Healthcare IT 2012: It’s Not the End of the World!

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Conflict of Interest Disclosure

William Morgan

Has no real or apparent conflicts of interest to report.
Agenda

• Introduction & Learning Objectives
• Defining the Challenges
  – Regulatory, Technological, Demand, Fiscal
• Identifying Solutions
  – Tools & Templates, Methodology & Models
• Sharing Successes
  – “Deep Dive” Case Studies
• Summary
Introduction

- New Orleans, LA
- Tulane University
- USMC – Logistics
- ISH & Healthlink
- Provena & CHRISTUS
- Regional IM Executive, CHRISTUS Spohn Health System
Learning Objectives

• Challenges
  – Describe a concise summary of the myriad regulatory and fiscal challenges facing healthcare IT leaders today with a particular focus on regulatory compliance, the "explosion" of data and Demand Management challenges

• Solutions
  – Identify templates for IT resource alignment enabling effective and efficient utilization of limited assets with an emphasis on systems methodology, supporting IT governance models, and a review of successful professional development programs

• Successes
  – Show IT leaders a proven roadmap for success utilizing supporting case studies that will facilitate process improvement, effective resource management, and organizational achievement today, tomorrow, and in the years to come
Defining the Challenges
Agenda

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Defining the Challenges

• Regulatory
  – ARRA, HITECH, and Meaningful Use

• Technological
  – Cloud computing, DR/BC, Data storage

• Demand
  – Internal / External, Organization / Community

• Fiscal
  – Decreasing reimbursement / rising costs
  – Any and all of the above with a cost component
Regulatory Challenges
Regulatory Environment

• **ARRA & HITECH**
  – Subtitle A – Promotion of HIT
    • Part 1: Improving quality, safety, and efficiency (Establishes the ONCHIT)
    • Part 2: Application and use of HIT standards
  – Subtitle B – Testing of HIT
  – Subtitle C – Grants and Loans Funding
  – Subtitle D – Privacy
Regulatory Challenges

- EHR Meaningful Use Demonstration
- Health Information Exchanges
- Ongoing Privacy and Security
- Accountable Care Organizations
- Mobile Access
- Near Future Challenges
  - ICD-10, Patient Portals (legislation pending)
Regulatory Challenges

- EHR Meaningful Use Demonstration
- Health Information Exchanges
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Regulatory Challenges

- EHR Meaningful Use Demonstration
- Health Information Exchanges

Courtesy of Harrison HealthLink
Regulatory Challenges

- EHR Meaningful Use Demonstration
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Example: Texting Orders

- Is it acceptable for physicians and licensed independent practitioners to text orders for patients to the hospital?

- No. This method provides no ability to verify the identity of the person sending the text and there is no way to keep the original message as validation of what is entered into the medical record.

  – Source: The Joint Commission Standards FAQ
Technological Challenges
Technological Challenges

- Cloud Computing; “to Cloud or not to Cloud”
- Disaster Recovery / Business Continuity
- Explosion of data; storage and security
  - Typical PACS Images:
    - CT Scan: 1 MB
    - Angiogram: 3 – 5 MB
    - Diagnostic CT (64 slice): 8 MB
  - Typical CPACS Image/Study: 500MB

"640K ought to be enough for anybody."
- Bill Gates, 1981 on the new 640KB IBM PC
Size Matters

Not quite a day’s work in your facility – about 1.5 TB
(Based on a 250-bed facility with various specialties/sub-specialties)

IBM 640KB PC
circa 1981

CT Scan
1 MB

Angiogram
5MB

Diagnostic or
64 slice CT
8MB

CPACS Study
500 MB
DID YOU KNOW?
Demand Management
Healthcare IT Demands

- EHR
- ERP
- ICD-10
- CRM
- PACS
- CPACS
- CPOE
- eICU
- BMV
- RIS
- SSO
- P4P
- ACO
- HIPAA
- JCAHO
- SOX
- Stark
- eHealth
- Robots
- Nomadics
- RFID
- Carts

- Internal – Organizational
- External – Community
Demand Management

**COST** -- The ever present challenge...

**PACE**

versus

**POCKETBOOK**
Example: Consumer Needs

  - Palm Pilot, Blackberry, iPAQ (Compaq/HP)
  - Palm OS, RIM/BB OS, MS OS/Windows Mobile
- June 2007
Fiscal Challenges
Fiscal Challenges

- Decreasing reimbursement / rising costs
  - Will decreases effect treatment behavior?
  - What are key cross-industry cost drivers?
- All of the previously stated challenges have some type of a fiscal component
  - Regulatory
  - Technological
  - Demand Management
“Show Me the Money”

• Results of the 2010 ACHE Survey: “Top Hospital CEO Concern”

• Financial Challenges
  – Finance 77%
  – Healthcare reform 53%
  – Government Regulations 32%
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Solution Sets

• Solution #1: Meaningful Use tracking tool
• Solution #2: HIE models and templates
• Solution #3: Data storage, security, back-up and recovery methodology
• Solution #4: Effective governance – an organizational Demand Management model
“What Gets Measured, Gets Managed”
Solution Set #1: Meaningful Use tracking tool

• Why track Meaningful Use Compliance?
  – Regulatory requirement
  – Financial incentives

• Tracking compliance?
  – Begin with the end in mind
  – Agree on metrics and measures
  – Enable standards enforcement and operational improvements
## MU Objective Gap Analysis

<table>
<thead>
<tr>
<th>Stage 1 Meaningful Use Objective</th>
<th>Functionality Exists</th>
<th>Functionality Does Not Exist</th>
<th>Functionality Exists but Not Fully Functional</th>
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</tr>
</tbody>
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### Health Outcomes Policy Priority

- **Stage 1 Objectives**
  - Eligible Hospitals and CAHs
  - Stage 1 Measures
  - Measure Data Source
  - NOTE/COMMENT

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<tr>
<th>Improving quality, safety, efficiency, and reducing health disparities</th>
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<th>NOTE: 6/29/11 The plan is to use the entry of orders by Pharmacists to meet this objective. MT ARRA</th>
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### List Facilities Individually
### MU Attestation Status

<table>
<thead>
<tr>
<th>Project ID</th>
<th>TPM</th>
<th>Project Name</th>
<th>Phase</th>
<th>Go-Live Date</th>
<th>Project Status</th>
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<td>55453</td>
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<td>MEDITCH PDII Patient Discharge Instructions</td>
<td>04-Executing</td>
<td>10/1/2011</td>
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<tr>
<td>55448</td>
<td></td>
<td>eMAR in ED</td>
<td>04-Executing</td>
<td>11/1/2011</td>
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<tr>
<td>55463</td>
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<td>Meditech CCD Suite (enterprise)</td>
<td>04-Executing</td>
<td>5/1/2012</td>
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<tr>
<td>55391</td>
<td></td>
<td>Public Health Reporting Interfaces (Enterprise)</td>
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<td>4/1/2012</td>
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<tr>
<td>55433</td>
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<td>Quality Measurement for Meaningful Use</td>
<td>04-Executing</td>
<td>12/2/2011</td>
<td>Green</td>
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<tr>
<td>55479</td>
<td></td>
<td>Meaningful Use Stage 1 Attestation Preparation</td>
<td>04-Executing</td>
<td>9/1/2012</td>
<td>Green</td>
</tr>
<tr>
<td>55018</td>
<td></td>
<td>HIE - Health Information Exchange (enterprise)</td>
<td>04-Executing</td>
<td>6/29/2012</td>
<td>Green</td>
</tr>
</tbody>
</table>

**List of PMs for each project**

- Summary list of MU projects tracked on a weekly basis and reported to leadership
- Leadership can be “compliance incented”
Meaningful Use Resources

https://www.cms.gov/EHRIncentivePrograms/30_Meaningful_Use.asp
“Improve Community Health and Reduce Costs”
Solution Set #2: HIE models and templates

• Why implement an HIE?
  – Improve Community Health
  – Reduce medical errors
  – Lower costs

• HIE Models?
  – Integrated (Centralized)
  – Federated (Decentralized)
  – Hybrid
Comparing Models - Integrated

Pros
- Data in a single warehouse
- Queries are easy and fast
- Facilitates community data analysis for research and public health purposes
- Better data management due to scale and the class of products used (usually)

Cons
- Single database dependant
- Possible “data latency” due to slow submission from participating systems
- Duplication of demographic and clinical records possible
- Large up-front investment
Comparing Models - Federated

Pros
• Provider stores data – no ownership conflict
• Data always current – provider doesn’t send central data bank
• Single system failure won’t cripple the network.

Cons
• Provider must ensure only authorized third-party connections to the network
• Must agree on definitions for standards and guidelines for inter-provider access
• Complete EHR view more difficult
Comparing Models - Hybrid

Pros

• Faster queries when allowed by providers in control of the information
• More support from the HIE and less administrative or technological burden for the participants.

Cons

• Potentially more costly than the decentralized or federated model
HIE Template

• Begin with the end in mind
• Overcome the two biggest challenges first
  – Governance
  – Funding
• Key off of Federal and State guidelines
• Leverage successful models and plans
  – Look at your local & regional market
  – Consider your strategic plan
Figure 4-2. NV HIE Major Milestones and Timeline 2011

2011 Strategic Time Line and Objectives

- Establish basic HIE core services
- Facilitate Stage 1 Meaningful Use
- Set stage for full NV HIE implementation and deployment beyond 2011.

2011:

January
- Senate Bill 43 dealing with various aspects of HIE continues ongoing sub-committee review.
- NV HIE Strategic and Operational Plan revisions continue – site visit from ONC TA advising on plan draft revisions
- NV HIE Strategic and Operational Plan revisions complete and submitted to ONC for approval

February
- General project planning and corresponding budget planning continues
- Discussions begin with Nevada Rural Hospital Partners (NRHP) to provide HIE core services, and act as HISP
- NV HIE Strategic and Operational Plan approved by ONC, funding released shortly thereafter
- NV HIE Governance/Operations in place - begins organizational and technology planning and evaluations

March
- NV HIE non-profit begins HIE Technology evaluation and selection, and plans for roll-out strategy post Stage 1 Meaningful Use
- NV HIE Core Services and HISN in place, NHIN Direct registrations begin, point-to-point messaging, including NHIN Direct mediated connectivity testing begins/continues at pace for successful achievement of Stage 1 Meaningful Use by year’s end.

April
- Beginning discussions and planning for NV HIE Governance/Operations not-for-profit... Executive Leadership, Board of Directors, Business/Fiscal Sustainability Model
- Begin engaging Providers, Hospitals, Labs, and Pharmacies to begin validation of point-to-point and Direct mediated messaging.

May
- NV HIE Governance/Operations in place - begins organizational and technology planning and evaluations
- Additional/continuing field study complete in prep for Direct mediated messaging – point-to-point ready PCPs/EMRs identified, including those to be Direct mediated.

June
- Validation and verification of point-to-point messaging, including NHIN Direct mediated, continues throughout the state.

July
- NV HIE Governance/Operations in place - begins organizational and technology planning and evaluations

August
- Validation and verification of point-to-point messaging, including NHIN Direct mediated, continues throughout the state.

September
- NV HIE Governance/Operations in place - begins organizational and technology planning and evaluations

October
- NV HIE Governance/Operations in place - begins organizational and technology planning and evaluations

November
- NV HIE Governance/Operations in place - begins organizational and technology planning and evaluations

December
- NV HIE Governance/Operations in place - begins organizational and technology planning and evaluations

Nevada Office of Health Information Technology prepares and submits report to ONC documenting all point-to-point messaging connectivity, including NHIN Direct mediated messaging, establishing successful achievement of Stage 1 Meaningful Use.
# HIE Sample Plan

## Figure 12-1. NV HIE Implementation and Operation Approach

<table>
<thead>
<tr>
<th>NV HIE Business</th>
<th>Phase 1 - Initiation</th>
<th>Phase 2 - Creation</th>
<th>Phase 3 - Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Delivery Org</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Director or HIT</td>
<td>Accountable Responsible</td>
<td>Accountable to ONC &amp; State</td>
<td></td>
</tr>
<tr>
<td>NV HIE Business (non-profit)</td>
<td>Not Involved</td>
<td>Accountable Responsible</td>
<td>Accountable Responsible</td>
</tr>
<tr>
<td>Service Vendor(s)</td>
<td>Supporting</td>
<td>Supporting</td>
<td>Supporting</td>
</tr>
<tr>
<td>Technology Product Vendors</td>
<td>Not Involved</td>
<td>Not Involved</td>
<td>Not Involved</td>
</tr>
</tbody>
</table>
HIE Sample Plan

- Nevada State HIE
  [http://dhhs.nv.gov/PDFs/HIT/NV_StaeHITPlan_AppendixG.pdf](http://dhhs.nv.gov/PDFs/HIT/NV_StaeHITPlan_AppendixG.pdf)

- Minnesota eHealth

- Texas Health Services Authority
  [http://www.thsa.org/media/1343/thsa_general_approach_hie_imple
  mentation.pdf](http://www.thsa.org/media/1343/thsa_general_approach_hie_imple
  mentation.pdf)

- Healthcare Leaders HIE article
  [http://www.meditech.com/industrypress/otherfiles/healthlead
  ersmagazine.pdf](http://www.meditech.com/industrypress/otherfiles/healthlead
  ersmagazine.pdf)
HIMSS Resources – State HIT Dashboard

http://www.himss.org/statedashboard/default.aspx
“Maintaining the C.I.A. of Healthcare data”
Solution Set #3: Data management methodology

• Why establish a data strategy?
  – Facilitate regulatory compliance
  – Manage data “explosion”
  – Husband resources

• Establishing a data management methodology
  – Organizational strategic plan
  – Business Impact Assessment (BIA)
  – Consider the “Pace vs Pocketbook” challenge
Data Management Methodology

- Storage
- Security
- Back-up and Recovery
Data Warehouse

Operational Systems
- Marketing
- Sales
- ERP
- SCM

Integration Layer
- ODS
- Staging Area

Data Warehouse

Data Marts
- Mart
- Mart

Strategic Marts
- Exploration & Mining
Business Intelligence

ETL Process

Data Warehouse

Datamarts

Reporting

OLAP Analysis

Ad-hoc reporting
Data Management Methodology

- Storage
- Security
- Back-up and Recovery
Data Management Methodology

- Storage
- Security
- Back-up and Recovery

courtesy of Seagate

Tier 0
5% of Active Data

Tier 1
20% of Active Data

Tier 2
75% of Active Data

Tier 3
100% of Retired Data

HOT
- Indexing
- E-Commerce
- OLTP
- Content Mgmt
- Business Intelligence
- RDBMS
- Web Hosting
- HSM
- HPC
- Mail Servers
- Medical Records
- CRM
- Collaboration
- ERP
- ILM

COLD
- Video on Demand
- Surveillance
- Security access control
- Archive
- On-line Archiving
- Backup
- Video/Audio Broadcast
- Content Delivery
- Medical Records
- Financial
- Data Warehouse

HIMSS12

Linking People, Potential and Progress
Data Management Methodology

• “Healthcare storage virtualization is a flexible architecture that can help hospitals deal with the data explosion in a cost-effective manner.”
  – Tony Cotterill, CEO BridgeHead Software

• What do you store and how do you store it?

“The CIO & IT as an Active, Equal Partner”
Solution Set #4: Effective Governance and Process to Balance Organizational Demand

• Why establish effective governance?
  – Support strategy
  – Manage demand
  – Improve performance

• Effective governance key
  – Executive sponsorship based on the organization’s mission, vision, and values
Typical Governance Model

This Structure manages IT expenditures in an efficient, effective and responsive way.
Strategic Decisioning Process

Affiliate Request → IS Leader Affiliate / Region → Affiliate/Region Steering Committee → ESC

Denied / Refined

Guiding Principles

Affiliate specific investment consistent with guiding principles

Approval $$$$

Single Solution?
Supports Architectural Vision?
Support Strategies?
Collective Priority?
Operational Standard?
Operational/ Clinical Budget Owner?
Roles and Responsibilities

- Information Technology
  - Education
  - Project Management
  - Support
  - Maintenance
  - Portfolio Management

- Functional Area
  - Sponsorship
  - Ownership
  - Budgeting
  - Secure Funding
  - ROI
  - Reporting

Partnering for Success:
“Champion of Functional Ownership”
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Case Studies:

Meaningful Use Compliance Tracking at CHRISTUS Health

and

Community Health Data Sharing – UC Davis Health System and Sutter Health
CHRISTUS Health
Meaningful Use Compliance
The Policy and Plan

• Meet regulatory requirements
• Leverage Information Technology
  – As part of the CHRISTUS Advocacy Framework
  – As an enabler of program compliance
• Utilize agreed upon measurement plan
  – Indicators support measures
  – Measures support requirements
  – Requirements support regulations
### MU Objective Gap Analysis

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<th>D</th>
<th>E</th>
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<td>Health Outcomes Policy Priority</td>
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### MU Attestation Status

- List of PMs for each project
- Summary list of MU projects tracked on a weekly basis and reported to leadership
- Leadership can be "compliance incented"
The Outcome

• Projected $20 million in FY-12 incentives
  – $11.7 documented as of Dec 2011
• Roadmap for enhanced technology supporting quality and future compliance
• Husbanding financial resources supports the organizational priorities of:
  – Clinical Integration
  – Asset Growth
  – Cultural Alignment
UC Davis and Sutter Health Community Data Sharing
Vendor Enabled Community Health Data Sharing

• Co-operative Agreement
  – Both organizations agreed to data sharing through Epic’s “Care Everywhere” product

• Shared Success
  – The Steven Hendrick story

• Outcome
  – Improved care, faster service, decreased costs
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Summary

• Defining the Challenges
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• Identify Solutions
  – Tools & Templates, Methodology & Models

• Share Success
  – “Deep Dive” Case Studies

• Next Steps
  – Take the tools
  – Go home
  – Make fire
Questions?
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