Emerging Technology and Future HCIT Trends

Presented by:
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The Coker Group
AGENDA

- Health Care Information Technology
  - Market HCIT trends as it relates to adoption and implementation
    - Trends
    - Threats
    - Theories
  - Leveraging ICAHN
TECHNOLOGY EVOLUTION FROM 4000 B.C. TO 2014 IN 5 MINUTES
4000 TO 1200 BC - RECORDS ARE KEPT ON CLAY TABLETS.
3000 BC - THE ABACUS
In 1642 Blaise Pascal invented the *Pascaline* as an aid for his father who was a tax collector. (It could only add.)
PINWHEEL CALCULATOR WITH 10-DIGIT SETTING REGISTER, MADE IN SWEDEN IN 1945.
One early success was the Harvard *Mark I* computer which was built as a partnership between Harvard and IBM in 1944. This was the first programmable digital computer made in the U.S. The machine weighed 5 tons, incorporated 500 miles of wire, was 8 feet tall and 51 feet long.
1968 - The first-ever computer mouse in the hand of its inventor Doug Engelbart
1970 - UNIX IS DEVELOPED AT BELL LABS BY DENNIS RITCHIE AND KENNETH THOMSON
1981- IBM INTRODUCED THE FIRST DESK-TOP COMPUTER
**MICROSOFT Version 1.0 was released in 1985, the more commonly known Windows version was released in 1990, which was version 3.1**
1979 - FIRST LAPTOP
1992 - The first chip to implement its 64-bit architecture
OUR PROGRESS IN HEALTHCARE

33% use this device

33% use this device

33% use this device or desktop
• Recent survey by the Centers for Disease Control and Prevention, 38.4 percent of doctors reported they were using full or partial EMR systems, and 20.4 percent said they were using minimally functional EMRs, including e-prescribing, the ability to order tests and view lab results, and electronic notes.
The 4% Reality

• When the CDC asked about EMR systems conforming to interoperability standards and are known as electronic health records (EHRs), just 17% of physicians reported having basic EHRs.

• Only 4% of respondents said they had fully functional EHRs at the point of care.

• While this has improved, there is still a significant swag between systems sold vs. fully adopted at the point of care.
## US Physician Population*

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Total Phys</strong></td>
<td>615,421</td>
<td>720,325</td>
<td>813,770</td>
<td>941,304</td>
</tr>
<tr>
<td><strong>Hospital-Based</strong></td>
<td>142,875</td>
<td>154,856</td>
<td>157,032</td>
<td>169,337</td>
</tr>
<tr>
<td><strong>Residents / Fellows</strong></td>
<td>92,080</td>
<td>96,352</td>
<td>95,725</td>
<td>98,688</td>
</tr>
<tr>
<td><strong>Full-time staff</strong></td>
<td>50,795</td>
<td>58,504</td>
<td>61,307</td>
<td>70,649</td>
</tr>
<tr>
<td>% of total - full-time staff</td>
<td>8.3%</td>
<td>8.1%</td>
<td>7.5%</td>
<td>7.5%</td>
</tr>
<tr>
<td>% growth in Hospital-based</td>
<td>8%</td>
<td>1%</td>
<td>7%</td>
<td></td>
</tr>
</tbody>
</table>


*AMA and The Coker Group, 2009

Just over 700,000 potential EMR users

*This data was included to reflect the updated number of practicing physicians in the US.*
MARKET SHARE CLAIMS (BY VENDORS)*

<table>
<thead>
<tr>
<th>Vendors</th>
<th>Acquired products &amp; solutions</th>
<th>Market Share Claims by total Number of providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epic</td>
<td>NONE - 100% organic</td>
<td>150,000</td>
</tr>
<tr>
<td>GE</td>
<td>Millbrook, Logician, IDX FlowCast, IDX GroupCast, IDX CareCast, EDI - Company claims to have 20% of the ambulatory market</td>
<td>148,000</td>
</tr>
<tr>
<td>Sage</td>
<td>Medical Manager, Emdeon, PCN, Verses</td>
<td>107,000</td>
</tr>
<tr>
<td>McKesson</td>
<td>Horizon, Practice Partners, MediSoft, RelayHealth</td>
<td>129,000</td>
</tr>
<tr>
<td>Misys/Allscripts/ A4</td>
<td>HealthMatics, Compusense, Medic, Tiger, Vision, TouchWorks, ImPact, PenChart. Company claims 1 in every 3 physicians use one of their products/solutions</td>
<td>247,000 (reported) 200,000 (actual)</td>
</tr>
<tr>
<td>NextGen</td>
<td>Originally 2 products (10 years ago), mostly organic - both products have been fused together</td>
<td>50,000</td>
</tr>
<tr>
<td>eClinicalWorks</td>
<td>NONE - 100% organic - Single version solution</td>
<td>20,000</td>
</tr>
<tr>
<td>Greenway</td>
<td>NONE - 100% organic - Single version solution</td>
<td>4000</td>
</tr>
<tr>
<td>LSS Data Systems</td>
<td>NONE - 100% organic - Single version solution</td>
<td></td>
</tr>
<tr>
<td>athenahealth</td>
<td>NONE - 100% organic - Single version solution</td>
<td>17,000</td>
</tr>
<tr>
<td>Cerner Ambulatory</td>
<td>Several (VitalWorks consisted of several legacy products)</td>
<td>37,000</td>
</tr>
<tr>
<td>e-MDs</td>
<td>NONE - 100% organic - Single version solution</td>
<td>7000</td>
</tr>
<tr>
<td>Practice One</td>
<td>N/A</td>
<td>5000</td>
</tr>
<tr>
<td>MED3000</td>
<td>VAR - Non-applicable</td>
<td>NA</td>
</tr>
<tr>
<td>Henry Scheine</td>
<td>Medical Supply company (Acquired vendor)</td>
<td>NA</td>
</tr>
<tr>
<td>HealthPort</td>
<td>Formally Companion</td>
<td>4000</td>
</tr>
<tr>
<td>Others (35+)</td>
<td>There are 35 additional CCHIT vendor not considered here</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>925,000</strong></td>
</tr>
<tr>
<td></td>
<td>Estimated Actual</td>
<td><strong>675,000</strong></td>
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*This data was included to show the differences between vendor claims and market share realities reflected in Coker’s data*
VENDOR CONSOLIDATION...
WHAT HAS HAPPENED?

THE GOOD, BAD AND UGLY...
HCIT OPPORTUNITIES

- EHR to EHR replacements
- Refreshing (every 3 to 5 years)
- Disruptive software and devices (Analytics / iPads)
- New Vendors (Cloud)
- Optimization Solutions
- Enhancements
- Impact of Disruptive Market Trends
  - ACOs, PCMHs, ICD-10, Hospital Alignment, HIEs
THE COMPOSITION OF SPENDING CONSISTS OF....

- Device integration
- Image management, storage and retrieval
- Ambulatory surgery centers
- Electronic Health Records
- Exam room instruments
- Reporting tools / software
- PQRS tools/ software
- Clinical integration
- External integration
- Accountable Care Enabling Technology
- Etc., etc., etc.
## Historic Barriers to Adoption

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Before</th>
<th>Now</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Too Expensive</td>
<td>Cost of doing nothing???</td>
</tr>
<tr>
<td>Standards</td>
<td>None</td>
<td>Interoperability / HIE</td>
</tr>
<tr>
<td>MD Culture</td>
<td>Diverse</td>
<td>Starting to Embrace</td>
</tr>
<tr>
<td>Privacy</td>
<td>Self Regulated</td>
<td>HIPAA</td>
</tr>
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</table>
ESTIMATED RATE OF AMBULATORY EHR FAILURE

• According to some researchers there has been a 30-40% failure rate of EHR implementations.

• These failures are a result of:
  ➢ Lack of implementation planning
  ➢ Inadequate research and expectations of technology
  ➢ Incomplete training of staff
  ➢ Mismanagement of workflow and staffing changes
  ➢ Reluctance of providers to take on additional burden
WHERE THE RUBBER HITS THE ROAD!

Productivity is the Primary Barrier to EHR Adoption

Physicians Fear Productivity Losses

EHR Impact on Physician Productivity

Source: MGMA 2011 EHR Adoption Survey – 4,588 practices / 120,000 physicians
IMPLEMENTING TECHNOLOGY
THE “HAPPY” / “SAD” ANALYSIS
THE EHR DISPLACEMENT OPPORTUNITY
1. Can the issues be resolved through remediation?

2. Can the issues be resolved with technical improvements?

3. Is vendor being responsive and concerned about the issues?

4. Does the practice bear some responsibility for the failure?

5. Has the product or version been commercially discontinued?
GOING BEYOND EHRs
WHERE IS HCIT GOING...
PATIENT KIOSKS
SMART FORMS
VOICE TO TEXT
DASHBOARD TOOLS / ANALYTICS

New Patients % Gauge
Number of Patients Seen Gauge
Point of Service Cash Collected Gauge
Number of Claims Billed Gauge

New Patients Percentage Trend
Point of Service Cash Collected Projection

New Patients Percentage
- Actual
- Goal

Point of Service Cash Collected
- Current
- Projected
- Target

Value as of Prior Date: $2,701.90
Target at Period End: $8,000.00
Amount needed to reach target: $5,298.10
Number of Days Remaining in Period: 5
Amount Needed per Day to Reach Goal: $652.26
Average Daily Amount: $185.46
Projected Value at Period End: $4,265.67
Projected Shortfall or Surplus: ($3,734.33)
CLOUD COMPUTING / SAAS
POPULATION DISEASE MANAGEMENT

Source: SyntraNet
HEALTH INFORMATION EXCHANGES

Source: MediExchange
ACO ENABLING TOOLS

Source: ACOManagement
TeleHealth Solutions
PORTABLE DEVICES

83% of physicians carry a smart phone
EXTERNAL DRIVING FORCES
EMERGING MARKETS

- Healthcare Reform Readiness
- HIE Solutions and Providers
- Analytics
- Local and State HIT Collaborations
- Datacenters and ASP/SAAS/IAAS offerings
- Corporations Expanding Into HIT
  - Wal-Mart
  - Amex
  - Google
  - AT&T
ADOPTIONS INCENTIVES

• Stimulus
• eRX
• PQRI
• Penalties
Policy Updates --

AND THE IMPACT ON HCIT
THE BLACK SWAN
The Impact of the Highly Improbable
Nassim Nicholas Taleb
ARRA Organization & Funding of HIT

ARRA Funding: $787 Billion

HIT Related Funding (~ $22 Billion?)

- Medicare/Medicaid $17.7 Billion (2019?)
  - Medicare Providers: Enterprise: DC-Based MDs: ~$40K
  - Medicaid Providers: Enterprise: DC ~ $2 M Providers: ~$75K
- National Coordinator for HIT $2.0 Billion
- Regional/State Health Exchanges Mandated $300 Million
- Infrastructure Grants Implement/Improvements
  - IHS: ~$85 Million
  - HHS: ~ $2-3 Billion
  - CHC: $1+ Billion
  - Agriculture: 2.5 Billion

National Institute of Standards/Technology $20 Million

Policy Committee Standards Committee Chief Privacy Officer.
Meaningful Use Measures Made Simple

Physician
- eRX
- Problem List
- Decision Support
- Quality Measures

Nurse / MA
- Smoking
- Medications Education

Front Desk
- Demographics
- Provide Summary
- Electronic Copy
- Exclusions if Applicable

Exchange Data
- Privacy/Security
- Generate List

One Time Set Up
- Vital Signs
- Immunizations
- Syndromic Surveillance
LEVERAGING ICAHN
KNOWLEDGE SHARING

• Vendor Demonstration Tools (don’t reinvent the wheel)
  – Score Cards
  – Demo Scenarios
  – Scribe my exam
• Specialty Specific RFPs
• Reference Check Tools
• Site Visit Tools
• Tools for Comparing cost, including recurring cost
• ICAHN Conferences/Summits/Forums
• ICAHN Annual Meeting
• Peer-to-Peer Networking
GUIDANCE ON HOW TO NEGOTIATE AN IT CONTRACT LIKE A PRO
WHAT TO NEGOTIATE OVER

• Initial costs
• Hardware cost
• Software cost
• Communications cost
• Installation cost
• Ongoing support cost
• Implementation cost
• Support cost
• Technical support cost
• Integration costs
• Interface cost
• Entitlement to new releases/bug fixes
• The cost of tailoring
• Future upgrades and releases (This should always be at no additional cost)
MODIFYING THE CONTRACT

• Source Code
• Acceptance Period (Hardware & Software)
• Implementation Caveats
• No Front Loading of Support Fees
• No Front Loading the purchase terms
• Assignment
• Future Upgrades and New Releases
• Copyright infringements
• Warranties
• Termination
• Future providers and fees (Recurring cost)
GAIN KNOWLEDGE

- CCHIT.ORG
- HIMSS.ORG
- AMIMA.ORG
- National Societies
- Network with local Chapters
- White Papers
- Seminars/Webinars
- www.illinoisnetwork.org
- FREE Contract Inspection — jdaigrepont@cokergroup.com
FINAL THOUGHT

FIVE STAGES OF HCIT ADOPTION

From *Death and Dying* by Elizabeth Kubler-Ross
1ST STAGE: DENIAL

- Occurs from time of purchase until first few days of go-live
- Sees only benefits of EMRs
- Denial of any difficulties
2nd Stage: Anger

- Typically lasts one month
- Angry because of reduced patient volumes
- Staff upset with new system
3rd Stage: Bargaining

- Lasts 2-4 weeks
- Plead with vendor to make program work
- Will do anything
4TH STAGE: DEPRESSION

• Lasts 3-6 months
• Assume program will not work
• Can’t abandon it since it costs so much
5TH STAGE: ACCEPTANCE

• It all starts to fall into place
• See benefits from the system
• You and every one else live happily ever after!
• Cause for celebration
THANK YOU

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