



Let's build a smarter health system.
Patients, Partners & You.

Office of National Coordinator
October 29, 2010

**CMS' C-HIEP Proof-of Concept
CARE Open Source Solution (COSS)**

Presenter: **Nitin Jain**, Executive Consultant – Federal Healthcare

IBM Federal Healthcare and Life Sciences



Building a smarter health system.

- C-HIEP Overview
- MDHT integration into C-HIEP
- CARE Open Source Solution (COSS) Toolkit
- Q&A





What is C-HIEP?

- Proof-of-concept
- Align with national standards for data interoperability
- Move towards a uniform, harmonized data set
- Move towards enhancing the ability for communication and coordination of care across settings



**Continuity
Assessment
Record &
Evaluation
CARE**

**Health
Information
Exchange
Project
HIEP**



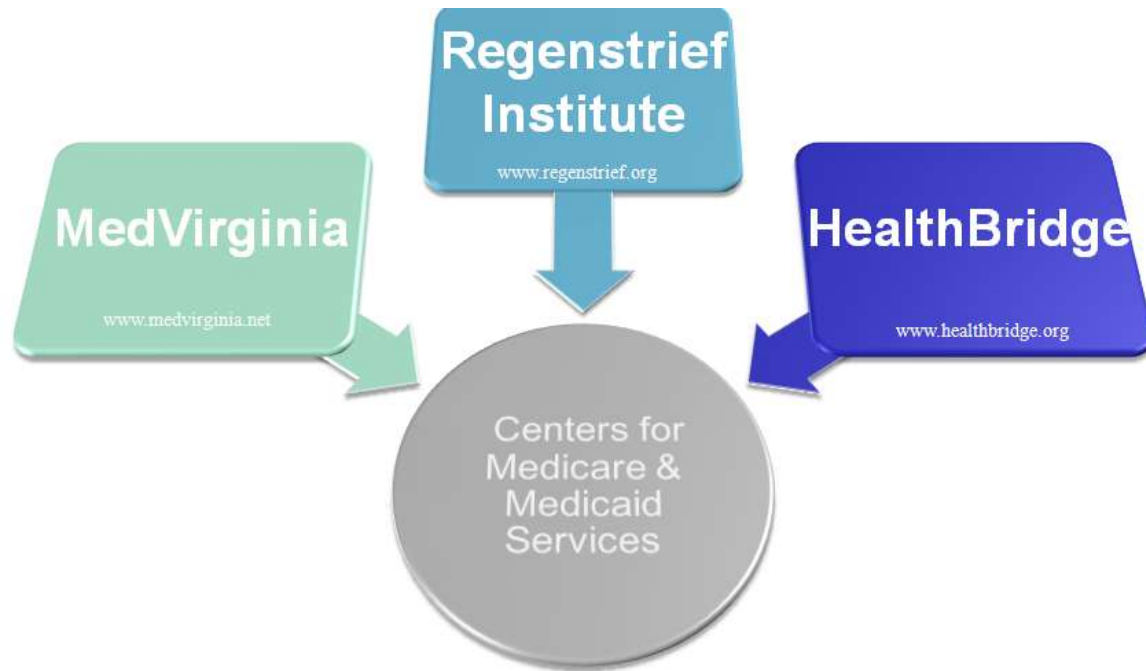


C-HIEP Participants

CMS: Project Owners

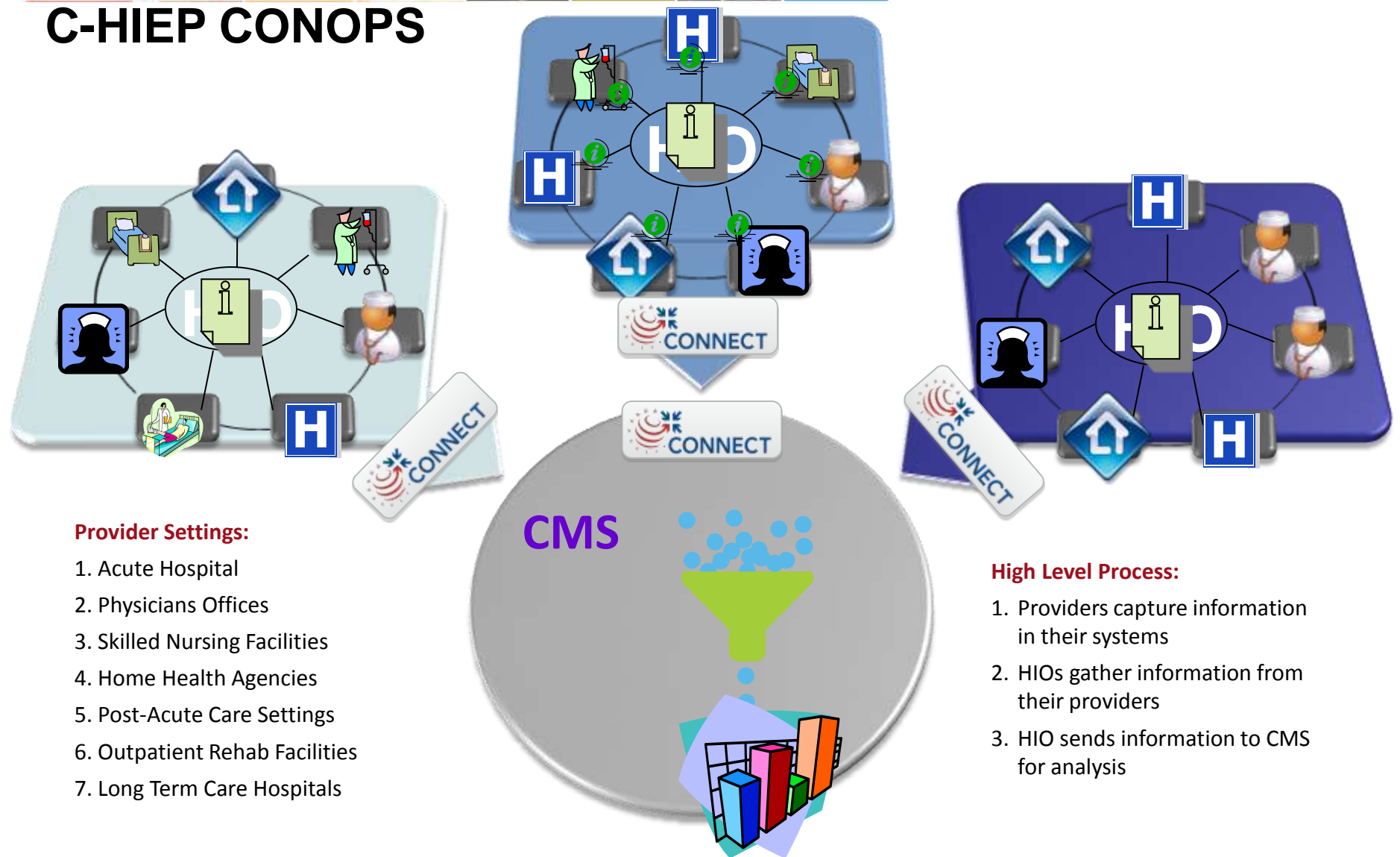
IBM: Technical Contractor

HIOs: Participants





C-HIEP CONOPS



Provider Settings:

1. Acute Hospital
2. Physicians Offices
3. Skilled Nursing Facilities
4. Home Health Agencies
5. Post-Acute Care Settings
6. Outpatient Rehab Facilities
7. Long Term Care Hospitals

High Level Process:

1. Providers capture information in their systems
2. HIOs gather information from their providers
3. HIO sends information to CMS for analysis





MDHT integration into C-HIEP



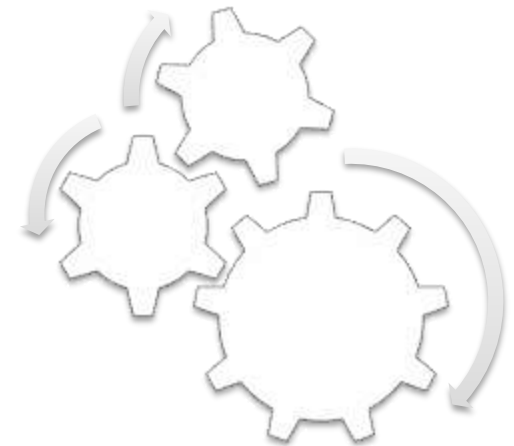


CARE-Set Data Interoperability

- Patient encounter and assessment data captured as part of the normal process of care performed by healthcare providers, such as hospitals, outpatient clinics, long term settings, etc.
- CARE-SET data elements are derived from HITSP C83 Content Specification

http://hitsp.org/ConstructSet_Details.aspx?&PrefixAlpha=4&PrefixNumeric=83

- CARE-SET content
 - **Problem List**
 - **Procedures**
 - **Medications Administered**
 - **Allergies and other Adverse Reactions**
 - **Results**
 - **Vital Signs**
 - Functional Status
 - Advanced Directives





MDHT Integration into C-HIEP

- Use of MDHT generated runtime Java API for
 - Serialization (Extracting, Assembling and Transforming) CARE-SET data into C83 construct at the SOURCE (HIO, Submitting provider etc.)
 - De-serialization (Validating, Disassembling) of CARE-SET data into discrete data elements at the CONSUMER (CMS)

Extract information from

- Discharge summary
- Lab reports
- Meds Administration

Assemble sections

- Problem List
- Results
- Medications

Transform into

- C83 Construct

Validate C83

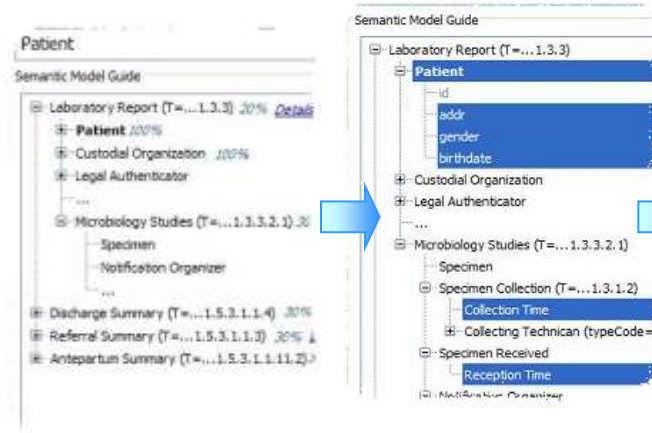
- CARE-SET rules & CCD schema

Dissemble into

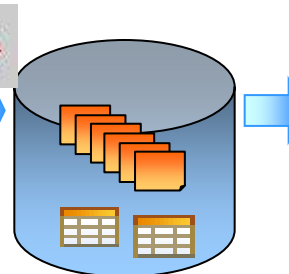
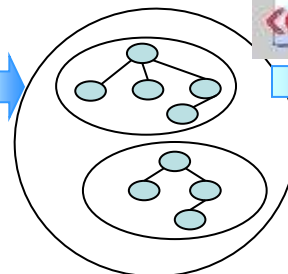
- Discrete relational data objects

Reporting:

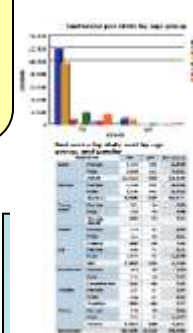
- How many patients have diagnosis of Acute Appendicitis?
- How many providers have performed Nasal Repair NEC procedure?



Data Source



Data Consumer



Analytics Reporting & Dashboards
C-HIEP Assessment Data Analytics





CARE Open Source Solution (COSS) Toolkit





COSS Toolkit Summary

The CARE Open Source Solution (COSS) is intended to show how, through the development of a production-ready prototype toolkit, EHR vendors and HIOs can rapidly incorporate a HL7 CDA based new document standard into their HIT systems for the capture and exchange of CARE Transition data. The development of this toolkit will promote improvements to future QIO reviews.





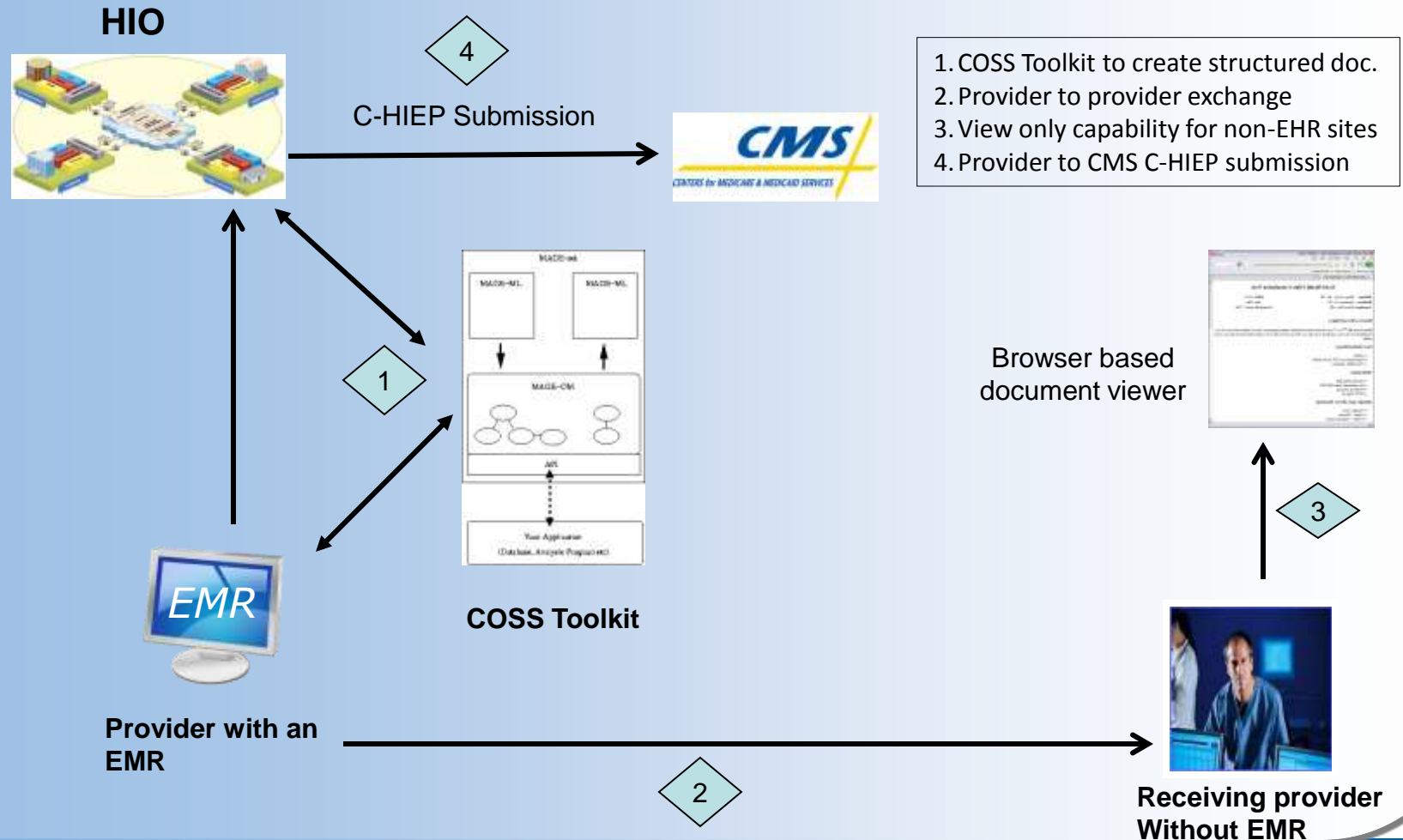
COSS Requirements and Objectives

- Use MDHT to design and create reusable model to map CARE-SET data elements into CDA to produce an “e-specification” for CARE Transition Document, allowing standard bodies, Implementation Guide authors and system implementers to rapidly respond to emerging standards.
- Provide an open source COSS toolkit that can be distributed with
 - Java API and Web services to enhance the capability of EMR vendors and HIOs to generate and consume CARE Transition Document, without increasing the implementation burden.
 - Stylesheet that will allow providers without an EHR to view CARE Transition document received from other provider independent of a document exchange mechanism.
 - Validation service to test conformance of CARE Transition document to CARE-SET e-specification and other underlying constraints from HL7/IHE/NHIN.





COSS Business Context





Q&A

Thank You!

Nitin Jain

email: jainni@us.ibm.com

