A CMIO’s Perspective on Optimizing Physician Documentation in a Large Enterprise

Session #PE2, Monday March 9, 2020

Ori Lotan, MD
Chief Medical Information Officer, Universal Health Services, Inc.
Meet Our Speakers

Ori Lotan
Chief Medical Information Officer
Universal Health Services, Inc.
Conflict of Interest

Ori Lotan, MD

Other:

Crossings Healthcare Solutions is a wholly owned subsidiary of Universal Health Services, Inc.

Crossings Healthcare Solutions commercializes innovations created & implemented at UHS to outside customers.
Agenda

• Present outcomes from enterprise wide implementation of electronic physician documentation with voice recognition
• Review major project milestones and events
• Discuss enterprise wide implementation of clinical decision support to improve the quality of physician documentation
Learning Objectives

• Describe the main events that contribute to successful implementation of a physician documentation project
• Explain the benefits of embedding clinical decision support within the workflow of physician documentation
• Recall four metrics that impact the quality of physician documentation
• List the five tenets of good clinical decision support
• Name at least six medical diagnostic families that are good CDS targets for improving physician documentation
Speaker Intro - Ori Lotan, MD

- Ori splits his CMIO time between UHS and UHS’ subsidiary Crossings Healthcare Solutions.

- Prior to becoming a full-time CMIO with UHS in early 2010, Dr. Lotan practiced Internal Medicine for 10 years, both as a primary care physician and a hospitalist.

- He established the hospitalist program at Texoma Medical Center in Denison, Texas, and served as the hospital’s Chief Medical Information Officer.

- Ori received his MD at the University of Texas Health Science Center at San Antonio, where he also completed his Internal Medicine residency training in 1999.

- He is Board Certified in Internal Medicine and the Subspecialty of Clinical Informatics.
UHS is a Fortune 500 Company Headquartered in King of Prussia with >$10 billion in annual revenue

- UHS owns and operate more than 350 facilities, including 26 acute care hospitals & >300 behavioral health facilities in U.S & U.K and employs more than 87,000 people
Implementation Strategy

- UHS has 26 Acute Care facilities across the U.S.
- Three (3) production domains (East, Central, West)
- Timeline
  - Design and configure January, 2010 – April 2011
  - Installation @ 25 hospitals May, 2011 – July, 2013
- Phase 1 – Core clinical modules
- Phase 2 – Inpatient Computerized Physician Order Entry (CPOE)
- Phase 3 – Inpatient Physician Documentation with Cloud Based Voice Recognition
Approach to Physician Documentation

• Previously inpatient physicians were primarily using dictation with mix of electronic & handwritten progress notes
  • Hybrid chart (EMR + Paper Record)
• Primarily Independent Medical Staff (95%+)
  • Approximately 6,000 active medical staff practice at our facilities
  • UHS employs ~ 550 Providers (115 clinics)
  • All other MDs are independent physicians, some of whom split patients with competitors
  • Challenge for us is to create a better EMR experience for physicians and nurses practicing in our facilities
• Leveraged physician documentation with custom development & included voice recognition system
Physician Documentation Results

- High electronic documentation adoption of **96 percent** — **10 percent higher** than national health system leaders
- Reduction in transcription to **3.8 percent** — **9 percent lower** than national health system leaders
- Significant use of dynamic documentation of **73.7 percent** — **49 percent higher** than national health system leaders
Physician Documentation Results - Transcription Reduction by Facility
Physician Documentation Results - Academic Medical Center
Documentation Time in EMR

- Non-UHS
- UHS
Physician Adoption Results - Hard ROI

2014 - 2019 TSP Dollar Volume Comparison

- 2014 UHS TSP Spend
- 2015 UHS TSP Spend
- 2016 UHS TSP Spend
- 2017 UHS TSP Spend
- 2018 UHS TSP Spend
- 2019 UHS TSP Spend

$5,150,445
$3,910,416
$1,740,474
$1,040,753
$736,590
$510,668
# UHS Discharge Turn Around Time

### Facility Statistics - Turn Around Time 2015

<table>
<thead>
<tr>
<th>AVG TAT(hr)</th>
<th>MIN TAT(hr)</th>
<th>MAX TAT(hr)</th>
<th>MEDIAN TAT(hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>203.73</td>
<td>-506.15</td>
<td>3784</td>
<td>10.85</td>
</tr>
</tbody>
</table>

### Discharge Summary prior to DC (%)

- 35.44%

### Facility Statistics - Turn Around Time 2017

<table>
<thead>
<tr>
<th>AVG TAT(hr)</th>
<th>MIN TAT(hr)</th>
<th>MAX TAT(hr)</th>
<th>MEDIAN TAT(hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.22</td>
<td>-561.17</td>
<td>556.03</td>
<td>-2.85</td>
</tr>
</tbody>
</table>

### Discharge Summary prior to DC (%)

- 78.88%
Physician Satisfaction Survey

• Survey conducted by 3rd party organization (Press Gainey)
• Scores benchmarked to national physician satisfaction scores
• 25 hospitals included (community, academic, etc.)
• **MD’s had EMR Satisfaction at 75th percentile**
• Best results across all categories surveyed
• Results after less than 24 months using physician documentation
## Physician Documentation Main Events Overview

<table>
<thead>
<tr>
<th>Main Events</th>
<th>Timeline to Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kickoff</td>
<td>16 weeks prior</td>
</tr>
<tr>
<td>Technology Readiness</td>
<td>12 weeks prior</td>
</tr>
<tr>
<td>Validation/Training</td>
<td>3-4 weeks prior</td>
</tr>
<tr>
<td>Open House</td>
<td>1-2 days prior</td>
</tr>
<tr>
<td>Conversion</td>
<td>10 days of support</td>
</tr>
<tr>
<td>Optimization</td>
<td>8-10 weeks post</td>
</tr>
</tbody>
</table>
Kickoff

- One hour webinar 16 weeks prior to conversion
- Review project scope, timeline, expectations
- Project Management driven
Technical Readiness

1. Perform Assessment
2. Review Strategy
3. Deploy Hardware & Software
4. Provide Recommendations
5. Confirm Timeline
6. Go-Live
Technical Assessment

• ~12 weeks prior to conversion
• Review overall IT architecture
  • Meet with key IT personnel, management, and technicians.
  • Focuses on process and technology
    • Workstation standardization, software standardization, deployment strategy, network infrastructure (wireless, LAN, WAN, firewall, IPS), user workflow, active directory, middleware and more.
  • Device installation begins 5 weeks prior to conversion
    • Hardware, mics, single-sign on
Validation Event

- 8 weeks prior to first 2 conversions
- 3-4 weeks prior to subsequent conversions
- 1 + ½ day open house for physicians
  - Scheduled appointment and walk ins
  - Focus on high volume users
  - CMIO or Asst. CMIO, 2-3 additional Corp personnel, 2-3 super users
Training

• Trainer
  • In IS or Education Department
  • On-going responsibility for training
  • Primarily in a non-direct patient care role

• Super User
  • Typically an RN in a direct patient care role
  • Provides conversion support during go-live and then resumes patient care activities

• End User
  • Providers
  • Focus on high volume admitters, active medical staff
Training Recommendations

- Train the Trainer Training
  - Two day class
  - Complete the 2 WBTs (Basic & Advanced) prior to class
  - Recommend 12 – 15 participants per class

- Super User Training
  - 8 hour class
  - Complete the 2 WBTs (Basic & Advanced) prior to class
  - Recommend 12 – 15 participants per class
**Provider Training Recommendations**

- Start 2 to 3 weeks before conversion
- 60 minute Web-based Training (WBT) Basic features + 30 minute Web-Based Training for Advanced features available 3+ months prior to conversion
- MDs “required” to complete Web-based Training Basic features OR meet 1 on 1 for training to obtain Voice Recognition License
- Education Team tracks WBT completion for “target” physicians 60-90 days prior to conversion
Provider Training Recommendations

• 30 to 45 minutes of in-person training and initial setup (note settings, auto-text, macros)
  • Train high volume providers and hospitalist. Focus on active medical staff.
• Provide Voice Recognition license on completion
• Consider open houses
  • Day prior to conversion
  • Assist with set up, end-user configuration, training
• Contingency plan for just in time training
  • Dedicated trainer on-demand during conversion
Conversion: Command Center Overview

- Corporate provides 10 days of onsite support inclusive of 1 CMIO or Assistant CMIO
- Tuesday 7am through following Thurs 3pm
- Onsite Team Coverage consists of the following:
  - Leadership – 1 command center lead for 4 days with night on-call
  - Physician Doc – days with minimal night coverage
  - Voice Recognition – days with minimal night coverage
  - Revenue Cycle, HIM Operations – days week 1 and 2
- Remote Team Coverage - Tue 7am through Fri 5pm days only
  - Education
  - Revenue Cycle, HIM Operations – days weeks 1 and 2
- Daily adoption reports starting 24 hours post conversion
Conversion: Super User Overview

- Physician Documentation - 7am-7pm with a couple Rounders at night depending on Physician volume on night shift

- Facility provides the following Super Users for the conversion:
  - Physician Support/Rounders – 1 Super User for every 10-15 Physicians participating
  - Facility super users without clinical duty to cover the house in zone coverage

- Corporate will assist in recruiting external super users to enhance the conversion schedule coverage

- Support Schedule completed 1 month prior to conversion
Optimization

- 8-10 weeks post conversion
- Schedule based on availability, facility feedback and trending of adoption reports
Lessons Learned & Tips

• Key Success Factor:
  • Physicians Engagement
    • Physician-to-Physician interaction played a key component.
    • Creating custom auto-text and macros to meet physician workflow.

• Lessons Learned:
  • Have the right correct middleware version and Mic drivers.
  • Test physicians workflow (e.g. Free Text, Workflow MPage)
  • Create regression test scripts
  • Leverage your smart auditor to troubleshoot any application issues
Lessons Learned & Tips

• Need for custom development to address specific needs and embed advanced clinical decision support, quality advisors, communication tools, etc.

• New concept for MDs to concurrently review, order and document
  • Takes some time to get used to it

• Get specialty workflow right
  • Importance of end user feedback
  • Fosters collaboration with providers

• Cloud & Network Edition experience:
  • UHS has Cloud Based for Inpatient Physician Documentation and legacy Network Edition in Emergency Departments
  • No training of Cloud Based required (i.e. reading scripts)
  • Excellent “Out of the box” performance (even with strong accents)
Physician Documentation Quality Improvement

Clinical Decision Support - Project Background

• UHS uses back end computer assisted coding
  • Retrospective coding workflow

• In 2015, started looking into front end (physician) concurrent coding

• Current vendor product was not integrated, lived outside physician workflow, and had very few active customers on UHS’ EMR

• New CDS tool could integrate well into physician documentation workflow, but was relatively unproven
Role of Documentation in Quality

- Hospitals and now Physicians are being measured on the quality of care delivered

- Metrics being monitored include:
  - Severity of Illness (SOI)
    - Indication of the complexity of your patients based on your documentation
  - Risk of Mortality (ROM)
    - Calculated based on the diagnosis and the degree of complexity (SOI)
  - Observed/Expected Mortality (O/E Mortality)
    - Compares observed mortality rates to the risk of mortality (ROM) rates calculated based on SOI documentation
  - Length of Stay (LOS)
    - Expected LOS is calculated based on the SOI documented.

- Each metric is dependent upon provider documentation that reflects accurate severity of illness
New CDS Tool

• Automated decision-support tool within physician documentation that analyzes clinical notes and responds in real time

• Prompts the physician for clarifications only when there is high confidence for additional diagnosis to most accurately reflect severity of illness (SOI)
Value Add of New CDS Tool

• Physician quality scores are in large part based on the accuracy of the documentation of the patient’s clinical condition.

• CDS will suggest additional potential diagnoses based on the available documentation.
  • Assists in accurately reflecting the quality of care provided
  • Reflects actual acuity
  • Fewer retroactive coding queries
  • Looks at all notes and evidence across an encounter
**Sepsis**

Physician documents Left Lower Lobe pneumonia with no other co-morbidities Documented

Current MS DRG 195 Simple Pneumonia & Pleurisy W/O CC/MCC

Clarification is fired from DQR noting that clinical documentation suggests the patient has sepsis. If accepted by the physician the DRG will be MS DRG 871 Septicemia/severe Sepsis w/o MV 96+ Hrs w MCC

<table>
<thead>
<tr>
<th>Example</th>
<th>CODE</th>
<th>MS DRG</th>
<th>Mortality Expected</th>
<th>Complication Expected</th>
<th>Ave LOS Expected</th>
<th>Expected Readmission Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonia</td>
<td>J18.9</td>
<td>195</td>
<td>0.55%</td>
<td>5.91%</td>
<td>3.33</td>
<td>7.89%</td>
</tr>
<tr>
<td>Sepsis + Pneumonia</td>
<td>A41.9</td>
<td>871</td>
<td>14.80%</td>
<td>20.12%</td>
<td>6.90</td>
<td>16.12%</td>
</tr>
</tbody>
</table>

*Expected (Exp) Outcome Values based on specific Population with Proprietary analysis of Severity may vary with different population and assessment methods. For illustrative purposes only; based on real data.
How does CDS Tool work?

Signing the note will auto-trigger SmartReview.
Clarification Found
Options for Supported Diagnoses:

◆ **Clarify:** Choose this if you agree with recommendations.

◆ **Does Not Apply:** Choose this only if you are sure the diagnosis proposed is incorrect.

◆ **Ask Again Later:** Choose this if unsure.
Clarification Accepted

This text can be edited prior to pulling into the note.
Upon signing the note, users will either see a clarification pop up or this message if no clarifications are found.
Supported Diagnostic Families

- Encephalopathy
- Pneumonia
- Respiratory Failure
- Acute Exacerbation of COPD
- Asthma
- Heart Failure
- Shock
- Malnutrition
- Renal Failure
- Anemia
- Sepsis
**Good Clinical Decision Support**

- Communicates the right information
  - Succinct and evidence / guideline based

- To the right person
  - Provider documenting patient care

- Using the right format
  - Usable alert

- Through the right channel
  - Physician documentation platform

- At the right time in the workflow
  - When completing a note
**Target Group**

- Optimized for Hospitalists, General Practitioners, Intensivists, Residents, Mid-Level Providers (Non-Specialty)
  - Inpatients are focus; all payers

- Not optimized for Specialist workflow
  - Example: Cardiologist would get prompted on pneumonia

- Not turned on for ED

- Can turn on/off at both position level and user level
UHS Roll Out

- April 2016 reference call:
  - Generally Positive

- June 2016 Pilot:
  - Two facilities SoCal (27 MDs, primarily Hospitalists)

- October 2016:
  - Six hospital system Las Vegas

- December 2016:
  - Five hospital system in South Texas
  - Four hospitals in FL, SC, TX

- March 2017:
  - Five hospitals in CA, Nevada, OK, TX, DC
Facility Dashboard

Target for Response rate is above 80%, for agree rate is between 35 and 65%. As for % evaluated, it is not clear so we are shooting for above 60% at this point.
UHS Pilot

- Overall shift in capture of SOI and ROM from Minor/Moderate to Major/Extreme
- 36% improvement in capture of Extreme SOI
- 24% improvement in capture of Extreme ROM
- 12% CMI uplift across accepted encounters

Source: Metrics captured during a nine-week ROI study from June through August 2016 at two UHS facilities.
Outcomes - Improvement in Quality Metrics
Questions

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