BENCHMARKING EMR ADOPTION FOR HELSIT 2013

Introduction to EMRAM & status as of Q2/2013

PRESENTED BY: DANIEL CZERMAK-WÄNN, NORDIC CLIENT RELATIONS MANAGER, HIMSS ANALYTICS EUROPE
SEPTEMBER 18TH 2013, TRONDHEIM
INTRODUCTION TO HIMSS ANALYTICS EUROPE (HAE)
HIMSS ANALYTICS EUROPE

… for benchmarking and best practice in the adoption of Healthcare IT in Europe!

Data
- Adopted eHospital Census
  - Data from >1,900 acute hospitals across 18 European countries

Information
- Statistical analyses and reports
  - Benchmarking tools: EMRAM
  - >1,600 hospitals evaluated on EMRAM

Intelligence
- Conclusions
- Decisions
- Strategies
  - Cooperation with Healthcare Providers, National and Regional Health Authorities, Associations, HIT Vendors and System Integrators, Consultancies

Successful HIT Adoption

© HIMSS Analytics Europe – Benchmarking EMR Adoption - 3
THE EMR ADOPTION MODEL
THE EUROPEAN EMR ADOPTION MODEL

... in 7 Stages to Highest Quality in Patient Care

<table>
<thead>
<tr>
<th>European EMR Adoption Model&lt;sup&gt;SM&lt;/sup&gt;</th>
<th>Cumulative Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 7</td>
<td>Complete EMR; CCD transactions to share data; Data warehousing feeding outcomes reports, quality assurance, and business intelligence; Data continuity with ED, ambulatory, OP.</td>
</tr>
<tr>
<td>Stage 6</td>
<td>Physician documentation interaction with full CDSS (structured templates related to clinical protocols trigger variance &amp; compliance alerts) and Closed loop medication administration.</td>
</tr>
<tr>
<td>Stage 5</td>
<td>Full complement of PACS displaces all film-based images.</td>
</tr>
<tr>
<td>Stage 4</td>
<td>CPOE in at least one clinical service area and/or for medication (i.e. e-Prescribing); may have Clinical Decision Support based on clinical protocols.</td>
</tr>
<tr>
<td>Stage 3</td>
<td>Nursing/clinical documentation (flow sheets); may have Clinical Decision Support for error checking during order entry and/or PACS available outside Radiology.</td>
</tr>
<tr>
<td>Stage 2</td>
<td>Clinical Data Repository (CDR) / Electronic Patient Record; may have Controlled Medical Vocabulary, Clinical Decision Support (CDS) for rudimentary conflict checking, Document Imaging and health information exchange (HIE) capability.</td>
</tr>
<tr>
<td>Stage 1</td>
<td>Ancillaries - Lab, Radiology, Pharmacy - All installed OR processing LIS, RIS, PHIS data output online from external service providers.</td>
</tr>
<tr>
<td>Stage 0</td>
<td>All Three Ancillaries (LIS, RIS, PHIS) Not installed OR Not processing Lab, Radiology, Pharmacy data output online from external service providers.</td>
</tr>
</tbody>
</table>

“Paperless” patient record environment for highest quality of care, data continuity & full HIE

- Full electronic clinical decision support, and highest medication safety
- Completely electronic diagnostic image management
- Electronic order entry with decision support and result reporting
- Clinical ordering and documentation – especially nursing care
- A patient-centered electronic data repository
- Electronic diagnostic and pharmacy department information
# EMR ADOPTION MODEL

<table>
<thead>
<tr>
<th>Required capabilities</th>
<th>Health Information Exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>7</strong> Paperless medical record environment</td>
<td>Full internal data continuity and HIE (e.g. for disease m’ment programs)</td>
</tr>
<tr>
<td><strong>6</strong> Structured physician documentation for automated CDSS; CLMA</td>
<td>Sharing of clinical information via standardised electronic transactions</td>
</tr>
<tr>
<td><strong>5</strong> Completely electronic image management</td>
<td>PACS available to external clinicians remotely</td>
</tr>
<tr>
<td><strong>4</strong> Computerized physician order entry with 2nd level clinical decision support</td>
<td>e.g. ePrescribing with external pharmacy, exploding orders to ext. CPs</td>
</tr>
<tr>
<td><strong>3</strong> Clinical ordering and nursing documentation</td>
<td>e.g. medication reconciliation in eMAR, tele-monitoring</td>
</tr>
<tr>
<td><strong>2</strong> Patient-centered clinical data repository or electronic record</td>
<td>e.g. Remote access / HIE with care providers (e.g. medical summary)</td>
</tr>
<tr>
<td><strong>1</strong> Electronic diagnostic and pharmacy department information</td>
<td>Remote ordering, result reporting / data sharing (e.g. HL7); e.g. teleradiology</td>
</tr>
<tr>
<td><strong>0</strong> Mainly patient administration and hospital management</td>
<td>e.g. Exchange with payers (billing / claims) and supply chain</td>
</tr>
</tbody>
</table>
FROM SILOS TO CARE CHAIN

… toward truly integrated care coordination & delivery

EPR/EMR = GATHER & STORE data

PHR = EMPOWER the patient

IHE = MOBILIZE data

© HIMSS Analytics Europe – Benchmarking EMR Adoption - 7
EMR ADOPTION - ECONOMIC AND CLINICAL PERFORMANCE
IS EXPENSE BY EMRAM STAGE

EMR Adoption has a cost

Based on data from HIMSS Analytics™ Database (U.S.A.)

© HIMSS Analytics Europe – Benchmarking EMR Adoption - 9
OPERATING MARGIN BY EMRAM STAGE

EMR Adoption also has a ROI

Based on 2011 data from HIMSS Analytics™ Database (U.S.A.)
CLINICAL PERFORMANCE BY EMRAM STAGE

... clear positive association with advanced EMR capabilities

Based on data from HIMSS Analytics™ Database (U.S.A.)
ECONOMIC IMPACT OF EMR ADOPTION

… What are the main ROI points?

• Avoid duplicate medical orders
• Reduce length of stay
• Reduce medical errors leading to complications, repeat admissions, etc.
• Reduce Adverse Drug Events (ADEs)
• Workflow / process improvements, e.g.:
  o Coding & Billing
  o Transcription
  o Scanning
  o Storage

→ Stage 6 is where ROI pay-off really begins

STATUS OF EMR ADOPTION
… IN DE, DK, NL, NO, EU & US
EMR ADOPTION IN EUROPE

Countries currently under review

Source: HIMSS Analytics Europe eHospital Census 2012
## EMR ADOPTION IN EUROPE

... based on HIMSS Analytics European EMR Adoption Model

### EMRAM Scores, % of Hospitals, Q2/2013

(based on data from latest 24 months, no weighting etc. applied)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Germany</th>
<th>Italy</th>
<th>Netherlands</th>
<th>Spain</th>
<th>Poland</th>
<th>Portugal</th>
<th>Europe*</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 7</td>
<td>0.3%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.4%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.1%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Stage 6</td>
<td>0.0%</td>
<td>0.5%</td>
<td>8.9%</td>
<td>3.8%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1.6%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Stage 5</td>
<td>8.9%</td>
<td>7.1%</td>
<td>33.9%</td>
<td>40.2%</td>
<td>0.0%</td>
<td>26.3%</td>
<td>15.6%</td>
<td>16.3%</td>
</tr>
<tr>
<td>Stage 4</td>
<td>2.5%</td>
<td>3.0%</td>
<td>3.6%</td>
<td>7.7%</td>
<td>0.7%</td>
<td>5.3%</td>
<td>3.5%</td>
<td>14.4%</td>
</tr>
<tr>
<td>Stage 3</td>
<td>6.9%</td>
<td>4.0%</td>
<td>1.8%</td>
<td>1.7%</td>
<td>0.0%</td>
<td>21.1%</td>
<td>4.0%</td>
<td>36.3%</td>
</tr>
<tr>
<td>Stage 2</td>
<td>32.1%</td>
<td>26.8%</td>
<td>51.8%</td>
<td>17.5%</td>
<td>10.2%</td>
<td>7.9%</td>
<td>26.1%</td>
<td>10.1%</td>
</tr>
<tr>
<td>Stage 1</td>
<td>1.3%</td>
<td>38.5%</td>
<td>0.0%</td>
<td>10.3%</td>
<td>12.9%</td>
<td>2.6%</td>
<td>17.6%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Stage 0</td>
<td>48.1%</td>
<td>20.0%</td>
<td>0.0%</td>
<td>18.4%</td>
<td>76.2%</td>
<td>36.8%</td>
<td>31.5%</td>
<td>7.8%</td>
</tr>
</tbody>
</table>

| N      | 393     | 574   | 56          | 234   | 147    | 38       | 1,581   | 5,441|

* Includes countries listed in the table above, plus: Austria, Belgium, Denmark, Finland, France, Ireland, Norway, Sweden, Switzerland, United Kingdom

Source: HIMSS Analytics Europe Database, Q2/2013
PRIMARY CARE EMRAM
MEASURING HIE — THE PC-EMRAM

... an adoption model for primary care EMRs and HIE with acute care

• To measure IT Adoption in the primary care setting
  • for patient and prescriber based encounters, i.e. physician and/or licensed care giver assessing and generating orders & prescriptions
  • for tethered and non tethered practices alike
  • in North America, Europe, Middle East, Asia, because Northern Europe and Southern Asia are way ahead of the US with A-EMR deployments
• To assess “care chain readiness”
  • for Health Information Exchange
  • for community medical records / EHRs
  • for Clinical and Business Intelligence across “silos”
• To “Push the market”
### THE PC-EMRAM

... an adoption model for primary care EMRs and HIE with acute care

<table>
<thead>
<tr>
<th>Stage</th>
<th>Cumulative Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 7</td>
<td>HIE, data sharing with community based HER, robust business and clinical intelligence</td>
</tr>
<tr>
<td>Stage 6</td>
<td>Advanced CDS, proactive care management, population health management</td>
</tr>
<tr>
<td>Stage 5</td>
<td>Patient engagement</td>
</tr>
<tr>
<td>Stage 4</td>
<td>CPOE, physician documentation with CDS, external data exchange</td>
</tr>
<tr>
<td>Stage 3</td>
<td>E-prescribing, nursing documentation, medication reconciliation, CDS</td>
</tr>
<tr>
<td>Stage 2</td>
<td>CDR, access to results from outside facilities</td>
</tr>
<tr>
<td>Stage 1</td>
<td>Access to clinical information, unstructured data, multiple data sources</td>
</tr>
<tr>
<td>Stage 0</td>
<td>Paper based chart</td>
</tr>
</tbody>
</table>

**Note:** “Ambulatory EMRAM” will be used in the United States
THANK YOU

Daniel Czermak-Wänn, MD
Nordic Client Relations Manager, HIMSS Analytics Europe
CMIO Exonor

Exonor Group AS
Karihaugveien 89
1086 Oslo

e-mail: dcw@exonor.com
phone: +46 70 417 66 02

For further information visit: www.himssanalytics.eu