The Role of Interoperability / HIE in Supporting Population Health Management

Early Lessons from the Maryland CRISP Integrated Care Network Infrastructure Initiative

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Learning Objectives

1. Identify the goals and objectives of the Integrated Care Network for improving the health of the population in the State of Maryland

2. Discuss the use of interoperable systems in health information exchange to manage population health

3. Examine the opportunities and challenges encountered when connecting providers in multiple settings
Agenda

• CRISP Background
• CRISP Current Services
• CRISP Integrated Care Network Infrastructure
• Challenges and Opportunities
CRISP

Chesapeake Regional Information System for our Patients
Why is Maryland different?
Maryland’s hospitals have committed to:

- Saving Medicare $330 million over five years
- Limiting per capita annual growth of hospital inpatient and outpatient costs to 3.58%
- Capping growth of all Medicare spending to the national average
- Lowering the state's 30-day hospital readmission rate for Medicare beneficiaries
- Reducing hospital-acquired conditions by 30% over a five-year period.

If the state fails to meet its targets... bad things happen:

- Hospitals face financial penalties
- Maryland could lose its authority to set targets
- Maryland could lose its Medicare rate-setting exemption
CRISP vision, mission and guiding principles

CRISP is a non-profit health information exchange, or HIE, serving Maryland and the District of Columbia.

**Our Vision**
To advance health and wellness by deploying health information technology solutions adopted through cooperation and collaboration.

**Our Mission**
We will enable and support the healthcare community of Maryland and our region to appropriately and securely share data in order to facilitate care, reduce costs, and improve health outcomes.

**Our Guiding Principles**
1. Begin with a manageable scope and remain incremental.
2. Create opportunities to cooperate even while participating healthcare organizations still compete in other ways.
3. Affirm that competition and market-mechanisms spur innovation and improvement.
4. Promote and enable consumers’ control over their own health information.
5. Use best practices and standards.
6. Serve our region’s entire healthcare community.
History of CRISP

2006: CRISP begins at a Spring meeting between John Erickson and the CIOs of Maryland’s three largest hospital systems, asking how to make medical records for seniors available when they visit the hospital. Erickson Retirement Communities funds a part time staff position to work on a pilot project.

2008: CRISP partners with MHCC to plan an HIE for Maryland, in a process which engages dozens of healthcare stakeholders. The MHCC provides a $250k grant, and the Erickson Foundation contributes another $250k to expand the work. Administration of the finances and staff is done through Erickson Retirement Communities.

2009: CRISP finishes incorporation as a non-profit corporation, is named Maryland’s designated statewide HIE (July), is awarded a $10M HSCRC grant (August), and hires staff (September). Administration of the finances and staff shifts to Johns Hopkins.
History of CRISP

2010: CRISP connects first provider organizations (September) and wins a $6M REC grant

2011: Clinicians begin using the Query Portal (February) and every Maryland hospital is connected (December)

2012: CRISP turns on ENS service (August) and Board is expanded (December)

2013: CRISP begins sending CRS reports (January), goes live with the MHBE Provider Directory (September), connects the first District of Columbia hospital (November) and turns on PDMP service with DHMH (December)

2014: Health plans begin accessing records through a special CRISP portal (March), and CRISP begins routing CCDAs at hospital discharge (June)
CRISP’s core services

Clinical Query Portal

*Includes Maryland Prescription Drug Monitoring Program (PDMP)*

Search for your patients’ prior hospital and medication records

Monitor the prescribing and dispensing of drugs that contain controlled dangerous substances

Encounter Notification Service (ENS)

*Includes Direct Secure Messaging capabilities*

Be notified in real time about patient visits to the hospital

Use secure email instead of fax/phone for referrals and other care coordination

CRISP Reporting Services (CRS)

Use CRISP Data for patient identification, performance measurement and service coordination
CRISP Key Performance Indicators

Portal Queries

- 106,008
- Monthly...

ENS Notifications

- 727,537
- Monthly...

Monthly Portal Users

- Active Clinician user accounts*
- Unique Users who logged in during month
- Active User Accounts
Why build the Integrated Care Network Infrastructure?

**If:** The Maryland all-payer waiver and Global Budget Revenue will motivate new population-health efforts and care management initiatives...

**And:** Stakeholders will need new infrastructures and access to data to support these activities...

**It follows that:** Elements of these infrastructure could be shared, i.e., pursued cooperatively, both to avoid duplication of costs and to give care managers more complete data...

**And if so:** CRISP was chartered and is governed to be the place where health IT solutions are deployed through cooperation and collaboration.
Statewide ICN Infrastructure Development Plan

**In context notification & alerting tools**
- Risk stratification / predictive modeling tools
- Basic Care Management software
- Patient / provider relationship identification
- CRISP Reporting Services analytics (CRS)

**Clinical query portal**

**New Tools**
- Data Router / clinical data normalization
- Clinical portal enhancements
- CCDA / Care Plan parsing
- Privacy / consent management utility
- Identity management
- Encounter Notification Services (ENS)
- Medicare claims data
- Enrollment data, patient panels
- HIE clinical data

**Inputs**
- Administrative / visit data (need ambulatory connectivity)
- PDMP
- Processed Case Mix data

**HIE Infrastructures**

**IT Stack**

- New or needs significant development
- Existing

*Working Version 1.4*
ICN Infrastructure Workstreams

1. Ambulatory Connectivity: We are connecting more practices, physicians, long-term-care facilities, and other health providers to the CRISP network.

2. Routing Data: We are building a data router: including data normalization, patient consent management, patient-provider relationships – for sharing patient-level data.

3. Clinical Portal Enhancements: We will enhance the existing Clinical Query Portal with a care profile; a provider directory; information on other known patient-provider relationships; and risk scores.

4. Notification & Alerting: We will create new alerting tools so that notifications happen within the context of a provider’s existing workflow.

5. Reporting & Analytics: We will expand existing CRISP reporting services and make them available to a wider audience of care managers.

6. Basic Care Management Software: We will support care management software platforms – through data feeds, reports and potentially a basic shared care management tool.

7. Practice Transformation: We will train providers on leveraging CRISP data and service, sharing best practices and workflows, and supporting collaborative partnerships. CRISP’s role is TBD and may be supportive or coordinating.
Data router key functions

- Consent management
- Data normalization
- Data routing
- Patient-provider relationships determination and management

**Data Router** - The router is a service that includes key functionality to support connectivity, consent management, data routing to other services or data consumers, and determine patient-provider relationships. These approaches may rely on connectivity through a health system, through a hosted EHR, directly to the practice, or via an administrative network.
Multi-State PDMP Query

Made possible by Prescription Monitoring Information Exchange (PMIX) Architecture
Single Sign On

Made possible by Mirth RESTful API and standard SAML assertion
Care Profile and Care Alert (In Pilot)


Organizations subscribed to this patient:
- University Family Medicine
  - Phone Number: (410) 328-8792

Care Alert:
Test Care Coordination Note
This note has multiple lines.
for patient Maureen Testing, if the patient presents with fever and
and shaking hands, call personal intervention manager at telephone
number (301) 555-8977 (ask for Bryant).
Patient displays aggressive behavior when approached to get an injection.

Made possible by HL7 2.5 ORU
Image Exchange (In Pilot)

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**XR-Shoulder 2V LT**

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**Notes**

XR-Shoulder 2V LT 1/28/2016 9:03 AM
Clinical history: MVC, shoulder pain
Comparison: none available.

Findings/Impression: There are changes of open reduction internal fixation of the left humeral diaphysis. There are chronic degenerative changes in the left greater tubercle. There is no evidence of acute fractures or dislocations. Dictated by: [Redacted]
Electronically Signed By: [Redacted]
Signed Date/Time: [Redacted]

Performing Facilities
Northwest Hospital (LifeBridge)
5401 Old Court Road
Randallstown, MD 21133

Made possible by HL7 2.5 ORU
Image Exchange (In Pilot)

Made possible by DICOM
How CRISP Uses IHE Profiles

XCA (Cross Community Access) – Used to share CCD documents across organizations. Primarily used by CRISP to communicate to other HIEs but also to communicate with Epic’s CareEverywhere and eCW.

XCPD (Cross Community Patient Discovery) – Used in conjunction with XCA to allow external organizations to discover a patient’s unique CRISP ID and request or file documents under that ID.

XDS (Cross Enterprise Document Sharing) – Used to allow EMRs to send CCDs to CRISP and deposit them directly into our clinical document repositories. Used primarily today with NextGen and Athenahealth.
How CRISP Uses IHE Profiles

XDR (Cross Enterprise Document Sharing via Reliable Messaging (Point-to-Point)) – Part of the Direct protocols and similar to XDS except that it includes reliability, meaning that there is specific notification sent backwards to allow the sender to know that the document was received. CRISP uses this with EMRs that support this as part of MU instead of XDS.

PIX (Patient Identifier feed) – Like an ADT feed that allows CRISP to understand patient IDs and link them to CRISP IDs.

PDQ (Patient discovery query) – Like XCPD. Used to discover what the patient’s CRISP ID is.
Challenges and Opportunities

Challenge:
Increasingly complex products and services

Opportunity: CRISP Customer Success Program
→ Customer Success Liaisons
Challenges and Opportunities

Challenge:
Ambulatory Connectivity is a bugger!

Opportunity:
Process + Passion + Persnicketiness = Progress
Challenges and Opportunities

Challenge:
Making Care Alerts a part of clinical practice
Thank You!

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