Simplifying and Standardizing Clinical Documentation to Generate Big Data

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Overview

• EBCD Background
• Getting Organized
• Key Decisions
• Implementation Strategy
• Impact on Big Data Tools
Background

The Tower of Babel, 1563
Pieter Bruegel, 1525 -1569
Create a patient centric record that guides and informs the provision of safe, effective and efficient care by the interdisciplinary team and produces data to evaluate care of individual and populations of patients.
Getting Organized
Roles & Responsibilities:  
*Clearly Defined, Non-overlapping, Mutually Respected*

- **Steering Committee**
  - Vision, Guiding Principles
  - Priorities, Disagreements

- **Clinical Team**
  - Content and thought flow

- **Technical Team**
  - Navigation and data flow

- **Subject Matter Experts**
  - Regulatory expertise

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Project Structure

**Steering Committee**  
J. Englebright,  
CNO Council

**Technical Team**  
Define design  
Apply informatics science and HIT functionality

**Clinical Team**  
Define evidence-based practice  
Apply ideal workflow

**Project Team**

**Subject Matter Experts**  
(Standards, Risk, Legal, HIM)
Evidence Based Clinical Documentation
Content Development Process

Content Development

- Current Build
- Focus
- Guidelines & Templates
- Individual Assignment
- 1.0 Develop Baseline Content (Clinical Team)
- 1.1 Incorporate Evidence (Clinical Team)
- 1.2 Field Review (Clinical Team)
- As Needed
- Content Data Model
- TJC
- Lippincott
- NJM
- ZynxEvidence

Data Flow Development

- CWAT IS DFD
- Corporate Clinical SME
- EBCD Sub-Team
- Context Level Flows
- Known Technology Constraints
- MT 6.0 Sub-Team IS DFD
- MT 6.0 Tools
- 2.1 Validate & Update Data Flow (Sub-Team)
- Acute Care / Critical Care Sub-Team

Hand-Off Process

- EBCD Technical Team SME’s
- System Processes
- 4.0 Review Session (Technical / Content Teams)
- Content Team GTP
- Standardized Clinical Process
- Standardized Clinical Data Model

Team Management
## Guiding Principles:
### EBCD Development Process

<table>
<thead>
<tr>
<th>Principle</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence-based vs. consensus-based decision-making</td>
<td>Supports evidenced based practice</td>
</tr>
<tr>
<td>Small design team, large review group</td>
<td>More efficient, preserves focus on evidenced based practice</td>
</tr>
<tr>
<td>Practicing clinicians define content</td>
<td>Maintain patient centered focus, avoid overbuilding content</td>
</tr>
<tr>
<td>Regulatory experts evaluate content for compliance</td>
<td>Assure compliance and leadership buy-in</td>
</tr>
<tr>
<td>Focus on the ethical and competent clinician</td>
<td>Maintain patient centered focus, avoid overbuilding</td>
</tr>
</tbody>
</table>
## Guiding Principles: EBCD Design

<table>
<thead>
<tr>
<th>Principle</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support ideal workflow</td>
<td>Support clinical process</td>
</tr>
<tr>
<td>Automate data entry whenever possible</td>
<td>Minimize error and improve efficiency</td>
</tr>
<tr>
<td>Incorporate decision-support</td>
<td>Minimize error and improve efficiency</td>
</tr>
<tr>
<td>Use software as designed</td>
<td>Minimize maintenance and enable more timely upgrades</td>
</tr>
<tr>
<td>Strict adherence to Style Guide</td>
<td>Maximize efficiency in building, use and training</td>
</tr>
</tbody>
</table>
Screens Consistent & Easy-to-Use

Style Guide Standards
- Designed around usability heuristics
- Designed around user workflow
- Standard presentation
- Standard visual cues

Design Decisions
- Case sensitivity
- Symbols
- Abbreviations
- Color usage
- Positioning/justification/spacing
- On screen documentation (info boxes)
- Navigation
Consistent User Interface
Consistent User Interface
Key Decisions
Key Decision:
Standard Nursing Terminology

• We identified a need for a Standard Nursing Terminology to guide our build
  – Provide an organizing framework
  – Define domain completeness
  – Enable internal and external data exchange and research
A standardized terminology for electronic health record (EHR) systems that supports capturing discrete patient care data for documenting the “essence of care” and measuring the relationship of clinical care to patient outcomes.

http://www.sabacare.com
- Healthcare Patterns: Organizing framework for plan of care and teaching documentation screens
- Care Components & Diagnoses: content for nursing diagnoses/problems dictionaries, elements of plan of care and teaching documentation screens
- Outcomes: Content for goals and outcomes dictionaries, elements of plan of care
- Interventions & Action Types: Content for intervention dictionary, queries for screens
Key Decision:
Clinical Care Classification System (CCC)

Matched our approach:
- Derived from empirical research of nursing documentation
- Based on nursing process
- Focus on “essence of care”

Met our technical requirements:
- Recognized by ANA and HITSP
- Mapped to SNOMED and LOINC
- Fit easily in the MediTech dictionary framework
Key Decision:
Plan of Care

✓ POC is patient centric and goal directed.

✓ Each patient has a unique POC consisting of 3 – 4 priority problems that are the focus for this episode of care.

✓ Problems are identified from a nationally recognized nursing taxonomy (Clinical Care Classification System or CCC).

✓ POC is reviewed regularly and updated as needed based on changes in the patient’s condition, response to treatment, and progress toward goals.

✓ Routine care, individualized considerations for care and physician ordered nursing interventions are not components of the Plan of Care.
The RN selects 3-4 priority problems for this episode of care

Physiological problem/alteration in:
- Neurological
- Renal
- Urinary elimination
- Musculoskeletal
- Immunologic response
- Thermoregulation
- Growth and development

Psychological problem/alteration in:
- Communication

Functional problem/alteration in:
- Pain

Health behavior problem/risk:
Plan of Care Goals

Goals default in as Improve or Stabilize but can be modified.
Target Date for Goal Attainment

The RN establishes the Target Date for each goal

<table>
<thead>
<tr>
<th>Neurological alteration problem has:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Improved/Resolved</td>
</tr>
<tr>
<td>2 Stabilized/Maintained</td>
</tr>
<tr>
<td>3 Deteriorated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Neurological alteration problem expected to:</th>
<th>Improve/Resolve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target date:</td>
<td>11/02/15*</td>
</tr>
<tr>
<td>Neurological alteration problem is:</td>
<td>Stabilizing/Maintaining</td>
</tr>
</tbody>
</table>

| Neurological alteration problem has: |

| Neurological alteration problem comment: |
Plan of Care Outcomes

- The RN will status the goal to show progress or deterioration
- The RN will document the final outcome of the problem
Individualizing the Plan of Care

- Comments can be used to provide individualized detail
- Additional fields appear on Behavioral Health and Rehabilitation POC for measurable short and long term goals.
Key Decision:
Routine Care for All Inpatient Populations

- Required care and documentation elements for all inpatients
- Appear on the task list
- Not tied to specific problems or goals
- All nursing assistant actions are “perform”

Assess
- Admission assessment
- Pain management
- PRN Medication Effectiveness

Perform
- Vital Signs, MEWS/PEWS
- I&O
- Height & Weight
- Lines, tubes & drains
- ADLs: Hygiene Care / Meals / Ambulation

Teach
- First dose medication education
- Patient/Family Education

Manage:
- Care management
Key Decision:
Individualized Care Considerations

- Required history elements
- Communicated to all caregivers to be used in planning and providing care
- Not associated with goals
- Not part of Plan of Care

- Culture / Spiritual considerations
- Hearing / Sight Impairments
- Developmental level
- Other respectful considerations (PTSD)
- Legal considerations (organ donor, advanced directives, POA)
- Assistive devices
- Substance use
- Living situation
- Educational needs and preferences
Key Decision: Patient History

- Demo Recall used extensively
- Family history has been assigned to the admitting provider
- Patient screenings limited to 3-5 queries
  - Enable specialists to identify patients in need of full assessment and/or intervention
Key Decision
Teach/Educate

- Individual Learning assessment is completed once
- Teach/Educate Process follows similar as POC design
- Nurse may trigger follow-up topics as necessary
Key Decision: Lines, Drains, & Airway (LDA)

One screen to capture LDAs for all units:
- Facilitates communication among care team
- Improves accuracy of documentation
Key Decision:
Safety/Risk/Regulatory

Risk screenings pulled to a common screen for:

- Frequent Assessments
- Ease of access
Inventory of belongings
Standard precautions
Hand washing
Safety measures defined by policy (i.e., trach tube at bedside)
‘Routine’ emotional support
‘Routine’ explanations of care processes
Handoff Communication is defined by process not “form”

Documentation Not Needed in Medical Record

If it wasn’t documented, it wasn’t done
EBCD Pilot Site:
Doctors Hospital of Augusta

Meditech 5.6x NUR, EDM, ORM modules

- Impacted end-users: Nursing and Respiratory Therapy staff; clinicians who interact with shared screens
- Physician awareness of change
Measured benefits of EBCD

- EBCD demonstrated a clear advantage over the baseline documentation at the pilot site in all tasks
  - Shorter time to complete
  - Less effort
  - Better ability to better capture discrete data

- The most significant benefit is with the Shift Assessment. This is the most complex task tested and had the greatest efficiency gains
Pilot Success Metrics:
Objective Results

✓ **Doctors of Augusta Test Lab:** pre-go live study suggested 19 minutes saved in charting per nurse, per shift.

✓ **Doctors of Augusta:** 30 days post go live study (actual results) demonstrated 29 minutes saved in charting per nurse, per shift.

✓ Study was performed on those screens most impacted by EBCD.

- Shift Assessment
- Fall Risk Assessment
- Hygiene Care
- Skin Risk Assessment
- Inventory of Belongings
93% of Nurses Increased Time at Bedside

- “give pain RX (medicine) quicker”
- “talk one to one with the patient”
- “help other RN’s with patient care”
- “more time to talk to patients”
- “wash their hair”
- “check on them (patients) more often”

14 adult inpatient nurses surveyed 3 weeks post go live by Clinical Lead at Doctors of Augusta

Doctors of Augusta Hospital. February 16, 2016 Go Live.

<table>
<thead>
<tr>
<th>Functional Task</th>
<th>User Interface</th>
<th>Time Elapsed (seconds)</th>
<th>Left Clicks</th>
<th>Keystrokes</th>
<th>Sum of Effort (SOE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift Assessment</td>
<td>Baseline</td>
<td>209</td>
<td>5</td>
<td>244</td>
<td>458</td>
</tr>
<tr>
<td></td>
<td>EBCD Pre Education</td>
<td>109</td>
<td>39</td>
<td>1</td>
<td>149</td>
</tr>
<tr>
<td></td>
<td>EBCD 30 Days</td>
<td>107</td>
<td>40</td>
<td>0</td>
<td>147</td>
</tr>
<tr>
<td>Fall Risk Assessment</td>
<td>Baseline</td>
<td>42</td>
<td>1</td>
<td>11</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>EBCD Pre Education</td>
<td>37</td>
<td>11</td>
<td>0</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>EBCD 30 Days</td>
<td>9</td>
<td>9</td>
<td>0</td>
<td>18</td>
</tr>
</tbody>
</table>

- Doctors of Augusta Test Lab: pre-go live study suggested 19 minutes saved in charting per nurse, per shift.
- Doctors of Augusta: 30 days post go live study (actual results) demonstrated 29 minutes saved in charting per nurse, per shift.
93% of Nurses Increased Time at Bedside

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Pilot Success Metrics:
Subjective Results

Adult Inpatient Nursing

- NA, 7%
- 1+ Hr, 57%
- 30+ Mins, 36%
EBCD Impact on Nurses and Patients

RN saving an average of 49 minutes per shift

- What nurses do with an extra 49 minutes a day:
  - “Give Pain medicine quicker”
  - “Talk one to one with the patient”
  - “Help other RNs with patient care”
  - “Wash their hair”
  - “Check on patients more often”

- Missed Nursing Care when nurses run out of time:
  - Timely medication administration
  - Patient education
  - Ambulation
  - Hygiene
  - Surveillance
  - Emotional & psychological support
  - Documentation
  - Discharge planning

<table>
<thead>
<tr>
<th>Based on 70 Chart Audits</th>
<th>Number of Plan of Care Problems</th>
<th>Number of Nursing Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Go Live</td>
<td>Post Go Live</td>
</tr>
<tr>
<td>Sum</td>
<td>498</td>
<td>322</td>
</tr>
<tr>
<td>Average</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

Reference
# EBCD Enterprise Pre Work Activities and Participants

<table>
<thead>
<tr>
<th>Workstream</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitals Signs Standardization</td>
<td>Clinical Analyst</td>
</tr>
<tr>
<td>MEDITECH: NUR Module Nursing Access</td>
<td>Clinical Analyst</td>
</tr>
<tr>
<td>NPR Analysis</td>
<td>Clinical Analyst, Facility Lead</td>
</tr>
<tr>
<td>EBCD Parameter Setup</td>
<td>Clinical Analyst</td>
</tr>
<tr>
<td>Analysis of Clinical Systems and Equipment</td>
<td>Clinical Analyst</td>
</tr>
<tr>
<td>EBCD Intervention Analysis</td>
<td>Clinical Analyst, Facility Lead</td>
</tr>
<tr>
<td>OA Messaging Removal</td>
<td>Clinical Analyst, Facility Lead, Dept Directors</td>
</tr>
<tr>
<td>Corporate Screen Use Analysis</td>
<td>Clinical Analyst</td>
</tr>
<tr>
<td>Inpatient Routine Nursing Care Orders</td>
<td>CNO, DAC, Nursing Directors, Policy Committee, Clinical Analyst</td>
</tr>
<tr>
<td>NE1 Wound Assessment Tool</td>
<td>EBCD Facility Lead, Lead Physical Therapist/Wound Champion, and all Nursing and Physical/Wound Therapy</td>
</tr>
<tr>
<td>Nursing Documentation Policy</td>
<td>Nursing Leadership, Policy Approval Committee</td>
</tr>
<tr>
<td>Patient Weight Documentation</td>
<td>Facility Lead</td>
</tr>
<tr>
<td>PDOC Localization</td>
<td>PDoc Specialist or DCS</td>
</tr>
<tr>
<td>Device Assessments</td>
<td>EBCD Facility Lead, IT Director</td>
</tr>
<tr>
<td>Healthstream Build Out</td>
<td>Facility Lead or Director of Education</td>
</tr>
<tr>
<td>Informatics/Professional Practice Council (Governance)</td>
<td>Facility Lead</td>
</tr>
<tr>
<td>Evidence Based Tools</td>
<td>Clinical Analyst, Facility Lead</td>
</tr>
</tbody>
</table>
Readiness Toolkit

- NE1® Wound Assessment Tool
- Corporate Screen Use Analysis
- Evidence Based Tools
- Nursing Documentation Policy
- Routine Nursing Care
- Device Assessments
- NPR Analysis
- PDOC Localization
- Vital Signs Standardization
- OA Messaging Removal
- Crosswalk for Systems
- Governance Committee
- Healthstream Build Out
- Projects Impacting Nursing Implementation
- Meditech: NUR Module Process Interventions Routine
- EBCD Parameter Setup
- EBCD Intervention Requests
Impact:
Nursing Data Portal
Holding the Gains . . . Assuring On-going Adherence to Guiding Principles

Structure

Process

Does our current process match the ideal process?

No

Redesign process

Yes

Does the content match the guiding principles and key decisions?

No

Redesign documentation

Yes

No change
EBCD The BIG Picture

Practice Guideline → Clinical Workflow → Data

Care Team → Electronic Data Warehouse → Nurse Sensitive Indicators Dashboard

Nursing Data Portal → Research → Knowledge
EBCD Governance: Nursing Practice Change
EBCD Summary

• EBCD is designed to:
  – **advance nursing practice** to a common evidence foundation,
  – improve patient and staff outcomes by **returning time to care** by reducing non-value-added documentation burden,
  – enhance **communication** and transition of care by sharing data among departments,
  – improve **efficiency** of staff learning, teaching and system maintenance through simplified design,
  – enhance **quality** improvement by capturing discrete data,
  – enable learning and research through discrete, **coded** data,
  – provide standardized data for **analyzing differences** in nursing practices and determining most **effective practices**
References
