Health Information Technology Tools to Support the Implementation of a Complex Care Management Program

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Disclosure

We have no financial or commercial conflicts of interest to report regarding this educational presentation.
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Learner Objectives

1. The learner will be able to describe the use and implementation of structured data fields in electronic health records (EHRs) as a tool to measure the impact of nursing in the primary care setting.

2. The learner will be able to discuss the challenges of structuring electronic health records to measure the nursing role in complex care management in primary care.

3. The learner will be able to explain the global implications of defining structured data collection using electronic health records for complex care management in the primary care setting.
Federally Qualified Health Centers (FQHCs)

- Nation’s largest safety net setting
- Located in designated high need communities
- Caring for 24 million patients annually
- 93% served are below 200% poverty and 35% uninsured

CHC Profile

- Founding year: 1972
- Primary care hubs: 14; 204 sites
- Annual budget: $100m
- Staff: 1,000
- Patients/year: 100,000 (est. 2017)
- Specialties: onsite psychiatry, podiatry, chiropractic
- Specialty access by e-Consult to 15 specialists
Elements of the Model

- Fully integrated teams and data
- Integration of key populations into primary care
- Data-driven performance
- “Wherever You Are” approach

Weitzman Institute

- QI experts; national coaches
- Project ECHO® — special populations
- Formal research and R&D
- Clinical workforce development
Structured Data in Electronic Health Records to Capture Nursing Work in Complex Care Management
Health Information Technology and Complex Care Management

Our Goal:
• Improve the quality of complex care management through health information technology

Key Priorities:
• Learn how to achieve better complex care management with EHRs
• Use EHRs to measure complex care processes in primary care
• Build population health outcomes of complex care into EHRs
• Promote adoption of the develop HIT tools
Complex Care Measures

Complex care measures help us:

- Quantify complex care
- Evaluate complex care services
- Answer specific population outcomes questions
- Provide better complex care management

Complex care processes and outcomes in primary care are difficult to measure
Data Models in Complex Care Management

• Value of a data model
  • A set of rules to define the structure of data
  • Defines the relationships among different kinds of data
  • Helps with the data planning and identifying the data elements within the EHR that are available to use for complex care measures
  • The definition of EHR fields and what kind of information they record should be predetermined based on a data model

• Structured data collection
  • Easy to retrieve data when you need it
  • Easy to generate reports
Current State of Using EHR Data for Complex Care Management

• Underutilization of structured data fields to record complex care processes
• Clinical workflow barriers, which lead to limited attention to and documentation of complex care coordination processes
• Lack of data standardization
• Limited or lack of health EHR systems interoperability
Challenges of Using Existing EHR fields

- EHRs initially were designed to document care of individual patients and for billing insurers for reimbursement of services, and not for measuring population data or clinical processes.
- Existing EHR fields may not suit a data model for measuring complex care.
- Some fields are redundant or use different wording to measure the same thing.
- Limitations in linking data
- Altering fields has consequences for how related fields are populated and accessed, and may interrupt data collection already under way.
- Building new fields requires re-training nurses.
HIT and Complex Care Management in Primary Care: Stakeholders

- Nurses / Clinical Teams
- Business Intelligence
- Quality Improvement
- Research and Evaluation
- Leadership
- Patients
Challenge: Meet the needs of clinical staff

Solution: Work with nurses to create a solution – a dashboard, care templates, and a scorecard
Development of a Dashboard to Provide Decision Support for Complex Care Management in Primary Care
Learner Objectives

1. The learner will be able to describe how an operable population-based electronic dashboard was developed.

2. The learner will understand how an electronic dashboard provides decision support for nurse care managers in primary care.

3. The learner will understand the importance of a nurse-driven dashboard as a tool for Complex Care Management in a global setting.
Data Driven: the *Right* Data at the *Right* Time

- EHR
- ETL Process
- Data Warehouse
- Structured Data Pulls
- Dashboards
- Scorecards
An Operable Nursing Dashboard

- Based on an algorithm of standardized definitions that identifies high risk patients who would benefit from complex care management
- Serves as an actionable complex care opportunity
- Patients receive the care that they need (population level)
Global Alert for Enrollment in Complex Care Management

- Allows for more population-based views of complex care processes and outcomes.
- Provides more complete and more timely access to population health trends and analytics based on the rich data set.
- Helps reduce variations in complex care management
- Minimizes the data collection burden – structured data may be automatically extracted for complex care measurement
Global Alert for Enrollment in Complex Care Management

RN CCM Global Alert
Global Alert for Enrollment in Complex Care Management
Reason for Complex Care Management

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<th>2 ER Visits in Last 12 Mths</th>
<th>Hosp. in Last 12 Mths</th>
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</table>
Consider Possible Data Sources

- From hospitalization document
- From CHN Claims data
## Customizing the Sort

This table shows patient data with various metrics such as patient ID, ER visits, hospital visits, diabetes, hypertension, asthma, chronic conditions, smoking status, A1C, blood pressure, LDL, and gender. The data is sorted chronologically by date from April 28, 2017, to June 1, 2017.
### Additional Actionable Data

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<th>Last SMG Date</th>
<th>Action Item</th>
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Evaluation of the CCM Dashboard

- Krippendorf’s Content Analysis
- Close examination of text, categorizing of similar meanings, clustering of categories, themes.
- Transcripts were read 4 times over 3 months.
- Each transcript was read a 5th time and thoughts on categories were written on the margins.
- The data was then grouped under each of these categories
- Categories read and collapsed
Themes

• Provide better care
• Extra work
• Variability in instruction
• Streamlining information
Dendograms

Don’t have a lot of time to go on the dashboard
Waste of time mostly
Hours and hours of work
Feels like extra work

Time Consuming

Its very redundant
A lot of tedious work
Not user friendly
Too many screens

Burdensome

Extra Work

Not so useful for care coordination patients
Takes away from complex patients

Useless
Themes Explored: Provide Better Care

• Enhanced their jobs
• ‘have all my people in one spot’
• ‘identify patients who may need more support’
• Could find patients quickly and follow their vitals and lab values easily
• Able to follow patients who had been recently discharged from hospital
• The dashboard allowed them to spend more time on care coordination
Themes Explored: Extra Work

- Use of dashboard was perceived as ‘burdensome’
- It ‘takes away from the patients who actually need care coordination’
- Felt obliged to open the dashboard otherwise they would ‘get into trouble’
- Felt ‘too redundant’
- Took too long to check in on the patients and daily checking in was unrealistic
- Competing tasks took away from time allocated to care coordination
- ‘we are feeding the dashboard with information’
Themes Explored: Variability in Instruction

• Training for dashboard use was inconsistent
• None of the nurses had hands on training
• ‘it would have been helpful to have hands on training with somebody looking at it with us’
• Suggested that a refresher course would be helpful
Themes Explored: Streamlining Information

- Complex Care Management panels to be linked to their profiles and be ‘nurse driven’ instead of PCP driven
- A column that would give ‘the reason why we started to do care coordination’ on a particular patient
- Seamless navigation through patient templates to obtain pertinent information
- Clarity when a patient should be removed from care coordination
- Accurate and updated information
Revised CCM Dashboard

New filter option
### History of Present Illness

**Diabetes:**
- Home glucose testing — Checks QID. Glucose control — Fair per last A1C of 7.6. Topics discussed using your glucometer: When to test, What should my FBS be, recording your results, Testing Action Plan, Pr veraled understanding. Hypoglycemia Patient explains that he has not had an episode in the last few months, but when he does get dizzy and his BG reading would be lower than 100 but it has never been below 70. He treats hypoglycemia with half a cup of orange juice and a piece of sweet bread. Symptoms — Polyphagia after dinner, denies any other symptoms of hyperglycemia. Foot Problems — Diabetes, Not — Patient reports that he consumes too many sweets after dinner and many of these are sweets that he shares with his five year old son. Exercise — Patient reports that although he does not have a set exercise routine, he does feel that he is very active working on a barker long hours and engaging in active play with his five year old son.

**Medications:**
- Medication review: Name of each med. How pt kids track of meds, Purpose of each med. Why it is important to take meds. Refills needed. Tips for better adherence, pt understood understanding. Adherence rate: Patient reports excellent adherence.

### Self-Management:

- **Self-Management Goal in EHR:**
  - Ready to set a new goal? Ready to set a new goal? Yes. SM Goal: Healthy Eating. Will substitute evening sweet snacks with sugar-free products. SM Goal: Being Active/Exercise N/A at this time. SM Goal: Medication Use N/A at this time. SM Goal: Glucose Monitoring N/A at this time. SM Goal: Self-Care/Risk Reduction N/A at this time. Confidence Score: —/5.

- **Self-Management Goal Details:**
  - Foot exam in past year? Eye exam past year? Eye exam past year? — Patient reports that he saw his eye doctor within the past year, but unsure if retinopathy screening was done. Patient agrees to bring us the contact information for his eye doctor and to please make an appointment to get those records at his next visit. Hemoglobin A1C in past 6 months: A1C: Yes Within the last three months. A1C: Yes within the last three months. A1C: Yes. Within the last three months. A1C: Yes. Within the last three months. Confidence Score: —/5.

### Care Coordination Drill

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Training Primary Care RNs to a New Model

Project ECHO: RN complex care Management: 24 RNs participate bi-weekly for two hours of didactic, Plus case presentation and feedback
Project ECHO Complex Care Management: Training Primary Care RNs to a New Model

- First session on 9/24/15
- Duration: 2 hours; 1 didactic and ~2 cases
- All 12 sites involved – Approx. 35 nurses
- Faculty consists of:
  - Chief Nursing Officer
  - Medical Provider
  - Pharmacist
  - Behavioral Health Provider
  - Homecare Nurse
  - Complex Care Management Specialist and Certified Diabetes Educator
  - Registered Dietician and Certified Diabetes Educator
  - Access to Care Coordinators
Equipping RNs for Complex Care Management

Didactic Topics Covered:

1. Complex Care Management
2. Care Transitions
3. Homecare Nursing
4. Health IT for Complex Care Management
5. Complex Pain Care
6. Substance Abuse
7. Self-Management Goal Setting
8. Medical Nutrition Therapy
9. Diabetes Management
10. Diabetes Medication Management
11. Personality Disorders
12. CT Medicaid: Intensive Case Management Program
13. Medication Reconciliation
14. HIV PrEP and PEP
15. LGBT Cultural Competency
16. Asthma (Rx, Meds, Spirometry)
17. Wound Care
18. COPD
19. Congestive Heart Failure
20. Obesity and Weight Management

Future Topics:

1. HIV
2. Hepatitis C
3. Role of the Complex Care Management Nurse
4. Anxiety Disorders
5. Triage for Behavioral Health Concerns and the Suicidal Patient
6. Psychiatry Medications
7. Buprenorphine Treatment
Transition Care Template

- A template based on Coleman’s (2004) pillars to document the care of patients transitioning from hospital to home
- The template aims to aggregate information from multiple providers and settings into a single location
- EHR - populated with data from the transition template (e.g., hospital discharge data, self-care, VNA referrals, ED discharges, falls, patient concerns and red flags) offers a view of processes of transition care and clinical outcomes not possible otherwise.
Transition Care Template

Hospital Transition
Transition Care Template

**HPI:**

Hospital Transition
- Hospital Discharge
  - From: ---
- ED Discharge
  - -> ---
- Admission Date:
  - Admission Date ---
- Admission Reason: ---
- Discharge Date:
  - -> Discharge Date ---
- Medication
  - Medications Reconciled? ---
  - Medications Filled? ---
  - Medication adherence ---
  - Reasons for poor med adherence ---
  - System for taking medications? ---
  - Medication errors identified: ---
  - ---

**Follow-up/Discharge Plan**
- Other agencies providing services? ---
- If yes, has patient been contacted by agency? ---
- Reviewed discharge instructions ---
- Follow up appointment with PCP? ---
- Specialist follow up ---
- Transportation ---

**Red Flags**
- Alarm symptoms present ---
- Alarm symptom/zone sheet reviewed? ---

**Self-Care**
- Patient needs assistance with: ---
- Support System ---
- Community Services ---

**Patient's Concerns**
- Patient is concerned about: ---

**VNA Referral:** ---

**Falls**
- Patient fell in hospital ---
- Patient fell at home ---
- Patient at risk for falls at home ---
- Home safety evaluation ---
Percent of Fields Completed

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Lessons Learned and Next Steps

- Nurses who use it like it
- Templates often not fully completed
- Clinical care documentation vs. population management
- Need to address barriers to outreach:
  - No discharge plan from hospital to PCP
  - Patients difficult to reach
  - Patients don’t know their discharge plan
- Need to train new staff, review right workflow, right team member, remind/address overall template use
- F/U chart reviews
Self Management Goal Template

Nursing Care Coordination

Self Management
Self Management Goal Template

Ready to Set New Goal
Self Management Goal Template

Motivational Interviewing

Confidence Interval

Confidence Score
Self Management Goal Template

New goal: reduce soda intake from 3 cans per day to 1

Select or type the self-management goal
Self Management Goal Template

Follow-up on a current self-management goal
Self Management Goal Template

Progress Toward Goal
Development of a Nursing Scorecard to Track Metrics to Support Complex Care Management
Objectives

1. Describe the purpose and implementation of a nursing scorecard.
2. Understand the importance of tracking population metrics for nurses providing complex care management.
3. Explain the global implications of nursing scorecards in the primary care field
Goal: Quantify care coordination numbers and outcomes as part of overall nursing performance

Solution: Nursing Scorecard

- Why a scorecard?
- Development of scorecard
- Scorecard review
- Related data
- Revisions/lessons learned
Nursing Scorecard

A scorecard that indicates performance on selected complex care measures for primary care nurses and providers.

Performance feedback:
• Credible and timely
• Responsible party is clearly identified
• Based on current clinical data
• Flexible query function for drilling down into a measure
• Data available for benchmarking
Why a Scorecard?

- “Live” data
- Reinforces a “measurement culture”
- A framework for decision-making
- Linkage of strategy and resource allocation
- Learning and continuous improvement
- Greater management accountability
- Support staff in understanding the value of their work
Development of Care Coordination Scorecard

- Designed in coordination with CC Dashboard
- Define potential CC patients
- Discipline-specific measures
- Include both Clinical and Operational measures
- Track core program objectives over time
- Link data with desired responses
- Ensure usability
- Dedicated time for use

Design & Implementation
Potential Complex Care Patients

• Transition patients
• High Emergency Department Utilizers
• Uncontrolled Diabetes
• Uncontrolled Hypertension
• 4+ Chronic conditions
## Care Coordination Scorecard: Raw Data

<table>
<thead>
<tr>
<th>Nurse</th>
<th>PCP</th>
<th>Current CCM Patients n</th>
<th>Total CCM Pts. Ever n</th>
<th>Eligible CCM Patients n</th>
<th>CCM Telephone Encounters n</th>
<th>Patients with HTN n</th>
<th>HTN Controlled %</th>
<th>Patients with Diabetes n</th>
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Care Coordination Scorecard: Summary

Care Coordination: Enrollment by Nurse, as of 5/1/2017

Name of Nurse and Site

% Current/Potential  % Total/Potential
## Complex Care Management Scorecard

<table>
<thead>
<tr>
<th>Nurse</th>
<th>PCP</th>
<th>Panel Size</th>
<th>Total CC Patients</th>
<th>Potential CC Patients</th>
<th>CC TE's</th>
<th>HTN Controlled</th>
<th>HTN Patients</th>
<th>Controlled HTN</th>
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<td>95</td>
<td>29</td>
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</tbody>
</table>
Care Coordination Scorecard: County Summary

![Graph showing Fairfield County Sites: Total CC Enrollment]
Care Coordination Scorecard

Middlesex County: Total CC Enrollment

Coverage Changes
1. Hand - Service
2. Bennink - Haney & Khan
3. Bennink - Adams

Number of Patients Ever Enrolled in Care Coordination

Date

Nurse Name
Lessons Learned

• Focus on Design & Implementation
• Include the Frontline team members in every step
• Ongoing improvement
  • Design
  • Measures
  • Data
• Ongoing training/Support
• Evaluate usability
• Celebrate success
Thank you
EHR References


Dashboard References


Scorecard References
