NATIONAL QUALITY FORUM

Meeting Materials

Priority Setting for Health Care Performance Measurement: Addressing Performance Measure Gaps in Priority Areas

Care Coordination

Agenda

Priority Setting for Health Care Performance Measurement: Addressing Performance Measure Gaps in Priority Areas

Care Coordination Committee Meeting

April 3-4, 2014

NQF Conference Center at 1030 15th Street NW, 9th Floor, Washington, DC

Remote Participation Instructions:

Streaming Slides and Audio Online

- Direct your web browser to: http://nqf.commpartners.com
- Under "Enter a Meeting" type the meeting number for Day 1: **602675** or for Day 2: **134129**
- In the "Display Name" field, type your first and last name and click "Enter Meeting"

Teleconference

- Dial **(888) 802-7237** for committee members and **(877) 303-9138** for public audience
- Use conference ID code for Day 1: **6905065** and for Day 2: **6926117**

Meeting Objectives:

- Build shared understanding of environmental drivers of care coordination measurement activities
- Refine domains and sub-domains of measurement for coordination between primary care and community-based services, developing potential measure concepts in key areas
- Consider role of new data capabilities in facilitating measurement of care coordination
- Prioritize opportunities for care coordination measurement to inform HHS

Day 1: Thursday, April 3, 2014

8:30 am **Breakfast**

9:00 am **Welcome and Review of Meeting and Project Objectives**
Susan Reinhard, Co-Chair

9:30 am **HHS Opening Remarks and Environmental Context for Project**
Samantha Meklir; Office of Planning, Analysis, and Evaluation; HRSA

9:45 am **Review Project Progress to Date**
Sarah Lash, Senior Director, NQF

- Review of project elements: care coordination definition, conceptual framework, environmental scan, and web meeting themes
- Committee affirmation of elements

10:20 am **How Does This Work Relate to Endorsement of Measures?**
Lauralei Dorian, Project Manager, NQF
Gerri Lamb and Don Casey, Care Coordination Endorsement Steering Committee Co-Chairs

- Care Coordination Measure Maintenance and Endorsement
- Committee discussion

10:40 am **Connecting NQF Efforts on Care Coordination to Improve Population Health Outcomes**
Facilitator: Susan Reinhard
Elisa Munthali, Managing Director, NQF
Wendy Prins, Senior Director, NQF

- Population Health Framework
- Prioritizing Measure Gaps
- MAP Person- and Family-Centered Care Task Force
- MAP Dual Eligible Beneficiaries Workgroup
- Committee discussion of other related efforts

11:20 am **Break**

11:30 am **Evaluate Draft Domains and Sub-Domains for Care Coordination Measurement**
Facilitator: Mark Redding
All Committee Members

- Review web meeting homework results
- Committee discussion to refine domains and sub-domains for measurement

12:25 pm **Opportunity for Public Comment**

12:30 pm **Lunch**

1:00 pm **Committee Activity: Evaluating Impact and Feasibility of Measurement**
Facilitator: Susan Reinhard
All Committee Members

- Results of Steering Committee discussion
- Group activity to place measure domains in quadrants

2:30 pm **Break**

2:45 pm **Small Group Work: Generating Potential Measure Concepts**
Lauralei Dorian, Project Manager, NQF
All Committee Members

- Three groups brainstorm to create potential measure concepts for each of the measurement sub-domains under the following headings:
    - Creation of Person-Centered Plan of Care
    - Utilization of the Health Neighborhood to Execute the Plan of Care
    - Achievement of Outcomes

4:00 pm **Report Out from Small Groups**
Facilitator: Mark Redding
All Committee Members

- Share progress in creating potential measure concepts

4:40 pm **Opportunity for Public Comment**

4:45 pm **Summary of Day and Adjourn**
Facilitator: Mark Redding

Day 2: Friday, April 4, 2014

8:30 am **Breakfast**

9:00 am **Review Previous Day's Themes**
Facilitator: Mark Redding

9:15 am **Health IT's Role In Supporting Paradigm Shift**

Facilitator: Mark Redding
Kate Goodrich, Director of Quality Measurement and Health Assessment Group, Center for Clinical Standards and Quality, CMS, HHS
Fred Rachman, Alliance of Chicago

- Remarks from CMS on vision for care coordination measurement and use
- Reflections on Krist et al. article based on a Health Center Controlled Network perspective
- Committee discussion

10:30 am **Data Standards to Support Care Coordination Measurement**

Facilitator: Mark Redding
Russell Leftwich, State of Tennessee Office of eHealth Initiatives

- Plan of care data standards
- Interoperability and Open Data
- Committee discussion

11:45 am **Opportunity for Public Comment**

11:50 am	**Lunch**
12:30 pm	**Final Measure Gap Prioritization Exercise** *Sarah Lash* *All Committee Members* • Committee voting
1:30 pm	**Round-Robin Discussion of Themes for Recommendations to HHS** *Facilitator: Mark Redding* *All Committee Members*
2:15 pm	**Opportunity for Public Comment**
2:30 pm	**Wrap Up/Next Steps** *Mark Redding*
2:45 pm	**Adjourn**

Priority Setting for Health Care Performance Measurement: Addressing Performance Measure Gaps in Priority Areas

NATIONAL QUALITY FORUM

Care Coordination Committee
In Person Meeting

April 3-4, 2014

Welcome

Prioritizing Measure Gaps: Care Coordination Meeting Objectives

- Build shared understanding of environmental drivers of care coordination measurement activities
- Refine domains and sub-domains of measurement for coordination between primary care and community based services, developing potential measure concepts in key areas
- Consider role of new data capabilities in facilitating measurement of care coordination
- Prioritize opportunities for care coordination measurement to inform HHS

Today's Agenda – Thursday, April 3 – Part 1

9:30: HHS Opening Remarks and Environmental Context for Project

9:45: Review Project Progress to Date

10:20: How Does This Work Relate to Endorsement of Measures?

10:40: Connecting Efforts on Care Coordination to Improve Population Health Outcomes

11:20: Morning Break

11:30: Evaluate Draft Domains and Sub-Domains for Care Coordination Measurement

12:25: Opportunity for Public Comment

Today's Agenda – Part 2

12:30: Lunch

1:00: Committee Activity – Evaluating Impact and Feasibility of Measurement

2:30: Afternoon Break

2:45: Small Group Work – Generating Potential Measure Concepts

4:00: Report Out from Small Groups

4:40: Opportunity for Public Comment

4:45: Summarize Themes and Adjourn for the Day

COMMITTEE MEMBERS	
Susan Reinhard, PhD, RN, FAAN (co-chair)	AARP
Mark Redding, MD (co-chair)	Community Health Access Project
David Ackman, MD, MPH	Amerigroup
Richard Birkel, PhD, MPA	National Council on Aging
Don Casey, MD, MPH, MBA	IPO4Health
David Cusano, JD	Georgetown University Health Policy Institute
Woody Eisenberg, MD, FACP	Pharmacy Quality Alliance
Nancy Giunta, PhD, MSW	Silberman School of Social Work, Hunter College, CUNY
Carolyn Ingram, MBA	Center for Health Care Strategies, Inc.
Gerri Lamb, PhD, RN, FAAN	Arizona State University
Russell Leftwich, MD	State of Tennessee, Office of eHealth Initiatives
Linda Lindeke, PhD, RN, CNP	University of Minnesota, School of Nursing
Rita Mangione-Smith, MD, MPH	Seattle Children's Research Institute
Sharon McCauley, MS, MBA, RDN, LDN, FAND	Academy of Nutrition and Dietetics
Judy Ng, PhD, MPH	National Committee for Quality Assurance
Michael Parchman, MD, MPH	MacColl Center for Health Care Innovation
Fred Rachman, MD	Alliance of Chicago Community Health Services
Robert Roca, MD, MPH, MBA	American Psychiatric Institute for Research and Education
Vija Sehgal, MD, PhD, MPH	Waianae Coast Comprehensive Health Center
Daniel Stein, MBA	Stewards of Change
Ilene Stein, JD	Service Employees International Union

Team Introductions and Housekeeping Announcements

- NQF Staff
    - Sarah Lash, Senior Director
    - Lauralei Dorian, Project Manager
    - Laura Ibragimova, Project Analyst
    - Severa Chavez, Project Analyst (not present)
    - Wendy Prins, Senior Director (cross-task coordination)
- Announcements
    - Participation
    - Travel/Expense Reimbursement
    - Breaks

HHS Opening Remarks and Environmental Context for Project

Samantha Meklir,

Health Resources and Services Administration (HRSA)

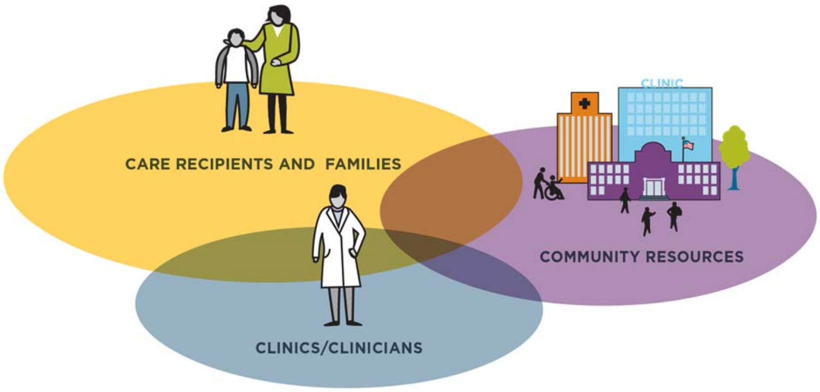
Review Project Progress to Date

Definition of Care Coordination

What is Care Coordination?

“Care coordination is the deliberate organization of activities and information to improve health outcomes by ensuring that care recipients’ and families’ needs and preferences for healthcare and community services are met.”

- Developed based on AHRQ *Care Coordination Measures Atlas,* the NQF *Preferred Practices and Performance Measures for Measuring and Reporting Care Coordination,* and committee feedback on the web meeting.
- Recent edits noted in green text.



NQF Preferred Practices

- ***Preferred Practice 2 – Revised:*** The healthcare home or sponsoring organizations shall be the central point for incorporating strategies for continuity of care among medical treatment, behavioral health services, long-term support services, and the community.
- ***Preferred Practice 3 – Revised:*** The healthcare home shall develop infrastructure for managing plans of care and ensuring that those plans of care are delivered and received by all relevant entities. The infrastructure should incorporate systems for registering, tracking, measuring, reporting, and improving essential coordinated services.
- ***Preferred Practice 6 – Revised:*** Healthcare providers and other entities involved with providing care and supports to an individual should have structured and effective systems, policies, procedures, and practices to create, document, execute, and update that person’s plan of care.

NQF Preferred Practices

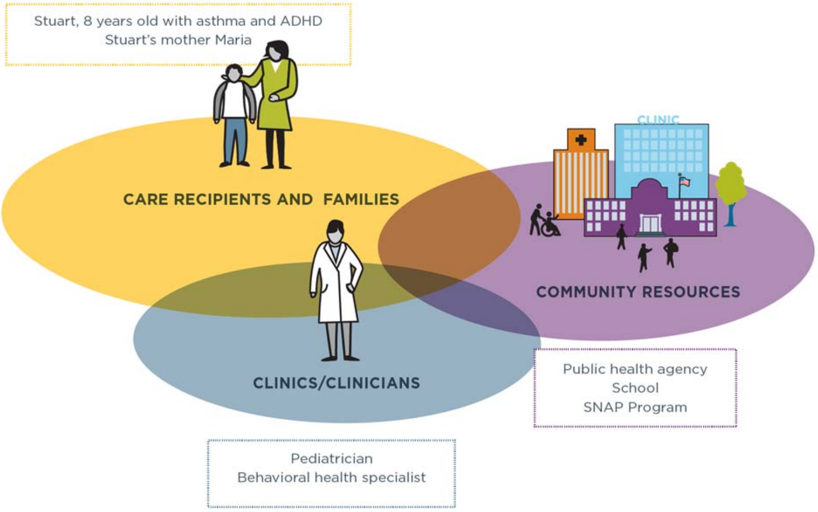
- ***Preferred Practice 7 – Revised:*** A systematic process of preventive and follow-up tests, treatments, assessments, or services should be established and informed by the plan of care.
- ***Preferred Practice 8 – Revised*:** The development of the comprehensive plan of care should include education of the care recipient and support for self-management as appropriate. The plan of care should also consider natural supports such as family caregivers and other resources.
- ***Preferred Practice 9 – Revised:*** The plan of care should include the entire array of community, nonclinical, behavioral, and healthcare services that respond to a person's needs and preferences and contribute to achieving the person's goals.

NQF Preferred Practices

- ***Preferred Practice 12 - Revised:*** All members of the healthcare home team, including the care recipient and his or her designees, should work within the same plan of care and share responsibility for their contributions to achieving the care recipient's goals.
- **Preferred Practice 15:** Standardized, integrated, interoperable, electronic, information systems with functionalities that are essential to care coordination, decision support, and quality measurement and practice improvement should be used.

Additional Concepts Suggested by Committee

- System and data interoperability to support integration of non-medical human services information into person-centered plans of care
- Evaluating the care recipient’s level of activation or engagement in care and customizing treatment accordingly
- Acknowledging role of social determinants in health outcomes and working in partnership to mitigate them
- Reduction of caregiver burden
- Reduction of duplication of care coordination services



Stuart, 8 years old with asthma and ADHD
Stuart’s mother Maria

Public health agency
School
SNAP Program

Pediatrician
Behavioral health specialist

CARE RECIPIENTS AND FAMILIES + CLINICS/CLINICIANS

Comprehensive assessment of Stuart's health, behaviors, and the family's needs and assets

Shared decision-making between clinicians and family to set appropriate goals for Stuart

Ongoing monitoring

CLINICS/CLINICIANS + COMMUNITY RESOURCES

Care team makes warm transfer to community health worker to assist with asthma control and SNAP enrollment

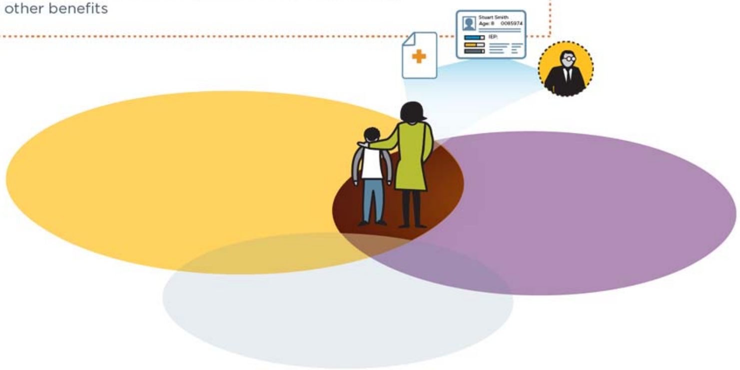
Clinician suggests Maria join group for parents of children with ADHD that the practice has partnered with

CARE RECIPIENTS AND FAMILIES + COMMUNITY RESOURCES

Individualized education plan at school that accounts for Stuart's needs

Public health team educates Maria at home about how to identify and remove environmental triggers for asthma

Contact with human services system to connect the family with other benefits



RESULTS

- Stuart's asthma-related visits to ED subside
- Stuart experiences better attendance and outcomes at school
- Positive experiences reported by all involved, including clinicians & community-based workers

Committee Affirmation of Definition and Conceptual Framework

Preliminary Measure Scan Results

- Scan included a review of 5,962 measures
- 363 measures identified as potential care coordination measures
- Available measures are either too narrowly or too broadly designed to be actionable by providers of primary care
- 180 measures calculated at a broad population level and would need significant modification before being applied to clinics, clinicians, and/or community-based providers

Types of Measures Revealed by Scan

- Measures clustered into several distinct types, each with its own strengths and weaknesses. These included:
  - Condition-Specific Measures
  - Age-Specific Measures
  - International Measures
  - One-Way Referral Measures
  - Measures Derived from Surveys and/or Research Evaluations
  - Population-Level Measures

Themes from Committee Web Meeting

- Project should focus on coordination outside the traditional healthcare system and a care recipient's engagement with those community resources, emphasizing the role of social determinants that control the majority of health outcomes
- Care coordination measurement should be agnostic to target population or provider of care coordination (e.g., family, professional caregiver)
- Measurement should balance types of measures (e.g., process, outcome) and various topics
- Care recipient and family's perspectives on the effectiveness of care coordination are among the most meaningful outcomes of coordinated care
- Increase in a care recipient and/or family's activation level and participation in care also a desirable outcome

Themes from Committee Web Meeting

- Committee's feedback on aspects of care coordination that could be developed into meaningful measures:
  - A comprehensive assessment of health that incorporates social, behavioral, and education needs
  - A shared care plan that is informed by both the care recipient/family and medical and non-medical providers
  - The extent of a patient's engagement; coordination does not occur by merely offering a referral
  - Connection of services between the clinical setting and the community
  - The family's level of access to information and services
  - The reduction of cost and over-utilization
  - Improved patient safety as an outcome of successful coordination of care

Committee Affirmation of Environmental Scan and Web Meeting Themes

How Does this Work Relate to NQF Endorsement of Measures?

Foundational Work:
NQF-Endorsed Definition and Framework for Measuring and Reporting Care Coordination

- Care Coordination Framework (2006) identified five domains essential to the future measurement of care coordination:
  - Healthcare home
  - Proactive plan of care and follow-up
  - Communication
  - Information systems
  - Transitions or handoffs

Past Consensus Development Process (CDP) Projects

2010: Preferred Practices and Performance Measures for Measuring and Reporting Care Coordination

- 10 measures endorsed
- 25 Preferred Practices endorsed

2013: Care Coordination 2-Phase Project

- Phase 1 – Environmental Scan, Development of Pathway Forward
- Phase 2 – CDP
  - NO new measures submitted to project
  - 12 maintenance measures recommended

Current Project:
Phase 1 Measures – Structural Measures

- **7 structural measures from University of Minnesota**
- **Measures**
  - #0291 Administrative Communication
  - #0293 Medication Information
  - #0293 Medication Information
  - #0294 Patient Information
  - #0295 Physician Information
  - #0296 Nursing Information
  - #0297 Procedures and Tests

Phase 1 Measures – EHR Measure

- **1 E-Prescribing Measures from City of NY Department of Health and Mental Hygiene**
    - #0487 EHR with EDI Prescribing Used in Encounters Where a Prescribing Event Occurred
- **3 Median Time Measures from CMS:**
    - #0495 Median Time from ED Arrival to ED Departure for Admitted Patients
    - #0496 Median Time from ED Arrival to ED Departure for Discharged Patients
    - #0497 Admit Decision Time to ED Departure Time for Admitted Patients

Phase 1 Measures – New Measure

- **1 New Measure From Brigham and Women's Hospital/Veterans Rural Health Resource Center – VA Office of Rural Health**
    - #2456: Medication Reconciliation: Number of Unintentional Medication Discrepancies per Patient (Outcome Measure)

Current Committee Recommendations

- To be added based on results of ongoing meetings.

Activities and Timeline: Review Cycle 1

Process Step	Timeline
Measure submission deadline (cycle 1)	December 20, 2013
SC member orientation	January 27
SC member preliminary review and evaluation	February - March
SC Work group calls	February 19-26
SC Meeting	March 18-19
Draft report posted for NQF Member and Public Review and Comment	April 24 – May 23
SC call to review and respond to comments	June 12
Draft report posted for NQF Member vote	June 6 – July 7
CSAC review and approval	July 10 – July 30
Endorsement by the Board	July 31 – August 13
Appeals	August 14 – September 12

Connecting NQF Efforts on Care Coordination to Improve Population Health Outcomes

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National Quality Strategy

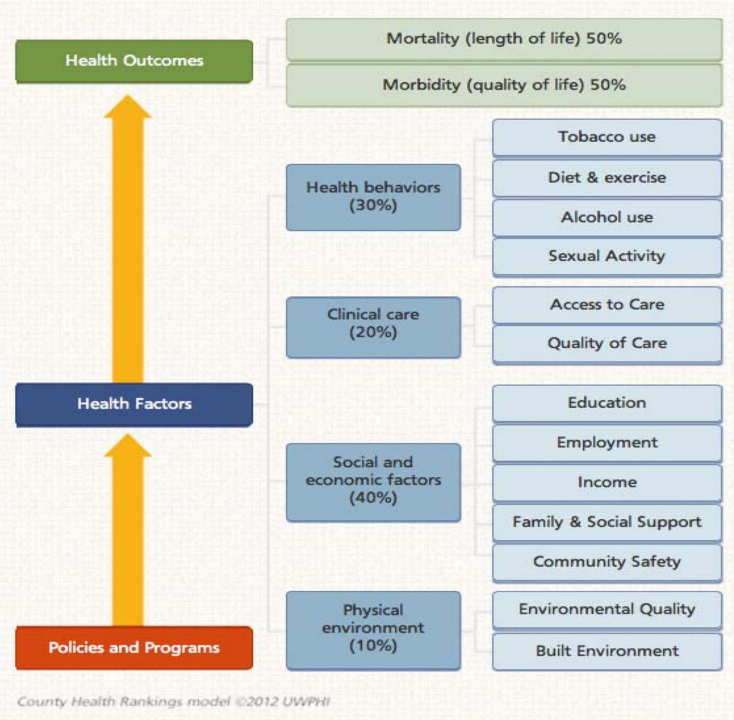
Better Care

PRIORITIES

- Health and Well-Being
- Prevention and Treatment of Leading Causes of Mortality
- Person- and Family-Centered Care
- Patient Safety
- Effective Communication and Care Coordination
- Affordable Care

Healthy People/ Healthy Communities

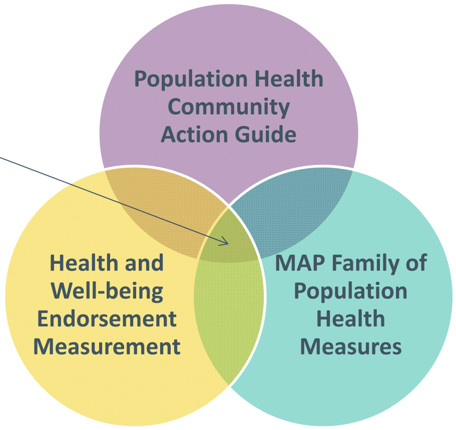
Affordable Care



County Health Rankings model ©2012 UWPHI

NQF's Current Work on Population Health

- Aligned with NQS' Three-Part Aim
- Focus beyond medical model – increased emphasis on determinants of health and improvement activities
- Address measurement, measure gaps, methodological and other challenges of population health measure development
- Opportunity to leverage population health activities and to exchange ideas between committees


Population Health Community Action Guide

Health and Well-being Endorsement Measurement

MAP Family of Population Health Measures

NQF Population Health Projects Timeline

Time Period	MAP Population Health Family	Population Health Action Guide	Health & Well-Being CDP
April 2014	In-person task force meeting	Draft *Action Guide* for public comment	In-person committee meeting (April 29-30)
June 2014	Public comment	In-person committee meeting	Draft report
July 2014	Final report		Public and member comment
Aug 2014		Base year final report	NQF member vote
Fall 2014		Begin work with Feedback Communities (TBD)	Final report
2016		Final *Action Guide* (TBD)	

Population Health Action Guide: Ten Key Elements

1. A self-assessment about readiness to engage in this work
2. Leadership across the region and within organizations
3. An organizational planning and priority-setting process
4. A community health needs assessment and asset mapping process
5. An agreed-upon, prioritized set of health improvement activities
6. Selection and use of measures and performance targets
7. Audience-specific strategic communication
8. Joint reporting on progress toward achieving intended results
9. Indications of scalability
10. A plan for sustainability

Priority Setting for Health Care Performance Measurement: 2013-14 Focus Areas

- Adult Immunizations
- Alzheimer’s Disease and Related Dementias
- Care Coordination
- Health Workforce
- Person-Centered Care and Outcomes

Prioritizing Measure Gaps: Adult Immunization

Highest measurement priorities to optimize vaccination rates and outcomes across adult populations

- Measures for specific adult vaccines for which there are no NQF-endorsed measures (e.g., zoster, HPV, Td/Tdap)
- Summary or composite measures of adult immunization
- Outcome measures (e.g., hospitalizations, deaths, post-discharge readmission) for vaccine-preventable diseases
- Provider-level and population-level measures

Prioritizing Measure Gaps: Alzheimer’s Disease and Related Dementias

Highest measurement priorities to improve care and outcomes for persons with dementia and their families and caregivers

Five overarching measurement domains along the episode of care/disease trajectory (with corresponding subdomains) :

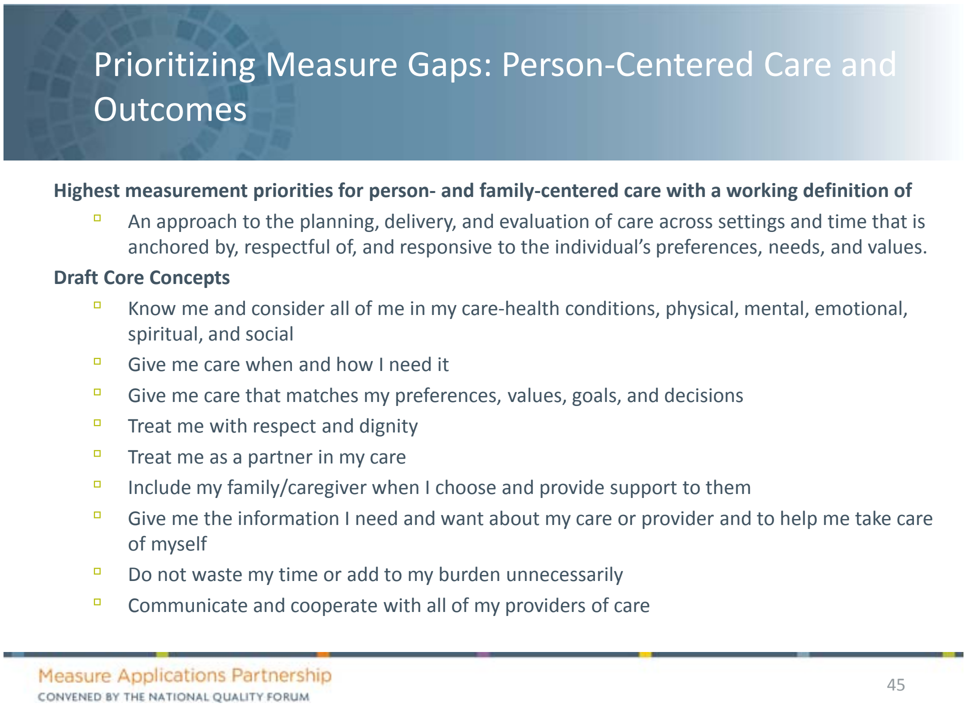
- Population at risk
- Symptom awareness and initial detection
- Evaluation and initial management
- Care, treatment, and support
- End-of-life and bereavement

Prioritizing Measure Gaps: Health Workforce

Highest measurement priorities with an overarching lens of community needs and workforce deployment for improved prevention and care coordination

Nine overarching measurement domains:

- Training and development
- Experience with care
- Workforce capacity and productivity
- Infrastructure
- Clinical community and cross-disciplinary relationships
- Staff experience
- Workforce diversity and retention
- Recruitment and retention
- Assessment of community and workforce needs



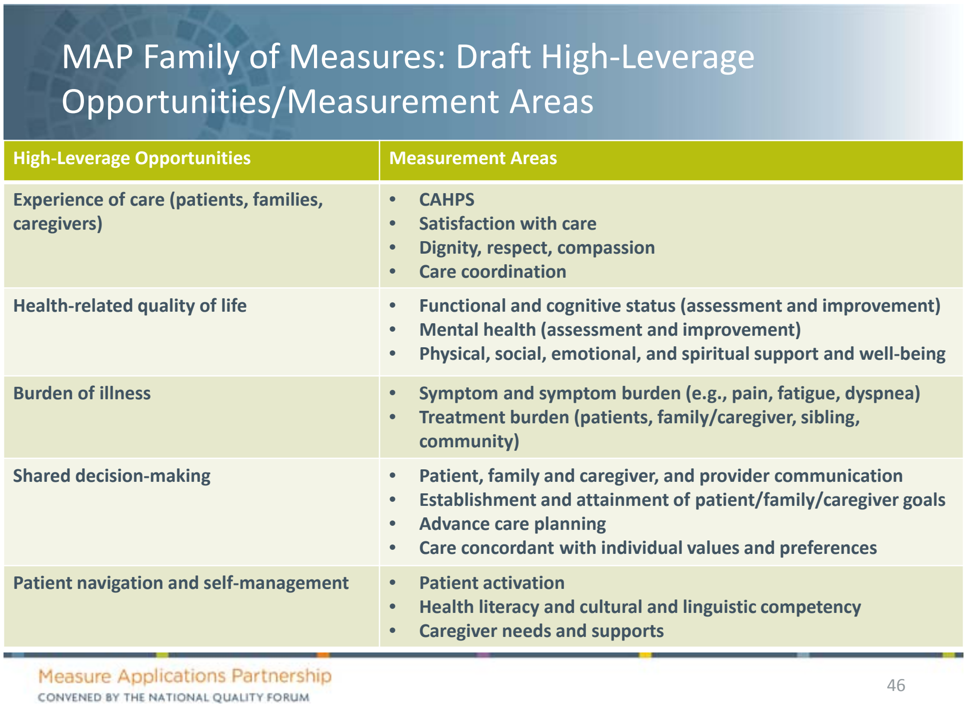
Prioritizing Measure Gaps: Person-Centered Care and Outcomes

Highest measurement priorities for person- and family-centered care with a working definition of

- An approach to the planning, delivery, and evaluation of care across settings and time that is anchored by, respectful of, and responsive to the individual's preferences, needs, and values.

Draft Core Concepts

- Know me and consider all of me in my care-health conditions, physical, mental, emotional, spiritual, and social
- Give me care when and how I need it
- Give me care that matches my preferences, values, goals, and decisions
- Treat me with respect and dignity
- Treat me as a partner in my care
- Include my family/caregiver when I choose and provide support to them
- Give me the information I need and want about my care or provider and to help me take care of myself
- Do not waste my time or add to my burden unnecessarily
- Communicate and cooperate with all of my providers of care



MAP Family of Measures: Draft High-Leverage Opportunities/Measurement Areas

High-Leverage Opportunities	Measurement Areas
Experience of care (patients, families, caregivers)	• **CAHPS** • **Satisfaction with care** • **Dignity, respect, compassion** • **Care coordination**
Health-related quality of life	• **Functional and cognitive status (assessment and improvement)** • **Mental health (assessment and improvement)** • **Physical, social, emotional, and spiritual support and well-being**
Burden of illness	• **Symptom and symptom burden (e.g., pain, fatigue, dyspnea)** • **Treatment burden (patients, family/caregiver, sibling, community)**
Shared decision-making	• **Patient, family and caregiver, and provider communication** • **Establishment and attainment of patient/family/caregiver goals** • **Advance care planning** • **Care concordant with individual values and preferences**
Patient navigation and self-management	• **Patient activation** • **Health literacy and cultural and linguistic competency** • **Caregiver needs and supports**

Most Recent Efforts of MAP Dual Eligible Beneficiaries Workgroup

- In pursuit of the National Quality Strategy, MAP:
  - Determined best available measures and measure gaps for high-need subgroups of dual eligible beneficiaries
  - Developed a Family of Measures
  - Began exploration of quality of life outcomes and how various system stakeholders share responsibility for supporting better outcomes for vulnerable beneficiaries
  - Will discuss at an in-person next week how to accelerate measure development and quality improvement strategies in key topic areas.

MAP Duals Workgroup: High-Leverage Opportunities for Improvement Through Measurement

Care Coordination

Quality of Life

Screening and Assessment

Mental Health and Substance Use

Structural Measures

Other Related Efforts – Inside and Outside of NQF

- Risk Adjustment for Socioeconomic Status or Other Sociodemographic Factors
  - Report currently available for comment
- MAP Population Health Task Force
- Do committee members recommend coordinating with other projects? What related efforts are most important?

Evaluate Draft Domains and Sub-Domains for Care Coordination Measurement

Crafting Measurement Domains and Sub-Domains Based on Homework Results

Methodology

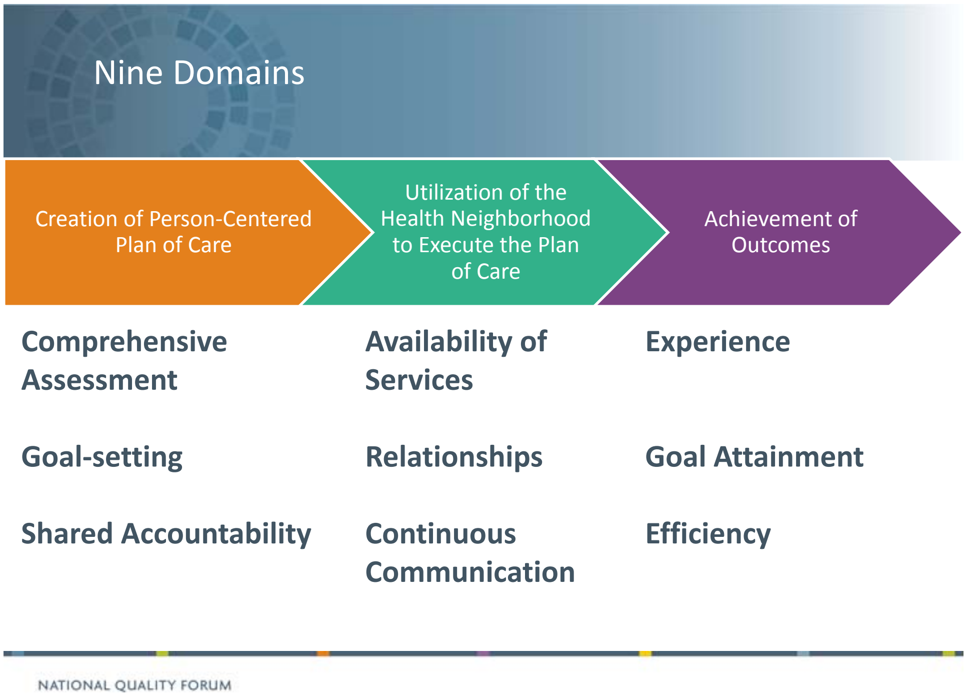
- Introduced on web meeting, committee ranked possible domains of measurement for coordination between primary care and community-based services.
- Each member selected up to 10 out of 51 possible sample domains, drawn from three key sources.
- Participants also had the option to add additional domains or propose revised wording of sample domains, as needed.
- Staff tallied the committee's votes for each domain, grouped similar concepts, and organized the list to improve consistency in the level of granularity.

Thematic Clusters


Creation of Person-Centered Plan of Care

Utilization of the Health Neighborhood to Execute the Plan of Care

Achievement of Outcomes



Nine Domains

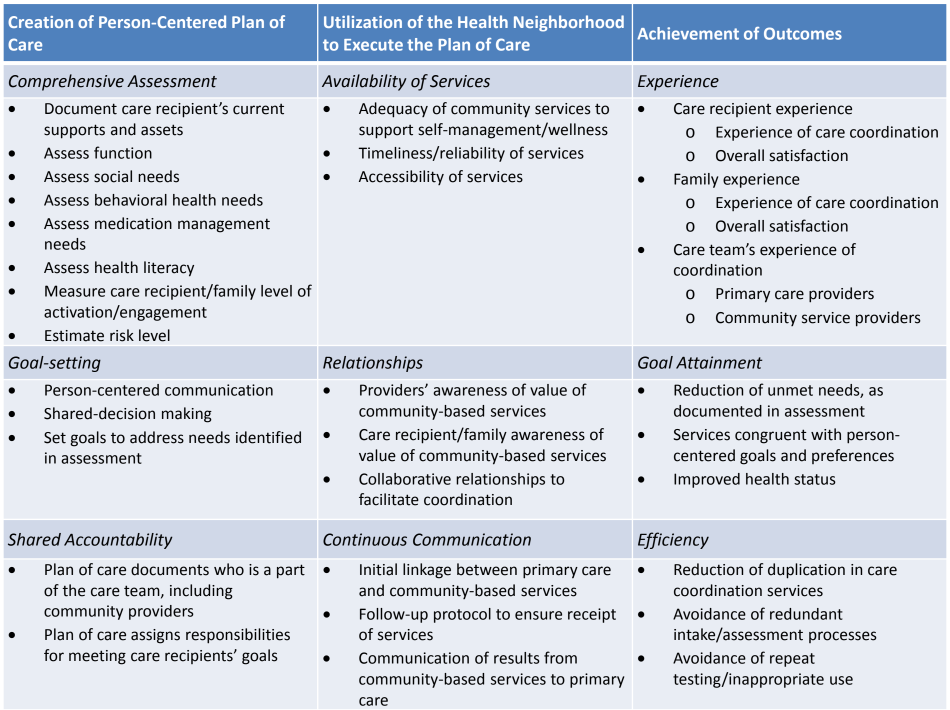
Creation of Person-Centered Plan of Care

Utilization of the Health Neighborhood to Execute the Plan of Care

Achievement of Outcomes

Comprehensive Assessment	**Availability of Services**	**Experience**
Goal-setting	**Relationships**	**Goal Attainment**
Shared Accountability	**Continuous Communication**	**Efficiency**

NATIONAL QUALITY FORUM



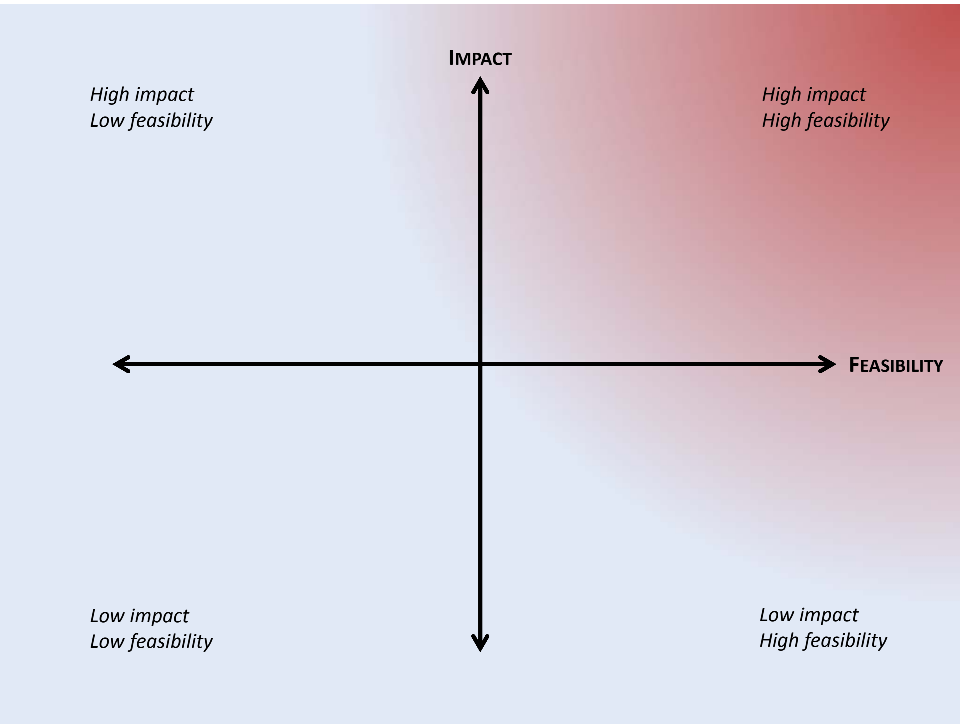
Creation of Person-Centered Plan of Care	Utilization of the Health Neighborhood to Execute the Plan of Care	Achievement of Outcomes
Comprehensive Assessment	*Availability of Services*	*Experience*
• Document care recipient's current supports and assets • Assess function • Assess social needs • Assess behavioral health needs • Assess medication management needs • Assess health literacy • Measure care recipient/family level of activation/engagement • Estimate risk level	• Adequacy of community services to support self-management/wellness • Timeliness/reliability of services • Accessibility of services	• Care recipient experience o Experience of care coordination o Overall satisfaction • Family experience o Experience of care coordination o Overall satisfaction • Care team's experience of coordination o Primary care providers o Community service providers
Goal-setting	*Relationships*	*Goal Attainment*
• Person-centered communication • Shared-decision making • Set goals to address needs identified in assessment	• Providers' awareness of value of community-based services • Care recipient/family awareness of value of community-based services • Collaborative relationships to facilitate coordination	• Reduction of unmet needs, as documented in assessment • Services congruent with person-centered goals and preferences • Improved health status
Shared Accountability	*Continuous Communication*	*Efficiency*
• Plan of care documents who is a part of the care team, including community providers • Plan of care assigns responsibilities for meeting care recipients' goals	• Initial linkage between primary care and community-based services • Follow-up protocol to ensure receipt of services • Communication of results from community-based services to primary care	• Reduction of duplication in care coordination services • Avoidance of redundant intake/assessment processes • Avoidance of repeat testing/inappropriate use

Committee Discussion to Refine Domains and Subdomains for CC Measurement

- Are there prominent domains or sub-domains missing?
- Are there domains or sub-domains that should be removed?
- Should any domains or sub-domains be re-framed for accuracy?

Opportunity for Public Comment

Committee Activity: Evaluating Impact and Feasibility of Measurement



IMPACT

High impact
Low feasibility

High impact
High feasibility

FEASIBILITY

Low impact
Low feasibility

Low impact
High feasibility

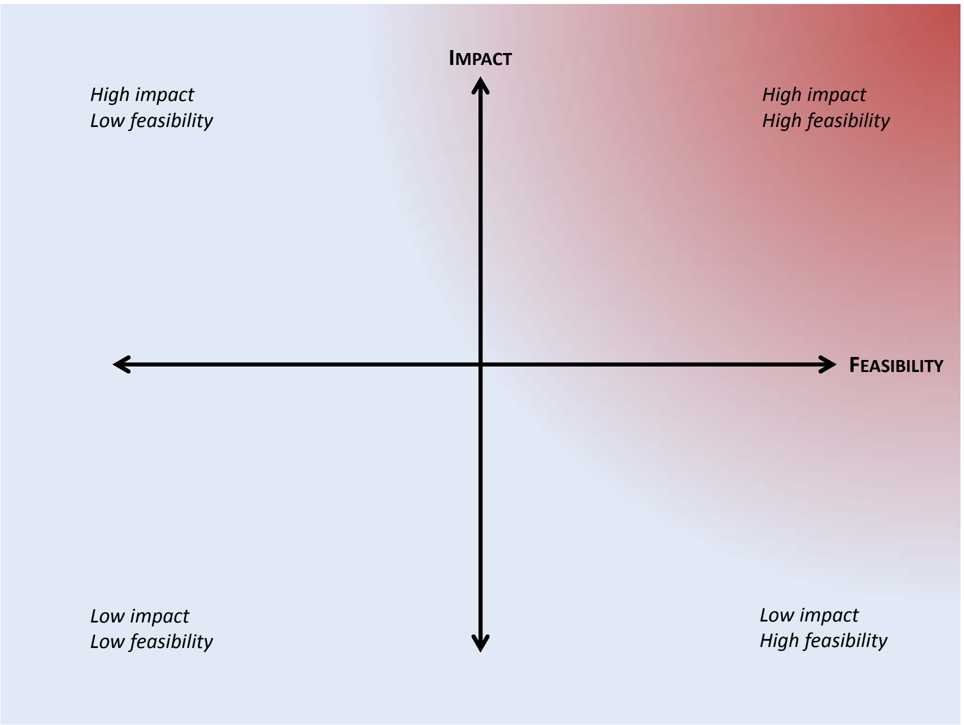
Instructions for Activity

Discussion:

Assuming a trade-off between measures' impact and how easy it is to develop them, what is the most fertile ground for measure development?

Gerri and Don to share feedback from Steering Committee

- Individual work over lunch
- Group work:
  - Reach consensus on whether each of the nine domains is:
    - High or low impact
    - High or low feasibility
  - Staff will place domains on "sticky wall" in appropriate quadrant



IMPACT

FEASIBILITY

High impact
Low feasibility

High impact
High feasibility

Low impact
Low feasibility

Low impact
High feasibility

Small Group Work: Generating Potential Measure Concepts

Thematic Clusters

Creation of Person-Centered Plan of Care

Utilization of the Health Neighborhood to Execute the Plan of Care

Achievement of Outcomes

Instructions for Activity

- Three groups brainstorm to create potential measure concepts for each of the measurement sub-domains:
  - Creation of Person-Centered Plan of Care
  - Utilization of the Health Neighborhood to Execute the Plan of Care
  - Achievement of Outcomes
- Try to draft at least one measure concept for each sub-domain.
- Worksheets and staff facilitation will guide each group.

Instructions for Activity

- **EXAMPLE in first row of worksheet**
  - Sample sub-domain: educational attainment
  - Sample numerator: Number of children ages 10+ who screen positive for risk factors for poor educational outcomes (e.g., dropout) and for whom a community referral is completed
  - Sample denominator: All children ages 10+ seen in primary care in measurement year
  - Sample data source: electronic health record

Group 1	Group 2	Group 3
Creation of Person-Centered Plan of Care	**Utilization of the Health Neighborhood to Execute the Plan of Care**	**Achievement of Outcomes**
Laura, 9th Floor Conference Room	**Sarah,** Current Meeting Room	**Lauralei,** 8th Floor Large Conference Room
Gerri Lamb	Robert Roca	Richard Birkel
Fred Rachman	Mark Redding	Michael Parchman
Susan Reinhard	Rita Mangione-Smith	Judy Ng
David Cusano	Sharon McCauley	Ilene Stein
Woody Eisenberg	Nancy Giunta	David Ackman
Carolyn Ingram	Russell Leftwich	Donald Casey
Vija Sehgal	Samantha Meklir	Linda Lindeke

Report Out from Small Groups

- Please summarize your discussion for the group, highlighting:
  - One or two of your group's strongest potential measure concepts
  - The types of measures your group is seeking (e.g., process, outcome, experience)
  - Domains in which your group found it particularly easy or difficult to generate potential measure concepts
  - Data sources your group considered for measurement
  - Any other important themes!

Opportunity for Public Comment

Summary of Day

Review of Previous Day's Themes

Today's Agenda: Friday, April 4

9:15: Health IT's Role in Supporting Paradigm Shift

10:30: Data Standards to Support Care Coordination Measurement

11:45: Opportunity for Public Comment

11:50: Lunch

12:30: Final Measure Gap Prioritization Exercise

1:30: Round-Robin Discussion of Themes for Recommendations to HHS

2:15: Final Opportunity for Public Comment

2:30: Wrap Up and Next Steps

Health IT's Role in Supporting Paradigm Shift

Setting the Stage

Comments from Dr. Kate Goodrich

Director of Quality Measurement and Health Assessment Group; Center for Clinical Standards and Quality, CMS

Comments from other members of the HHS team

Alliance of Chicago Experience

- Slides forthcoming during week of 3/31

Committee Discussion

- Questions for presenter?
- Does the article by Krist and colleagues align with your thinking about the HIT capabilities needed to support care coordination?
- How can we foster innovation and support person-centered care in the context of family and community while HIT continues to evolve?

Data Standards to Support Care Coordination Measurement

Consolidated CDA and Quality Measures in Care Coordination

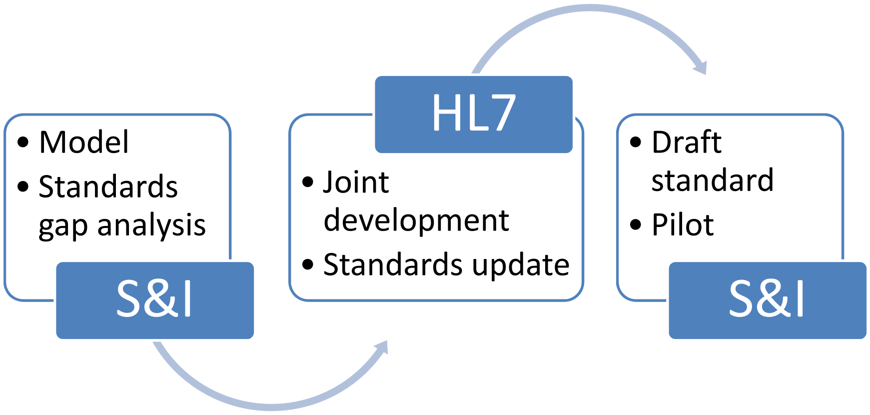
Russell B. Leftwich, MD

S&I Framework

- Open government platform
- Committed volunteers from industry, health care organizations, academia, government, professional societies
- Initiative purpose, charter, mission statement


Use case
model
Standards analysis
harmonization
pilot

Collaborative Standards Development


- Model
- Standards gap analysis

S&I

HL7

- Joint development
- Standards update

- Draft standard
- Pilot

S&I

S&I Transitions of Care Initiative

- Anticipating Meaningful Use Stage 2
  - Focus on Health Information Exchange (the verb)
- Specialist closed loop referral/Hospital Discharge
- Model of clinical information needed
- Best fit standards from standards analysis
- Standards gap analysis and proposed standards
- Harmonization of standards

What is HL7 Clinical Document Architecture (CDA)?

- CDA is a document markup standard for the structure and semantics of an exchanged “clinical document.”
- A CDA document is a defined and complete information object that can exist outside of a message; it can include text, images, sounds, and other multimedia content.
- CDA documents are encoded in Extensible Markup Language (XML).
- CDA is derived from HL7's central Reference Information Model (RIM), thereby enabling data reusability - with lab or pharmacy messages, claims attachments, clinical trials, etc.
- The CDA specification is richly expressive and flexible. Templates, conformance profiles, and implementation guides (IGs) can be used to constrain the generic CDA specification.

Consolidated Clinical Document Architecture (C-CDA)

Document Types (partial list)

- Continuity of Care Doc (CCD)
- Discharge Summary
- Referral Note
- Consultation Note
- Progress Note
- Unstructured Document
- Care Plan
- Transition of Care
- Clinical Summary
- Ambulatory Summary
- Inpatient Summary
- Data Portability Export

Blue: 9 document templates in C-CDA
Red: 9 document types explained in Meaningful Use Companion Guide, with no explicit document templates

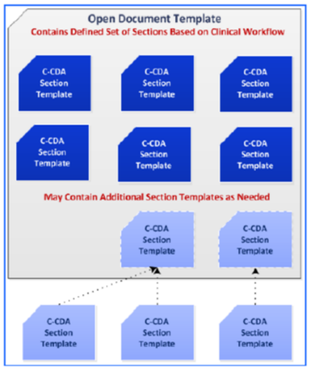
C-CDA R2 Section Templates*

- US Realm Header
- Allergies
- Medications
- Advance Directives
- Chief Complaint
- Reason for Visit
- Procedures
- Vital Signs
- Social History
- Family History
- Encounter Diagnosis

* C-CDA defines 71 standard section templates with standard entry templates for some types of information

Figure from HL7 DSTU
MU Companion Guide for C-CDA

Figure 4: Additions to Consolidated CDA Document Templates

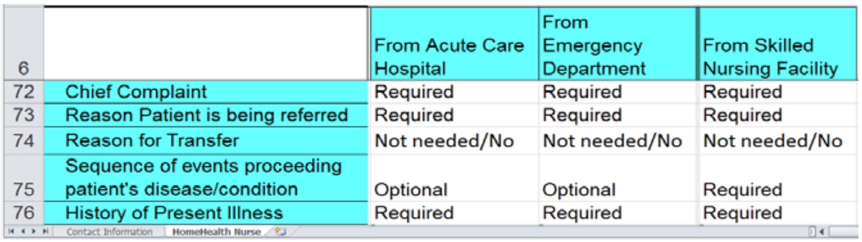


Longitudinal Coordination of Care

- Long Term/Post Acute Care (LTPAC)
  - – LTPAC Care Transfers
  - – Longitudinal Care Planning
- Improving Mass Post Acute Care Transfers (IMPACT)

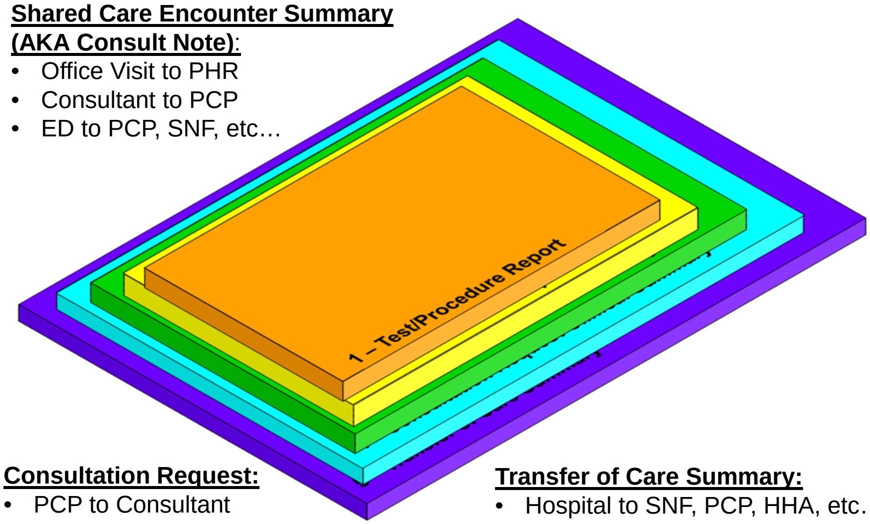
IMPACT “Receiver” Survey

- Largest survey of Receiver data needs
- 46 Organizations completed evaluation
- 11 Types of healthcare organizations
- 12 Different types of user roles
- 1135 Transition surveys completed



6		From Acute Care Hospital	From Emergency Department	From Skilled Nursing Facility
72	Chief Complaint	Required	Required	Required
73	Reason Patient is being referred	Required	Required	Required
74	Reason for Transfer	Not needed/No	Not needed/No	Not needed/No
75	Sequence of events proceeding patient's disease/condition	Optional	Optional	Required
76	History of Present Illness	Required	Required	Required

Five Transition Datasets

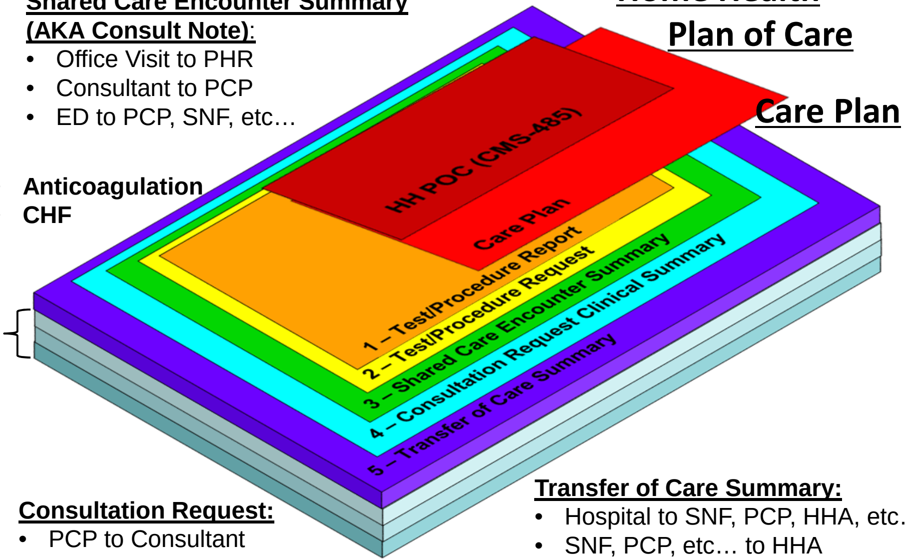


Shared Care Encounter Summary (AKA Consult Note):
- Office Visit to PHR
- Consultant to PCP
- ED to PCP, SNF, etc…

Consultation Request:
- PCP to Consultant
- PCP, SNF, etc… to ED

Transfer of Care Summary:
- Hospital to SNF, PCP, HHA, etc…
- SNF, PCP, etc… to HHA
- PCP to new PCP

Datasets include Care Plan



Home Health Plan of Care

Care Plan

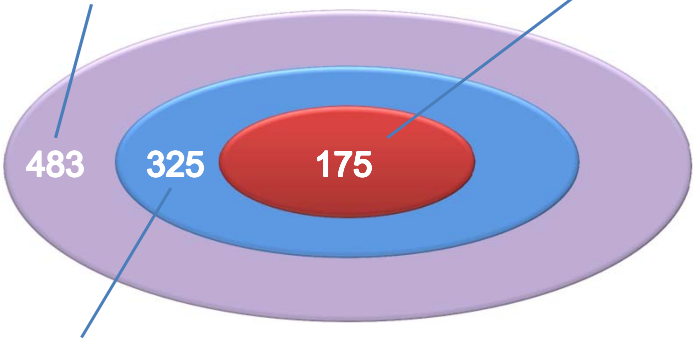
Shared Care Encounter Summary (AKA Consult Note):
- Office Visit to PHR
- Consultant to PCP
- ED to PCP, SNF, etc…

- **Anticoagulation**
- **CHF**

Consultation Request:
- PCP to Consultant
- PCP, SNF, etc… to ED

Transfer of Care Summary:
- Hospital to SNF, PCP, HHA, etc…
- SNF, PCP, etc… to HHA
- PCP to new PCP

C-CDA Data Element Gaps



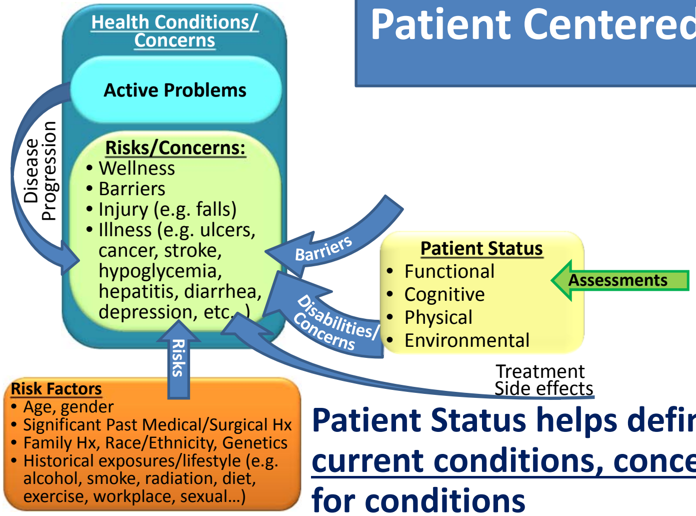
Data Elements for Longitudinal Coordination of Care

CCD Data Elements

IMPACT Data Elements for basic Transition of Care needs

- **Many "missing" data elements can be mapped to CDA templates with applied constraints**
- **20% have no appropriate templates**

Developing a Longitudinal Patient Centered Care Plan



Health Conditions/ Concerns

Active Problems

Risks/Concerns:
- Wellness
- Barriers
- Injury (e.g. falls)
- Illness (e.g. ulcers, cancer, stroke, hypoglycemia, hepatitis, diarrhea, depression, etc…)

Disease Progression

Barriers

Disabilities/ Concerns

Risks

Patient Status
- Functional
- Cognitive
- Physical
- Environmental

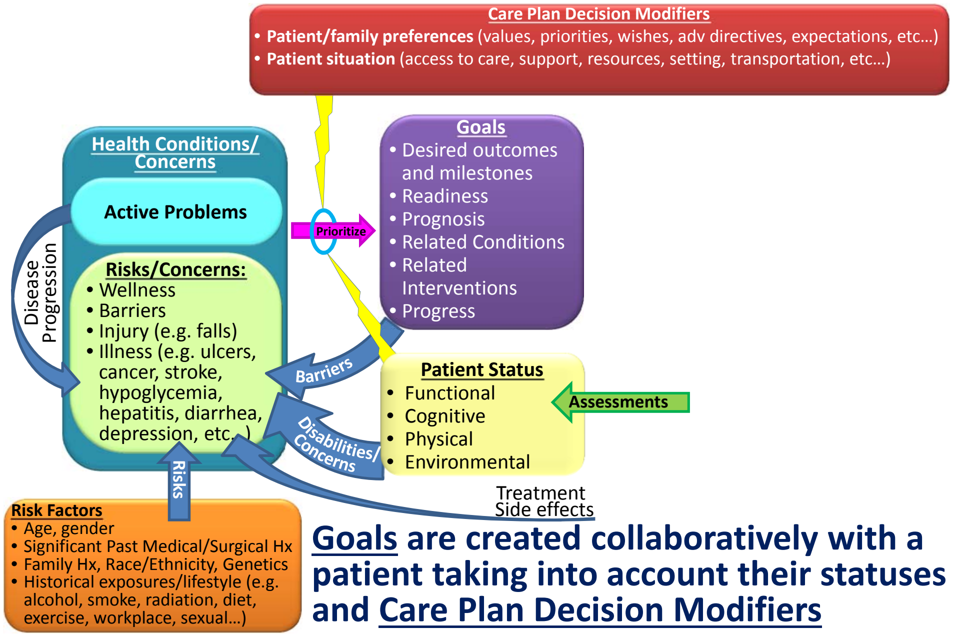
Assessments

Treatment Side effects

Risk Factors
- Age, gender
- Significant Past Medical/Surgical Hx
- Family Hx, Race/Ethnicity, Genetics
- Historical exposures/lifestyle (e.g. alcohol, smoke, radiation, diet, exercise, workplace, sexual…)

Patient Status helps define the patient's current conditions, concerns, and risks for conditions

Risks/concerns come from many sources



Care Plan Decision Modifiers
- **Patient/family preferences** (values, priorities, wishes, adv directives, expectations, etc…)
- **Patient situation** (access to care, support, resources, setting, transportation, etc…)

Goals
- Desired outcomes and milestones
- Readiness
- Prognosis
- Related Conditions
- Related Interventions
- Progress

Prioritize

Health Conditions/ Concerns

Active Problems

Risks/Concerns:
- Wellness
- Barriers
- Injury (e.g. falls)
- Illness (e.g. ulcers, cancer, stroke, hypoglycemia, hepatitis, diarrhea, depression, etc…)

Disease Progression

Barriers

Disabilities/ Concerns

Risks

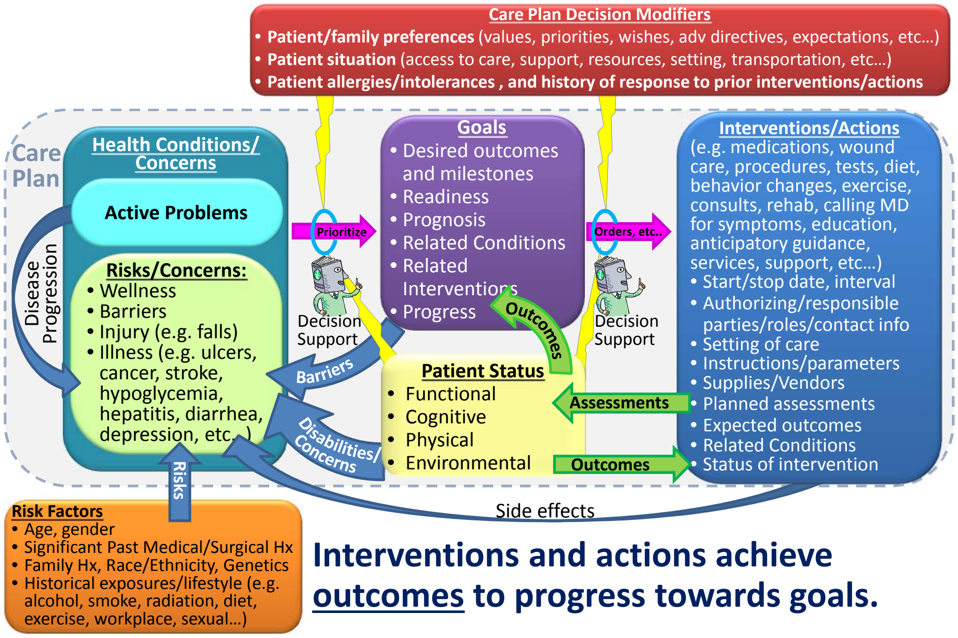
Patient Status
- Functional
- Cognitive
- Physical
- Environmental

Assessments

Treatment Side effects

Risk Factors
- Age, gender
- Significant Past Medical/Surgical Hx
- Family Hx, Race/Ethnicity, Genetics
- Historical exposures/lifestyle (e.g. alcohol, smoke, radiation, diet, exercise, workplace, sexual…)

Goals are created collaboratively with a patient taking into account their statuses and Care Plan Decision Modifiers



Care Plan Decision Modifiers

- **Patient/family preferences** (values, priorities, wishes, adv directives, expectations, etc…)
- **Patient situation** (access to care, support, resources, setting, transportation, etc…)
- **Patient allergies/intolerances , and history of response to prior interventions/actions**

Care Plan

Disease Progression

Health Conditions/ Concerns

Active Problems

Risks/Concerns:
- Wellness
- Barriers
- Injury (e.g. falls)
- Illness (e.g. ulcers, cancer, stroke, hypoglycemia, hepatitis, diarrhea, depression, etc…)

Prioritize

Decision Support

Goals
- Desired outcomes and milestones
- Readiness
- Prognosis
- Related Conditions
- Related Interventions
- Progress

Outcomes

Orders, etc..

Decision Support

Interventions/Actions

(e.g. medications, wound care, procedures, tests, diet, behavior changes, exercise, consults, rehab, calling MD for symptoms, education, anticipatory guidance, services, support, etc…)
- Start/stop date, interval
- Authorizing/responsible parties/roles/contact info
- Setting of care
- Instructions/parameters
- Supplies/Vendors
- Planned assessments
- Expected outcomes
- Related Conditions
- Status of intervention

Barriers

Disabilities/ Concerns

Patient Status
- Functional
- Cognitive
- Physical
- Environmental

Assessments

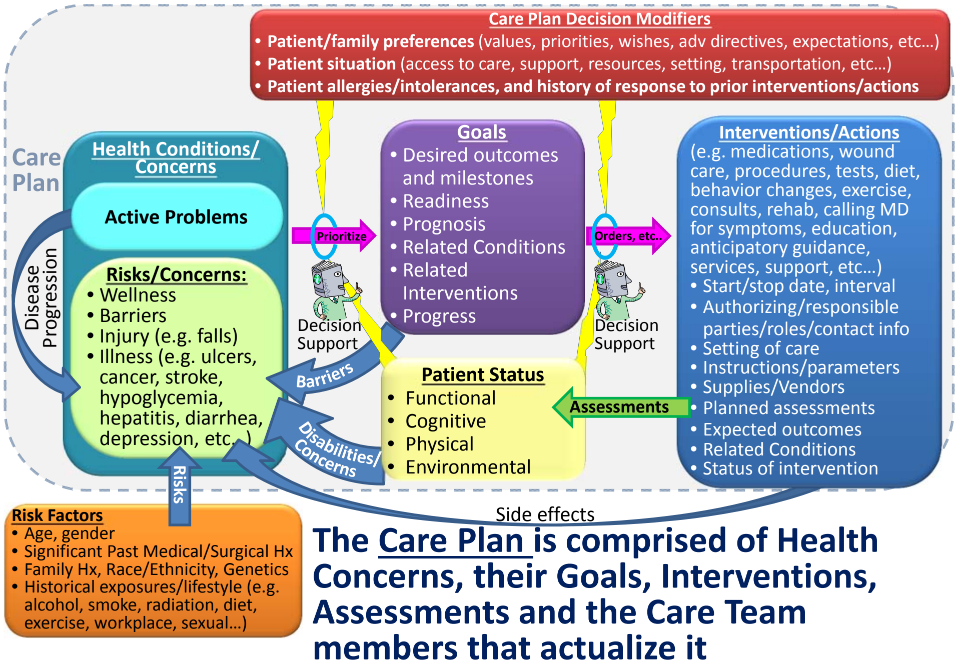
Outcomes

Risks

Side effects

Risk Factors
- Age, gender
- Significant Past Medical/Surgical Hx
- Family Hx, Race/Ethnicity, Genetics
- Historical exposures/lifestyle (e.g. alcohol, smoke, radiation, diet, exercise, workplace, sexual…)

Interventions and actions achieve outcomes to progress towards goals.



Care Plan Decision Modifiers

- **Patient/family preferences** (values, priorities, wishes, adv directives, expectations, etc…)
- **Patient situation** (access to care, support, resources, setting, transportation, etc…)
- **Patient allergies/intolerances, and history of response to prior interventions/actions**

Care Plan

Disease Progression

Health Conditions/ Concerns

Active Problems

Risks/Concerns:
- Wellness
- Barriers
- Injury (e.g. falls)
- Illness (e.g. ulcers, cancer, stroke, hypoglycemia, hepatitis, diarrhea, depression, etc…)

Prioritize

Decision Support

Goals
- Desired outcomes and milestones
- Readiness
- Prognosis
- Related Conditions
- Related Interventions
- Progress

Orders, etc..

Decision Support

Interventions/Actions

(e.g. medications, wound care, procedures, tests, diet, behavior changes, exercise, consults, rehab, calling MD for symptoms, education, anticipatory guidance, services, support, etc…)
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- Supplies/Vendors
- Planned assessments
- Expected outcomes
- Related Conditions
- Status of intervention

Barriers

Disabilities/ Concerns

Patient Status
- Functional
- Cognitive
- Physical
- Environmental

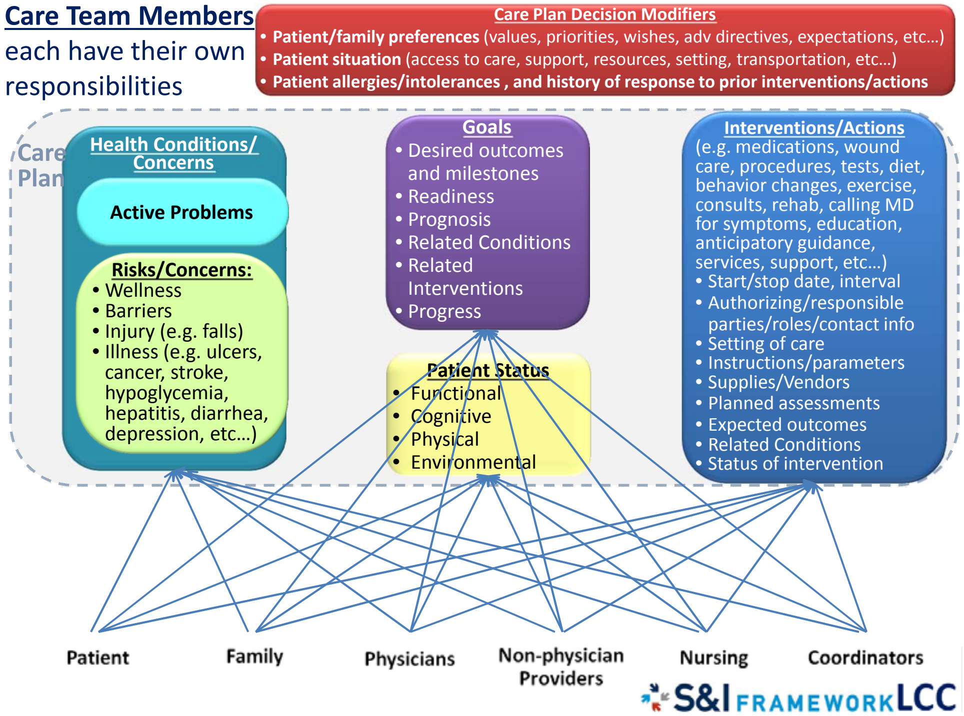
Assessments

Risks

Side effects

Risk Factors
- Age, gender
- Significant Past Medical/Surgical Hx
- Family Hx, Race/Ethnicity, Genetics
- Historical exposures/lifestyle (e.g. alcohol, smoke, radiation, diet, exercise, workplace, sexual…)

The Care Plan is comprised of Health Concerns, their Goals, Interventions, Assessments and the Care Team members that actualize it



Care Team Members each have their own responsibilities

Care Plan Decision Modifiers
- **Patient/family preferences** (values, priorities, wishes, adv directives, expectations, etc…)
- **Patient situation** (access to care, support, resources, setting, transportation, etc…)
- **Patient allergies/intolerances , and history of response to prior interventions/actions**

Care Plan

Health Conditions/ Concerns

Active Problems

Risks/Concerns:
- Wellness
- Barriers
- Injury (e.g. falls)
- Illness (e.g. ulcers, cancer, stroke, hypoglycemia, hepatitis, diarrhea, depression, etc…)

Goals
- Desired outcomes and milestones
- Readiness
- Prognosis
- Related Conditions
- Related Interventions
- Progress

Patient Status
- Functional
- Cognitive
- Physical
- Environmental

Interventions/Actions
(e.g. medications, wound care, procedures, tests, diet, behavior changes, exercise, consults, rehab, calling MD for symptoms, education, anticipatory guidance, services, support, etc…)
- Start/stop date, interval
- Authorizing/responsible parties/roles/contact info
- Setting of care
- Instructions/parameters
- Supplies/Vendors
- Planned assessments
- Expected outcomes
- Related Conditions
- Status of intervention

Patient **Family** **Physicians** **Non-physician Providers** **Nursing** **Coordinators**

S&I FRAMEWORK LCC

2013 Consolidated-CDA Update

- Update of existing section templates
- Addition of diet/nutrition
- Addition of Patient Generated Data Header
- Update of Consult Note Template
- Addition of 3 new document templates
  - Referral Note
  - Transfer Summary
  - Care Plan (including guidance for digital signature)

Clinical Document Architecture (CDA) Evolution

CDA Implementation Guides	**Continuity of Care Document (CCD)**	**Consolidated CDA v 1** **IG for CDA R2 IHE Health Story Consolidation, DSTU Release 1.1**	**Consolidated CDA v2 (2013 update)**
Date Published	2006-2010	July 2012	2014
SDO Publisher	Multiple separate – HITSP, HL7, IHE Health Story	HL7	HL7
Vocabulary	Constrained by C-CDA R2 templates	Constrained by C-CDA R2 templates	Constrained by C-CDA R2 templates
Templates included	CCD	CCD, H&P, Discharge Summary, Op Note Procedure Note, Diagnostic Imaging, Progress Note, Consult Note, Unstructured document	All plus … Referral Note, Transfer Summary, Care Plan, Patient Generated Data Header
Certification criteria vocabulary constraints		Smoking status, race, ethnicity, language, medications, problem list, diagnoses, laboratory, immunizations, procedures	

Quality Reporting Document Architecture (QRDA)

What is QRDA?

Quality Document Reporting Architecture (QRDA) is a CDA-based standard for reporting the healthcare quality measurement data associated with the originating query.

- QRDA Category I (Single-patient Report)

  Individual patient-level report with the full clinical data defined in the measure.

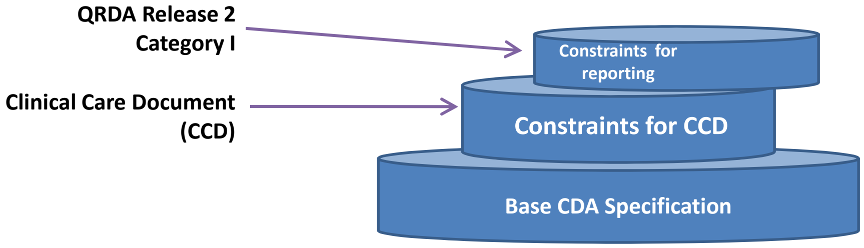
- QRDA Category II (Patient List Report)

  Multi-patient report across a defined population that may or may not identify individual patient data within the summary.

- QRDA Category III (Calculated Report)

  Aggregate quality report with a result for a given population and period of time.

QRDA is a specification of Health Level Seven (HL7) CDA for reporting quality measure data out of an EHR.



QRDA Release 2 Category I

Clinical Care Document (CCD)

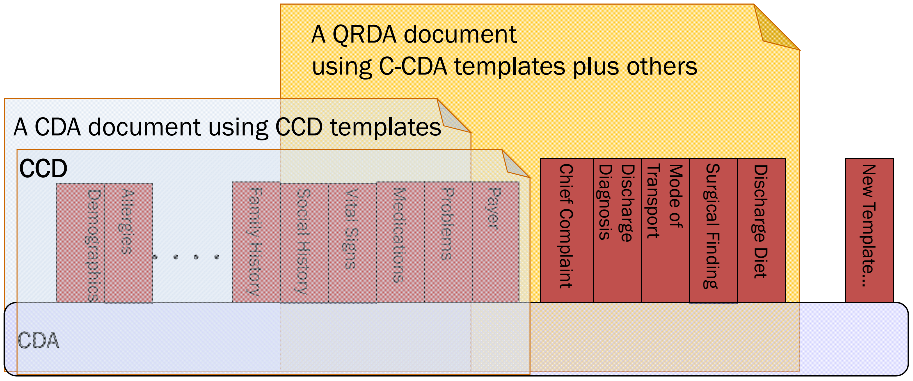
Constraints for reporting

Constraints for CCD

Base CDA Specification

HL7 QRDA Category I

QRDA is a CDA-based IG designed to have those data elements needed for quality measurement.



Categories of QRDA

QRDA Category I – Single-patient Report

- A QRDA Category I report is an individual-patient-level quality report.
- Each report contains quality data for one patient for one or more quality measures, where the data elements in the report are defined by the particular measure(s) being reported on.
- A QRDA Category I report contains raw applicable patient data. When pooled and analyzed in a report, this quality data is used to calculate population measure metrics.
- Category I was published November 2012 and is required in MU2 (§ 170.205(h)).

Categories of QRDA

QRDA Category II – Patient List Report

- A QRDA Category II report is a multi-patient-level quality report. Each report contains quality data for a set of patients for one or more quality measures, where the data elements in the report are defined by the particular measure(s) being reported on.
- QRDA Category II is not yet an HL7 standard; it was a “for comment only” chapter in the 2008 QRDA ballot.
- There is currently no community demand for bringing this report to ballot.

Categories of QRDA

QRDA Category III – Calculated Report

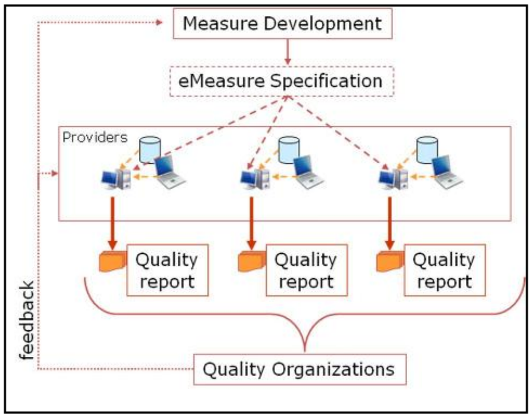
- A QRDA Category III report is an aggregate quality report. Each report contains calculated summary data for one or more measures for a specified population of patients within a particular health system over a specific period of time.
- Data needed to generate QRDA Category III reports must be included in QRDA Category I reports.
- Category III was published November 2012 and is required in MU2 (§ 170.205(k)).

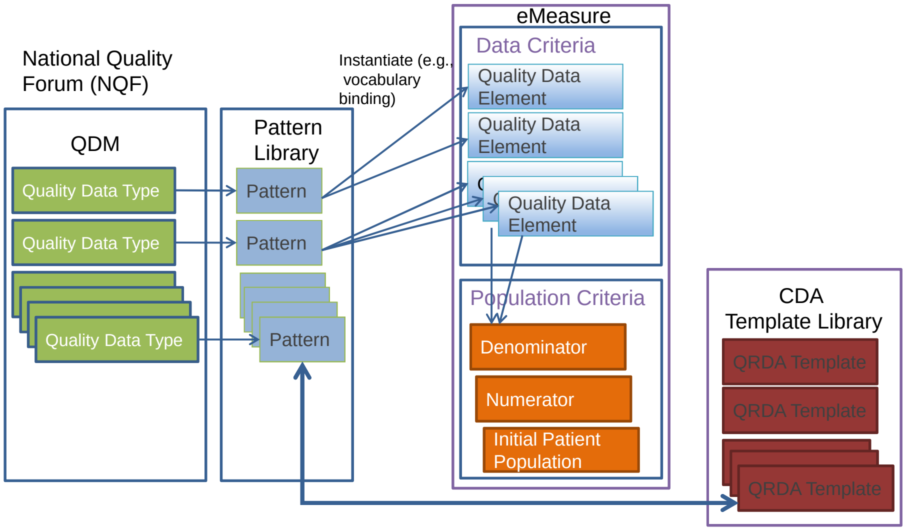
QDM-based QRDA (Category I)

- Clinical measureable parameters are assembled into quality measures, which are then expressible as eMeasures.
- The eMeasures guide the collection of EHR data and other data, which are then assembled into QRDA quality reports and submitted to quality or other organizations.
- While there is no prerequisite that a QRDA document must be generated based on an eMeasure, *the QDM-based QRDA standard is written to tightly align with Health Quality Measures Format (HQMF).*

QDM-based QRDA (Category I)

Criteria are written against MU capabilities.





National Quality Forum (NQF)

QDM

Quality Data Type

Quality Data Type

Quality Data Type

Pattern Library

Pattern

Pattern

Pattern

Instantiate (e.g., vocabulary binding)

eMeasure

Data Criteria

Quality Data Element

Quality Data Element

Quality Data Element

Population Criteria

Denominator

Numerator

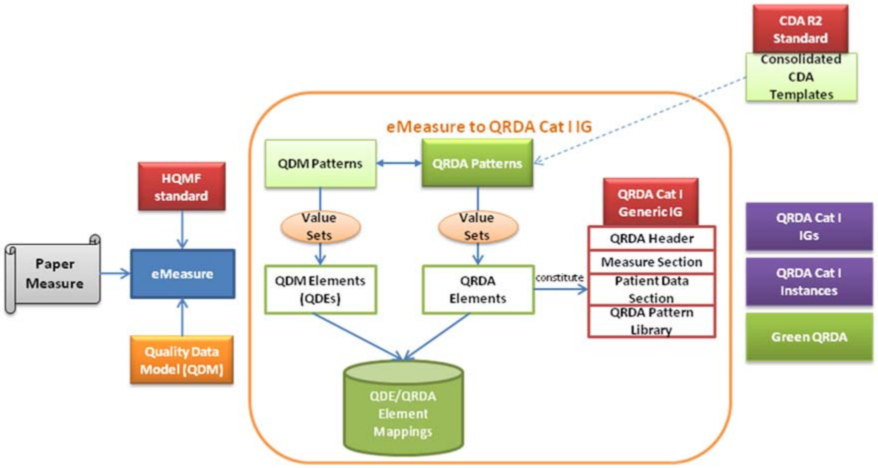
Initial Patient Population

CDA Template Library

QRDA Template

QRDA Template

QRDA Template



CDA R2 Standard

Consolidated CDA Templates

eMeasure to QRDA Cat I IG

QDM Patterns

QRDA Patterns

HQMF standard

Value Sets

Value Sets

Paper Measure

eMeasure

QDM Elements (QDEs)

QRDA Elements

constitute

QRDA Cat I Generic IG

QRDA Header

Measure Section

Patient Data Section

QRDA Pattern Library

QRDA Cat I IGs

QRDA Cat I Instances

Green QRDA

Quality Data Model (QDM)

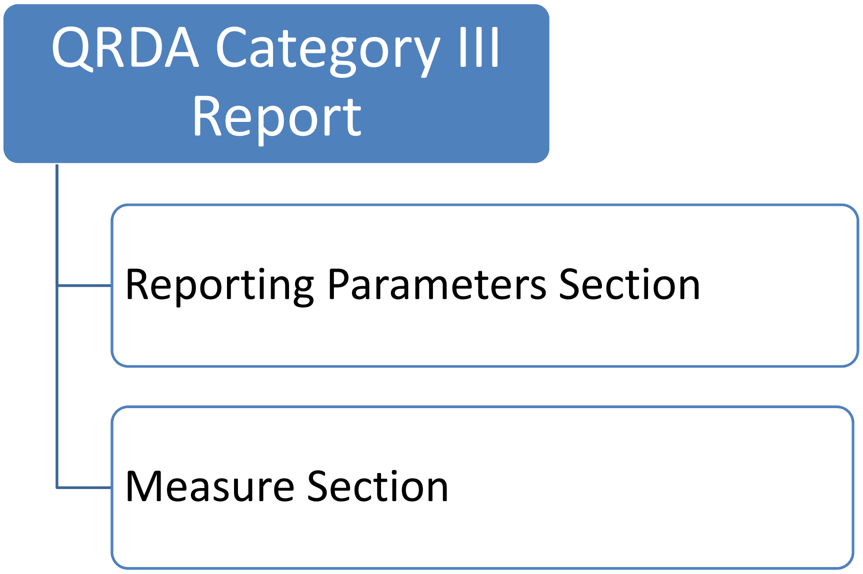
QDE/QRDA Element Mappings

What is QRDA III?

- A way of expressing aggregated calculation data for Clinical Quality Measure (CQM) calculation
  - Just the results; no patient data included
- Contains data for one or more Measures
- XML document
- CDA-based

QRDA Category III Document

- An aggregate quality report that contains calculated summary data for one or more measures for a specified population of patients within a particular health system over a specific period of time.
- Refers to these identifiers in an eMeasure or other query.
- Communicates data residing in health information systems that is stripped of all patient identifiers, protecting patients and healthcare providers from the risks of inadvertent leakage of private information.



QRDA Category III Report

- Reporting Parameters Section
- Measure Section

Document Header Notes

- QRDA III is designed for reporting aggregate data about any quality measure.
- The QRDA Category III report format matches the QRDA Category I report where appropriate.
- RecordTarget is a required element in CDA.
- QRDA III reports data on groups of patients, thus the recordTarget ID contains a nullFlavor.

Measure Section Contents

Measure Reference	• Reference to the measure being reported on – Its identifier • There may be more than 1 from various organizations/tools • MAT id, NQF id , HQMF id ……
Performance Rate	• Performance Rate = (Numerator) / (Denominator – Denominator Exclusions – Denominator Exceptions)
Reporting Rate	• (Numerator + Denominator Exclusions + Denominator Exceptions)/(Denominator)
Measure Data	• Report on individual Measure Data , ie populations -- IPP, DENOM,NUMER …

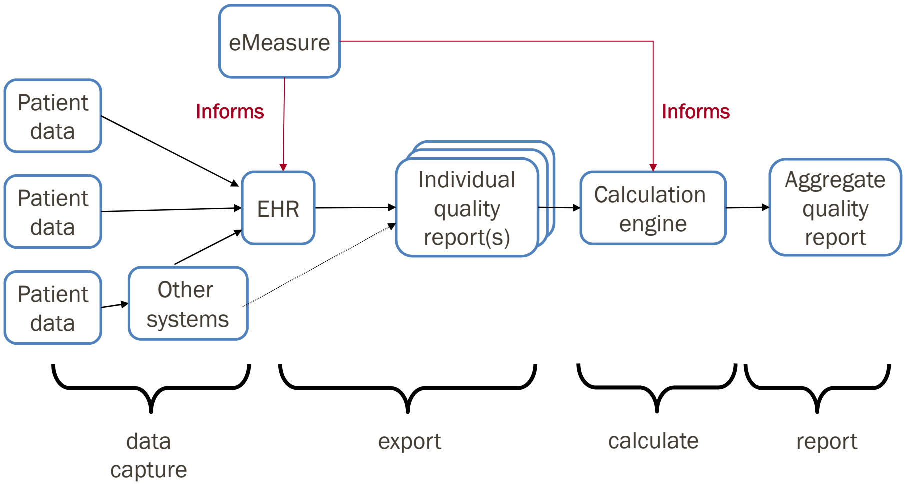
Measure Date Contents

Identifier and Type of Data Being Reported	• IPP, DENOM,NUMER,DENEX,MSRPOPL ….
Aggregate Count	• The number of people or episodes in the population being reported on
Continuous Variable Data	• Only if reporting on MSRPOPL • Deviates from the convention of reporting measure data for other items (IPP,DENOM ….)
Stratum Reporting	• One for each stratification • Aggregate Count or CV Variable data for the individual stratifications
Supplemental Data (Ethnicity, Race, Postal Code, ….)	• Number of people/episodes grouped by each data point for the supplemental data type • An entry for each Race for the individuals counted in the population

Relationship to PQRS

- PQRS is a reporting program that uses a combination of incentive payments and payment adjustments to promote reporting of quality information by eligible professionals.
- The PQRS program has developed an XML specification to send aggregated quality data – known as the PQRI XML.
- The PQRI specification is analogous to QRDA Category III in that they both report aggregate data.
- The data elements currently sent in the PQRS 2012 Data Submission Vendor XML Specification have been represented in this QRDA III specification.

MU2 and Quality Reporting



eMeasure

Informs

Informs

Patient data

Patient data

Patient data

EHR

Other systems

Individual quality report(s)

Calculation engine

Aggregate quality report

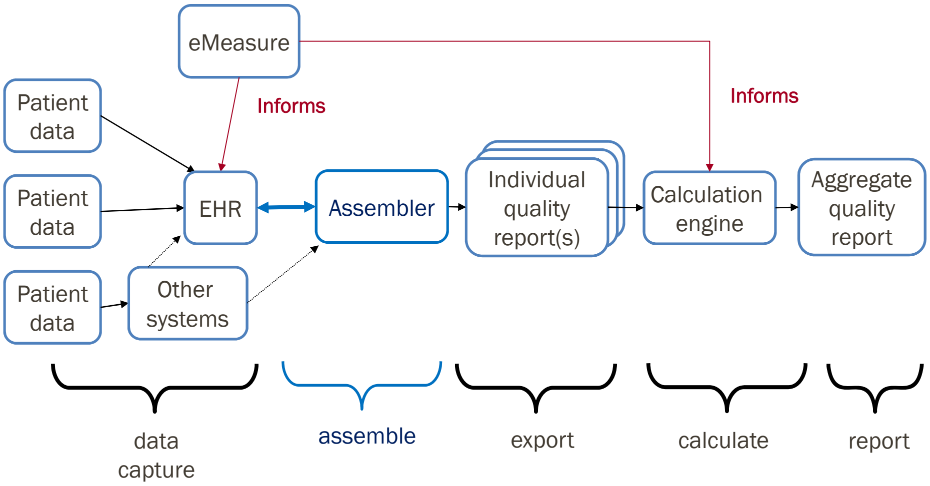
data capture

export

calculate

report

MU3 and Quality Reporting



eMeasure

Informs

Informs

Patient data

Patient data

Patient data

EHR

Assembler

Other systems

Individual quality report(s)

Calculation engine

Aggregate quality report

data capture

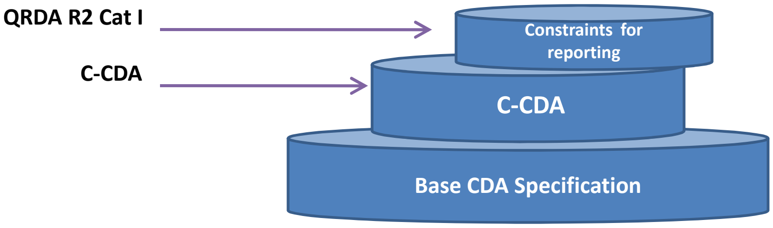
assemble

export

calculate

report

- QRDA I reuses but tightens C-CDA templates for quality reporting purposes.
- QRDA contains some new templates.



QRDA R2 Cat I

C-CDA

Constraints for reporting

C-CDA

Base CDA Specification

QRDA and eMeasures

The eMeasures guide the collection of EHR data and other data, which are then assembled into QRDA quality reports and submitted to quality or other organizations.

Committee Discussion

- Questions for presenter?

- How do emerging data standards show promise for supporting more sophisticated measurement of care coordination activities?
- Which of the committee's measurement domains will benefit the most from standardization?

Resources on Interoperability and Open Data

- *Beyond Transformation: Open Data and the Future of Civic Innovation*, edited by Brett Goldstein with Lauren Dyson
- HealthData.gov
- HealthDataPalooza.org
- Blue Button Initiative
- Purple Binder (purplebinder.com)

- Others known by the committee?

Opportunity for Public Comment

Final Measure Gap Prioritization Exercise

Instructions

- To capture a vote, press the number on the voting device that corresponds to the answer choice
  - For single digit responses, participants do not need to press the “Send” key
  - The “Send” key is required for multi-digit responses. For example, if the choices are 2, 6, and 8; press 2 6 8 Send.
- To change a vote:
  - For single digit responses, participants can change an answer selection prior to the end of the voting period by pressing another number- the last key pressed is captured
  - For multi-digit responses, participants can change an answer selection by pressing the hazard key, selecting new option, then pressing “Send”

Instructions - Domain Voting

- Please use your remote to select Care Coordination measure domains for prioritization.
    - Each numbered button corresponds to the domains in list order.
    - Pick no more than FOUR domains.

Care Coordination Domains

1. Comprehensive Assessment
2. Availability of Services
3. Experience
4. Goal-setting
5. Relationships
6. Goal Attainment
7. Shared Accountability
8. Continuous Communication
9. Efficiency

Instructions

- Please use your remote to select Care Coordination measure sub-domains for prioritization.
  - Each numbered button corresponds to the domains in list order.
  - Pick no more than ONE sub-domain for each of the top four domains previously ranked.

Care Coordination Prioritizing Sub-domains

Comprehensive Assessment

1. Document care recipient’s current supports and assets
2. Assess function
3. Assess social needs
4. Assess behavioral health needs
5. Assess medication management needs
6. Assess health literacy
7. Measure care recipient/family level of activation or engagement
8. Estimate risk level

Care Coordination Prioritizing Sub-domains

Goal Setting

1. Adequacy of community services to support self-management/wellness
2. Timeliness/reliability of services
3. Accessibility of services

Care Coordination Prioritizing Sub-domains

Shared Accountability

1. Plan of care documents who is a part of the care team, including community providers
2. Plan of care assigns responsibilities for meeting care recipients' goals

Care Coordination Prioritizing Sub-domains

Availability of Services

1. Adequacy of community services to support self-management/wellness
2. Timeliness/reliability of services
3. Accessibility of services

Care Coordination Prioritizing Sub-domains

Relationships

1. Providers' awareness of value of community-based services
2. Care recipient/family awareness of value of community-based services
3. Collaborative relationships to facilitate coordination

Care Coordination Prioritizing Sub-domains

Continuous Communication

1. Initial linkage between primary care and community-based services
2. Follow-up protocol to ensure receipt of services
3. Communication of results from community-based services to primary care

Care Coordination Prioritizing Sub-domains

Experience

1. Care recipient experience
   - Experience of care coordination
   - Overall satisfaction
2. Family experience
   - Experience of care coordination
   - Overall satisfaction
3. Care team’s experience of coordination
   - Primary care providers
4. Community service providers

Care Coordination Prioritizing Sub-domains

Goal Attainment

1. Reduction of unmet needs, as documented in assessment
2. Services congruent with person-centered goals and preferences
3. Improved health status

Care Coordination Prioritizing Sub-domains

Efficiency

1. Reduction of duplication in care coordination services
2. Avoidance of redundant intake/assessment processes
3. Avoidance of repeat testing/inappropriate use

Round Robin Discussion of Themes for Recommendations to HHS

Committee’ Suggested Themes for Forthcoming Report

Your thoughts here!

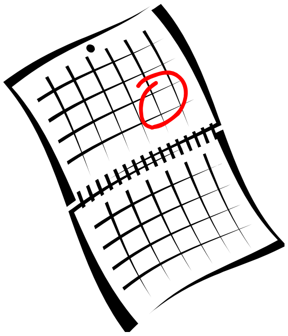
- Take a few minutes to consider and share:
  - What areas for measure development have the most power to transform care coordination between primary care and community-based services?
  - What activities and associated measurements will be most powerful in producing better health?
  - What insights from this meeting should be emphasized in the forthcoming report?

Opportunity for Public Comment

Wrap Up/Next Steps

Upcoming Events

- **Mid-June:** Draft report available for NQF Member and public comment
- **June 30:** Webinar (open to all) to present major findings and collect stakeholder feedback
- **August:** Final report submitted to HHS and available on NQF website



Adjourn

Thank you for participating!

Prioritizing Measure Gaps: Care Coordination

Opportunities for Measurement based on Committee Post-Meeting Exercise, February 2014

Committee's Working Definition of Care Coordination:

Care coordination is the deliberate organization of activities and information to improve health outcomes by ensuring that care recipients' and families' needs and preferences for healthcare and community services are met.

Approach to Developing Domains and Sub-Domains for Measurement:

The multistakeholder expert committee for the Prioritizing Measure Gaps: Care Coordination project met via web in November 2013 to discuss a draft conceptual framework and draft environmental scan. Following the discussion, committee members completed a prioritization exercise to rank possible domains of measurement for coordination between primary care and community-based services. Each member selected up to 10 out of 51 possible sample domains. The sample domains were drawn from three key sources: AHRQ's Clinical and Community Relationships Measures Atlas (CCRM), ANA's Framework for Measuring Nurses' Contributions to Care Coordination, and NCQA's Medical Home System Survey. (Not all domains from these sources were included due to duplication and/or being out of scope.) Participants also had the option to add additional domains or propose revised wording of sample domains, as needed.

NQF staff tallied the committee's votes for each domain to give a general sense of priority. Staff then grouped similar concepts and organized the list to improve the consistency in the level of detail used across the domains and sub-domains. The results summarize topics that committee members thought to be important for the creation of new performance measures.

Potential Domains and Sub-Domains for Measurement:

The following table presents three columns, each containing three potential domains for measurement and various sub-domains. The domains are displayed as italicized terms in the light green rows. The sub-domains are displayed as bullet points. The domains and sub-domains are generally organized to move through time from left to right. For example, the "Goal-setting" domain occurs prior to the "Goal attainment" domain.

Creation of Person-Centered Plan of Care	**Utilization of the Health Neighborhood to Execute the Plan of Care**	**Achievement of Outcomes**
Comprehensive Assessment	*Availability of Services*	*Experience*
• Document care recipient’s current supports and assets • Assess function • Assess social needs • Assess behavioral health needs • Assess medication management needs • Assess health literacy • Measure care recipient/family level of activation/engagement • Estimate risk level	• Adequacy of community services to support self-management/wellness • Timeliness/reliability of services • Accessibility of services	• Care recipient experience o Experience of care coordination o Overall satisfaction • Family experience o Experience of care coordination o Overall satisfaction • Care team’s experience of coordination o Primary care providers o Community service providers
Goal-setting	*Relationships*	*Goal Attainment*
• Person-centered communication • Shared-decision making • Set goals to address needs identified in assessment	• Providers’ awareness of value of community-based services • Care recipient/family awareness of value of community-based services • Collaborative relationships to facilitate coordination	• Reduction of unmet needs, as documented in assessment • Services congruent with person-centered goals and preferences • Improved health status
Shared Accountability	*Continuous Communication*	*Efficiency*
• Plan of care documents who is a part of the care team, including community providers • Plan of care assigns responsibilities for meeting care recipients’ goals	• Initial linkage between primary care and community-based services • Follow-up protocol to ensure receipt of services • Communication of results from community-based services to primary care	• Reduction of duplication in care coordination services • Avoidance of redundant intake/assessment processes • Avoidance of repeat testing/inappropriate use

Next Steps: The Prioritizing Measure Gaps: Care Coordination committee will review these potential domains and sub-domains for measurement at the group’s April 2014 in-person meeting. The committee will be asked the following questions:

1) Are there prominent domains or sub-domains missing?
2) Are there domains or sub-domains that should be removed?
3) Should any domains or sub-domains be re-framed for accuracy?

Prioritizing Measure Gaps in Care Coordination: Committee Exercise to Generate Potential Measure Concepts for Future Development

- This exercise focuses on the measurement opportunities related to “Creation of a Person-Centered Plan of Care”
- Together with your group, brainstorm potential ways to measure each of the subdomains in the conceptual framework.

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
EXAMPLE	*Educational attainment*	*# of children ages 10+ who screen positive for risk factors for poor educational outcomes (e.g., dropout) and for whom a community referral is completed*	*All children ages 10+ seen in primary care in measurement year*	*Electronic health record*
Comprehensive Assessment	Document care recipient’s current supports and assets	1.		
		2.		
		3.		
Comprehensive Assessment	Assess function	1.		
		2.		

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
		3.		
Comprehensive Assessment	Assess social needs	1.		
		2.		
		3.		
Comprehensive Assessment	Assess behavioral health needs	1.		
		2.		
		3.		

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
Comprehensive Assessment	Assess medication management needs	1.		
		2.		
		3.		
Comprehensive Assessment	Assess health literacy	1.		
		2.		
		3.		
Comprehensive Assessment	Measure care recipient/family level of activation/engagement	1.		

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
		2.		
		3.		
Comprehensive Assessment	Estimate risk level	1.		
		2.		
		3.		
Goal Setting	Person-centered communication	1.		
		2.		

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
		3.		
Goal Setting	Shared decisionmaking	1.		
		2.		
		3.		
Goal Setting	Set goals to address needs identified in assessment	1.		
		2.		
		3.		

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
Shared Accountability	Plan of care documents who is a part of the care team, including community providers	1.		
		2.		
		3.		
Shared Accountability	Plan of care assigns responsibilities for meeting care recipients' goals	1.		
		2.		
		3.		

Prioritizing Measure Gaps in Care Coordination: Committee Exercise to Generate Potential Measure Concepts for Future Development

- This exercise focuses on the measurement opportunities related to "Utilization of the Health Neighborhood to Execute the Plan of Care"
- Together with your group, brainstorm potential ways to measure each of the subdomains in the conceptual framework.

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
EXAMPLE	Educational attainment	# of children ages 10+ who screen positive for risk factors for poor educational outcomes (e.g., dropout) and for whom a community referral is completed	All children ages 10+ seen in primary care in measurement year	Electronic health record
Availability of Services	Adequacy of community services to support self-management/wellness	1.		
		2.		
		3.		
Availability of Services	Timeliness/reliability of services	1.		
		2.		
		3.		

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
Availability of Services	Accessibility of services	1.		
		2.		
		3.		
Relationships	Providers' awareness of value of community-based services	1.		
		2.		
		3.		
Relationships	Care recipient/family awareness of value of community-based services	1.		
		2.		

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
		3.		
Relationships	Collaborative relationships to facilitate coordination	1.		
		2.		
		3.		
Continuous Communication	Initial linkage between primary care and community-based services	1.		
		2.		
		3.		
Continuous Communication		1.		

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
		2.		
		3.		
Continuous Communication	Communication of results from community-based services to primary care	1.		
		2.		
		3.		

Prioritizing Measure Gaps in Care Coordination: Committee Exercise to Generate Potential Measure Concepts for Future Development

- This exercise focuses on the measurement opportunities related to “Achievement of Outcomes”
- Together with your group, brainstorm potential ways to measure each of the subdomains in the conceptual framework.

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
EXAMPLE	Educational attainment	# of children ages 10+ who screen positive for risk factors for poor educational outcomes (e.g., dropout) and for whom a community referral is completed	All children ages 10+ seen in primary care in measurement year	Electronic health record
Experience	Care recipients experience - experience of care coordination - Overall satisfaction	1.		
		2.		
		3.		
		4.		
Experience	Family experience - experience of care	1.		

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
	coordination - Overall satisfaction	2.		
		3.		
Experience	Care team's experience of coordination - Primary care providers - Community service providers	1.		
		2.		
		3.		
		4.		
Goal Attainment	Reduction of unmet needs as documented in assessment	1.		

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
		2.		
		3.		
Goal Attainment	Services congruent with person-centered goals and preferences	1.		
		2.		
		3.		
Goal Attainment	Improved health status	1.		
		2.		
		3.		

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
Efficiency	Reduction of duplication in care coordination services	1.		
		2.		
		3.		
Efficiency	Avoidance of redundant intake/assessment processes	1.		
		2.		
		3.		
Efficiency	Avoidance of repeat testing/inappropriate use	1.		
		2.		

Conceptual Framework		*Potential Measure Concepts for Each Measurement Subdomain*		
Measure Domain	**Measure Subdomain**	**Numerator**	**Denominator**	**Data Source**
		3.		

Electronic health record functionality needed to better support primary care

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▸ Additional material is published online only. To view please visit the journal online (http://dx.doi.org/10.1136/amiajnl-2013-002229).

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Received 30 July 2013
Revised 18 December 2013
Accepted 23 December 2013

ABSTRACT

Electronic health records (EHRs) must support primary care clinicians and patients, yet many clinicians remain dissatisfied with their system. This article presents a consensus statement about gaps in current EHR functionality and needed enhancements to support primary care. The Institute of Medicine primary care attributes were used to define needs and meaningful use (MU) objectives to define EHR functionality. Current objectives remain focused on disease rather than the whole person, ignoring factors such as personal risks, behaviors, family structure, and occupational and environmental influences. Primary care needs EHRs to move beyond documentation to interpreting and tracking information over time, as well as patient-partnering activities, support for team-based care, population-management tools that deliver care, and reduced documentation burden. While stage 3 MU's focus on outcomes is laudable, enhanced functionality is still needed, including EHR modifications, expanded use of patient portals, seamless integration with external applications, and advancement of national infrastructure and policies.

INTRODUCTION

The adoption and use of electronic health records (EHRs) holds the promise of improved care and better patient outcomes.[1–3] To ensure that all Americans enjoy benefits, national legislation charged the Office of the National Coordinator (ONC) and Centers for Medicare and Medicaid Services (CMS) with defining national EHR meaningful use (MU) objectives and measures.[4 5] Adherence to MU is being reinforced by US$27 billion in incentives.[6 7] While MU is intended to encourage clinician use of existing EHR features, it has effectively directed the energies and innovations of EHR vendors as well.[8]

MU is divided into three stages. Stage 1 focused on promoting data capture and sharing (2011), stage 2 on promoting exchange of health information (2014), and stage 3 on improving outcomes (2016).[9–11] Throughout, CMS and ONC have sought input from experts, clinicians, and the public.[12]

Many have questioned whether EHR design and MU support promising new care models, such as the Accountable Care Organization (ACO) and Patient Centered Medical Home (PCMH).[13–15] A useful evaluation, which has not been previously made, is how well EHR functionality supports primary care. The Institute of Medicine (IOM) asserts that 'primary care is the logical foundation of an effective health care system because it can address the large majority of health problems in the population.'[16] This is supported by evidence demonstrating that primary care extends life span, reduces morbidity, increases satisfaction, reduces disparities, and is cost effective.[17] It is also where the majority of people receive care.[18 19]

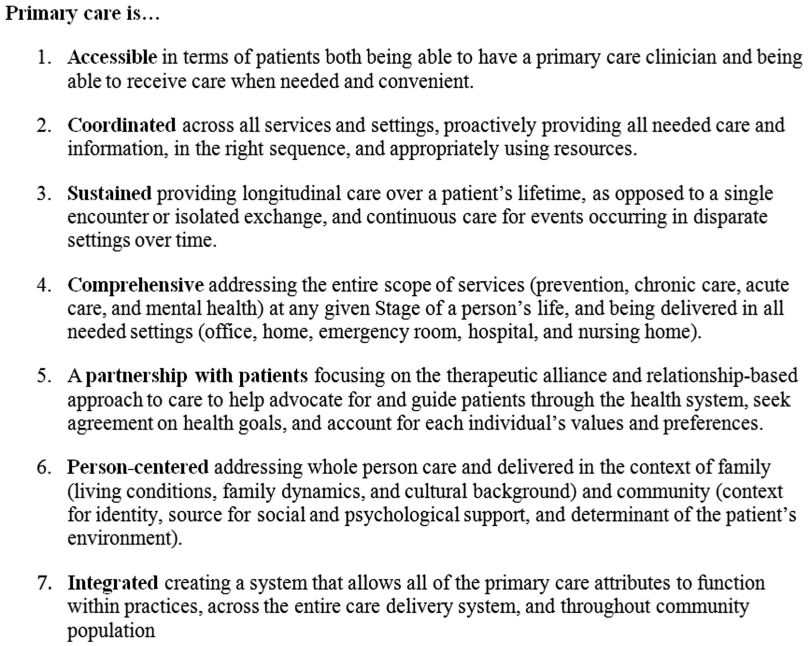
Primary care has embraced EHR adoption and MU. Online appendix A describes the phases of how practices achieve MU. In 2011, 57% of office-based physicians reported using any EHR, and, in 2013, more than half had received MU incentives.[20 21] Yet clinicians commonly report EHR dissatisfaction.[22–25]

This article presents a consensus statement from the American Academy of Family Physicians (AAFP), American Academy of Pediatrics (AAP), American Board of Family Medicine (ABFM), and North American Primary Care Research Group. It identifies gaps in current EHR functionality and makes enhancement recommendations to better support primary care. The IOM attributes of primary care were used to define primary care needs, and stage 2 MU eligible provider objectives were used to define EHR functionality. Steps to reach consensus included (1) assigning each MU objective to the primary care attribute it supported,[16 26] (2) identifying unmet needs within each attribute, and (3) obtaining iterative input from organization members and 148 practicing clinicians. Initial work was carried out by the 43 members of the NAPCRG Health Information Technology (HIT) working group (primary care HIT leaders from 38 institutions internationally). Practicing clinicians were identified from four practice-based research networks and included family physicians (n=78), internists (n=16), pediatricians (n=18), mid-level providers (n=12), nurses (n=15), and informatics staff (n=9) from 15 states in urban, suburban, and rural communities. Participant consensus was sought during each step.

PRIMARY CARE ATTRIBUTES

The IOM defines primary care as 'the provision of *integrated, accessible health care services* by clinicians who are *accountable* for addressing a large *majority of personal health needs*, developing a *sustained partnership* with *patients*, and practicing in the *context of family and community*.'[16] Central to primary care is the patient–clinician relationship, established with the mutual expectation of continuation over time and predicated on the development of mutual trust, respect, and responsibility. Family

To cite: Krist AH, Beasley JW, Crosson JC, *et al. J Am Med Inform Assoc* Published Online First: [*please include* Day Month Year] doi:10.1136/amiajnl-2013-002229



Primary care is…

1. **Accessible** in terms of patients both being able to have a primary care clinician and being able to receive care when needed and convenient.
2. **Coordinated** across all services and settings, proactively providing all needed care and information, in the right sequence, and appropriately using resources.
3. **Sustained** providing longitudinal care over a patient's lifetime, as opposed to a single encounter or isolated exchange, and continuous care for events occurring in disparate settings over time.
4. **Comprehensive** addressing the entire scope of services (prevention, chronic care, acute care, and mental health) at any given Stage of a person's life, and being delivered in all needed settings (office, home, emergency room, hospital, and nursing home).
5. **A partnership with patients** focusing on the therapeutic alliance and relationship-based approach to care to help advocate for and guide patients through the health system, seek agreement on health goals, and account for each individual's values and preferences.
6. **Person-centered** addressing whole person care and delivered in the context of family (living conditions, family dynamics, and cultural background) and community (context for identity, source for social and psychological support, and determinant of the patient's environment).
7. **Integrated** creating a system that allows all of the primary care attributes to function within practices, across the entire care delivery system, and throughout community population

Figure 1 Seven Key Primary Care Attributes Defines by the Institute of Medicine.

and community provide context, and an integrated delivery system provides the means for delivery of care.[16] The IOM indentifies seven attributes that characterize primary care (figure 1), [16] which are echoed in the Chronic Care Model, PCMH, and ACO design.[27–30] EHRs that meet the needs of primary care will meet the needs of these care models, specialists, and hospital-based clinicians.

MU OBJECTIVES AND PRIMARY CARE ATTRIBUTES

Stage 1 and 2 MU objectives were finalized on July 13, 2010 and August 23, 2012, respectively, and stage 3 will be finalized in 2015.[6 31] Two groups of participants are eligible to receive incentives—eligible providers and hospitals. This article focuses on stage 2 provider objectives.

MU objectives are defined by specific reportable measures and targets to achieve.[32] Stage 1 has 15 core objectives and 10 additional objectives—five of which clinicians select to report. Stage 2 consists of 17 core and six additional objectives—of which clinicians report three.[10] The assignment of each MU objective by the primary care attribute it best supports is presented in table 1. As the MU objectives were not specifically designed around the IOM primary care attributes, some objectives do not clearly support any primary care attribute, and others support multiple primary care attributes. For this perspective, each objective was categorized by group consensus as supporting only one attribute.

PRIMARY CARE NEEDS AND EHR ENHANCEMENTS

As demonstrated in table 1, the content of stage 2 MU objectives appears to inadequately support primary care attributes. MU has driven EHRs to better support the coordinated and integrated attributes, but they do less to promote the accessible, sustained, partnership, and person-centered attributes. For the variety, complexity, and comprehensiveness of primary care to be captured, a fundamental shift is needed from the documentation of episodic and procedural care to the evidence-based personalization of longitudinal whole-person care with active patient and care team participation. Specific EHR enhancements to address unmet primary care needs are outlined in box 1 and in the text below.

Accessibility

To increase clinician accessibility, EHRs need to reduce documentation burden, help clinicians move beyond visits to deliver care, and allow clinicians to evaluate, monitor, and improve accessibility. Current EHRs essentially add a 'third party' to the examination room, competing with patients for clinician attention.[33 34] This effect is greater when information is difficult to access or when documentation is time consuming.

If EHRs could easily aggregate and accept structured clinical data from external sources, they might reduce documentation workload, allowing the clinician to be fully present for the patient. Objectives require the ability to view, download, and transmit health information, but not update a clinician's EHR.[35] To extend care outside visits, clinicians need enhanced electronic communication tools coupled with capacity for patients to electronically share health information (eg, pictures, device data). Interactions with patients could expand beyond messaging and include video conferencing, yet clinicians report that EHRs lack even basic communication functions.[36]

Coordination

Clinicians need EHRs that can coordinate and track care delivery across all clinical settings. Stage 2 MU objectives advance the creation and use of information exchanges, an important prerequisite for coordinating care. While the ability to exchange information must exist in all certified EHRs, they often require the creation of individualized and costly interfaces. As a result, clinicians in small to medium sized practices are largely excluded.[37 38] Practices need access to 'out of the box' information exchanges that can easily send and receive a patient's health information. To have this functionality, EHRs need to adopt standard data models, coding systems, and vocabularies; clinicians need to adopt standardized methods for recording and tracking patient data.

Through PCMH and ACO initiatives, practices are expanding staff roles, creating care teams, and partnering a growing cadre of ancillary services.[27–30] Clinicians will need EHRs that allow the electronic formation of teams with defined member roles, mechanisms to distribute tasks, processes for communication,

Table 1 Stage 1 and stage 2 meaningful use (MU) objectives categorized by primary care attribute

MU objectives	Stage 1 objectives	Stage 2 objectives
IOM primary care attribute: accessibility		
Secure messaging	No measure	Use secure messaging for 10% of patient communications (C)
IOM primary care attribute: coordination		
CPOE	Use CPOE for medication orders for 30% of patients (C)	Use CPOE for medication, laboratory results, and radiology orders for 60% of patients, includes drug-formulary check (C)
Drug-formulary checks	Implement drug-formulary checks (C)	
ePrescribing	Generate and transmit 40% of prescriptions electronically (C)	Generate and transmit 65% of prescriptions electronically (C)
Summary of care	Provide patient care summaries for 50% of care transitions (C)*	Provide patient care summaries for 65% of care transitions, includes up-to-date problem, medication, and allergy lists (C)
Problem list	Maintain an up-to-date problem list for 80% of patients (C)†	
Medication list	Maintain an active medication list for 80% of patients (C)†	
Medication allergy list	Maintain an active medication allergy list for 80% of patients (C)†	
Timely electronic access to health information	Provide 10% of patients timely electronic access to health information (E)	View, download, and transmit to 3rd party—revised objectives to provide 50% of patients the ability to view, download, and transmit health information electronically (C)
Electronic copy of health information	Provide patients with an electronic copy of their health information (C)	
Electronic copy of discharge instructions	No measure	
IOM primary care attribute: sustained care		
Patient reminders	Send reminders to 20% of patients for follow-up care (E)	Send reminders to 20% of patients for follow-up care (C)
Patient list	Generate one list of patients by condition for outreach (E)	Generate one list of patients by condition for outreach (C)
IOM primary care attribute: comprehensiveness		
Vital signs	Record vital signs (height, weight, blood pressure, BMI) on 50% patients (C)	Record vital signs (height, weight, blood pressure, BMI) on 50% patients (C)
Smoking status	Record 50% of patients' smoking status (C)	Record 80% of patients' smoking status (C)
Medication reconciliation	Perform medication reconciliation on 50% of patients (E)	Perform medication reconciliation on 65% of patients (C)
Laboratory results into EHR	Incorporate 40% of laboratory results as structured data (E)	Incorporate 55% of laboratory results as structured data (C)
Imaging results	No measure	40% of imaging results and information accessible through the EHR (E)
IOM primary care attribute: partnership with patients		
Clinical summaries for office visits	Provide patients a clinical summary after 50% of office visits (C)	Provide patients a clinical summary after 50% of office visits (C)
Patient-specific education	Identify patient-specific education resources for 10% of patients (E)	Identify patient-specific education resources for 10% of patients (C)
Advance directives	Record advanced directives for 50% of patients over 65 years (E)	Record advanced directives for 50% of patients over 65 years(E)
IOM primary care attribute: person-centered		
Demographics	Record demographics (language, gender, race, ethnicity, date of birth) on 50% patients (C)	Record demographics (language, gender, race, ethnicity, date of birth) on 80% patients (C)
Family history	No measure	Family history (E)
IOM primary care attribute: integrated		
CDS	Implement 1 clinical decision support rule (C)	Implement 5 clinical decision support rules counting drug–drug and drug–allergy interactions (C)
Drug–drug and drug–allergy interactions	Implement drug–drug and drug–allergy interaction checks (C)	
Immunization registry	Be capable of submitting electronic data to immunization registries (E)	Be capable of submitting electronic data to immunization registries (C)
Laboratory results to public health agency	Be capable of submitting electronic laboratory results to public health agencies (E)	Be capable of submitting electronic laboratory results to public health agencies (E)
Specialized registry	No measure	Be capable of identifying and reporting specific cases to a specialized registry (E)
Cancer registry	No measure	Be capable of identifying and reporting cancer cases to a State registry (E)
Privacy and security	Protect electronic health information (C)	Protect electronic health information (C)

*The stage 1 objective is better categorized as 'partnership with patients', but the stage 2 modification is categorized as 'coordinated'.

†The stage 1 objective is better categorized as 'comprehensive', but the stage 2 modification is categorized as 'coordinated'.

BMI, body mass index; C, core (required) MU objective; CDS, clinical decision support; CPOE, computerized physician order entry; E, elective MU objective; EHR, electronic health record; IOM, Institute of Medicine.

Table 2 Electronic health record (EHR) and information technology enhancements not addressed by meaningful use (MU) and needed to better support primary care

Primary care attribute: accessibility

Make documenting, accessing, and conveying information non-labor-intensive, to increase time with patients

- Accept structured clinical data from existing external sources that can update EHRs
- Support EHR use by multiple staff members during clinical encounters for documentation and delivery of care
- Allow patients to directly enter health information through patient portals, open notes, and shared EHR space
- Do not allow EHRs to achieve MU through additional non-clinically relevant documentation

Support enhanced asynchronous care

- Allow clinician–patient email, texting, video conferencing, and other bidirectional communication mechanisms
- Allow patients to electronically share information they collect (documents, spreadsheets, pictures, device data, etc)

Embed tools to assess and monitor clinician accessibility

- Create queries for clinicians to track availability
- Support mechanisms for patients to electronically schedule appointments
- Collect patient reports on a clinician's accessibility

Primary care attribute: coordination

Expand capacity for EHRs to receive and aggregate information from all settings so primary care clinicians can proactively coordinate care

- Provide 'out of the box' health information exchange functionality to access all relevant health information
- Support timely health information exchanges so clinicians can aggregate information at the point of care
- Ensure vendor agnostic standardization of data
- Store and exchange all structured data linked to standardized meta-data identifiers
- Import discrete data from exchanges into the EHR (not just view data)

Provide functionality to help coordinate care among teams internally within offices and externally across organizations and systems

- Allow the electronic formation of clinical teams with defined roles for members
- Ensure that electronic tasks are distributed on the basis of defined roles
- Create tools to track the progress of tasks across team members

Track and coordinate ancillary and enabling services (eg, case management, transportation, interpretation, social services, financial assistance)

- Provide secure communication with coordination services
- Maintain a shared library of local coordination services tailored to the individual
- Create and maintain 'benefits formularies' delineating coverage of medications, tests, procedures, and services

Create a dashboard that synthesizes and prioritizes information about individual, and panels of, patients

- Identify and sequence visits with other clinicians, changes in medication and diagnoses, and key results
- Identify urgent messages or whether patients have been to an acute care facility or admitted to the hospital

Primary care attribute: sustained care

Track and support continuity of care

- Allow patients to define who they view as their primary care clinician
- Allow clinicians to track and limit patient panel size on the basis of number of patients and illness severity[61]
- Provide tools for practices to measure patient and clinician continuity of care

Track and support care over time

- Describe chronic conditions and events over time (beginning and end to conditions, changes in severity, and other temporal information)
- Update status and severity of chronic conditions based on other information available in the EHR
- Allow the documentation and use of health information based on episodes of care
- Provide trending tools to show health information as a function of time, influencing data, and events

Primary care attribute: comprehensiveness

Support the whole spectrum of clinical care

- Comprehensively support all aspects of preventive, chronic, acute, and mental health care through documentation, decision support, and outcomes tracking
- Support residential, ambulatory, nursing home, emergency, and hospital settings

Ensure the accuracy of EHR information

- Allow patients to review, correct, and update their health information
- Provide a means for clinicians to reconcile differences between patient-reported information, information from health information exchanges, and information in the existing EHR
- Build tools to auto-resolve outdated information and identify data inconsistencies

Primary care attribute: partnership with patients

Incorporate the patient's perspective into EHRs

- Document issues that are important to the patient (eg, patient goals, what life activities give meaning, what outcomes would be worse than death)
- Allow prioritization of patient goals
- Capture and track the patient's presenting complaint and symptoms as well as their evolution over time
- Allow patients to enter information into EHRs about their goals, values, beliefs, behaviors, and psychosocial factors

Support patient–clinician shared decision-making

- Identify who makes decisions, how decisions are made, and available social support
- Provide patients with educational material, decision aids, and value-assessment tools tailored to decision needs

Primary care attribute: person-centered

Support whole-person care[50]
  - Describe and track who the patient is, including social and cultural context, patient narratives, meaningful life events
  - Expand EHR functionality (eg, documentation, decision support, outcome tracking) beyond disease orientation to include a whole-person perspective

Meaningfully record the patient's family history
  - Cluster family records within EHRs to allow Health Insurance Portability and Accountability Act (HIPPA)-compliant cross-referencing and provide family context
  - Allow patients to record and update family genograms in a simple and intuitive format
  - Link family history to clinical decision support to identify high-risk individuals and personalize support

Identify environmental and community health factors
  - Record environmental and community health factors, such as living situation, occupation, context for identity, and psychological support
  - Link the patient's environmental health factors to public health data and proactively identify relevant health needs

Integrate and share clinical and community-based care
  - Identify community resources, programs, and caregivers that may support a patient's healthcare needs
  - Allow communication with and shared access to EHR information for community caregivers
  - Provide real-time coverage assessment and cost information about community resources

Primary care attribute: integrated

Integrate care settings
  - Support the integration of clinical care and mental health
  - Support the integration of clinical care and public health

Support the individual needs of practices
  - Allow for local tailoring of content, display, and functionality while maintaining necessary standardization
  - Embed functionality and tools for continuing medical education and maintenance of certification

Support national health recommendations and priorities
  - Ensure that patient health information is collected with adequate detail to support national guidelines
  - Integrate national guidelines into the EHR
  - Supply clinicians and patients with timely prompts to support care

Allow population management
  - Provide tools to track patient population health, adjusted for illness severity, and nationally/regionally benchmarked
  - Provide tools to identify and reach out to patients overdue for care
  - Include bidirectional flow of information to and from public health, cancer, immunization, and specialized registries
  - Integrate local and national benchmarking into outcomes reports

Promote accountability for care
  - Document important outcomes to patients and public health entities
  - Allow information sharing and collaboration with population health partners

and tools to track patient progress. These functions will need to extend beyond individual practices to integrate a range of clinicians and services in multiple healthcare settings and the community. Such functionality is essential to support clinical–mental health and primary care–public health integrations.[39]

A more fundamental deficiency for supporting coordination is EHRs' focus on information documentation rather than extraction. Clinicians need a dashboard that synthesizes and prioritizes information across clinicians and settings to clearly show what has happened to a patient or what is happening within a panel of patients. A patient dashboard might show the sequence of clinicians that have seen the patient, changes in medications and diagnoses, and results from tests and procedures. A panel dashboard might show urgent messages or a list of patients seen in an acute care facility or admitted to the hospital.

Sustained care

To promote sustained care, MU only mandates that EHRs have reminders and generate registries. More is needed to promote both continuity and longitudinality. Continuity requires establishing and defining relationships and tracking how well relationships are maintained. EHRs need to allow patients to identify their clinicians. Clinicians need to define and track their patient panel size.

Clinicians need EHRs that have evolved beyond merely linking data according to data type (laboratory results, medications) or units of service (visits) in support of fee-for-service billing to provide the capacity to view episodes of care and display the chronological progression of signs and symptoms.[40–42] For chronic conditions, EHRs could make it easy, within the same graphic representation, to see a timeline of laboratory results, medication changes, and symptom/disease evolution.

Comprehensiveness

MU has begun to advance data acquisition and documentation, basic decision support, and outcome tracking, but objectives remain process- (eg, record smoking status) and disease-focused. Primary care addresses the entire health spectrum and will need EHRs with more robust decision support to address all of prevention, acute care, chronic care, and mental health.[43 44] To provide comprehensive care, clinicians need accurate health information. Beyond medication reconciliation, no objectives address information accuracy. EHRs could be configured to automate resolution of outdated information, identify data inconsistencies, and allow patients to participate in the reconciliation process.

Partnership with patients

Care needs to be tailored to each individual through shared decision-making and patient and family engagement.[45] Objectives do little to support this, beyond sharing clinical summaries, providing basic educational resources, and documenting advanced directives. Contextual factors that influence decision-making (eg, goals, values, preferences, priorities, resources) need to be included in EHRs. EHRs need to clarify how decisions are made, initiate delivery of decision-support material, and integrate use of materials into encounters.[46 47] The record should capture and document a patient's readiness to change unhealthy behaviors and also appropriately provide tailored prompts and materials to clinicians, patients, and families to better motivate and support change.[47] Integrated health risk appraisals and other prioritization tools completed by patients can further help to move beyond disease-oriented care to goal-directed care.[48 49]

Person-centered

An understanding of the patient is central to creating long-term partnerships. The current objectives of recording demographics and family history do not support addressing whole-person care in the context of family and community. Person-centered care requires integration of social, cultural, and community context, biomedical, behavioral, and social risks, and personal goals and preferences.[50] A person-centered summary, or 'patient profile,' should be available as a dashboard in the EHR, and decision-support tools should be tailored on the basis of these factors. Through patient portals, patients should be able to enter and edit their own information to improve accuracy and ease of data collection.

Integration

Clinicians need EHRs to serve as the information backbone across all primary care attributes throughout a clinician's practice, community, and career.[14 27–30] Clinicians will need more robust clinical decision support that facilitates integration of all aspects of evidence-based guidelines, including high-risk individuals, guideline exceptions, influence of comorbidities, and patient preference.[51] Current decision support is too simplistic, resulting in inaccurate prompts, alert fatigue, and inappropriate care.[52 53] Greater federal coordination is needed to ensure that decision supports are implemented consistent with, and prioritized to, national needs.[54–56]

At the practice level, clinicians need more effective population-management tools. They need to be able to generate their own quality reports on demand, tailor reports to individual needs, and seamlessly move from population measures to initiating care delivery for patients in need of services.[57] Important clinical outcomes, such as death, hospitalization, quality of life, and satisfaction with care, need to be systematically documented, tracked, and benchmarked. Given that information and patient needs vary between clinicians, EHRs need to allow local tailoring of functionality and content while maintaining standardization.

Throughout their careers, clinicians must maintain competencies and core skills, demonstrated through board (re)certification and maintenance of certification. To support this process, clinicians need tools embedded in EHRs to measure, trend, and benchmark performance, conduct knowledge assessments based on practice behaviors, and support continuous quality improvement.[58]

DISCUSSION

Providing primary care is an important but daunting task, and designing EHRs to support primary care is equally challenging. The systematic process of comparing the stage 2 MU objectives with the IOM core attributes of primary care demonstrates that EHRs are not being required to consistently support all attributes of primary care.

As detailed in box 1, this analysis suggests that primary care needs additional EHR functions, but some are more critical than others. High-priority items per group consensus include:

1. Enhancing the extraction, interpretation, and prioritization of critical health information for individual patients and a clinician's patient panel;
2. Advancing information exchange to coordinate care across clinicians and settings;
3. Greater patient engagement;
4. Population-management tools to deliver care;
5. Reduction in documentation burden;
6. Better integration of care across settings.

It will be tempting for ONC and EHR vendors to discount these suggestions, stating that the issue is one of implementation and not development. However, clinician input and review of this article, as well as the literature, reveal that major advances in EHRs are needed. Take for example the objective to 'view, download, and transmit health information'; an EHR can meet this requirement without being functional by merely having the capability to assemble and send information.[59 60] This does not require data integration, update EHR content, provide care coordination, or even provide an easy transfer mechanism.

The approach used in this article of comparing the stage 2 MU objectives with the IOM core attributes of primary care has several limitations. First, while MU has incentivized EHR advances, EHRs have functionality not defined by MU objectives. Second, neither MU objectives nor EHR functionality were explicitly designed around primary care attributes. Although categorizing existing objectives and desired EHR additions is a useful and systematic approach, it is a subjective process. Third, the recommendations made in this article are not prescriptively detailed. Many EHR additions and enhancements will require innovative and novel ideas and solutions. This article purposefully focuses on what primary care clinicians think they need and not what can easily be done. Fourth, the stage 3 MU objectives currently under review may address some of the deficiencies identified in this article. Finally, just because there is a gap in EHR functionality does not mean that adding the functionality will improve outcomes. Research is needed to ensure that functions work and do not introduce unintended consequences.

More is outlined in this article than can be accomplished by MU or EHR developers alone. Years of effort, from many entities, are needed to improve EHR functionality. Some functions will be technically difficult; others may require fundamental EHR redesign. Some functions may be delivered best through external applications that are easily integrated into EHRs. Finally, some functions will require infrastructure development, new business models, and policy changes outside the control of EHR developers, such as health information exchange advancement, data standardization, privacy and security regulatory reform, and integration of national guidelines and priorities.

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Acknowledgements This publication was reviewed and endorsed by the American Academy of Family Physicians (AAFP), American Academy of Pediatrics (AAP), American Board of Family Medicine (ABFM), and North American Primary Care Research Group (NAPCRG). This work was partially supported by CTSA Grant Number ULTR00058 from the National Center for Advancing Translational Sciences (NCATS). We would like to thank all the participants who provided meaningful input into the content of this article and its recommendations including the NAPCRG's Health Information Technology Committee, AAFP National Research Network (NRN), Oklahoma Physicians Resource/Research Network (OKPRN), OCHIN, Virginia Ambulatory Care Outcomes Research Network (ACORN), Robert Bernstein PhD MDCM, Brendan Delany MD, Elias Brandt, Emily Eaton, Kurtis Elward MD, Thomas Ehrlich MD, Roland Grad MD CM MSc, Sarah Gwynne AM, John Hughes MD, Samuel Jones MD, Thomas Kuhn MD, Susan Lin DrPh, John Machado, David Mehr MD MS, Zsolt Nagykaldi PhD, Kevin Pearce, Michael Raddock MD, Vanessa Short MPH, Alexander Singer MD, Karen Tu MD MSc, Edward Zimmerman MS. We would also like to especially thank Laura Nichols MS for organizing and coordinating writing activities. A modified version of this article was submitted to the Office of the National Coordinator's Health Information Technology Policy Committee (HITPC) as a joint policy statement from AAFP, AAP, ABFM, and NAPCRG to inform stage 3 MU Recommendations on January 14, 2013.

Contributors All listed authors substantially contributed to the conception and design of the framework to generate recommendations, development of the manuscript's recommendation, initial drafting and/or revision of the manuscript, and review and final approval of the manuscript for publication.

Competing interests None.

Provenance and peer review Not commissioned; externally peer reviewed.

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Electronic health record functionality needed to better support primary care

Alex H Krist, John W Beasley, Jesse C Crosson, et al.

J Am Med Inform Assoc published online January 15, 2014
doi: 10.1136/amiajnl-2013-002229

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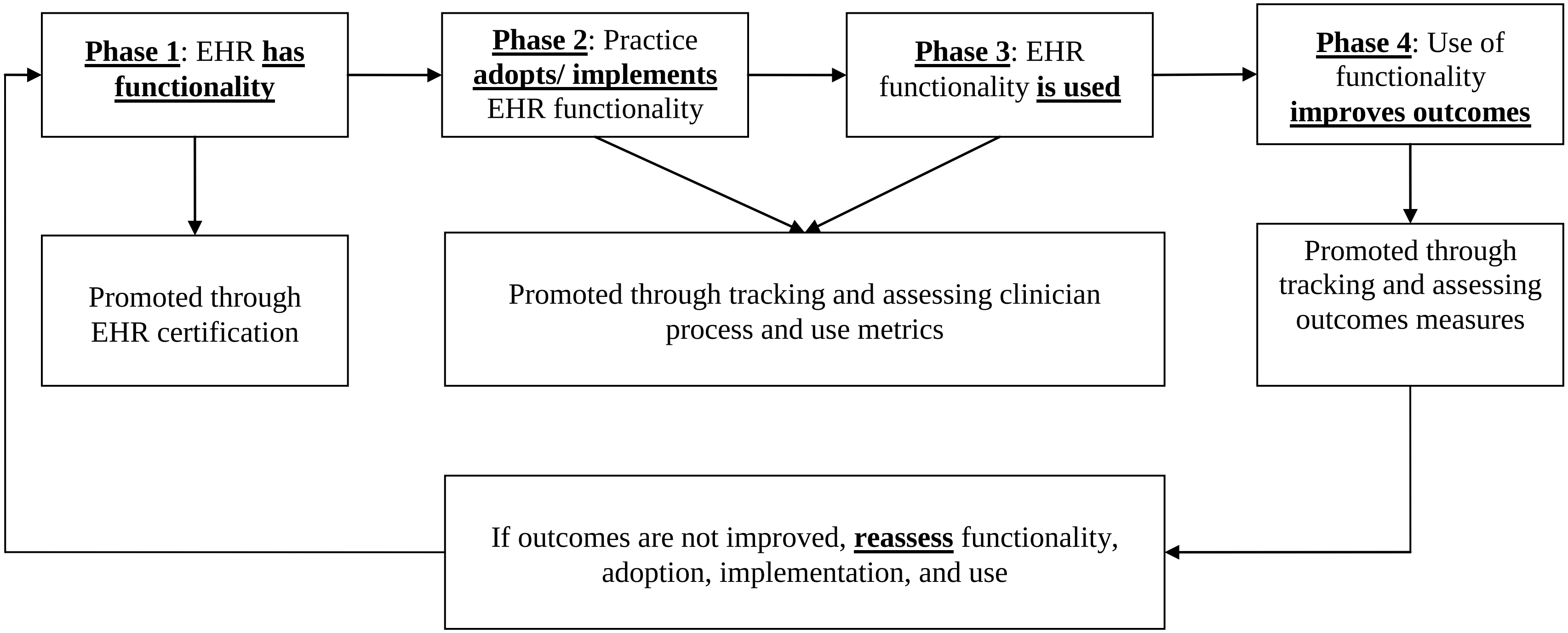
APPENDIX A: Conceptual Model Describing the Phases of How Primary Care Practices Locally Achieve Meaningful Use

Conceptually, primary care practices striving to use their EHR meaningfully move through four phases: (1) identifying necessary EHR functionality, (2) adopting and implementing the EHR functionality, (3) using the functionality, and (4) ensuring that use of functionality improves patient outcomes (see below). The strategies to track and ensure practices complete these phases include expanding certification requirements for EHRs (for phase 1), measuring use and process (for phase 2 and 3), and tracking and assessing outcomes (for phase 4). Stage 1 MU parallels practice phase 1's focus, Stage 2 parallels practice phase 2 and 3, and Stage 3 parallels practice phase 4. While MU is entering Stage 3, for many attributes of care, clinicians and practices still remain in their first phase of locally meaningful EHR use.


Phase 1: EHR has functionality
Phase 2: Practice adopts/ implements EHR functionality
Phase 3: EHR functionality is used
Phase 4: Use of functionality improves outcomes
Promoted through EHR certification
Promoted through tracking and assessing clinician process and use metrics
Promoted through tracking and assessing outcomes measures
If outcomes are not improved, reassess functionality, adoption, implementation, and use

HIT ENABLED CARE COORDINATION

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SEPTEMBER 2011

Fragmented health care in the United States is a significant factor in patient safety, patient outcomes and the cost and efficiency of care. Addressing this fragmentation requires a comprehensive, patient centered coordination of care that presently exists in only a few very highly integrated care delivery systems in the US. Among the major obstacles to care coordination are the lack of a designated care team lead and lack of formal documentation of the care team members. A second major obstacle is the lack of effective communication between successive providers and between care settings at transitions of care. Other challenges include the low level of adoption of electronic records both by primary care practices and by other providers of care, both specialist physicians and other providers and care settings. Beyond providers, the recognized need for a paradigm shift in patient and family engagement in health care will require a quantum leap in the development and adoption of Personal Health Records and the integration of these PHRs into the healthcare system.

Effective care coordination enabled by EHR technology will require an effective care plan document, and the exchange of the needed patient information to inform the plan. That master care plan document would typically be maintained dynamically in the EHR system of the primary care practice. It would serve as the equivalent of a musical score for orchestrating care coordination for individual patients. There may be some reasonable expectation that in some future iteration of the healthcare system that care plan will be a virtual care plan that exists “in the cloud” and belongs to the individual patient, but the reality of current technology and adoption would dictate that in the current era, there is a more localized electronic document that is the care blueprint.

The concept of such a holistic care plan is described in models for patient centered medical homes as a whole patient care plan that is created for complex (usually referred to as high risk) patients. It is also a part of advanced primary care practice initiatives. It is a longitudinal care plan, as opposed to the daily care plans constructed for hospital inpatients, that is created by the collaborative efforts of the members of the patient’s care team of a practice in cooperation with the patient, and the patient’s family or designee(s).

The discussions of the ToC Initiative work groups have identified several issues adversely affecting the coordination of care for patients transitioning through care settings and care givers. Meeting our national goals for quality of care, the health of populations, and slowing of cost growth, as articulated in the National Quality Strategy, requires more effective and patient-centered coordination of care than is presently experienced by most patients. To build on the successes attained by those who developed chronic disease management and case management for the sickest patients, the effort to address the current fragmentation of care for the broader range of patients using healthcare IT and the interoperability framework reveal major obstacles, including:

- Lack of a designated and recognized care team lead and/or coordinator in many provider settings.
- Lack of consistent interoperable documentation of key data. Including but not limited to essential patient information such as medications ordered and immunizations received, as well as supportive data such as formal documentation of the care team members.

- Lack of effective communication between successive providers, by providers between care settings at transitions of care, and with patients and their families.
- Low level of adoption of electronic records both by primary care practices and other providers, including specialist physicians and other disciplines and care settings.
- The need for a significant paradigm shift in patient and family engagement in health care, including their access to information and of electronic tools and contribution of key information by the patient (or patient proxy) that are critical for top quality care.
- The availability and uptake of interoperable Personal Health Records (PHRs) patient portals, and other means for patients to exchange information with EHRs is sub-optimal.

POSSIBLE SOLUTIONS

For clinical care to be the most effective at the lowest cost the ToC Initiative workgroup believes care team coordination to be essential. In addition, we believe to maximize care coordination the following needs to be in place.

- Recognized and established care team appropriate to the patient's individual needs with a recognized care coordinator/leader
- An up to date "master" care plan including all data relevant to and necessary for the individual patients care
- Effective communication tools promoting timely, accurate and complete communication between the patient and/or patient proxy and all care givers
- Effective integration of patient generated information into the workflow of providers and all caregivers
- The ability to interact with and view the master care plan at the appropriate level of detail by each care giver and by the patient or patient proxy
- The ability for the patient, patient proxy and care team members to reconcile and update the care plan as needed to keep it accurate and relevant to the patient's needs at all times.

CARE TEAM AND LEADERSHIP

Central to the notion of patient-centered, well-coordinated care is the concept of team based care. Since each patient has unique needs and spends the majority of his or her time outside of the health care system, effective implementation calls for a team that is unique for each patient. The care team spans not only the providers within a medical home practice, but also additional (specialist) providers who are caring for the individual, as well as the patient, family caregivers and community resources. Roles, coordination of roles and responsibilities within these complex teams must be clear. In many instances there must be an individual with responsibility for ensuring that all the tasks in the plan come together in the most effective way. In most cases, the primary care physician would be responsible for managing the execution of the care plan. But there are situations in which a specialist, other clinical professional, non-physician provider, the patient themselves, family caregiver or other patient proxy would take that role. This fluid assignment of care management recognizes the continuing movement of care from and between inpatient, ambulatory and home care.

MASTER CARE PLAN

An effective care plan, and the exchange of critical pieces of patient information are essential for reducing the fragmentation of the health care system and achieving the goals of the National Quality Strategy. In the context of team-based care, a master care planning document is an essential tool, and is described in models for patient centered medical homes as a whole-patient care plan. The master care plan is a particularly useful tool for maximizing quality of care for complex/high risk patients. It is also a part of advanced primary care practice initiatives. A hallmark of a patient-centered, holistic care plan is that it is longitudinal and created by the collaborative efforts of the various members of the patient's care team and across settings of care, in cooperation with the patient and family caregivers. The holistic care plan accompanies the patient to all care arenas and is reconciled, updated and managed at the correct level of detail for the patient at the current site of care.

Clinical Summaries, hospital discharge summaries, hospital discharge instructions, and recommendations by specialists after evaluation of a patient serve as adjuncts to the care plan. Clinical summaries and hospital discharge summaries are, in essence, plans for a patient's care with a narrow focus on a specific encounter with a health care provider (outpatient/ambulatory provider or hospital, respectively). Additional elements of these encounters, such as findings and relevant test results and discharge instructions, should contribute to building and maintaining the dynamic master care plan. The summary documents are snapshots representing the patient's health state at the time of a transition of care as well as pertinent recent care provided. The master care plan however is a dynamic document that is expected to change and be updated, as a result of periodic assessment of a patient's status, patient self reported status, and progress and as a result of unexpected events such as hospitalization. Both summary documents and the master care plan are necessary components of more effective care coordination.

Patients can and should be encouraged to provide observations and patient-reported outcomes data as part of building and maintaining their care plan. For example, reporting patient history, family history, psycho-social history, preferences, and values and contributing updates related to home testing, drug adherence, functional status, quality of life and updated personal health goals and are critical components of both effective care planning and patient engagement. Information from the home environment as a "setting of care" is critical, since ongoing management of wellness and chronic illnesses occurs outside of the health care system in the patient's home. Reduction of unnecessary readmissions and better stewardship of our health care resources requires that care planning extend beyond the walls of the health care system to be a continuous process that is responsive to individual patients' needs. This is not possible without incorporating information from patients and their caregivers in the care plan. Additionally, important documents like advance directives or medical power of attorney – when they exist - should be included in or accompany patient care plans. Care plans may also include standing orders or patient directives that accompany the care plan documentation and support the patient in many care settings.

Future states of the care plan would ideally be virtual, existing "in the cloud" and belonging to the individual patient. Current realities of technology and adoption dictate that in the current era, the care plan will be a more localized electronic document. The master document would typically be maintained dynamically in the EHR system of the patient's healthcare home. Consistent with current practice updates to documents are sent to all participants in the form of an electronic CC or fax when EHR systems are not available. When the patient transfers to a new or "next" care setting the master care plan would accompany the patient and be established in the EHR of the new care setting. This requires reconciling the master care plan, not only specific sections of the master care plan such as the medication or problem lists at each transfer of care.

COMMUNICATION

Essential to achieving the goal of coordinated care is effective communication between all care team members, including the patient and the care givers in their home environment. While extremely useful in facilitating better communication between care team members, unformatted messages should not replace the exchange of clinical summaries and consult summaries. Existing observation and result standards currently employed in EHRs can and should be used for standardized documentation of patient generated observations, results and demographic updates.

INTEROPERABILITY

Interoperability is clearly a critical factor in facilitating this new, more effective and more integrated approach to care. Therefore, specification of standards for interoperability around care plan data elements, as well as care summary data elements is essential. Structured data elements representing types of interventions not typically recorded in EHRs, such as goals, patient education or instruction, and referral follow-up need to be articulated, existing standards identified, and gaps clearly defined. Creating interoperability between the care plan documents in provider systems and technologies used by patients and their family caregivers (such as PHRs, patient portals, future mobile technologies, etc.) is a vital component of advancing patient engagement. Giving the patient access to their health information and control over its distribution, providing an enduring copy of instructions within the context of the holistic care plan, including provider actions, and enabling exchange of patient self-management plans are all essential for reaching the goals of the National Quality Strategy. Such interoperability would also allow the potential "translation" of this information by software services that address health literacy and preferred language requirements.

The Standards and Interoperability Framework Transitions of Care community is working to enable this interoperability for both clinical summary documents and care plan elements. We are developing a roadmap to more robust interoperability between systems around care plan elements. Currently steps in that roadmap include:

- Leveraging the Care Plan section CCD standards, which focus primarily on discharge instructions.
- Investigating how the Direct Project could provide a means of facilitating secure messaging between all team members
- Determining if the Direct Project is sufficient for enabling effective communication between care team members and patients and their family care givers in the home environment.
- Identifying existing standards that could be used for care planning data elements and whether they are adequate for the kind of data exchange and distillation of data required by this approach
- Defining what new standards are necessary to fill identified gaps, especially in reporting functions which would produce summary documents at transitions of care.
- Identifying existing standards that can be used to include patient generated observations, results, pre-visit questionnaires, and demographic changes.
- Leveraging existing standards to allow for attachments to care plans to be considered at all points of care such as patient directives, standing orders, powers of attorney, and Health Risk Assessment results.

PATIENT ACCESS TO PORTABLE HEALTH INFORMATION (VIEW AND DOWNLOAD)

The importance of patient engagement in overall care coordination is well recognized by the inclusion of the ability to view and download information via a web-based portal as a Stage 2 Meaningful Use criterion. There is great potential – and need – for innovation in technologies to help patients and their caregivers use their health information to be active participants in managing their health, and the "view and download" criteria take the critical step of providing access for patients to their own data.

The ToC Initiative Workgroup purports the use of data standards for technologies used by patients are essential to enable the interoperability so essential to patient engagement in using these technologies. The specific data standards applied need to be carefully considered. If appropriate, data standards already established and used in EHRs should be used. If current existing standards are not sufficient, development of appropriate standards should be pursued. Developers and providers of technologies to be used by patients should be strongly encouraged to participate in and employ standards that promote interoperability with the EHRs.

OPEN ISSUES

Discussion within the ToC Initiative Workgroup uncovered several issues, and many possible solutions were identified. There are a few issues, however, that remain open and require further consideration.

1. "Ownership" of an individual patient's healthcare information has been and continues to be highly debated. The ToC Initiative workgroup acknowledges multiple parties may claim "ownership" to the care plan but is not taking a stance on the solution. "Ownership" of care plan related data is not as pertinent to the coordination as the "Custodian" of the care plan data.

2. "Custodian" of the patient's individualized care plan. Practicality demands that at many care sites, the patient will not be the person doing the bulk of the data entry and updates. This brings to question who is the current custodian of the patient's care plan at any given moment?
   Are updates made only by an assigned care team lead? With this model updates would be made from care summaries and perhaps "mini" or focused care plans submitted by other care givers to the assigned care team lead.
3. Reconciliation of conflicting information. It is inevitable with multiple care givers contributing to the master patient care plan there will be duplicate and/or conflicting information found when reconciling the care plan from care setting to care setting. Determining which data should be kept and what should be archived will require smart business rules to be built into the reconciliation process.
4. Presentation of most pertinent information. Many caregivers prefer seeing only patient information that is pertinent to the care they are providing. For example, the cardiac surgeon is not often interested in the patient's chronic condition of gout.
5. How to manage "updated information"; is the old information lost, archived, or included in summary document somehow? Where is it stored/presented? In addition, each caregiver must be respectful of other care team members and not update, or delete information from the master care plan that is not of interest to them.
6. Process and workflow of care coordination between caregivers and care sites. Current siloed approaches fragment care. Patients often seek care from multiple providers or caregivers for their various health issues. Clinical providers and professionals are often not even aware of other care team members involved in the patient's overall care. Establishing the care team more formally, especially within the care plan was discussed earlier. The ToC Initiative Workgroup has not addressed workflow and processes to make the coordination of care between multiple caregivers smooth and seamless. It is important to note however that workflow and processes should capitalize on the strength of electronic tools and not require care givers or other support personnel to hand enter data that already exists in an electronic form.
7. Migration Path. Care Coordination today is a very paper based and siloed process. To get to the virtual well coordinated efficient master care plan there needs to be recognition of where care processes are today and where they need to be in the future. A venue should be created to determine the migration path from today to the future desired care coordination. The effort applied to determining a migration path for care coordination through a master care plan may be very applicable to other care processes as well.