowa Foundation For Medical Care

Primary Benefactor For Phase One

Alliance for Pediatric Quality

HL7 Sponsor

PeDS SIG

Project Management

Alschuler Associates LLC

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QRDA Supports Alliance Mission and Goals

Mission: Lead, shape and accelerate recognition and adoption of quality improvement

Goal: Promote pediatric improvement and measures

- Spread use of measures for improvement and public reporting

Goal: Ensure HIT works for children

- Seek industry-wide adoption of data standards for pediatrics
- Endorse pediatric data standards that make comparability possible

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Using Data for Quality Performance Measurement

Problem: lack of clinical data standard for quality reporting*

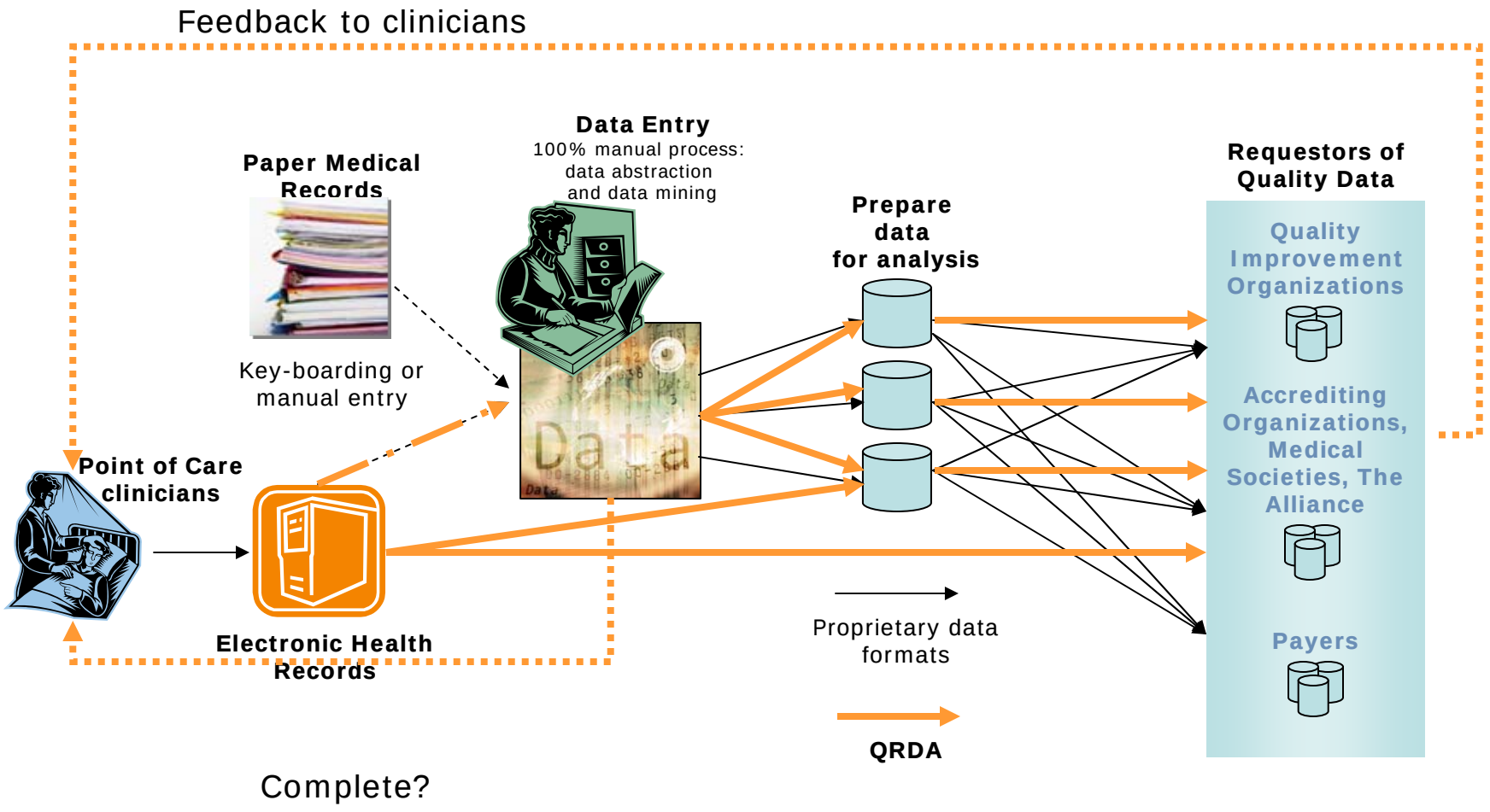
- Data collection is time consuming, burden for physicians and providers
- Data mapping is resource-intensive
- Lack of standard data complicates or inhibits data mining
- Administrative data sets inconsistent with clinical findings

*Source: Agency for Healthcare Research & Quality

Opportunity: clinical data standard for reporting

- Extracted directly from the EMR
  - reduces collection burden
  - eliminates data mapping
  - supports data mining across applications
  - higher quality data
- Supports adoption of quality measurement
  - Burden on physicians and providers reduced
  - Vendors have single model for findings for reporting and exchange

Future of Quality Measure Reporting



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Leverage and Harmonize With Others

American Health Information Community (AHIC), Health Information Technology Standards Panel (HITSP), and Certification Commission for Health Information Technology (CCHIT)

- Promoting automation of quality measurement data collection, aggregation and reporting
- Developing quality use case and interoperability specifications
- Certifying vendor products for interoperability

NQF Health Information Technology Expert Panel (HITEP)

- Identify high-value data from EHRs for quality measurement

Collaborative for Performance Measure Integration with EHR Systems (The Collaborative)

- Sponsored by American Medical Association (AMA) and National Committee on Quality Assurance (NCQA)
- Addressing performance measure functionality and integration with EHRs
- Facilitating integration, calculation and reporting of quality measures within vendor products

Integrating the Healthcare Enterprise (IHE)

- Building Technical Framework for coordination of quality data submission, aggregation and feedback
- Driving vendor adoption of standards

Health Level Seven (HL7)

- Developing, balloting and publishing the QRDA standard
- Working with Clinical Interoperability Council, Electronic Health Record Technical Committee, Government SIG, Pediatric Data Standards SIG, Structured Documents Technical Committee, and more

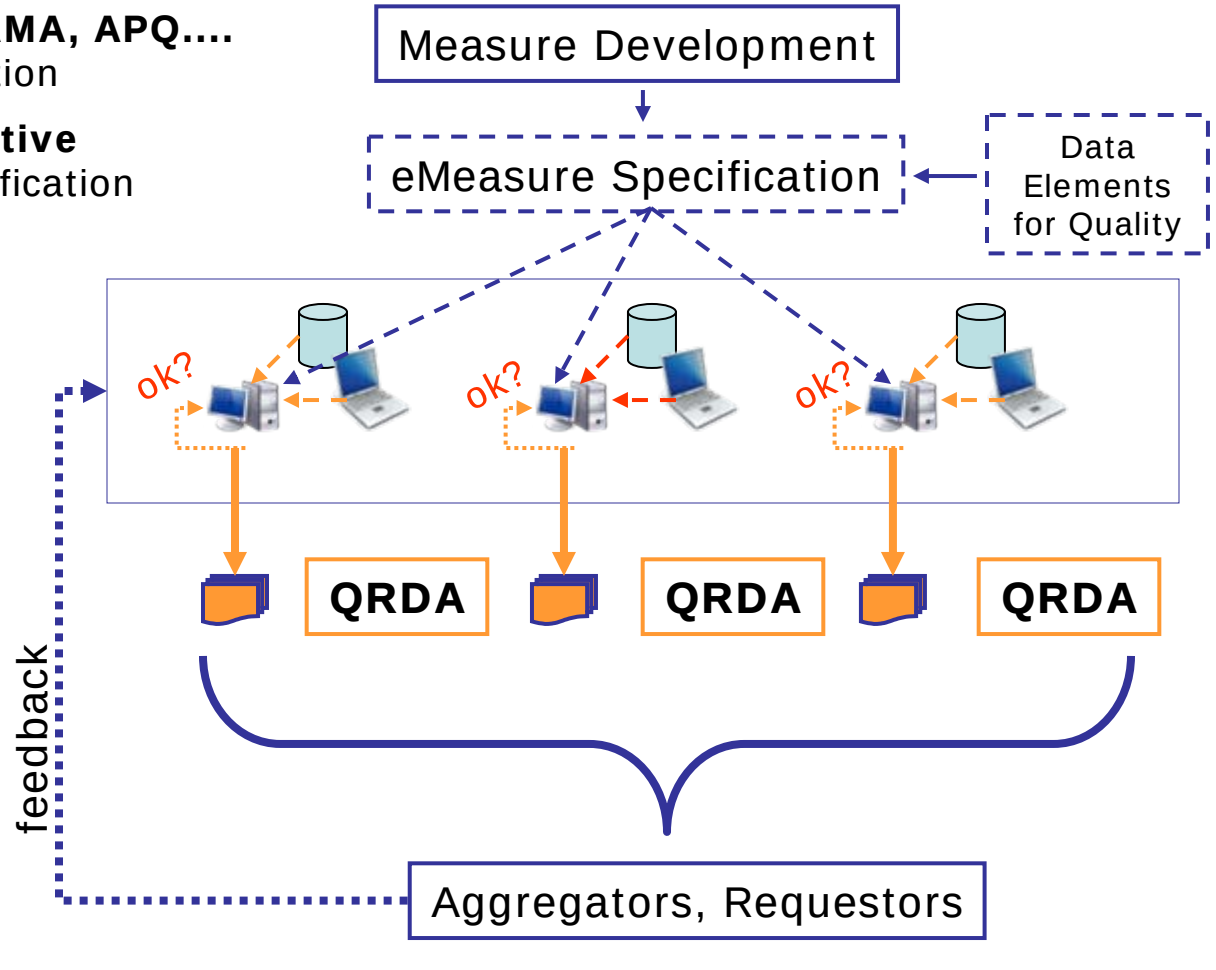
Coordination with Related Efforts

NQF, NCQA, AMA, APQ....
Measure definition

The Collaborative
eMeasure specification

HITEP
Data elements for quality

IHE:
Multi-party choreography using HL7 messages, services



AHIC, HITSP Use Cases

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Coordination with Related Efforts

- Coordination Points:
  - QRDA leverages The Collaborative's export construct
  - QRDA maps to the HITEP data elements for quality
  - QRDA is the payload in the IHE PEQD multi-party profile
  - Combined efforts of The Collaborative, IHE, QRDA and SDOs support the AHIC and HITSP use cases
- Coordination Priorities:
  - QRDA coordination with eMeasure definitions ("import" construct) will drive validation and improve data quality
  - Integrating data from the national exchange framework will enrich quality measurement and promote longitudinal assessment

Strawmen samples

- JCAHO asthma measure --- Pediatric, inpatient
  - CAC-1
  - CAC-2
- DOQ-IT CAD-1-7 --- Adult, ambulatory
  - Single or multiple visits
  - With evidence that test ordered; with test result

Strawmen samples

Were relievers administered?

Clinical and administrative formats

QRDA Patient Report: CAC-1 and CAC-2 - Windows Internet Explorer

C:\Documents and Setl

Google

QRDA Patient Report: CA...

Page

QRDA Patient Report: CAC-1 and CAC-2

Created On: August 20, 2007

Patient: **MRN:**

Birthdate: September 2, 2000 **Sex:** Male

PROBLEM LIST

- Extrinsic Asthma, with Status Asthmaticus
- Hypoxemia

RESULTS

- Pulse Oximetry: 93% O^2 saturation at Room Air

MEDICATIONS

- Respiratory medication administered by nebulizer
  - Albuterol Inhalant Solution [Accuneb]
- Oxygen therapy
- Prednisolone (ORAPRED SOLUTIO

ALLERGIES, ADVERSE REACTIONS, A

- Contraindication to Relievers (CAC-1
- Contraindication to Systemic Corticos

ADMISSION SOURCE

Emergency room

MEDICATIONS

- Albuterol (ALBUTEROL S
- Prednisolone (ORAPRED S

ALLERGIES, ADVERSE

- Contraindication to Relie
- Contraindication to Syste

Done

MEDICATIONS

Reliever medication(s) received? yes

- Albuterol (ALBUTEROL SULFATE - ACCUNEB INHALATION SOLUTION)
- Prednisolone (ORAPRED SOLUTION)

ALLERGIES, ADVERSE REACTIONS, ALERTS

- Contraindication to Relievers (CAC-1): None
- Contraindication to Systemic Corticosteroids (CAC-2): None

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Strawman samples

- **CCD compatible**

Altova XMLSpy - [JCAHO.CACCAD.QRDA.Sample5.xml]

File Edit Project XML DTD/Schema Schema design XSL/XQuery Authentic Convert View Browser WSDL SOAP Tools

```
104   -->
105   <component>
106     <structuredBody>
107     <component>
108       <section>
109         <title>ADMISSION SOURCE</title>
110         <text>Emergency room</text>
111         <entry>
112           <observation classCode="OBS" moodCode="EVN">
113             <code code="7" displayName="Emergency room" codeSystem="2.16.840.1.113883.3.117.1.2.5.2" codeSystemName="JCAHO"
114           </observation>
115         </entry>
116       </section>
117     </component>
118       <component>
119         <section>
120           <templateId root="2.16.840.1.113883.10.20.1.11"/>
121           <code codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" code="11450-4" displayName="PROBLEM LIST"/>
122           <title>PROBLEM LIST</title>
123           <text>
124             <list>
125               <item>Extrinsic Asthma, with Status Asthmaticus</item>
126               <item>Hypoxemia</item>
127             </list>
128           </text>
129           <entry>
130             <act classCode="ACT" moodCode="EVN">
131               <templateId root="2.16.840.1.113883.10.20.1.27"/>
132               <!-- Problem act template -->
133               <id root="a1b42461-334c-4786-bd05-f641227d0302"/>
134               <code nullFlavor="NA"/>
135               <entryRelationship typeCode="SUBJ">
136                 <observation classCode="OBS" moodCode="EVN">
137                   <templateId root="2.16.840.1.113883.10.20.1.28"/>
138                   <!-- Problem observation template -->
139                   <id root="ee7e4cf9-62ae-47e4-829b-ea3d5d4307b9"/>
140                   <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
```

QRDA validation: rules validate assertions

- if templateId =
  - <templateId root="2.16.840.1.113883.3.117.1.2.4.3 " displayable="Use of relivers for Inpatient Asthma (CAC-1)"/>
- and diagnosis =
  - <value xsi:type="CD" code="493.01" codeSystem="2.16.840.113883.6.103" codeSystemName="ICD-9" displayName="Extrinsic Asthma, with Status Asthmaticus"/>
- then QRDA SHALL contain
  - <substanceAdministration> ... <code code="93.94" codeSystem="2.16.840.113883.6.103" codeSystemName="ICD-9" displayName="Respiratory medication administered by nebulizer"/>

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<schema xmlns="http://www.ascc.net/xml/schematron" xmlns:cda="urn:hl7-org:v3">
  <title>Schematron schema for validating conformance to JACHO CAC1</title>
  <ns prefix="cda" uri="urn:hl7-org:v3" />
  <phase id='errors'> <active pattern='example'/>  </phase>
   <pattern id='example' see='#example'>
    <title>Example</title>
    <rule context='*[cda:templateId/@root="2.16.840.1.113883.3.117.1.2.4.3"]
    [//cda:observation[cda:value/@code="493.01"]
     [cda:value/@codeSystem="2.16.840.113883.6.103"]]'>
    <assert test="//cda:substanceAdministration/cda:code[@code='93.94']
     [@codeSystem='2.16.840.113883.6.103']">If Extrinsic Asthma, with Status Asthmaticus
    is observed, respiratory medication must be administered by nebulizer</assert>
    </rule>
  </pattern>
</schema>
```

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QRDA Project Overview

Phase One:

- ✓ Define project opportunity
- ✓ Select standards development expert for support
- ✓ Secure endorsement and funding
- ✓ Recruit volunteers
- ✓ Develop prototype QRDA-compliant reports
- ✓ Describe relationship to other projects
- ✓ Make recommendations for moving forward
- Secure endorsement and funding for Phase Two

3 months →

Phase Two:

- Ballot and publish QRDA Draft Standard for Trial Use through HL7
- Support vendor adoption through development of IHE Profile, HITSP endorsement
- Conduct proof of concept demonstrations

TBD →

Key Findings

- Clinical interoperability
  - Feasible to re-use structures (templates) developed for EHR interoperability
    - Simplifies data collection processes
    - Simplifies vendor application development
  - Promotes flexible workflow
    - Internal &/or external analysis
    - Single- or multiple-visit submissions with updates
    - Anonymized or patient-identifiable
- Point of care feedback
    - Immediate validation that data set complete
    - Can support guideline compliance
    - Reuse of clinical templates lays foundation for decision support
- Fits well in Interoperability Landscape
  - HL7 ballot project approved
  - IHE has selected for profile development
  - Can support Collaborative export requirements
  - Meets HITEP move to reliance on clinical data
  - Supports AHIC and HITSP use cases

Potential Next Steps

- Address open issues
  - Refine scope statement (patient-level data for measure population)
  - Synchronize/support “model of meaning”:
    - review receiver requirements
    - explore question/answer format &/or clinical findings
  - Explore relationship between Import/Export requirements
- Ballot within HL7 as Draft Standard for Trial Use
  - April/May ballot requires project launch in February
  - Timing critical to meet HITSP, IHE timelines
- Continue to coordinate with other efforts
  - Address full set of 84 HITEP priority measures
  - Rule set and metadata useful for Collaborative import definition file?
- Pilot: criteria under consideration
  - number of systems? sites? measures? requestors/recipients of data?
  - live data or canned? sole submissions or duplicates?
  - number of patients? of records? length of pilot?
- Communication plan to support adoption

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Primary Project Contacts

Chad Bennett
Iowa Foundation for Medical Care
The Collaborative for Performance Measure Integration with EHR Systems
cbennett@ifmc.org

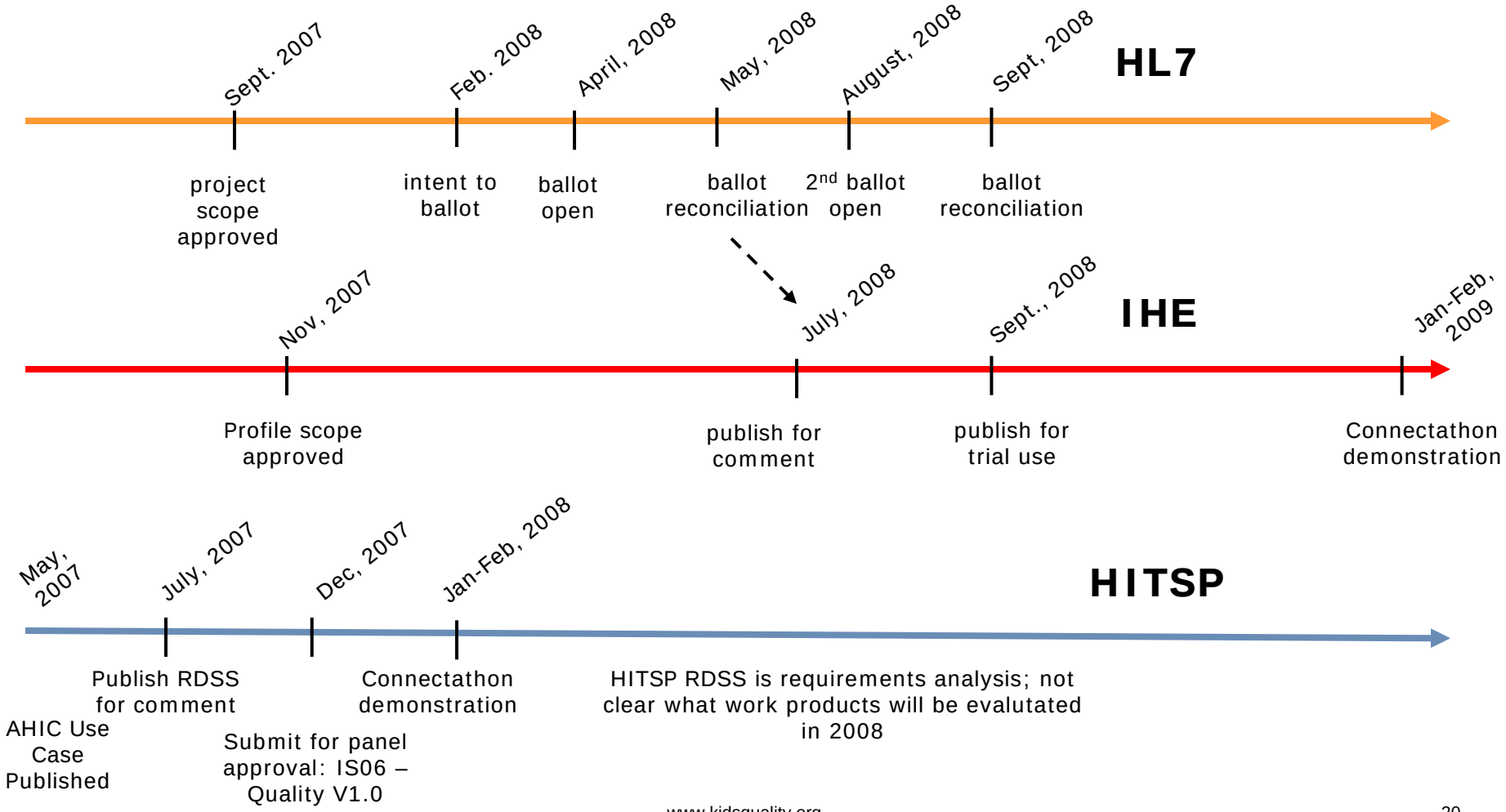
Crystal Kallem
American Health Information Management Association (AHIMA)
HL7 Structured Documents Technical Committee
crystal.kallem@ahima.org

Joy Kuhl
Alliance for Pediatric Quality
HL7 Pediatric Data Standards Special Interest Group
joy.kuhl@chca.com

Feliciano Yu, MD
HL7 Pediatric Data Standards Special Interest Group
The Children's Hospital of Alabama
fyu@peds.uab.edu

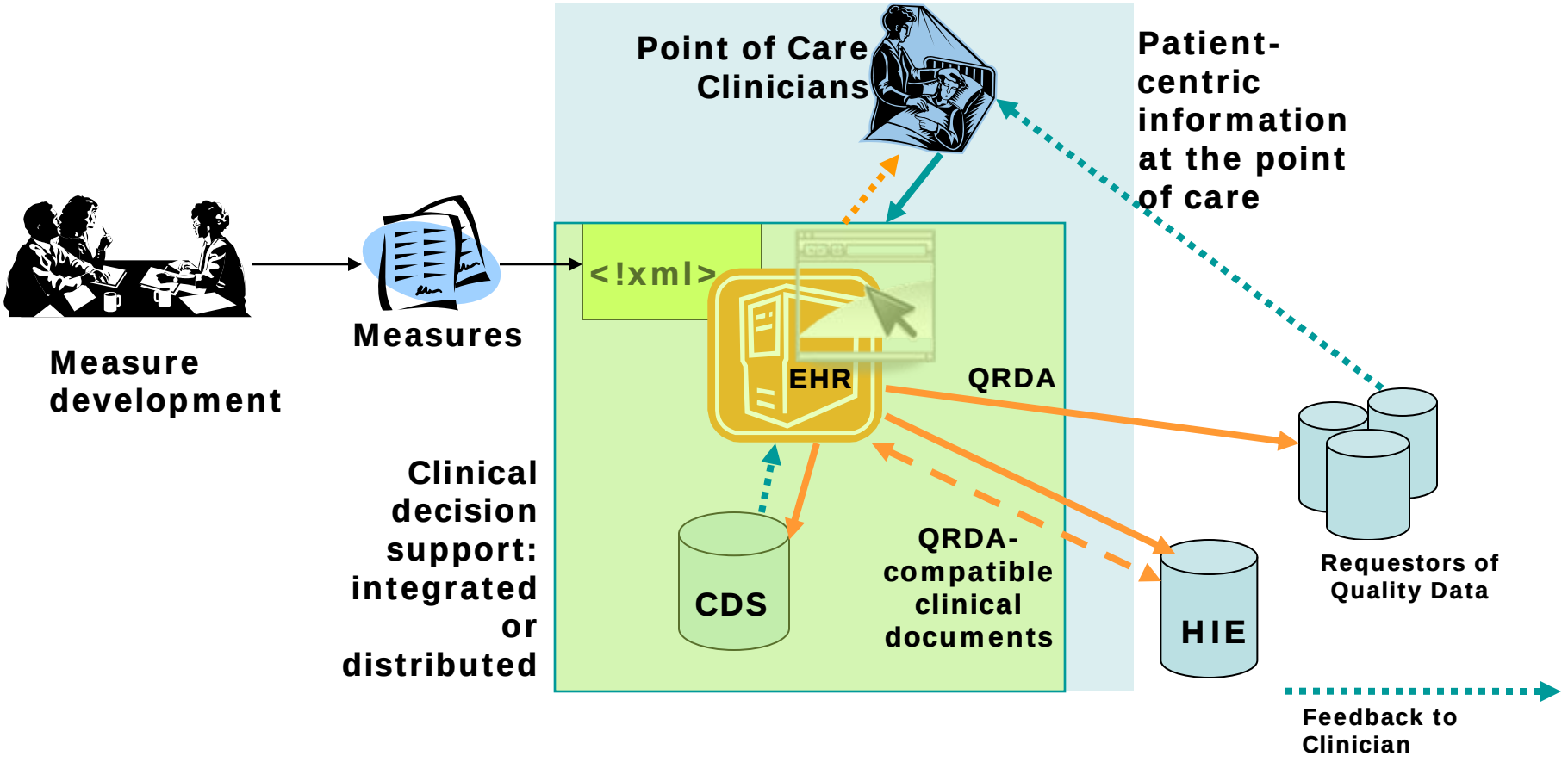
extras...

Critical path timelines: HL7, IHE



1. Select Improvement Priorities
2. Identify Data Elements for Recognized Measures
3. Import Measure Specifications into Vendor Systems
4. Providers Collect & Record Clinical Data
   - immediate validation on patient-level compliance
5. Providers Extract & Export Measure Data
   - to requestors of quality data
   - to local decision support
6. Measure Data Reviewed for Quality Improvement
   - aggregate reports on compliance
7. Integrates into health information exchange scenarios

Quality Lifecycle: Collect, Monitor, Share Support Improvement in Distributed Environment Leveraging Patient-centric Records



The Value of QRDA

- Leverage existing electronic health record data
- Reduce or eliminate manual data collection (QRDA-compliant EMRs and registries)
- Promote adoption of electronic health records
- Improve information technology return on investment
- Reduce the data collection, aggregation and reporting burden for health care providers

Do vendors support data standards?

- Vendors do not implement multiple one-off “solutions”:
  - if they need to revisit product design for each type of quality report, they will not provide the export function
- Vendors are committed to QRDA-compatible import/export
  - same clinical structures and semantics required for QRDA are part of CCHIT certification testing for 2008
- Vendors are represented in IHE and HITSP which will adopt QRDA, if and when it is balloted

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Four national pediatric organizations aligned to improve the quality of health care for America's children.

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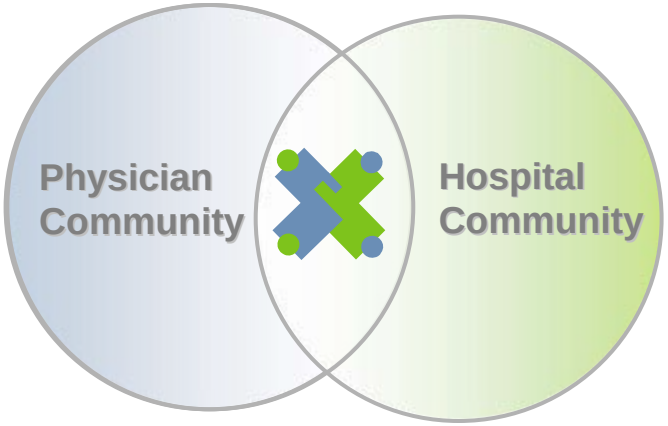
DEDICATED TO THE HEALTH OF ALL CHILDREN™



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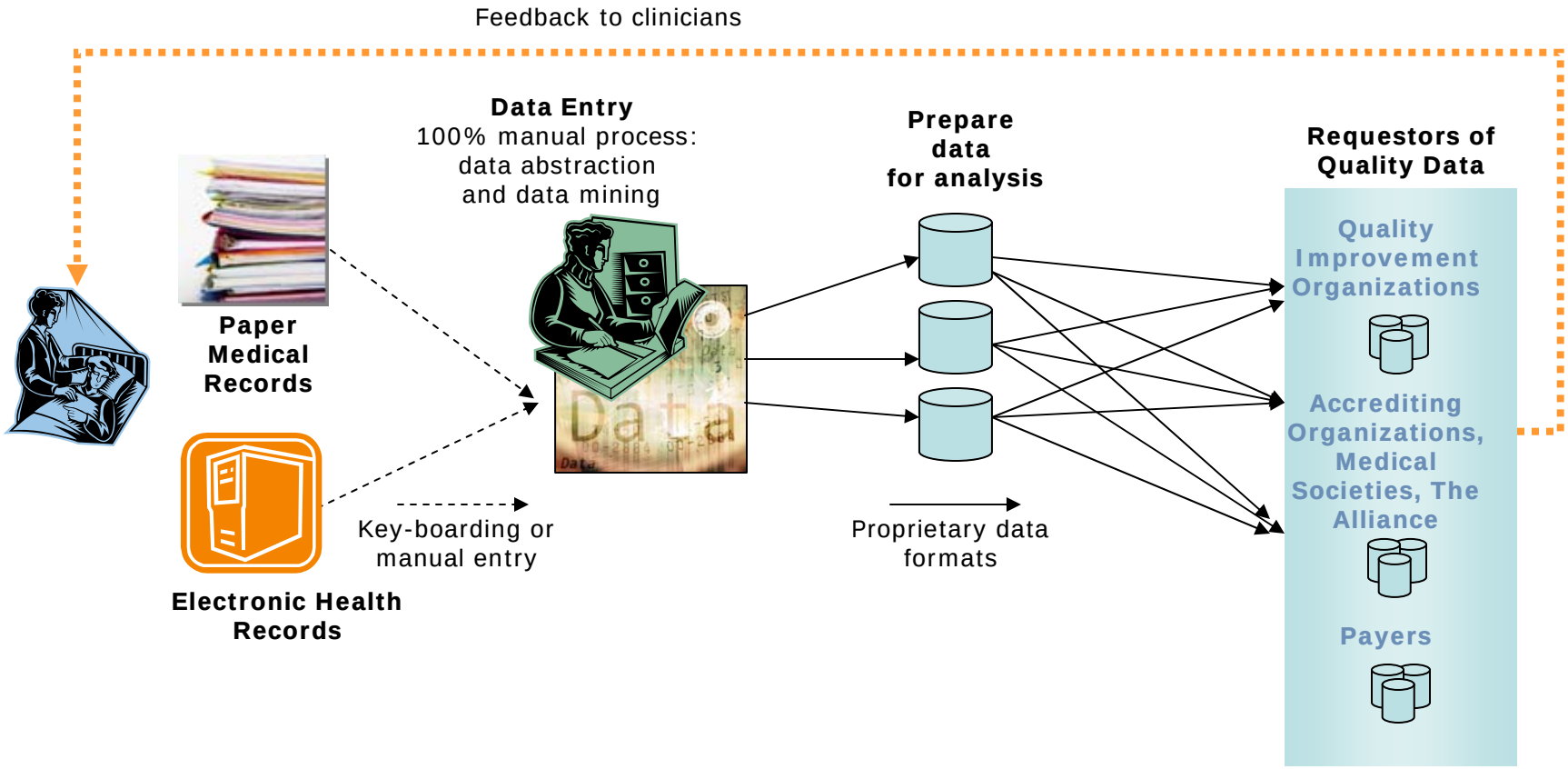
The American Board of Pediatrics
Founded 1933

NACHRI
National Association of Children's Hospitals and Related Institutions

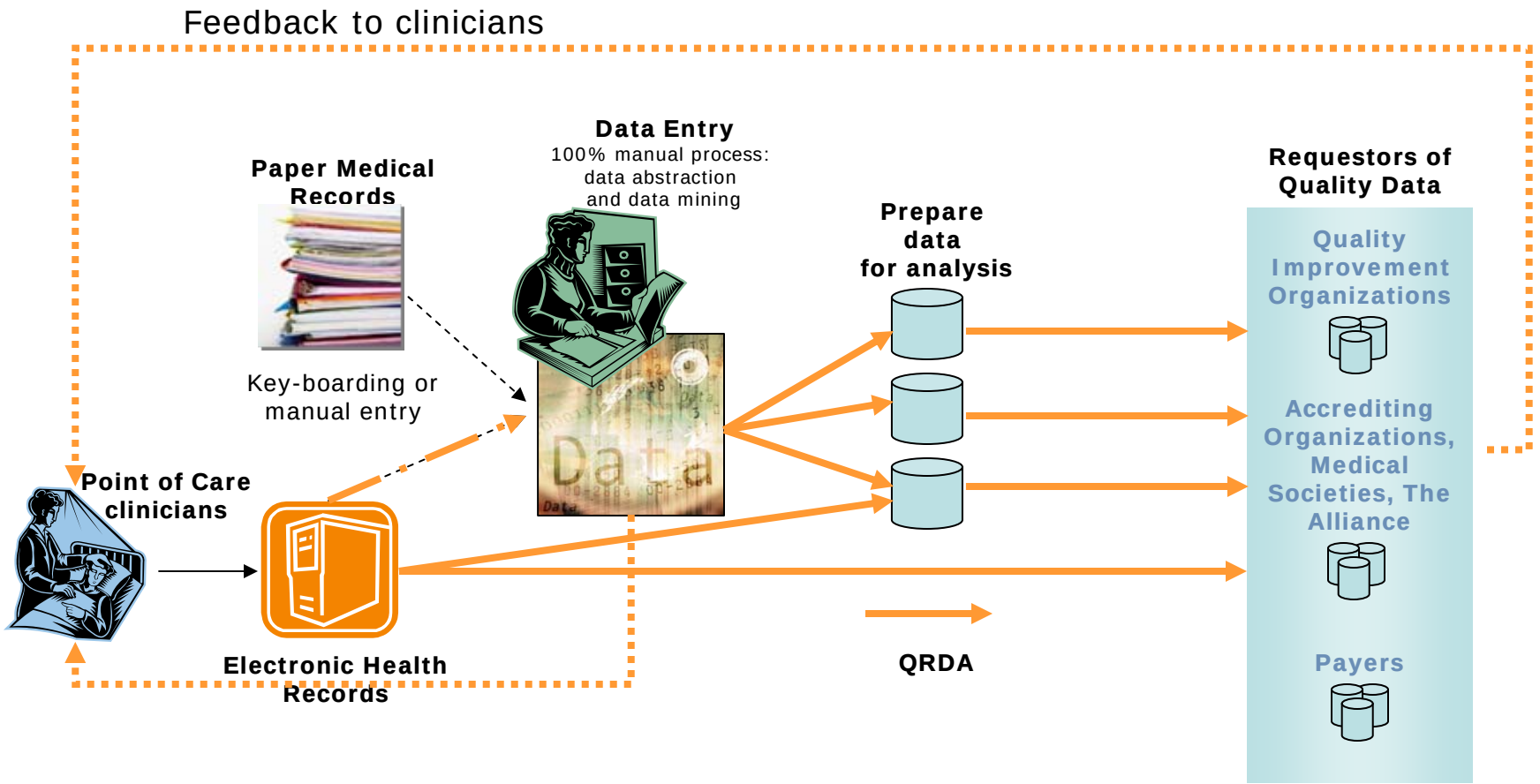
- 200+ children's hospitals and 60,000 pediatricians using the same play book to improve care
- Alignment of physicians and hospitals is essential to improvement progress
- Combined expertise and spheres of influence will accelerate improved quality for children

Status Quo in Quality Measure Reporting



Provider sends patient level measure data in multiple formats; data prepared for analysis and submitted in multiple formats; all feedback to point of care is post-analysis

Future of Quality Measure Reporting



Critical path timelines: HL7, IHE