Essential Clinical Dataset – ECD

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VP and CNO for Foundation and Premier

March 26, 2019
ECD Collaborative – Why?

• Most organizations have over-designed their EHRs resulting in a lot of “noise” and non-value added data elements

• Era of EHR Optimization

• There is not an established standard for the essential clinical data that needs to be documented in an EHR

• Anticipated Outcomes of the Collaborative:
  • Organizations will use the ECD as the foundation for EHR optimization
  • ECD will establish a national (international) standard that is EHR agnostic
“ONC is focused on working with CMS to **minimize clinician documentation burden**, increasing the usability of electronic health records, and promoting interoperability of health IT.”

The **standardization of nursing documentation** in a way that is **evidence-based, standardized across settings**, and allows for the **reuse of data elements** will be critical for continuity of care across the interdisciplinary care team.

Currently, variation in the length, content, and value of data collected in nursing assessment is significant and often unnecessary.

Rebecca Freeman, PhD, RN, PMP
Former CNO Office of the National Coordinator for HIT

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ANA and ONC Documentation Burden/Standardization and Care Planning Virtual Work Group
International Agenda item

• The Joint Position Statement between the Canadian Nurses Association (CNA) and the Canadian Nursing Informatics Association (CNIA) published in March 2017 recognizes the need for “a standardized approach to nursing documentation in all clinical practice settings across Canada”.

• Australian Nursing Informatics Position Paper August 6, 2017
  Element 7:
  • “Nurse informaticians insist on the adoption of nationally agreed nursing data standards…..for improved data integration, information sharing, performance monitoring, data analytics, patient safety and quality.”
ECD Collaborative Members

Formed June 2016

190+ Facilities 25,000+ Beds
Three pronged approach

**Evidence Based Practice**

- Review of literature for content, *not process or workflow*

**Regulatory:**

- CMS, TJC, DNV, MU 1-3

**Practice Based Evidence**

- United States, Federal Regulatory, *not state or global*

**Final ECD**

- Environmental scans of 12 clients’ production data for frequency of data element and utilization metrics
Adult ECD Timeline: Admission History & Intake

**ECD Program Kickoff:**
- Charter
- Membership

**8 hr. Regulatory Educational Session**

**Regulatory requirements review**
- by Collaborative for all workflows

**Data Extraction for Practice Based Evidence:**
- Admission History and Intake from 12 Collaborative PROD domains

**June 2016**
- Initial Webex meeting with Collaborative:
  - Methodology Overview
  - Literature Review “starter” articles provided

**July 19, 2016**
- Literature Review for evidence synthesis

**July 28, 2016**
- Sept → Oct

**Aug. 2016**
- Collaborative Report out Regulatory requirements for all workflows

**Nov. 2016**
- Dec ’16 → Apr ‘17

**March 2017**
- Collaborative Admission History & intake content validation – Initial review
Adult ECD Timeline: Admission History & Intake

Internal Cerner working group organized

March 2017

Collaborative validation of Individual Admission Dataset

Mar → May 2017

May → Jun 2017

Comparative Analysis

ECD V#1 Defined:

Jun → Jul 2017

Admission History ECD: collaborative review and sign off

July 6, 2017

Early Adopters begin ECD analysis against current process to determine Facility ECD

Aug → Nov 2017

First 2 clients LIVE in PRODUCTION

Nov 2017
## Baseline Variation – Adult Admission History Intake Assessment

<table>
<thead>
<tr>
<th>Client</th>
<th># of Electronic Forms</th>
<th># of Sections</th>
<th># of Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>4</td>
<td>36</td>
<td>318</td>
</tr>
<tr>
<td>#2</td>
<td>5</td>
<td>23</td>
<td>230</td>
</tr>
<tr>
<td>#3</td>
<td>3</td>
<td>26</td>
<td>280</td>
</tr>
<tr>
<td>#4</td>
<td>2</td>
<td>29</td>
<td>278</td>
</tr>
<tr>
<td>#5</td>
<td>2</td>
<td>25</td>
<td>208</td>
</tr>
<tr>
<td>#6</td>
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<td>57</td>
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<td>51</td>
<td>371</td>
</tr>
<tr>
<td>#8</td>
<td>6</td>
<td>22</td>
<td>265</td>
</tr>
<tr>
<td>#9</td>
<td>1</td>
<td>21</td>
<td>194</td>
</tr>
<tr>
<td>#10</td>
<td>8</td>
<td>66</td>
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</tr>
<tr>
<td>#11</td>
<td>2</td>
<td>29</td>
<td>299</td>
</tr>
</tbody>
</table>
## Cross Map - Admission History questions

<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
<th>Client 1</th>
<th>Client 2</th>
<th>Client 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Chief complaint</td>
<td>Reason for visit history</td>
<td>Patient's Chief Complaint</td>
<td>Reason for Visit</td>
</tr>
<tr>
<td>General</td>
<td>Arrival date/time</td>
<td>Arrival date/time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Arrived from</td>
<td>Arrived from</td>
<td>Admitted From</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Mode of arrival</td>
<td>Transportation to unit</td>
<td>Mode of Arrival</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Admit from another facility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Recent admission</td>
<td>Readmission review</td>
<td>Hospital inpatient last 30 days</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Admission info given by</td>
<td>Admission info from</td>
<td>Information Provided by</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Accompanied by relationship</td>
<td>Accompanied by</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Accompanied by name</td>
<td></td>
<td>Name of Person with Patient</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Preferred language patient</td>
<td>Preferred language</td>
<td>Pref. Language to Discuss Healthcare Info</td>
<td>Preferred Language for Health Care Info</td>
</tr>
<tr>
<td>General</td>
<td>Preferred mode of communication</td>
<td>Preferred method of communication</td>
<td>Preferred Communication Mode</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Emergency contact name</td>
<td>Emergency contacts</td>
<td>Emergency Contact 1</td>
<td>Contact Person Name and Number</td>
</tr>
<tr>
<td>General</td>
<td>Emergency contact relationship</td>
<td></td>
<td>Emergency Contact 1 Relationship</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Emergency contact number</td>
<td></td>
<td>Emergency Contact 1 Phone</td>
<td>Contact Person Name and Number</td>
</tr>
<tr>
<td>General</td>
<td>Primary caregiver name</td>
<td>Name/Number of family notified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Primary caregiver number</td>
<td>Name/Number of family notified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Notify family/caregiver of admission</td>
<td>Notify family of admission to hospital</td>
<td>Requested Notification of Family/Rep</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Notify PCP of admission</td>
<td>Notify your MD of admission to hospital</td>
<td>Requested Notification of PCP</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>PCP contact information</td>
<td>Name/Number of MD notified</td>
<td>Family Physician</td>
<td></td>
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<tr>
<td>General</td>
<td>Interpreter needed</td>
<td>Interpreter/Translator name, if used</td>
<td>Communication Need - Language</td>
<td>Interpreter Required</td>
</tr>
<tr>
<td>General</td>
<td>Interpreter information</td>
<td>Interpreter/Translator name, if used</td>
<td></td>
<td></td>
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</tbody>
</table>
# Frequency and utilization algorithm

Client frequency
8 of 12 facilities included the question

<table>
<thead>
<tr>
<th>Client Frequency</th>
<th>Utilization Average</th>
<th>Question</th>
<th>Client 1 DTA Utilization</th>
<th>Client 2 DTA Utilization</th>
<th>Client 3 DTA Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>88%</td>
<td>Chief complaint</td>
<td>Reason for</td>
<td>88%</td>
<td>Patient's</td>
</tr>
<tr>
<td>4</td>
<td>66%</td>
<td>Arrival date/time</td>
<td>Arrival date</td>
<td>89%</td>
<td></td>
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<tr>
<td>10</td>
<td>85%</td>
<td>Arrived from</td>
<td>Arrived from</td>
<td>84%</td>
<td>Admittee</td>
</tr>
<tr>
<td>10</td>
<td>74%</td>
<td>Mode of arrival</td>
<td>Transport</td>
<td>81%</td>
<td>Mode of</td>
</tr>
<tr>
<td>5</td>
<td>22%</td>
<td>Admit from another facility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>81%</td>
<td>Recent admission</td>
<td>Readmission</td>
<td>98%</td>
<td>Hospital</td>
</tr>
<tr>
<td>11</td>
<td>74%</td>
<td>Admission info given by</td>
<td>Admission</td>
<td>81%</td>
<td>Information</td>
</tr>
<tr>
<td>7</td>
<td>75%</td>
<td>Accompanied by relationship</td>
<td>Accompanied</td>
<td>74%</td>
<td></td>
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<tr>
<td>3</td>
<td>20%</td>
<td>Accompanied by name</td>
<td></td>
<td>Name of</td>
<td>27%</td>
</tr>
<tr>
<td>12</td>
<td>73%</td>
<td>Preferred language patient</td>
<td>Preferred</td>
<td>98%</td>
<td>Preferred</td>
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<tr>
<td>9</td>
<td>44%</td>
<td>Preferred mode of communication</td>
<td>Preferred</td>
<td>17%</td>
<td>Preferred</td>
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<tr>
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<td>47%</td>
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<td>80%</td>
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<tr>
<td>8</td>
<td>36%</td>
<td>Emergency contact relationship</td>
<td>Emergent</td>
<td>88%</td>
<td></td>
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<tr>
<td>10</td>
<td>42%</td>
<td>Emergency contact number</td>
<td>Emergent</td>
<td>88%</td>
<td>Contact F</td>
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<tr>
<td>8</td>
<td>3%</td>
<td>Primary caregiver name</td>
<td>Name/Nu</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>3%</td>
<td>Primary caregiver number</td>
<td>Name/Nu</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>51%</td>
<td>Notify family/caregiver of admission</td>
<td>Notify family</td>
<td>51%</td>
<td>Request</td>
</tr>
<tr>
<td>4</td>
<td>61%</td>
<td>Notify PCP of admission</td>
<td>Notify you</td>
<td>43%</td>
<td>Request</td>
</tr>
<tr>
<td>5</td>
<td>16%</td>
<td>PCP contact information</td>
<td>Name/Nu</td>
<td>3%</td>
<td>Family P</td>
</tr>
<tr>
<td>12</td>
<td>25%</td>
<td>Interpreter needed</td>
<td>Interprete</td>
<td>17%</td>
<td>Interpreter</td>
</tr>
<tr>
<td>7</td>
<td>3%</td>
<td>Interpreter information</td>
<td>Interprete</td>
<td>17%</td>
<td></td>
</tr>
</tbody>
</table>
Before
After

Removed 13 sections and 167 distinct questions
Key Findings and Considerations

• Senior Nursing Leaders (CNOs) have to be involved
• Nursing Shared Governance councils were best suited for the review of the ECD.
  • Led by Nursing Informatics
• Challenged the “because we have always done it”
  • Asked WHY five times
    • “Did the information NEED to be collected on admission?”
    • “If yes, did the RN have to collect?“
    • “If yes: part of ECD, If NO: what role/department should be collecting it?”
• Policy was driving practice with no relevant reason or evidence
• Local critical thinking and judgement applied when reviewing ECD
  • What is needed for the local patient population or regulations
• The process was just as valuable as the outcome
Adult Admission History ECD Results – 15 Clients

Total Questions (DTAs)
Pre versus Post ECD
Results Across 10 Early Adopters

Baseline vs. 30 days post ECD

**Total Questions:**
Reduced an average of 100 Questions

**Total Time:** (h:mm:ss)
Reduced an average of 0:2:21 minutes

**Total Clicks:**
Reduced an average of 37 clicks
Peds ECD: Scope, Phases, Goals

Scope
- Acute, inpatient, general pediatric population
- Documentation within the United States
  - Federal regulatory requirements

Goals
- Establish standard pediatric nursing content to be leveraged across the Cerner client base
- Embed in the Cerner Model System
- Utilize as the foundation for EHR configuration & optimization
- Contribute to creation of national standard for pediatric nursing content

Nursing Processes / Phases
1. Admission History & Intake
2. Physical Assessment:
   - Initial and Ongoing
3. Ongoing Care:
   - Interventions, Procedures, ADLs, I&O, Lines, Tubes, Drains
Admission History definition

Nursing documentation of historical information for the admission of the general acute-care pediatric patient

Guiding Principles

- Regulatory
- Evidenced based
  - ANA Pediatric Scope and Standards
  - AAP
- Is the RN the right person to collect on Admission
- Is the documentation actionable
Pediatric ECD Collaborative Members

Stand Alone, Academic, and Large Health System U.S. Pediatric Hospitals
Peds ECD Timeline

Jan. 2018
• Virtual Kick-off

Feb.- Mar. 2018
• Literature Review
• DTA extraction

April 2018
• In-person Meeting

June 2018
• ECD Client Advisors and Internal workout meetings

Sept. 2018
• In-person Meeting

Dec. 2018
• Collaborative sign-off
• Pilot/early adopter clients identified

Jan. 2019
• Peds ECD Admission Hx pilot kick-off

April 2019
• Physical Assessment kick-off
## Baseline Peds Admission History Intake

<table>
<thead>
<tr>
<th>Peds Collaborative Clients</th>
<th>Sections</th>
<th>DTAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16</td>
<td>101</td>
</tr>
<tr>
<td>2</td>
<td>22</td>
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<td>11</td>
<td>47</td>
<td>653</td>
</tr>
<tr>
<td>12</td>
<td>36</td>
<td>720</td>
</tr>
</tbody>
</table>

**Avg. # Sections = 27**

**Avg. # DTAs = 333**
Peds Admission History: Model vs. ECD

- **35 Sections**
- **359 Questions**

- **12 Sections**
- **83 Questions**
Data Reduction – Peds Admission Intake

Client Reduction in Data Elements

First 3 Clients live: March 2019
Review of Systems and Physical Assessment

Temperature, Pulse, Respirations, Blood Pressure, Pain
Skin, Hair Nails
Skull, Face, Eyes, Ears, Mouth, Neck
Muscles, Lymph nodes, Trachea, Thyroid gland
Lungs, External Chest
Heart, Peripheral Vascular System
Kidneys, Bladder, Genitalia
LOC, Mental Status, Cranial Nerves, Reflexes, Motor Function, Sensory Function
Muscles, Bones, Joints
Intestines, Liver, Spleen

Components of a physical assessment

Vital Signs
Integumentary
Gentiourinary
Respiratory
Cardiovascular
Gastrointestinal
Musculoskeletal
Neurological

### Physical Assessment Design from Collaborative

<table>
<thead>
<tr>
<th>Client</th>
<th>Number of Assessment Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>308</td>
</tr>
<tr>
<td>#2</td>
<td>476</td>
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<tr>
<td>#3</td>
<td>573</td>
</tr>
<tr>
<td>#4</td>
<td>405</td>
</tr>
<tr>
<td>#5</td>
<td>526</td>
</tr>
<tr>
<td>#6</td>
<td>187</td>
</tr>
<tr>
<td>#7</td>
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</tr>
<tr>
<td>#9</td>
<td>1092</td>
</tr>
<tr>
<td>#10</td>
<td>397</td>
</tr>
</tbody>
</table>
Systems Assessment Band

36 sections*

ECD – 14 sections

*Plus 24 excluded sections

*Exclude – Item is available within IVIEW, but is pulled in as needed for the patient’s condition

ECD excluded sections (16) – Seizure Assessment, Stroke, Ongoing Columbia Suicide Severity Rating, CIWA-AD, Central Line, Airway Management, Non-Invasive Ventilation, Invasive Ventilation, Vent Bundle, Chest Tubes, GI Ostomy, GI Tubes, Urinary Catheter, Urostomy, Post Fall Evaluation, Surgical Drains/Tubes
By the numbers* V5

Physical Assessment

- Total: 1713
- Include: 1508
- Exclude: 451
- Face Up: 1348
- Conditional: 160

Model v18.1 and ECD
Getting rid of non-used, non-value add items

Total items reduced by 36%
Includes reduced by 71%
Excludes increased by 212%

By the numbers…V5
By the numbers… V5

Eliminating the noise, adding some “intelligence”

Face up items reduced by 93%

Conditional logic increased by 118%
Metrics

Qualitative

• Staff Surveys Developed
  • Admission: RN
  • Physical Assessment: RN and other care team providers
• Available for all clients to administer surveys pre & post

Quantitative

• # of Distinct Questions
• Average Active Time
• Average Clicks
• Single Sign %
• Average % of Total DTAs Charted per Sign
• Average # of DTAs Charted per Sign
• The Number of Conditional DTA’s
• Number of Required DTAs
• Cost Savings (calculated from reduction in time)
ECD Initiatives - Recap

• Adult Med-Surg Collaborative
  ✓ Adult Admission Intake
  ✓ Physical Assessment

• Pediatric Collaborative
  ✓ Peds Admission Intake
  • Peds Physical Assessment
  • Peds 23 hour Observation/Per-Op Surgery Intake

• Behavioral Health Collaborative
  • BH Intake Assessment

✓ Adult 23 hour observation/Pre-Op Surgery Intake

• Adult Critical Care Collaborative
  • Kicking off April 2019

• Women’s Health & OB Admission Intake
  • Kicking off Spring 2019

• Non-US Collaboratives
  ✓ Canada – one site live on Adult Admission December 2018
  • Australia – initial planning and development charter in process
  • UK and Middle East: initial planning
QUESTIONS

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