“Making the Leap”
From Stage 6 to 7

EMRAM and O-EMRAM
UNC Health Care System
Presentations

May 3, 2018

We are honored to be the recipient of the HIMSS Analytics Stage 7 Award
EMRAM, O-EMRAM – January 19th 2018
AMAM - February 22nd 2018
Presentation Topics
Overview

- UNC Healthcare System Overview
- Planning for the Project
- Overcoming Obstacles and Challenges
- Telling the Story
- Technical Call
- Preparing for the On-Site Visit
- Pursuing and Achieving Stage 7
UNC Health Care System Overview

Rachel Foppiano
System Exec IT Director: Affiliation & Integration
Providing high quality care to patients in North Carolina and beyond

Who We Are

Integrated, not-for-profit health care system, owned by the State of North Carolina and based in Chapel Hill

We provide comprehensive patient care, facilitate physician education and research excellence, and promote the health and well-being of all North Carolinians
UNC Health Care System by the numbers…

Key System Statistics

System Stats

<table>
<thead>
<tr>
<th>Key Stats</th>
<th>2011</th>
<th>2017</th>
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<tbody>
<tr>
<td>Net patient revenues</td>
<td>$2.0B</td>
<td>$4.9B</td>
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<tr>
<td>Licensed beds</td>
<td>1,530</td>
<td>&gt;3,400</td>
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<tr>
<td>Employees</td>
<td>14,000</td>
<td>&gt;31,500</td>
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<td>Medical staff</td>
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<td>&gt;5,400</td>
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<tr>
<td>Employed MDs</td>
<td>2,110</td>
<td>&gt;3,200</td>
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<tr>
<td>Surgeries</td>
<td>60,000</td>
<td>&gt;120,000</td>
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<tr>
<td>ED visits</td>
<td>151,000</td>
<td>&gt;510,000</td>
</tr>
<tr>
<td>Clinic visits</td>
<td>1.1M</td>
<td>&gt;3.5M</td>
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</table>
Our recent growth is fueled by our commitment to deliver quality care

Providing Quality Care Across North Carolina

Delivering High Quality Care Across the State
As a system, a success for one, is a success for all

Awards

2016 HOSPITAL RANKINGS:
- 8 nationally recognized adult specialties
- 2 high performing adult specialties
- 7 nationally recognized children’s specialties

“BEST HOSPITALS IN THE REGION”:
- UNC Hospitals
- UNC Rex
- High Point Regional

2016 SCHOOL RANKINGS
- #2 for Primary Care
- #2 School of Public Health
Successful project planning is key

Project Planning

Key Project Planning Steps

Assessment
- Understanding requirements
- Initial Assessment started with 2017 Requirements

Gap Analysis
- Inpatient
- Ambulatory
- Technical

Define Scope
- Inpatient Facilities
- Ambulatory Facilities
- Identify Case Studies

Project Planning
- Resources
- Timeline
- Communication Strategy
- Overall Logistics
Obstacles and Challenges

Project Planning

HIMSS Stage 7 Challenges Encountered

- 24/7 Document Scanning
- BCMA in Interventional Radiology
- Physician Documentation
- Technology-enabled Scanning
- Lab Specimen Collection
24/7 Document Scanning

Rachel Foppiano
System Exec IT Director: Affiliation & Integration
What exactly is a “Clinically Relevant” Document?

UNC policy - anything that a clinician needs for patient care related decision making is considered clinically relevant. They are any types of paper produced with a problem, diagnosis, medication order on a patient, any paper where it mentions clinical notes on a patient’s care; examples of a non-clinically relevant documents are consent forms, discharge paperwork, and other forms requiring patient signature.

Non-clinically relevant documents will be scanned post discharge (within 3 days).

With very few exceptions, the legal medical record is considered Clinically-Relevant.
Inpatient Document Scanning

Scanning Process and Timeliness

**Concurrent Scanning Process**

1. **All handwritten paperwork is left in the paper chart on the unit by the nursing staff.**

2. **HIM collects the paperwork from the paper chart (2x/day on business days, 1x/day on weekends/holidays).**

3. **HIM staff preps clinically relevant documents for scanning while on the nursing unit.**

4. **A WOW and scanner is used to scan documents into the Document Management System which are viewable within the EMR.**

5. **Paperwork is removed from the paper chart and brought back to HIM department for quality checking.**

6. **After the paperwork is QA'd by HIM it is placed in a protected recycle bin for shredding.**

**All Clinically Relevant Documents Are Scanned Within 24 hours**

**All Non-Clinically Relevant Documents Are Scanned Within 72 hours**

Images (see appendix): FlatIcon & FreePik
IP Document Scanning
Implementation of 6 Hospitals in 4 Months

**Rollout Process**

- **Communication**
  - Roadshows at key system forums to solicit support, message changes and prepare for implementation

- **Piloted process at REX hospital**
  - Ironed out all the details on processes, exceptions and potential obstacles
  - Addressed concerns with operational leaders & HIM teams

- **Hardware Planning**
  - Ordered scanners on wheels & prepared training material and process documentation

- **System roll out**
  - Implement the new process to the rest of the inpatient facilities in the course of four months

**Lean for Document Scanning Implementation**

- **HIM teams across the HCS conducted Lean experiments**
  - Productivity and efficiency improved as units were added
  - Average minutes per chart went up slightly in PATHS with special discipline-specific documents that take longer to prep and must be taped onto blank paper to scan

### Rollout Metrics

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<th>Metric</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
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<td>Seconds per page</td>
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<td>47</td>
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<tr>
<td>Minutes per chart</td>
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<td>4.4</td>
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<tr>
<td>Pages per day</td>
<td>364</td>
<td>407</td>
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<td>Patient charts</td>
<td>63</td>
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<td>Units</td>
<td>Ortho</td>
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<td></td>
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<td>W&amp;C</td>
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</table>
IP Document Scanning
Scanning Documents into the EHR

Workstation on Wheels (WOW)
Mobile Workstation Used to Scan

Scanning on the Unit
Concurrent Scanning

Scanning Reminders
Reminders of Scanning Process
Bar-code Scanning in Interventional Radiology

Tammy Brown
Consultant Himformatics
During the Mock Survey, it was identified that the bar code scanning at interventional radiology in one of our hospitals was a gap.

We then turned on IR BCMA in Epic:

- The system required barcode scanning for medication and blood
- IT and Radiology leadership worked together to make plans for implementation
- Training and testing was conducted successfully
- IR BCMA went live 2 weeks before our site visit.
Documentation Matrix

Tammy Brown
Consultant Himformatics
Physician document is a required element ...

Ensure you have adequate time to prepare

Challenges

✓ How to attribute each
✓ Content type with documents
✓ How note types are bucketed
  - Notewriter
  - Notes with SDE
  - Notes with smartblocks
✓ Structured forms not tied with SDEs

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<th>H&amp;P</th>
<th>Handwritten</th>
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<th>Dictation/VR</th>
<th>Structured Forms</th>
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UNC AMB Documentation Matrix

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<th>Document Type</th>
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<td>Office (Progress) Notes/Consults*</td>
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*UNC Health Care System integrates consults into our office notes for outpatient visits
Technology-enabled Scanning

Tammy Brown
Consultant Himformatics
Technology-enabled Scanning
What does it entail?

2018 Requirement

Technology-enabled scanning must be in use for medication and blood product administration. It must also be in use for human milk (mother’s expressed breast milk) administration only if the milk is kept in communal storage. The process must be live and in use, wherever blood products, mother’s milk and/or medications are administered. Furthermore, the hospital must have the capability to track/monitor overrides and errors.

The hospital cannot be validated at Stage 7 if the process is not live and operational on all units and in the ED, and if not all medications, mother’s milk or blood products are included in the process. The hospital also cannot be validated if it cannot demonstrate how it tracks overrides and “near misses”.

<p>| | | | |</p>
<table>
<thead>
<tr>
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</table>
| 43 | % | **Patients** attempted to scan at the bedside.  
(Std: ≥ 95% - no more than five (5) percent can be excluded from scanning for inpatients). |   |

| 44 | % | **Medications** attempted to scan at the bedside.  
(Std: ≥ 95% - no more than five (5) percent can be excluded from scanning for inpatients). |   |

| 45 | % | **Blood products** attempted to scan at the bedside.  
(Std: ≥ 95% - no more than five (5) percent can be excluded from scanning for inpatients). |   |

| 46 | % | **Human milk** attempted to scan at the bedside.  
(Std: ≥ 95% - no more than five (5) percent can be excluded from scanning for inpatients). |   |

Prior to 2018, the requirement for Breast Milk scanning does not have a threshold. But in 2018, it is required that scanning rate be at or greater than 95%.
Breast Milk Scanning
Improving Breast Milk Scanning Compliance

Enlisted support from nursing leaders
Review reports with problem areas routinely
Step-by-step instructions to run reports for breast milk scanning compliance
Identify reasons for the non-compliant rate
• Lack of training
• Labeling issue
Lab Specimen Collection

Tammy Brown
Consultant Himformatics
Understand how technology enablement of specimen collection is executed as it relates to the closed-loop specimen collection process.

Specimens must be supported by technology from the point of collection through the testing in the lab.

Technology-enabled labels must contain all the information necessary to match specimen to correct patient.

Blood bank vendor solution approved to connect with EMR?
- Yes, blood bank should fully utilize technology in their processes
- No, work-around in place for lab staff to scan blood products directly into EMR

Blood specimens are barcoded at the point of collection.
Telling the Story

David Clark
Application Developer
Story boarding is the backbone of any presentation …

*Outlines*

- Defined by the HIMSS EMRAM & O-EMRAM preparatory guides.

*Use Sections*

- Each section and slide is tied to a particular requirement or checklist items in the preparatory guides
- Have backup slides if time is limited

*Flow*

- Designed the flow based on presenters and best groupings.

---

**Overview Presentation Story Board**

Outlines and structures of the presentation deck
Developing professional slides to...

*Illustrate your successes*

- Identify Section Owners to create initial content
- Modify content based on a standard UNC format
- Organize and consolidate the content to tell a precise and accurate story
- Reiterate the process when necessary
- Seek approval of the content owner, IT leadership
Carefully chosen case studies …

Should be the focus of your presentation

Outline interventions

Describe opportunity or problem

Highlight outcomes and improvements

Opportunity and Interventions (Rex Hospital)

**Opportunity**
- Delays in cleaning and assigning beds to newly admitted patients
- Complex and cumbersome process
- Overwork, inefficiencies, waste

**Interventions**
- Automatic assignment of room cleans in Epic to better deploy EVS co-workers
- Epic Reporting Workbench reports to determine turnaround time, monitor “stat” rates, and flex staffing
- Worked with nursing to leverage technology to digitally signal for discharges, reservations, and cleaning
- Monitor progress and sustain improvements by leveraging dashboards being fed by Epic data

**Outcomes**

- **Success**
  - Bed Clean Turn Around Time
    - From 125 to 79 minutes
    - 37% Reduction
  - Bed Dirty to Bed Assigned for Cleaning
    - From 58 to 27 minutes
    - 54% Reduction
  - Frequency of Stat Cleans
    - From 18 to 9 percent
    - 50% Reduction
Preparing the Presenters

David Clark
Application Developer
You must prepare them..  
*Multiple times!*

### Key Steps

1. **Identify the best presenters based on the content**
2. **Review the content of each section with the designated presenter**
3. **Practice runs are a must; provide feedback during practice**
4. **Ensure your presenters know the audience**
5. **Time checks to control the length and eliminate non-essential details**
6. **Anticipate questions from surveyors**
7. **Leave adequate time from Q&A**
8. **Keep the answers short and straight to the point**
Technical Call

David Clark
Application Developer
Due to the often times lengthy conversations on some of the technical details during the on-site overview presentation, HIMSS has decided to move a few technical topics to a pre-validation 2-hour web-based conference:

- Clinical and Business Intelligence
- **Cyber Security** (2018 Requirement, please refer to page 5 of the 2018 preparatory guide)
- Disaster Recovery & Business Continuity

UNC treated this section as a shortened technical presentation:

1. Prepared content slides for each section based on the check list
2. Prepared presenters
3. Shared the content during the technical call
4. Answered questions
Pre-Validation Technical Conference Call

IT Security is a new area added in 2018

Presentation Outline

• Overview
  • Sharing the key statistics (Blocked message, potential threats stopped, response to phishing attempts)
  • Outline layered defenses for prevention & detection (tout your bells and whistles)
  • Proactively preparing for the next active thread
  • Describe your security incident readiness (Communication Plan, ticketing protocol, monitor threat intelligence sources, “computer zero” forensics

• Cybersecurity
  • Education and Awareness; outlined annual confidentiality, privacy and security training
  • Provide selected security examples

• Compliance
  • Describe available compliance policies & standards
  • HIPPA Risk assessments
  • IT security annual audits

Cyber Threats + Vulnerabilities = Greatest Risks To Us
Preparing for the On-Site Visit

Tammy Brown
Consultant Himformatics
Training & Preparation
For identified Staff Members

Staff Education

- HIMSS Preparatory Guides
- Pocket Guides & Checklists
- HIMSS Posters for awareness

4 AMB Clinics

8 IP Areas

- Common BPAs for IP & AMB
- BCA Training
- HIMSS Reports

Routine Meetings are a must

- Biweekly Prep Meetings / Oct-Dec
- Operational Dress Rehearsal / Early Jan
- Site Survey / Jan 18th, 19th
- Mock Site Visit / Early Dec
- Check-in / Jan 17th

✓ Identify staff – clinical & administrative
✓ Address questions and concerns
✓ Review Epic workflows and provide training when needed
✓ BCA walkthroughs
✓ Device integration in OP settings
✓ Reports & Dashboards
Training & Preparation
Pocket Guides

Trifold Pocket Guides for quick reminders of:
- Schedules
- Support Contacts
- Staff Names
- Potential Interview Questions
- Area focus

Site Visit
Pocket Reference Guide
January 19th, 2018

Site Visit Itinerary
3:30-3:40pm SHV
3:40-4:00pm ED
4:00-4:20pm Radiology
5:00-5:20pm NICU
5:20-5:40pm NICU
12:40-1:00pm Blood Bank
1:00-1:20pm HIM
2:00-2:20pm Pharmacy

Stage 7 Support Contacts
Rachel_Foppiano 631-933-7552
Tammy Brown 336-408-1386
Dawn Hamilton 919-576-9052

Ancillary Departments – Focus
Blood Bank
- Ensure effective use of bar code technologies
- Understand what data is linked to Epic for scanning

Radiology
- Ensure department is utilizing imaging as available outside department
- Structured reporting tools are for rescuing

HIM
- All coding should be completely electronically
- Document scanning complies with 24 & 72 hour rules
- Dictation/transcription process and turnaround times

Pharmacy
- Re-packaging processes RFID technology
- Antimicrobial Stewardship

HIMSS Staff List

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<tr>
<th>Area</th>
<th>Area Staff</th>
<th>ISD Staff</th>
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<tr>
<td>6 HIV</td>
<td>Dr. Konya Crock, Chloe Reynolds, Stefanie Kowale, Jessica Lumbi</td>
<td>Don Licatose</td>
</tr>
<tr>
<td>ED</td>
<td>Dr. Ryan Lamb, Jennifer Sculli, Klin Boyer, Anastasia Jennings</td>
<td>Cathy Jarboe, Kristen Johns</td>
</tr>
<tr>
<td>Radiology</td>
<td>Dr. William Way, Joyce Watson, Dent Degennaro</td>
<td>Eitan Licatose</td>
</tr>
<tr>
<td>MS ICU</td>
<td>Dr. Francis Cestall, Kathy Quattruccii, Terrieta Talarca, Sara Soxe</td>
<td>Don Licatose</td>
</tr>
<tr>
<td>NICU</td>
<td>Dr. Marie Ambrose-Waagen, Michelle Clements</td>
<td>Daniel Licatose, Teresa Gaslul</td>
</tr>
<tr>
<td>Blood Bank</td>
<td>Dr. Timothy R. Carter, Judy Allen</td>
<td>Daniel Licatose, Teresa Gaslul</td>
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<tr>
<td>HIM</td>
<td>Erin Moran Gunter, Samantha Williams</td>
<td>Luke Yagnow</td>
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<tr>
<td>Pharmacy</td>
<td>Russell Laundon, Naomi Ren</td>
<td>Kim Wilkins</td>
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Epic has a team dedicated to assist clients in achieving Stage 7 certification

- 99% success rate
- Knowledge and experience of what the surveyors look for beyond what is in the requirements guide
- Give the staff a practice run of the real survey
- Provide a detailed report of what needs to be improved before the actual survey

**Epic assistance process:**

1. Weekly meetings with Epic to prepare
2. Educate staff based on Epic’s recommendations
3. Conduct Mock Survey
4. Implement improvements
Logistics
Every Detail Counts

- Dinner and other meals
- Transportation
- Valet Parking
- Prepare for Adverse Weather
- Meeting planning
Pursuing and Achieving Stage 7

Rachel Foppiano
System Exec IT Director: Affiliation & Integration
Pursuing and achieving stage 7

Lessons learned

1. Must have operational leaders support
2. Project team does not have to be big to be effective
3. Have adequate time for slide development
4. Alignment between clinical / business and IT is key
5. Stage 7 highlights opportunities for continued growth
6. Technology drives the improvement of patient care, truly!
UNC Achieves Stage 7 for AMAM

Rachel Foppiano
System Exec IT Director: Affiliation & Integration
UNC Health Care System Achieves HIMSS Stage 7 in Analytics
HIMSS Analytics Model for Analytics Maturity (AMAM)

About AMAM

The Analytics Model for Analytics Maturity (AMAM) is designed to help organizations measure and achieve advanced analytics capabilities. Similar to the medical record adoption model, AMMAM, is an 8 Stage model (0 to 7)

Eight Stages of Maturity

- 7 - Personalized Medicine and Prescriptive Analytics
- 6 - Clinical Risk Intervention and Predictive Analytics
- 5 - Enhancing Quality of Care, Population Health, and Understanding Economics of Care
- 4 - Measuring and Managing Evidence Based Care, Care Visibility, and Waste Reduction
- 3 - Efficient, Consistent Internal & External Report Production and Agility
- 2 - Core Data Warehouse Workout – Centralized Database with Competency Center
- 1 - Foundation Building: Data Aggregation & Initial Data Governance
- 0 - Fragmented Point Solutions

Citation: http://www.himssanalytics.org/amam
Feedback from our HIMSS Stage 7 Reviewers

- Clear alignment between your analytics strategy and health care system strategy - you are “living-and-breathing” it
- Great synergy between EADS and ISD Data and Analytics to support stakeholder needs
- Strong collaboration between these teams and the embedded analysts and data consumers they support
- The ORBITs model is a great way to engage users and analysts across the organization
- You have an effective governance model and your implementation approach is very thoughtful
- Robust technology stack and solid infrastructure
- Pervasive readiness – your analytical capabilities have been disseminated and leveraged throughout the organization
- The business trusts and believes in the data, solutions, and tools you provide
- The Patient Logistics Center (PLC) is a “phenomenal” example of how you’ve been able to rapidly deploy and realize analytical value