Children's Medical Center Dallas

POSITIVE RETURNS ON SPEECH RECOGNITION TECHNOLOGY INVESTMENTS
Nuance Healthcare At a Glance

• Healthcare Division: ~$500M

• Customers & partners in 30+ countries NA, EMEA & APAC

• 450,000 clinician users at more than 10,000 healthcare institutions

• 39% all US Hospitals
  – 1,500+ Radiology Reporting sites
  – 200,000+ Dragon Medical Users
  – 100,000+ eScription Users
  – eScription 3+ billion lines annually

• #1 in KLAS 7 Years in a Row
Capture Anywhere

Understand Everything

Use it for Good
Capture Anywhere  Understand Everything  Use it for Good
Nuance Implementation
Positive Return on Technology Investments
Mission: To Make Life Better for Children

**Background:**
- Serves fourth largest metro area in U.S. with highest projected growth of pediatric population over next 20 years.
- Three campuses: Dallas, Plano and Southlake (in 2011) with 559 licensed beds.
- $1B in assets, $2B in gross revenue, AA3 bond rating.
- Over 5,000 employees and 1,000 physicians.
- Over 100K inpatient days, 300K outpatient visits, 100K emergency visits.
- Academic affiliation with University of Texas Southwestern Medical School.

**Recognition:**
- Only Level I pediatric trauma center in North Texas (1 of 22 in U.S.).
- Only pediatric hospital in U.S. with more than two disease-specific certifications from Joint Commission; Children’s has seven.
- Nursing Magnet status; <10% of hospitals in nation have achieved.
- Ranked in Top 200 U.S. companies by *InformationWeek 500* for IT.
- HIMSS EMR Adoption Stage 7: top 1% worldwide; first free-standing pediatric hospital in nation; first hospital in Texas to achieve this level.
Children’s EMR Vision Statement

CHILDREN’S ESTABLISHED AN EMR VISION FOR IMPROVING THE SAFETY AND QUALITY OF CARE FOR PATIENTS…

• Our Electronic Medical Record (EMR) is patient-family centered with Quality, Safety and Accessibility at its core.

• It supports anytime, anywhere:
  – Our Children in both Wellness and Illness
  – Clinicians in Care, Advocacy, Research, & Education
  – Business Operations, both Financial and Legal

• We accomplish this through a strategic relationship with a primary vendor, an organizational commitment to accuracy, efficiency, effectiveness and continuous improvement of processes and practices.
# Timeline Summary

**CHILDREN’S EMR GO-LIVE SCHEDULE**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Date</th>
<th>Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>October 2008</td>
<td>Electronic Medical Record (EMR) infrastructure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Revenue Cycle &amp; Ambulatory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dragon Medical v. 10</td>
</tr>
<tr>
<td>Stage 2</td>
<td>May 2009</td>
<td>Emergency department, Operating Room, Inpatient Nursing / Ancillary,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intensive Care units</td>
</tr>
<tr>
<td></td>
<td>August 2009</td>
<td>Medical / Surgery inpatient physician documentation</td>
</tr>
<tr>
<td></td>
<td>November 2009</td>
<td>Computerized Provider Order Entry inpatient housewide</td>
</tr>
<tr>
<td></td>
<td>July 2010</td>
<td>HIMSS Analytics Stage 7 Achieved</td>
</tr>
<tr>
<td>Stage 3</td>
<td>July 2010</td>
<td>Ophthalmology</td>
</tr>
<tr>
<td></td>
<td>August 2010</td>
<td>Transplant</td>
</tr>
<tr>
<td></td>
<td>October 2010</td>
<td>Anesthesia</td>
</tr>
<tr>
<td></td>
<td>November 2010</td>
<td>Radiology</td>
</tr>
<tr>
<td></td>
<td>December 2010</td>
<td>Oncology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>eScription Implementation</td>
</tr>
<tr>
<td>Stages 1-3</td>
<td>October 2008 – April 2010</td>
<td>55 ambulatory areas</td>
</tr>
<tr>
<td></td>
<td>March 2011</td>
<td>Implemented Health Information Exchange &amp; ePrescribing</td>
</tr>
<tr>
<td></td>
<td>May 2011</td>
<td>Received Meaningful Use Incentive Dollars</td>
</tr>
<tr>
<td></td>
<td>July 2011</td>
<td>Dragon Upgrade – Network Edition</td>
</tr>
</tbody>
</table>
Key Transcription Performance Indicators

POSITIVESTATISTICAL RESULTS ARE REALIZED USING VARIOUS METRICS...

<table>
<thead>
<tr>
<th>Dictated</th>
<th>2009 # Reports</th>
<th>2009 TAT Hours</th>
<th>2010 # Reports</th>
<th>2010 TAT Hours</th>
<th>2011 YTD # Reports</th>
<th>2011 YTD TAT Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Summary</td>
<td>1,262</td>
<td>24</td>
<td>25</td>
<td>2</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Operative Report</td>
<td>1,637</td>
<td>10</td>
<td>1,563</td>
<td>2</td>
<td>1,443</td>
<td>1</td>
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<tr>
<td>Consult</td>
<td>14</td>
<td>17</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Clinic Visit / Letter</td>
<td>3,785</td>
<td>135</td>
<td>178</td>
<td>3</td>
<td>2229</td>
<td>4</td>
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</table>
## Where we started

2009 OUR STARTING POINT...

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
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<tbody>
<tr>
<td>Capital (Nuance)</td>
<td>$ 440,030</td>
</tr>
<tr>
<td>Operating expenses</td>
<td>$ 963,023</td>
</tr>
<tr>
<td>In house (16.5 FTEs)</td>
<td></td>
</tr>
<tr>
<td>Maintenance cost -</td>
<td></td>
</tr>
<tr>
<td>legacy system</td>
<td></td>
</tr>
<tr>
<td>IT resources</td>
<td></td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$ 1,403,053</strong></td>
</tr>
</tbody>
</table>
Where we ended
THE END TO THIS JOURNEY….

Operating expenses

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>In house staff 5.5 FTEs</td>
<td>$321,007</td>
</tr>
<tr>
<td>Dragon reduced (5.5 FTEs)</td>
<td></td>
</tr>
<tr>
<td>eScription reduction (1.5 FTEs)</td>
<td></td>
</tr>
<tr>
<td>Annual fee</td>
<td>$60,000</td>
</tr>
<tr>
<td>System Administrator</td>
<td>$75,000</td>
</tr>
</tbody>
</table>

**Total Cost** $466,007

Started this journey with $963,023 operating costs per year
Capital costs of $440,030
Return on Investment achieved at ~ 10 months

* Epic implementation eliminated outsourcing and accounted for 3 additional FTE reductions
Financial Payback Analysis

Return on Investment in a less than a year...
HIM Background

• Legacy environment consisted of paper charts, scanned records and two electronic systems
• Increased need for input from HIM professionals during transition
• 79+ employees
• Less than 2% turnover
• 75% of employees 5+ years employment
• 55% of staff clerical / imaging
• 20% of staff medical transcriptionists
HIM Transition Vision

- Acknowledged changes were on the horizon, 3+ years
- Developed Department’s EHR Vision
- Monthly Department Meeting Standing Agenda
  - Electronic health record status
  - Future HIM changes
  - Job skill sets for the future
  - Draft job descriptions for the future
  - Potential opportunities with current skill sets
- Encouraged use of educational benefits
  - Universities on site to provide guidance
  - Quarterly review with employees – future goal discussion
- Inserted HIM in organizational changes
- Identified “tools” to help Providers transition to EHR.
Transcription Background

• Legacy environment
  – Centralized dictation system
  – 6500 dictated reports per month
  – Average TAT - inpatient reports = 3 hours
  – Average TAT – ambulatory letters / notes = 135 hours
  – 16.5 Medical Transcription employees + three outside vendors
  – Extensive IT/HIM resources required to maintain system
Transcription Volume Trend

![Graph showing the trend of transcription volume from December 2008 to June 2011. The graph indicates a decrease in volume from December 2008 to April 2010, with a subsequent increase in volume from April 2011 to June 2011.](image-url)
Role Transition - FTEs

- HIM Department
- Hybrid Record

- Imaging = 22
- Transcription = 16.5
- Chart completion = 11
- EMPI = 1.5
- Regulatory = 2
- Systems Analyst = 2
- Coding = 10
- ROI = 5
- Management = 8

- HIM Department
- Electronic Record

- Imaging = 12
- Transcription = 6
- Chart completion = 8
- EMPI = 1
- Regulatory = 3
- Systems Analyst = 3
- EHR Trainers = 1
- Reporting = 1
- Coding = 13
- ROI = 5
- Management = 8
Transcription Role Transition

- 16.5 FTEs
- 2 MTs
- 1 MT
- 3 MTs
- 1 MT

6 FTEs
Coding
Regulatory Compliance
Chart Analysis
Document Imaging
System Specialist

- 1.5 MTs completed healthcare degrees and accepted positions in other healthcare institutions.
- 1 MT resigned to accept job outside of healthcare.
- Team Leader added responsibilities include implementation and training of providers Dragon Medical with Epic
Initial reasons for using deferred speech recognition for patient documentation:

- To assure timely access to clinical information
- To provide an option for providers who wish to continue dictating
- To provide an option for very long, complex documentation
- To improve transcription productivity
Increased Productivity

• Implemented deferred speech – (eScription) ASP model December 2010

• Transcription productivity:
  – November 2010 = 160 Lines per Hour
  – June 2011 = 300 Lines per Hour – Edited report
    240 Lines per Hour – Transcribed reports

• Approximately 50% of all dictation is “voice recognized” as of June 2011
  – (One ambulatory department requires special work flows that preclude using the normal eScription recommended work flows and is not conducive to voice recognition).
Current Environment

- 6 HIM + 4 Pathology MTs use eScription for Editing and Transcribing:
  - In patient Reports – Ops, DS, Progress Notes
  - Ambulatory Visit Notes and Letters
  - Pathology Gross & Microscopic Reports.

- Reduced IT and HIM resources for system maintenance and support
  - Decreased system down time.
Transcriptionists Win

• Decreased dictation and improved transcription productivity provided additional opportunities for our home based transcriptionists which include:
  – Consolidating transcription back in house that in some cases was contracted to outside vendors
  – Indexing
  – QC Scanned Images
  – Chart Analysis
  – Working Error Ques
Toolkit for Transitioning Providers

- Assessing provider specific documentation methods and technical skill sets helps determine best Toolkit options

Dictation

Electronic Templates

Hand-Held Devices
Front End Voice Recognition

- 98 attending physicians use Dragon Medical Network Edition - ambulatory & inpatient providers (10% of all attendings)

- 10 psychiatrists / psychologists / social workers use Dragon Medical Network Edition – Non provider

- 2 Translators use Spanish/English version Professional v. 10
Opportunities

- Electronic Templates
- Dictation
- Hand-Held Devices
- 2013 Considerations

New Tools

- Epic SmartText
- Epic Smart Phrase
- Dragon with Epic
- EScription – Deferred Speech
- Partial dictation with Epic
- EScription IntelliScript DVR Deferred Speech
- CAPD – computer assisted physician documentation
Implementation Timed with Epic Rollout

- Providers identified who may want to try Dragon during assessment by Epic Ambulatory team for clinic.

- Demo for interested parties.

- Rolled out Dragon before Epic implementation
Reasons to Use Front End Voice Recognition for Patient Documentation

• To assure timely access to clinical information

• To provide an option for providers who were not proficient with keyboarding

• To provide an option for very long, complex documentation

• To provide real-time documentation
• Use of Dragon dictation box was key to successful recognition.
  – Cumbersome work flow
  – Text could “disappear”

• Best practice was to train Dragon in local application

• Accessing Epic via One Chart (Clinical Context Object Workgroup (CCOW) application for consolidated access to patient data & single sign on).

• Accessing Dragon from home or off-site.
  – No access to network shared drive (roaming)
  – Too difficult to switch from roaming to local
Dragon Medical Upgrade Opportunities

• Revisit provider voice profiles, work flows, Dragon training, etc.

• Design tightly integrated Dragon voice commands for chart navigation – by provider and department.

• Optimize Dragon with Epic efficiency, cutting documentation time.
WINS - Upgrade Dragon to Network Edition

• Full Dragon functionality
  – Tighter integration with Epic
  – No need to use Dragon dictation box
  – Improved voice activated navigation commands

• Improved voice recognition

• Improved centralized management tools

• Available offsite access
  – Allows for update to roaming profile when laptop is back on network
Technology Summary

• Current version of:
  – EPIC- Summer 2009 IU2
  – DRAGON- Dragon Medical Network Edition with Roaming Profiles & PowerMic II
  – eSCRIPTION v. 9

• Implemented Epic 2008
• Implemented Dragon 2008
• Implemented eScription 2010
• Implemented Dragon Medical Network Edition Upgrade 2011
Keep in mind.........................

• Epic work flow:
  – Follow-up training for providers including optimization for their Epic work flow.
  – Not proofing the dictation can lead to embarrassing results.
  – Opportunities for providers to provide input regarding “other ideas” that would improve their work flow processes using voice recognition.

• Epic IT Application staff:
  – Opportunity to work with Epic system analysts to understand provider work flow processes
  – Epic SmartPhrases, SmartTexts - not always “Dragon friendly”.

• Epic Training staff:
  – Providers may be identified that could benefit from Dragon

• Epic Super-user training for Dragon support team:
  – Provide ongoing support and training
Providers Win

• Vital tool for physicians who are not comfortable using keyboard and mouse to document in Epic

• Dragon acts as a bridge between provider work flows and the related tasks within Epic.

• Realtime documentation of all note types with immediate availability for all care givers

• Multiple Application use
  – Epic, Microsoft Office Apps (Word, Outlook, etc.)

• Stable application and overall performance
  – Only 1 profile re-done due to incorrect usage
  – Profile loads quickly
Provider Testimonials

• “In Emergency Department - one voice command has replaced 5 keystrokes and 4 mouse clicks when creating an attending note. “

• “The ability to perform commands has huge potential --saving multiple keystrokes and mouse clicks. “

• “I have noted improved voice recognition”

• “Minimum 30 minute reduction in documentation time. I am able to complete my charts before the end of my shift!”

• “I can get through notes faster than before by hand or with the old version of Dragon that we had. A note may take about 5 minutes now instead of the previous 10 minutes,”

• “This new version just allows me to get more documentation done in less time.”

• “This version of Dragon is amazingly better at voice recognition, and picks up on training of new words very well.”
Q & A