Combining Technology and Evidence Based Practices to Improve Outcomes

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505. Combining Technology and Evidence-Based Practices to Improve Outcomes

Organizations can manage the challenge of data and information exchange with technology that uses reference and clinical standards, along with the Office of the National Coordinator for Health Care Information Technology requirements. Use of health information technology (HIT) and electronic health records (EHRs) to achieve the Triple Aim of reducing costs, improving clinical outcomes, and improving customer experience is the focus of current health reform efforts. Home health and hospice organizations must participate in meaningful use of HIT to foster reliable exchange of information among practitioners and patients. Participants will learn how their agency can use standard clinical terminology and evidence-based practices within an EHR system to comply with meaningful use standards, reach organizational goals, and improve patient care.

Track: Health Information Technology
Audience: | HH | HOS | NUR |
Today’s Objectives

- Summarize current health IT trends
- Describe the value of standard clinical terminology and reference code sets, evidence-based practice (EBP), and clinical decision support systems (CDS)
- Describe one organization’s journey to an EHR supported by standard clinical terminology, EBP, and CDS
- Identify ways homecare and hospice organizations can be involved in health IT Initiatives

A Key to the Triple Aim: System Integration and Execution

- Goals of the Triple Aim:
  - Improve health care quality and experience
  - Improve the health of populations
  - Reduce the per capita cost of health care
- Requires system integration and execution:
  - Technical standards to support patient-centered care
  - Electronic Health Records (EHRs)
  - Meaningful Use – Stage 2 and beyond
  - Clinical Decision Support Systems
  - Evidence-based clinical practice

IHI 2013
Knowledge - Statistics, Evidence and Mistakes - is the enemy of disease...The third revolution in healthcare will be driven by knowledge, technology and patients.”

Sir Mur Gray, Chief Knowledge Officer of Britain’s National Health Service
Meaningful Use

- Why:
  - To promote adoption of electronic health records in support of the Triple Aim through:
    - Complete and accurate information
    - Better access to information for providers and patients
    - Reducing costs of care

- How:
  - Through a set of CMS defined standards
    - Govern the use of EHRs
    - Allows eligible providers to earn incentive payments by meeting specific criteria

Technical Standards Supporting Meaningful Use

- Standard clinical terminology, i.e., Omaha System
- SNOMED (normalizing clinical concepts)
- LOINC (Logical Observation Identifiers Names and Codes)
- ICD CM9/10 (diagnosis coding)
- HL-7 (Health Language 7)
- HTML
- Transport Protocols (example - SOAP)
- xds.b, xca, SAML (document registry)
A Standard Clinical Terminology

The Omaha System

Problems (42)
actual/potential health problem
individual/family/community

Problem Classification Scheme
Intervention Scheme
Problem Rating Scale for Outcomes

EHR: From A High Level

Security and Identity
Persistent Info Documents
Dynamic Information Access
Workflow
Quality

EHRVA

Internet
Example of Technical Protocols: Document Registry: NwHIN SAML Headers

- Example of the SAML headers that the XDS Toolkit emits to interact with the US ONC CONNECT project. I cannot claim they are correct but they do interact well with CONNECT.
  - <soapenv:Header xmlns:soapenv="http://www.w3.org/2003/05/soap-envelope">
      - <wsu:Timestamp wsu:Id="_1" xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wsse:utility-1.0.xsd">
        - <wsu:Created>2012-04-27T19:17:33Z</wsu:Created>
    - <saml:Subject>
      - <saml:NameID Format=...</saml:NameID>
  - <saml:SubjectList>
    - <saml:Subject/>

Examples of What ‘Meaningful Use’ Requires

<table>
<thead>
<tr>
<th>DATA</th>
<th>SUPPORT &amp; OUTPUTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- CPOE (for Medications)</td>
<td>- Clinical Decision Support</td>
</tr>
<tr>
<td>- Drug-to-drug and drug-to-allergy interaction checks</td>
<td>- Calculate and transmit CMS quality measures</td>
</tr>
<tr>
<td>- Demographics, gender, race, ethnicity, DOB, preliminary cause of death</td>
<td>- Electronic copy of health records</td>
</tr>
<tr>
<td>- Problem list</td>
<td>- Electronic copy of discharge instructions</td>
</tr>
<tr>
<td>- Medication list</td>
<td>- Clinical summaries</td>
</tr>
<tr>
<td>- Medications allergy list</td>
<td>- Exchange key clinical information</td>
</tr>
<tr>
<td>- Vital signs</td>
<td>- Privacy and security</td>
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</tbody>
</table>
Clinical Decision Support

- Right information to the
- Right person in the
- Right format through the
- Right channel at the
- Right time

Clinical Decision Support

- Is a sophisticated HIT component doesn’t stand alone

- Common features
  - Knowledge-based (diagnosis, drug databases including interactions, side effects and monographs)
  - Rules & relationships that combine knowledge with patient-specific information
  - Communication mechanisms that provide relevant information to the clinician as care is delivered.
    Berner, 2009
  - A critical feature supporting achievement of the Triple Aim!
**Benefits of CDS inside the EHR**

- Streamline workflow and productivity
- Improve clinical accuracy through EBP
- Increase clinician satisfaction
- Improve patient outcomes

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**Benefits of CDS inside the EHR**

*Streamline Workflow and Productivity by:*

- Organizing and presenting information in an familiar order and workflow
- Supporting informed decisions & actions through a variety of rules and tools
- Cuing the clinician as to what has been accomplished and what is yet to be done
Benefits of CDS inside the EHR

*Increase Clinical Accuracy through EBP*
- Matching patient information with evidence, guidelines & requirements
- Providing discrepancy or omission alerts
- Providing follow up reminders
- Supporting decisions and recognizing variance
  - Easy access to information – EBP, tips, etc.
  - Suggesting alternatives
  - Collecting explanation of variance

Benefits of CDS inside the EHR

*Increase Clinician Satisfaction*
- Putting information where clinicians need it
- Keeping track of tasks and progress toward completion
- Providing support for completing complex procedures
- Placing the patient at the center of care
Benefits of CDS inside the EHR

*Improve Patient Outcomes*

- Suggesting individualized care plans based on EBP
- Providing visibility to an *inter*professional care plan
- Recommending specific actions, reminders and evidence while tracking progress
- Providing support for patient engagement


Standardized Terminologies and Evidence-Based Practice

Applying current concepts to homecare & hospice
Standardized Terminologies

Standardized point-of-care terminology: A structured language consisting of terms, definitions, and codes that clinicians use to guide and document practice (i.e. Omaha System)

Standardized reference terminology: A structured language consisting of terms, definitions, and codes that clinicians do not see, but software developers use to promote interoperability/exchange of data (i.e. SNOMED CT, LOINC)

Omaha System

• Problem Classification Scheme (assessment)
• Intervention Scheme (services)
• Problem Rating Scale for Outcomes (evaluation)
Omaha System Model of the Problem Solving Process

Copyright: Martin KS. (2005). The Omaha System: A Key to Practice, Documentation, and Information Management (Reprinted 2nd ed.). Omaha, NE: Health Connections Press.
Evidence-based Practice

Evidence-based practice is a problem-solving approach to health care that incorporates the conscientious use of current best evidence from 1) well-designed studies, 2) a clinician’s expertise, and 3) patient values and preferences. 

Fineout-Overhold, Melyn, 2005

*All three of these key components* must be present for evidence-based practice to be effective.

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The EBP Paradigm

Fineout-Overholt, el al, 2005
Why Standardized Terminologies and EBP?

National, State & Local Perspective
- Helps decrease variability across clinicians & providers
- Supports accurate and comparable benchmarking
- Helps achieve efficient & effective patient outcomes
- Helps decrease costs
- Meets accreditation & licensure standards
- Helps decrease adverse events
- Can positively affect Home Health Compare Scores

Why Standardized Terminologies and EBP?

Positioning your Organization for Success
- Standards are mandated
- Basing practice & care on evidence is expected by the Affordable Care Act (ACA)
- ACOs are required to promote evidence-based medicine
- Changing focus to value based purchasing
Why Standardized Terminologies and EBP?

Clinical Perspective
Research studies show that use leads to:
- Higher quality care
- Enhanced care coordination
- Improved documentation
- Improved patient outcomes
- Reduced costs
- Greater clinician satisfaction

Diffusion of Innovation

- Innovators-2.5% (venturesome, like novelty)
- Early adopters-13.5% (opinion leaders who are well connected)
- Early majority-34% (learn mainly from those they know well)
- Late majority-34% (look to majority; “safe” to try)
- Laggard-16% (reference point in past; may be obstructionists to valid change)

Everett Rogers, 1995
Delays to Adoption

Clinicians’ Perspective

- Lack of knowledge/awareness
- Wasn’t a part of their clinical education
- Too difficult or time-consuming
- EBP isn’t easily accessible when needed
- Change is difficult

Delays to Adoption

Organizational Perspective

- Time, energy and focus is consumed insuring regulatory compliance
- “That is why we hire licensed professionals”
- “Isn’t that why we have OASIS?”
- Software doesn’t include it
- Change is difficult and expensive
An Agency’s Experience

*The Journey* to an EHR supported by standard clinical terminology, EBP and CDS

UnityPoint at Home – Who We Are

- Iowa’s largest provider of integrated home health
- Provide an evidence-based integrated chronic care disease management education and certification program for its entire clinical workforce
- Transitioned to an electronic point of care documentation system in 2004
- Part of a Pioneer Accountable Care Organization
Our Electronic Health Record Journey

- **Point of Care**
  - Increased efficiency
  - Improved workflow
  - Increased accuracy

- **Electronic Scheduling**
  - Improved Care Coordination

- **Physician Portal**
  - Improved communication
  - Improved workflow

- **Wound Advisor**
  - Extends the reach of wound specialists

- **Telehealth monitoring**
  - Non-video and video monitoring

- **Intake workflow**
  - Centralize intake across sites

- **Electronic Supply ordering**
  - Patient supplies at POC
  - Delivered to patient's home

- **Smartphone**
  - Improves communication
  - Most recent data on the server

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The Complexity of Home Care

- Multiple co-morbidities

- Partnering to prevent 30 day re-hospitalizations

- Complex case management

- Difficult social situations

- Medication use and poly-pharmacy

- The realities of end-of-life care
Our Omaha System Journey

- First reviewed in 2002
- We valued the:
  - Patient-centeredness
  - Simplicity
  - Respect for the evolving technology landscape, i.e. mapping to SNOMED, LOINC, ICD 9/10CM
  - Problem Classification Scheme
  - The Problem Rating Scale for Outcomes
  - Applicability to all health care professionals
  - Use across care settings and internationally
- We were concerned that it was not embedded within our electronic medical record

Our Omaha System Journey

- Now is incorporated in our electronic medical record
  - Supported by EBP and CDS
  - Affords us a patient centered interprofessional care plan
    - Nursing
    - Therapy (PT, OT, SLP)
    - Social workers
    - Spiritual care, massage and music therapists
    - Extensible to physician and other mid-level practitioners
- Beginning roll out with home health and infusion
  - Pediatrics and hospice will follow
Our Omaha System Journey

• Access at the point of care
  • Essential that all care team members have access to the care plan at the place of care

• Working from a single integrated care plan
  • For example – a Neuro-musculo-skeletal function problem will have different interventions for each professional with a common end goal and visibility by all

Our Omaha System Journey

• Noted improvement
  • Before the use of an EHR with CDS and EBP
    • Professional specific care plans difficult to view by other disciplines
    • Difficult to access a common patient-centered problem list
    • Revisits not always focused
  • With an EHR with CDS and EBP
    • Professional specific care plans that contribute to interdisciplinary care plan
    • Working with patient-centered problem list
    • Revisits focused on patient's problems – efficient use of clinician time.
    • EBP interventions are suggested to clinician as care plan is built
Less Can Be More

- More documentation does not equal better documentation
  - More accurate charting focused on patient specific problems
  - Individualization occurs naturally based on the assessment findings
  - Interventions provided based on best and evidence-based practice
    - Including appropriate care team participants
- The Problem Rating Scale for Outcomes
  - Helping the care team determine readiness for discharge

Implementing an EHR with CDS and EBP

- Training plan – 9 sites
  - Provided Omaha System basic workshops in preparation
    - Established field staff champions
      - PT, OT, MSW, RNs
    - Quality Assurance
    - Clinical Supervisors
    - Clinical Executives
Implementing an EHR with CDS and EBP

- Implementation plan – Covering 9 physical locations
  - Each site trained individually
    - Use case studies to support the system training with the goals of:
      - Developing consistency in the care planning process
      - Developing consistency in scoring the Problem Rating Scale for Outcomes
  - Workshop attendees
    - Champions and supporting staff

Implementing an EHR with CDS and EBP

- Metrics once fully implemented
  - Patient outcomes using CDS and EBP
    - Improved
    - Achieved more quickly
  - Clinician satisfaction
    - Less training time to learn EHR system
    - Improved confidence implementing best interventions
    - Increased collaboration regarding patient problem list due to interdisciplinary care plan.
Preparing for Meaningful Use - Stage 2 and Interoperability

- Omaha System based on a standardized terminology
  - Including respect for reference codes, SNOMED, LOINC, ICD-9/10 CM

- Enabling us to share meaningful data

- Improving our ability to achieve positive outcomes

- Support our value to Accountable Care Organizations

Health IT Initiatives

How you can be a part of what is happening with technology to position us to achieve the Triple AIM for Health Care
Health IT Initiatives

There are many activities underway and open to your involvement, check out these sites for opportunities:

- [http://www.healthit.gov/policy-researchers-implementers/health-it-strategic-planning](http://www.healthit.gov/policy-researchers-implementers/health-it-strategic-planning)
- Your System, State or Regional HIE

*Let whoever is in charge keep this simple question in her head (not, how can I always do this right thing myself, but) how can I provide for this right thing to be always done?"*

Florence Nightingale

*Notes on Nursing: What it is and What it is Not*
What You’re Doing & Questions

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References


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Carrington JM. (2012). The usefulness of nursing languages to communicate a clinical event. CIN: Computers, Informatics, Nursing, 30(2), 82-88.


References


References


Omaha System Website: www.omahasystem.org