Building Nationwide Capacity for PCOR-Enabled CDS
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  - PCOR CDS-Learning Network
- SME, Clinical Decision Support
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- Past Chair, HIMSS 2005-6
Conflict of Interest

• Salary: Apervita, Inc.
• Consulting Fees:
  – RTI International: PCOR CDS-Learning Network
  – MITRE Corporation: Project Connect
  – HL7 Advisory Council
• Teaching fee: Harvard T.H. Chan School of Public Health
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Conflict of Interest

• Has no conflicts of interest to report
Agenda

- A case study in PCOR-enabled CDS
- Motivation for PCOR-enabled CDS -- Why is this important now?
- Introducing the Patient-Centered Outcomes Research Clinical Decision Support Learning Network (PCOR CDS-Learning Network)
- Goals, activities, and progress to date
- Next Steps for policy, marketplace, and research
- Q & A
## Learning Objectives

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<td>1</td>
<td>Describe the effects that barriers and facilitators to PCOR-enabled CDS have on quality and patient safety outcomes</td>
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<td>Organize the findings into a conceptual framework of barriers and facilitators that can direct future efforts for disseminating PCOR through CDS</td>
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<td>Explain how the PCOR CDS-Learning Network’s research has identified existing barriers and facilitators to disseminating PCOR via CDS</td>
<td>5</td>
<td>Evaluate how the stakeholder community can pull together to promote the dissemination of PCOR findings into clinical care via CDS</td>
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[Image]
Realizing the Value of Health IT through PCOR & CDS

• Patient Engagement and Population Management

• Treatment/Clinical
Case Study
What is the evidence for self-measured BP monitoring?
The Clinician:

1. Has difficulty finding specific evidence among multiple sources
2. Questions which evidence is most reliable
3. Needs to know that any evidence that is actionable both for her and the patient
4. Wonders what the evidence says around what is measurable
The Clinician Wants:

1. One or more repositories with PCOR-enabled artifacts
2. Embedded clinical care and patient engagement that generate secure and reliable data
3. Confidence that any CDS intervention fits into the EHR and workflow
4. Clinically meaningful results for her care and reimbursement
The Patient:

1. Has concerns with the side effects of her meds
2. Knows that her pen and paper logs are inconsistently used
3. Is open to the idea of sharing data with her MD “in theory”
4. Agrees technology could be helpful but “not good with computers”
The Patient Wants:

1. To learn how she can mitigate side effects
2. Support to improve how she tracks her data from the convenience of home
3. Education around the ways any tools could share her data with her clinician while addressing safety, privacy, and reliability concerns
4. Usable tools and data that help her self-measure her BP for improved decision-making
Delivering evidence through CDS...
to promote patient-centered care...
requires collaboration among multiple stakeholders.

CDS Implementers’ Perspectives

Researchers

Knowledge Vendors

Standards Developers

Clinicians
Motivation: A perfect storm for CDS?

- Lots of clinical data going online
- Lots of genetic data coming
- Lots of personal/social data coming
- Lots of geospatial data coming
- Toward Value-Based Purchasing
- The complexity and volume of knowledge (High Velocity Medicine)
  - Improving abilities to access and use external knowledge-enabled tools and services
  - Improving abilities to access appropriate insertion points in EMRs and clinical workflow
CITL HIT Value Assessments

- Net US could save $150B with HIT adoption, or approximately 7.5% or US Healthcare Expenditure
  - The Value of Ambulatory Computerized Order Entry (ACPOE)
    - $44B US nationally; $29K per provider, per year
  - The Value of HealthCare Information Exchange and Interoperability (HIEI)
    - $78B per year
  - The Value of IT-enabled Chronic Diabetes Management (ITDM)
    - $8.3B for Disease Registries; $17B for Advanced EHR
  - The Value of Physician-Physician Tele-healthcare
    - Over $20B
  - The Value of Personal Health Records
    - $20B
The Central Problem

Why is it so hard to transform care with even the best health IT?

Simply put: the chasm which exists between published knowledge and clinical experience, and implemented knowledge in health IT, is too wide for the average clinician or healthcare delivery organization to manage.
Toward Smart Healthcare

“Dumb” Healthcare

- EMR
- Patient Portal
- Electronic Data Warehouses
- Revenue Cycle Management Systems
- Customer Relationship Management/Call Centers

“Smart” Healthcare

- Surveillance
- Discovery
- Prevention
- Prediction
- Anticipation
- Guidance
- Monitoring
- Feedback
- Learning
A “Unified Approach” for CDS

Clinical guidelines
Local protocols
Experience

CDSC* “L2”
GEM Import

CDSC* “L3”
Duodecim Import
GRADEs Import

CDSC* “L4”
OpenCDS
CDS cloud service

Clinical Knowledge

Structured Knowledge

Encoded and Machine-Interpretable Knowledge

Decision Support Service

EHRs

CDS Performance Data

$25B

Kawamoto K, Middleton B, Reider J, Rosendale D, Schiffman R.
From Guidelines to Clinical Decision Support: A Unified Approach to Translating and Implementing Knowledge
AMIA Panel Presentation, Chicago, IL 2012

See also Boxwala et al., JAMIA 2011

*CDSC = CDS Consortium
EHR – API Ecosystem

CDS Market Current State

CDS Resource Sharing and Use
Discern Health Recommendations to Office Clinical Quality and Safety, ONC, 2015
CDS Market Preferred State

Supply
Generation
Standards and automation to support efficient translation

Exchange
Feedback contributes to a continuously learning system
Multiple options for users to buy

Demand
Integration
Awareness of benefits, lower cost, and trust stimulate demand

Use
Standards and automation make customization and maintenance less costly
To create a multi-stakeholder learning network that catalyzes the dissemination of patient-centered evidence and practices into Patient-Centered Clinical Decision Support to improve care and outcomes.
Goals

Create a content hub containing information that promotes:

– Understanding of Patient-centered CDS

– Best practices for disseminating evidence through Patient-Centered CDS.

– Sharing of information on the creation, implementation and measurement of Patient-Centered CDS

Bring together stakeholders to catalyze the advancement and adoption of patient-centered CDS by facilitating and contributing to the creation of technical standards, policies and legal frameworks relevant to Patient-Centered CDS
Strategic Priorities

**Inform**
- By providing Stakeholders with a broad array of up-to-date information relevant to Patient-Centered CDS

**Connect**
- By providing information and services that enable stakeholders to connect and collaborate

**Advance**
- By leading multi-stakeholder initiatives aimed at advancing the science and practice of Patient-Centered CDS
AHRQ PCOR CDS Initiatives

PCOR CDS-Learning Network
www.pcorcds-ln.org

Project Connect, MITRE Corp.
(Booth 230|Federal Health)

Funding opportunities to scale and develop PCOR-enabled CDS
Growing Membership in the Learning Network

• Close to 200 individual members
• Wide array of disciplines including:
  – EHR Vendors
  – CDS Developers and Vendors
  – Patient Advocates
  – Quality Improvement Organizations & Networks
• Increasing participation
A Diverse Membership
PCOR CDS - Learning Network Council

RTI
PI: Barry H. Blumenfeld, MD, MS
RTI Project Staff

PCOR CDS-Learning Network Steering Committee
(Co-Chairs, Permanent and Rotating Members)

AHRQ

Barriers & Facilitators Work Group
Dissemination Work Group
Technical Standards Work Group
Evaluation Work Group
Sustainability Work Group
Prioritizing Findings for Dissemination via CDS

Authoring CDS Interventions

Implementing CDS Interventions

Measuring Decisions and Outcomes

External Factors: Marketplace – Policy – Legal – Governance
The Analytic Framework for Action (AFA)

Addressing external factors including the marketplace, policy, legal, and governance that impact development, dissemination, and implementation of PCOR-enabled CDS.
Prioritizing findings to be disseminated via PCOR-enabled CDS using objective criteria.
The Analytic Framework for Action (AFA)

**Authoring** PCOR-enabled CDS interventions using consensus-enabled data and knowledge standards.
The Analytic Framework for Action (AFA)

Implementing PCOR-enabled CDS interventions into clinical workflows through standardized methods.
The Analytic Framework for Action (AFA)

Measuring PCOR-enabled CDS interventions to demonstrate any improvements in clinician and patient decision-making, care processes, and outcomes.
The Analytic Framework for Action (AFA)

Aggregating outcomes to facilitate system-level learning in PCOR knowledge, clinical practice, and patient outcomes.
What we are learning... so far

• **Addressing** stakeholder-specific challenges and opportunities
  – Vendors and patients
  – Providers and content developers
  – Payers and policy makers
• **Prioritizing** guidelines for translating evidence (PCOR) into CDS
• **Authoring** technical standards for provider, and patient-facing decision support
• ** Recommending** ways to measure decision support impact
Welcome to the Patient-Centered Outcomes Research (PCOR) Clinical Decision Support (CDS) Learning Network

Creating an ecosystem which allows all stakeholders to reduce the friction of turning knowledge from PCOR findings into CDS-enabled actions to produce better care and outcomes.
COMING SOON:
January 18, 2017 @ 1PM EST: The Transformation of our Health System - Disruptors and Implications for Clinical Decision Support

Webinar

Please register at: https://attendee.gotowebinar.com/register/3647794666960063222. (After registering, you will receive a confirmation about joining the webinar.)

Our healthcare system is transforming to a patient-centered "health system," as a result of many concurrent disruptors. As a result, we are shifting from practice or enterprise optimization of workflow, costs, and quality, to the so-called quadruple aim of enhancing medication safety, improving population health, reducing costs, and improving the work life of health care providers. This is all viewed in the context of the "systems" that continually improve itself, based on new knowledge and feedback of its own performance.

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PCOR CDS-Learning Network
Collaboration Hub

Frequently Asked Questions (FAQ)

Why should I get involved with the PCOR CDS-LN?
To participate in an ongoing collaboration around the identification of key patient-centered outcomes research findings and their dissemination into point of care clinical decision support systems, ultimately improving patient care. This work will position care providers for the transition to value based payments (MACRA) and better ensure that we are engaged in delivering more medical care that works effectively and less care that does not.

What is PCORCDS-LN?
PCORCDS is a website and collaboration space for interested parties to convene, discuss, and develop synergies to facilitate the Patient-Centered Outcomes Research Clinical Decision Support Learning Network (PCORCDS-LN).

What problem does the PCOR CDS-LN address?
As valuable PCOR findings are released, it remains a challenge to incorporate these findings into CDS effectively. This learning network was created to help address these challenges, to more effectively overcome barriers to implementing patient-centered outcomes research findings in clinical care.

What kinds of activities is the learning network going to be engaged in?
This learning network will provide subject matter expertise, management, mentoring, collaboration, and peer-learning opportunities.

Who is involved in The Learning Network?
The Learning Network is governed by an executive committee of renowned experts in PCOR CDS, supported by a team from RTI International, and connects an active community of members across multiple areas including payers, providers, patients, EHR vendors, and CDS vendors.

Who supports the PCOR CDS-LN?
Initial support for the PCOR CDS-LN is provided through a U18 grant by the Agency for Healthcare Research and Quality (U18 HS024849) for four years from April 1, 2016 until January 31, 2020. We anticipate that the PCOR CDS-LN will become self-sustaining after this initial funding has ended.

www.pcorcds-ln.org
Evaluating the Impact of PCOR-enabled CDS

- Number of PCOR-enabled CDS artifacts implemented
- Types of PCOR-enabled CDS being implemented
- Types of clinical settings implementing PCOR-enabled CDS
- Levels of providers using PCOR-enabled CDS
- Levels of patients using PCOR-enabled CDS
- Impact of PCOR-enabled CDS on clinical process and outcomes
Promoting Sustainability

• Identifying value-add products and services
• Forging strategic and cross-discipline partnerships
• Continuing to build identity
• Developing and finalizing a long-term business plan
What’s next?

• Key Topic Workgroups
  – Barriers and Facilitators (in progress)
  – Dissemination
  – Technical Standards
  – Evaluation
  – Sustainability

• Enhancing the Collaboration Hub
  www.pcorcds-ln.org

• Annual Meeting
  – 2nd Annual Meeting in September 2017, Washington DC (open attendance)

• Planning new E-Journal in 2017
• Developing consensus recommendations and reports
• Promoting PCOR-enabled CDS research
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Engaging and Collaborating with You!
PCOR CDS-Learning Network: Promoting patient-centeredness through CDS
Acknowledgments

• Support from an AHRQ grant: 1U18H5024849-01
• Squishy Media (Collaboration Hub)
• Efforts from many volunteers
  – Steering Committee
  – Advisory Committee
  – Barriers and Facilitators Work Group
  – And more to come!
Realizing the Value of Health IT through Patient-centered Outcomes Research & CDS

• Patient Engagement and Population Management

• Treatment/Clinical
Questions?

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- Please remember to complete an online session evaluation (Session 42)
- See http://www.pcorcds-ln.org