Information Technology Board Workshop

Thursday, April 16, 2009
1:00 p.m.

FineMark National Bank and Trust
12681 Creekside Lane, Ft. Myers, FL 33919

AGENDA

1. **CALL TO ORDER** by Richard Akin, Board Chairman

2. Background of Clinical Information Technology (IT) at LMHS

3. LMHS Clinical IT Strategy

4. Economic Stimulus Package (ARRA, HITECH Act)

5. What are the real possibilities?
   - Northshore University Health System - Chicago

6. Stakeholder Perspectives

7. Considerations and Implications

8. Open Discussion / Next Steps

9. **ADJOURNMENT**
Lee Memorial, others switch to electronic records
By JENNIFER BOOTH REED
jreed@news-press.com
Originally posted on January 14, 2008

When Amy Harrington leaves her primary-care doctor’s office, she takes a printed summary of the day’s visit, complete with vital sign readings, prescription lists and a recap of the conversation.

When Harrington’s rheumatoid arthritis flares up, she can call the doctor, Leah Lynch, and Lynch can pull up her records instantly, from office or home.

The advent of electronic medical records helps the 32-year-old North Fort Myers woman cope with the arthritis she has had since she was 19.

“If I am sick, she can access my records and see exactly what I’m taking,” Harrington said. “It just keeps everything organized.”

Neither perk would have been available before August, when Lynch became one of the Lee Physician Group’s first doctors to go electronic. The 70-doctor network is owned by Lee Memorial Health System, which is in the early stages of a major push to go digital.

While most other industries have long since plunged into the paperless era, health care remains routed in paper, pen and dictation devices. With good reason. The digitizing of patient records is fraught with privacy concerns, potential abuses and tremendous start-up costs for doctors and hospitals.

But the potential benefits — fewer prescription errors, less duplication of tests, instant access to emergency room records, primary care charts and hospital notes — has the nation’s doctors, lawmakers and health-care experts rushing to explore computerized records.

President Bush has said he wants most Americans to have electronic medical records by 2014. A national coordinator for health information technology has been hired and an American Health Information Community advisory group established.

Going digital

Lee Memorial, the region’s biggest provider, began putting its doctors online in August at the group’s request and introduced Cape Coral Hospital’s emergency room to the technology then.

Since then, Lee Memorial Hospital and HealthPark Medical Center emergency rooms also have begun tracking patients electronically. Gulf Coast Hospital will, too, once the expansion project is complete.

Going online next will be the three Lee Convenient Care walk-in clinics. The hospitals now have an electronic system, but it will be upgraded to the more advanced EPIC system that Lee Physicians Group and ERs have adopted.

The system so far has spent $6 million on hardware, software and implementation.
Lee Memorial isn’t alone. Family Health Centers, the federally designated health organization for the poor and uninsured; big practices such as Internal Medicine Associates, and smaller providers such as Fort Myers Family Medicine and Advanced Radiology Imaging have gone electronic.

“There are a lot of advantages, I think, for patients,” said Lynch, who has been involved in Lee Physician Group’s electronic push since 2002.

Among the advantages: She doesn’t have to wait for hospital medical record department staffers to dig up her patients’ records when they show up at her office for follow-up care — often before she even knew they were hospitalized.

More than charts

The term “electronic medical records” doesn’t do the technology justice.

These systems are not simply paper charts put on computers. They are medical management systems.

When Lynch goes to prescribe a medication, a warning pops up if the drug might interact with another or if the patient has an allergy or if the dosage appears unusual.

If one of Lynch’s patients lands in the ER, she’ll get an e-mail message telling her so.

And if patients are due for annual cholesterol checks, mammograms and other screenings, the technology will remind her to schedule them.

In the emergency room at Cape Coral Hospital, medical director Dr. Timothy Dougherty inputs a patient’s symptoms and diagnosis rather than dictating them and waiting for transcription services. He can access records in the middle of the night rather than waiting for the medical records department to open.

Dougherty said the technology also helps him manage ER flow because the records are started as soon as a patient comes in. ER staff can monitor how many patients are in the waiting room, who has been seen, who’s waiting for lab results, doctors’ exams and discharge. Lee County Emergency Medical Services will be able to view that same information, he said.

“This sounds like basic stuff, but it’s really profound,” said Mike Smith, Lee Memorial’s chief information officer. “Health care is enormously information driven. Gaps in any of it can really affect what (doctors) do.”

Consider, 44,000 to 98,000 Americans die each year from medical errors, according to the Institute of Medicine. Paper records alone aren’t to blame, but experts say they are one factor in triggering mistakes.

The RAND corporation in 2005 estimated that electronic records and other health information technology could prevent 2.2 million adverse drug events such as interactions and incorrect dosages.

That same study predicted technology could save $162 billion a year in reducing preventable medical errors, lowering death rates from chronic diseases, reducing employee sick days and limiting the number of diagnostic tests duplicated because providers don’t have the records they need.

“You wind up with all this paper, and paper can be easily misplaced,” Smith said.

Glitches

Lynch imagines a day when her patients’ electronic records can follow them anywhere — to doctors’ offices, labs, outpatient centers, hospitals.

It isn’t happening yet.
Electronic systems used by various providers here and across the country don’t “talk” to each other.

Within the Lee Memorial system, only employed physicians such as Lynch get the full benefit of the technology upgrade and integration between office and hospitals. That leaves some independent physicians clamoring to be let in.

“They refused to integrate with my system,” said Dr. Lee Adkins, a primary-care doctor with Fort Myers Family Medicine, which has its own electronic medical records software.

He doesn’t understand why Lee Memorial hasn’t found a way to interface with other doctors’ technologies or why it hasn’t made licensed copies of the EPIC program available to private doctors, provided the doctors pay for it and for any necessary technical support and hardware.

Smith said Lee Memorial hopes to work with independent doctors, but doing so is more complicated than it sounds.

Smith said the federal government has to certify that different softwares are compatible. Policy makers are still sorting out whether hospitals violate federal laws that govern physician referrals, Smith said. And so far, it has been impossible to get different systems to align fully with each other, Smith said.

Smith said the system will look for opportunities to spread the technology.

“My hope is we will over time be able to make it available,” Smith said.

**Tough transition**

Trading paper for keyboards isn’t easy on the doctors.

“This is not all a bed of roses,” said Lynch.

The electronic migration requires significant retraining and marks a huge departure from the way doctors have practiced for decades. Computers are now in exam rooms, and doctors have to reteach themselves how to interact with patients when they’re trying to navigate computer systems, Lynch said.

The system can wreak havoc on productivity — another economic barrier for doctors trying to stay one step ahead of declining or flatlining reimbursements.

Privacy concerns can’t be overlooked. A February 2007 report from the U.S. Government Accountability Office acknowledged the Health and Human Services department’s efforts to ensure confidentiality, but said a better defined approach was needed.

Lynch thinks they’re secure. If she needs to view the record of a patient who is not hers, the computer makes note of her presence in the file.

“If anything, these records are safer than paper charts because there’s a record,” she said.
Coordinated care should be a top priority in health care reform plans

By
Special to the Times-Union

Note to readers: Over the past two years, Mayo Clinic Health Policy Center has convened more than 1,500 patients and national thought leaders for a series of events that led to the development of four consensus cornerstones for health care reform: create value, reform the payment system, coordinate care and insure everyone. This is the third in a series about these principles.

Many sick patients "ping-pong" between multiple providers and care settings seeking a definitive diagnosis and an understandable treatment plan.

Too often, patients and their families have to manage records, compile notes, and attempt to translate their health care odyssey to the next provider they see, who frequently has to start from square one.

Coordinated care must be a top priority when the new president and the next Congress address health care reform. Here's why:

Coordination is necessary to provide the value that we all desire from health care: high quality at an affordable cost.

But coordinated care is not easy. According to a consumer survey conducted by the Mayo Clinic Health Policy Center, the majority of Americans - 53 percent - have a chronic condition requiring long-term care, which often requires care from more than one doctor.

Preferably, such care should be coordinated by a primary care physician who is geographically near to the patient but who can work efficiently with specialists when the need for such services arises.
Coordination can be challenging even when an episode of care is provided under one roof. Consider that a recent liver transplant patient at Mayo Clinic was cared for by 75 different people over five days and 11 work shifts.

That's not an unusual scenario for a patient with a complex health condition, the types of patients whom Mayo Clinic is best equipped to serve because of our integrated electronic medical record and unified medical staff.

The Mayo Clinic Health Policy Center has been working for more than two years to craft a plan for health care reform.

One point of consensus is the critical role of coordinated care. Patient services need to be integrated across providers, functions, location and time. But what does that mean, really?

- It means that a care provider can immediately access past mammograms when there's a suspicious finding in a woman's breast.

- It means that an oncologist and a cardiologist can quickly confer when their mutual patient develops new complications that could compromise both the cancer and heart disease treatment plans.

- It means that a diabetes nurse can remind patients when they are overdue for an eye exam or a blood sugar test.

- It means that any doctor on a patient's care team can get the information needed to prevent dangerous drug interactions.

To make such coordination commonplace, change is needed in four areas:

Information systems: Health care providers from different organizations and patients must be able to access their individual health records - anytime, anywhere. All groups must use compatible information systems and consistent medical terminology to exchange data and information, while maintaining patient privacy and confidentiality. The technology to do this is already available, but there are many financial, political and regulatory hurdles.

Payment reform: Today, care providers are paid the most to perform procedures - procedures mostly done once the patient is sick. Compensating providers for a more holistic approach to care, focusing on wellness, prevention and chronic care management will help promote prevention.

The problem is acute among patients on Medicare, who increasingly are finding it difficult to identify a primary care physician because reimbursement for such care is often less than the cost of providing it.
Care coordination: This role is like an interpreter or a coordinator. Patients with complex, chronic conditions need a point person to orchestrate their care - to bring together all relevant information into an effective treatment plan.

Medical education: Caregiver training needs a "coordination" track, where doctors, nurses and other providers learn to work effectively and efficiently in teams.

Each of us has a role to play. Respondents in the Mayo Clinic Health Policy Center consumer survey ranked patients as one of the most influential groups to help advance health care reform. Yes, even ahead of the president.

As health care reform proceeds, make your views known to your elected officials. Ask them to support changes that will encourage coordinated care rather than erode it.

George Bartley is a surgeon and CEO of Mayo Clinic in Jacksonville.

This story can be found on Jacksonville.com at http://www.jacksonville.com/tu-online/stories/092608/opl_336853541.shtml.
healthcare reform
a near-term reality?

The new administration has kicked off the year with an array of healthcare reform initiatives that will affect the industry over the next few years. President Obama has signed into law the American Recovery and Reinvestment Act (ARRA), a $787 billion economic stimulus bill with the following earmarked for investment in healthcare reform:

- $24.7 billion to provide a 65 percent subsidy of healthcare insurance premiums for the unemployed under the COBRA program
- $86.6 billion to help states with Medicaid
- $19 billion to modernize health IT (HIT) systems
- $10 billion for health research and construction of National Institutes of Health facilities

Against the backdrop of a national financial crisis and fierce competition for shrinking federal funds, healthcare industry leaders are closely examining how the stimulus package will affect them, and if the new administration will be able to have an impact on improving both the cost and quality of health care.

A survey of 4,000 U.S. adults about their opinions of key healthcare reform efforts found that Americans across the demographic spectrum acknowledge the gravity of the situation. Most respondents report they are ill-equipped to handle the financial burdens of a serious medical emergency. Only 6 percent describe themselves as fully ready for such a contingency, and less than 25 percent overall believe that their financial preparation is adequate. Families increasingly are beset by medical costs that they have less to spend on other essentials. Many are falling behind in their medical payments; 84 percent of respondents believe that the economic challenges will now make it even harder for people to pay their medical bills.

Despite these challenges, a significant impact on investment and potential savings might be realized by key reforms based on four interdependent areas of focus: HIT, comparative effectiveness, coordination of care, and consumerism. 

together, these four areas provide the opportunity to
achieve a savings of $530 billion based on a $220
billion up-front investment over three years, with net
savings realized beginning in year six. Thereafter,
compound annual growth rate health costs may
decline to 4 percent if implementation of the plan
proceeds without delay and with adequate invest-
ment and proper oversight.

However, a host of obstacles will continue to chal-
lenge reform before it can become a reality.

**Rising Healthcare Costs Complicate Reform**

For the past 30 years, U.S. healthcare costs have
grown by at least 2 percent more than the nation’s
overall gross domestic product. In 2008, healthcare
cost increases will near 8 percent, with dispropor-
tionately adverse impacts on states as they grapple
with explosive Medicaid costs, large employers that
bear the burden for other employers that do not pro-
vide health benefits, and individuals who can no
longer afford needed care. Further, the U.S. health
system’s quality of care seems unrelated to its costs,
as evidenced by estimates of 100,000 deaths annu-
ally due to errors and adults receiving recommended
care only 55 percent of the time.

The United States is the world leader in healthcare
spending but trails most westernized systems in patient
satisfaction, preventive health care, and population-
based mortality and morbidity results. And, as is widely
known, more than 46 million Americans lack basic
health insurance; 25 million more are underinsured.

Costs, access, and quality are the three primary
issues facing the $2.2 trillion U.S. healthcare system.
It is widely understood that costs must be addressed if
quality and access issues are to be solved. Reforming
the system to address costs without compromising
quality is possible, but not without major changes to a
system that is fragmented and complex.

**The Healthcare Reform Pyramid**

In recent history, healthcare reform efforts have
fallen short as a result of two forces: The economics of
the status quo make change an uphill battle for
reformers, and end users—consumers—have not
demanded major changes.

The system’s economics fuel its growth and some-
times retard reform efforts that might otherwise slow
the cost spiral. Incentives encourage more physician
visits, diagnostic tests, and medical procedures.
Coordination of care across sites and organizations is
not promoted nor are incentives adequate in prevent-
ive and chronic care management. Intramural con-
flicts among stakeholders keep tensions and distrust
high—plans versus providers, specialists versus pri-
mary care physicians, for-profit versus not-for-profit
organizations, and so on. Often, the tensions are well-
intended protectionism of a view or role.

Whatever the reasons, inertia that maintains the sta-
tus quo is generally stronger than the will to change.
As a result, incremental changes are the norm.

Consumers bear some responsibility, as well.
Although satisfaction with the U.S. system is not high—
more than half of respondents say 50 percent or more
of the amount spent on health care in the United
States is wasted—consensus around needed change is
not apparent. Consumers like health care when they
can get it the way they want it—someone else pays, and
they bear no responsibility for unhealthy behaviors or
outcomes. “Quality of care” to most refers more to
waiting times and convenience than to error-avoid-
ance, accuracy of diagnosis, and appropriateness of
interventions. And consumers spend more time
selecting cars than choosing physicians and hospitals,
where outcomes and safety vary widely.

Healthcare reform is about systemic change. It is not
about a single program that benefits one stakeholder
at the expense of others. It cuts across every sector,
every role, and indeed, every household.

The four interdependent areas of focus shown in the
healthcare reform pyramid on page 54 can provide a
solid foundation for systemic reform. The pyramid
reflects the essential relationships among these
areas. Each area includes several programmatic
efforts that are consistent with the direction of cur-
cent federal policy initiatives, so transcendence to the
new administration is a possibility. The domains
should be viewed as a whole. Excluding any of their
component programs will limit potential savings and
systemic impact.
**HIT.** The foundational focus, HIT is composed of e-prescribing, technology-enabled care coordination, and administrative cost efficiencies. E-prescribing saves money and improves safety by addressing adverse drug events. It facilitates sharing of patient information across sites of care and reducing redundant paperwork and unnecessary tests. The application of HIT, to which the Obama administration has pledged $50 billion over five years, has the potential to achieve net present value (NPV) savings as high as $90 billion over 10 years.

**Comparative effectiveness.** Building on the HIT foundation, the comparative effectiveness focus may be implemented as a means to shift incentives from doing more things to doing right things that are evidence-based and cost-effective. An important feature of this domain is continued investment in funding three to seven new personalized therapeutics/companion diagnostics annually. The advantages of personalized medicine in tandem with comparative effectiveness and HIT could achieve NPV savings as high as $140 billion over 10 years.

**Coordination of care.** Building on the HIT and comparative effectiveness areas of focus, the coordination of care focus is a new approach to delivering and paying for primary care health services to reduce demand for more expensive acute services and to improve population-based health outcomes. The net costs of this approach are significant and front-end loaded. They are necessary, nonetheless. This approach requires an NPV investment of up to $140 billion over 10 years, but it is crucial to support the pyramid’s dual goal of reduced cost and improved care.

**Consumerism.** This fourth focus is enabled through the use of personal health records, heightened transparency, and linkages to the third focus’s incentives and results. Nine of the 15 reasons for hospital admission involve the progression of chronic conditions that are not treated. The combination of the coordination of care approach plus incentives and technologies supportive of consumer engagement has the potential to dramatically reduce costs while improving health outcomes. Consumerism implemented in the context of the pyramid can achieve NPV savings as high as $440 billion over 10 years.

**Hope for Healthcare Reform**

The pyramid is a framework for considering healthcare reforms that are timely and necessary. Given the uncertainty of the economy and ever-increasing demands for healthcare services, stakeholders might consider this a model for creating a truly reformed system. In addition, by reducing costs, policymakers are availed the opportunity to deploy precious resources to increase healthcare access for the uninsured and other worthwhile programs. The new administration will continue to tackle challenges to the system. However, the stimulus package provides a glimmer of hope for healthcare reform, which could benefit from this investment.

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**Source:** Deloitte Center for Health Solutions.
Lee Memorial Health System Board Workshop
LMHS and Community EMR Strategy, and Implications of Economic Stimulus Plan

April 16, 2009
Agenda

- Background - Clinical Information Technology (IT) at LMHS
- LMHS Clinical IT Strategy
- Economic Stimulus package (ARRA, HITECH Act)
- What are the real possibilities?
  - NorthShore University Health System - Chicago
- Stakeholder Perspectives
- Considerations and Implications
- Open Discussion/Next Steps
This is **NOT** about the technology.

This **IS** about enabling the highest quality and highest value care.
“Information systems are critical. Medicine is inherently an information science. In general, the better information I have, the better diagnosis I can make, the better treatments I can offer, the better treatments I can deliver and the better outcomes I can achieve.”

Brent James, MD
Vice President of Research and Medical Affairs at Intermountain Healthcare,
Executive Director for Healthcare Delivery Research
LMHS IT History – 1997 to Present

1997

w LMHS IT Needs Assessment
   – Desire for integration
   – Greater functionality

w Established system-wide plan for:
   – Common systems at all acute locations
   – Single patient identifier (Master Patient Identifier – MPI)
   – Full patient clinical history on-line – Electronic Medical Record (EMR)

w IT Vision developed
LMHS IT History – 1997 to 2006

1997 - 1999
w SMS (Siemens) selected as vendor of choice for all three hospitals
w SMS (Siemens) Implementation went live all hospitals September 1999

2002 – 2006 – (LMH/HP/CCH)
w Siemens NetAccess web portal – live for physicians, office staff
w Siemens NetAccess web portal - live for acute care/nursing
w Clinicomp clinical documentation system expanded to Cape Coral Hospital
w LMHS Internet, Intranet, medical library live
w Continued enhancements/upgrades to NetAccess - (diagnostic images, fetal strips)
w Enterprise telemetry (Heart Central), other diagnostic/IT implementations
w Heartlab, Teleradiology implemented
w Impressive accomplishments
**Results viewable across locations, back to 1999**

### CBC (Up to 8 latest results)

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An example of the value of technology (e-mail from a specialist)

“I’m on call tonight and just received a call from Dr. Greene in the Cape ER about a “frequent flyer” with a new HA (headache). Radiology (tele-rad) has read the CT brain and feels there is an acute CVA (aneurism). The neuro exam is normal but the patient c/o (complains of) severe HA.

At home, I’ve reviewed the ER records, past exams and reports in netaccess and viewed the images from 2 hrs ago and 10 minutes later I called back Dr Greene.

The lesion is chronic for at least 6 mos! The pt does not need to be admitted and can be symptomatically treated for HA.

The hospital saves money/resources on this probably uninsured pt. and I can go back to sleep!

Currently at SWR (Southwest Regional), I would not be able to access the ER records because their handwritten, past reports would require the electronic passcode device which is at the office so I can access records while at work when necessary and CT images can not be reviewed!!

I know you know this information, and I don’t mean to be repetitive, but I thought a “real” example might be helpful to illustrate a common occurrence in our world.”
Issues with existing LMHS Hospital Systems

**LMH/HP/CCH** – (Siemens/Clinicomp)
- Numerous IT systems lashed together – not integrated
- Not built for advanced functionalities
  - closed loop med management, perioperative system, etc.
- Not built for contemporary needs – now and future
  - nursing workflow automation, clinical alerts, outcomes, med reconciliation, etc.
- Systems are aging, vendor support is increasingly an issue

**GULF COAST** – (HCA Meditech)
- Sub-optimal physician usability (not intuitive to use)
- Historical clinical data not sufficiently maintained on-line
- Not built for contemporary needs
  - nursing workflow automation, clinical alerts, outcomes, med reconciliation, etc.
- Revenue Cycle/Billing systems a concern
- Ongoing operating expense - $7+ million/year to HCA (incl. billing services)
Issues with LMHS Hospital Systems (cont.)

LMH, HP, and CCH, and O/P Diagnostic Patient Data is together, but..

Gulf Coast Medical Center is an information island.
LMHS IT History – 2005 to Present (cont.)

2005 -2008
- Epic purchased for Lee Physician Group office EMR
- Epic purchased for LMH/HP/CCH Emergency Departments
- Epic selected for Next Generation EMR System for LMHS Hospitals
- Epic selected for Next Generation Revenue Cycle system for LMHS Hospitals

2009 - Updated Implementation Strategies
- Epic proposed for all hospitals (EMR, revenue cycle)
  - Same database/configuration for all LMHS hospitals
  - Implement at Gulf Coast first
- Developed Strategy for Community Physicians
  - Backdrop – Healthcare reform, Medicare payment reform, our community
How and Why was Epic Chosen?

**Lee Physician Group** EMR Decision Process -
- Epic has superior physician usability - based on assessment by physicians
- Epic has superior EMR and billing functionality
- Epic has superior reputation for delivering high quality product and service

**Emergency Department** Decision Process -
- Epic has equal-to-or-better functionality as compared to ED niche vendors
- Epic patient integration with physicians offices/ED viewed as very valuable
- Possibility of Epic as a candidate for next generation hospital system

**Acute Care/Hospital** next generation EMR decision process -
- Epic rated as superior clinical functionality by caregivers
- Integration among various Epic clinical modules key differentiator
- Epic Revenue Cycle functionality viewed as excellent –
  - Seamless integration with other Epic clinical and non-clinical modules deemed a significant advantage
How and Why was Epic Chosen (cont.)?

- "One Patient, One Record" (not multiple interfaced records)
  - The only vendor with this capability
  - Relatively new products, all modules on recently available
  - LMHS uniquely positioned to capitalize on this capability

- Epic is focused exclusively ...
  - on large physician groups, large health systems
  - on developing the best software and supporting it well

- Highest customer product/service rankings in the healthcare IT industry (KLAS Research rankings)

- Proven track record in large health systems

- Large, growing, very stable company
LMHS’ Clinical IT/EMR Strategy - Drivers

- Limitations of existing LMHS EMRs - need replacement
- Fix the Gulf Coast data island, physician usability
- The opportunity to have all LMHS hospital and employed physicians on a common patient EMR
  - Capitalizing on the Epic EMR implementation underway at LPG
- The Vision 2017 Opportunity – a true Community EMR
  - The opportunity to use a single EMR throughout the Community... by LMHS employed AND community physicians
  - Secondarily, the possibility of establishing linkages between an LMHS Community EMR and other EMRs, in order to exchange patient data for clinical reasons
- Position us for the future – Medicare/Payor Reform
LMHS IT Strategic Drivers

Provide IT capabilities in support of and in alignment with LMHS’ System Goals and Strategies... to enable:

1. Efficient, cost effective, regulatory compliant delivery of IT Services
2. Robust, secure, highly reliable IT computing and data network infrastructure
3. Effective/safe clinical care delivery
4. Physician/clinical integration
5. Effective revenue cycle operation
6. Customer facing initiatives
7. Operational improvement/productive environment
8. Enable effective support for financials, procurement and HR
9. Enable decision support, data mining and business intelligence/analytics
Strategic EMR Plan – Multiple Tracks

w Implement Epic in Acute Care Settings
  – PHASE I
    a) Standardize Clinical Documentation, Scheduling/Registration, Revenue Cycle, Pharmacy, EMAR, OR, etc. for all hospitals
    b) Gulf Coast Medical Center first
    c) Cape Coral
    d) LMH/HP
  – PHASE II - Implement advanced functionality – sequencing TBD
    • Computer order entry (CPOE), physician documentation, clinical alerts, etc.

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  – LPG - Complete employed primary care LPG rollout (approved/underway)
  – LMHS Employed Specialists - Implement Epic in the LMHS employed specialists’ practices
  – Community/Affiliated physicians Strategy
    • Provide Epic ambulatory EMR to non-employed community physicians - separate business structure
    • Interconnectivity with physicians offices who have a non-Epic Electronic Medical Record
      – Data Sharing (rudimentary interface) from LMHS acute EMR to physician offices now – custom on their end (faxnet data stream)
      – Use of newly formed Continuum of Care Record (CCR) for information interchange in the future
    – Make available to schools, county health department, EMS

w Implement Epic for Direct to Consumer
  – Deployment of Personal Health Record integrated with LMHS EMR (MyChart) – scheduling, access to clinical information
  – e-Visits, automated in-home clinical monitoring/alerting

w Implement Epic in Home Health, Long Term Care

w Other non-clinical system replacements (HR, General Financials)
Economic Stimulus Summary

• $19 Billion appropriated for Health IT -
  - $2 Billion for Grants, Loans, Infrastructure (through Office of National Coordinator of Health IT)
  - $17 Billion paid through CMS for EMR usage Incentives for “meaningful” use of “qualified” EMR

✓ Incentive payments start in 2011-2016, phased down end of 2013

✓ Must demonstrate use of certified EHR in a meaningful manner, including use of electronic prescribing.

✓ Must demonstrate that the certified EHR is connected in a manner that allows for the electronic exchange of health information.

✓ Must use the certified EHR to report quality measures selected by HHS.

✓ Goals –
  – substantially increase adoption of EHRs
  – enable significant costs savings and quality improvement
  – stimulate the economy
The Healthcare Reform Pyramid

**Consumerism**
Focus: CDHPs, transparency, PHRs, incentives, value

**Coordination of Care**
Focus: Primary Care 2.0 Model (the new "Medical Home")

**Comparative Effectiveness/Evidence-Based Medicine**
Focus: personalized medicine, comparative effectiveness, episode-based payments to acute organizations

**Healthcare IT**
Focus: e-prescribing, care coordination, administrative cost reduction

Source: Deloitte Center for Health Solutions
Economic Stimulus Summary LMHS $$ Impact

w **Hospitals** (LMHS’ internal calculations):
- Medicaid and Medicare Incentives are not additive
  - Base $28,667,510 (all hospitals)
  - Add for 10% Medicaid at CCH 1,056,881
  - Add for Rehab (subchapter D qualification) 0 $3,581,694
  - Add for LMH/HP – if calculated separately 9,538,216
  **Total Possible** $39,262,607

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w **Physicians**
- Up to $44,000 per non-hospital-based physician
  - LPG 70 physicians X $40k = $2,800,000
  - Employed Specialists 36 physicians X $40k = $1,440,000

Starting in 2016, **reduced fee schedule** for non-qualified providers

**Medicare reform changes will increase value of EMR** (medical home, bundling)
NorthShore University Health System
(formerly Evanston Northwestern Health System)

Thomas Smith – Chief Information Officer
Ned Wagner, M.D. - Medical Director Informatics
NorthShore University HealthSystem

- NorthShore Hospitals and Clinics
  - Evanston Hospital
  - Glenbrook Hospital
  - Highland Park Hospital
  - Skokie Hospital
- NorthShore Medical Group
- NorthShore Home Services
- NorthShore Research Institute
NorthShore University HealthSystem

• Characteristics
  – Teaching hospitals
  – Organized research function
  – Integrated delivery network
    » physician offices
    » hospital inpatient care
    » hospital outpatient care
    » home care
  – More than 50 sites of care
NorthShore’s Portfolio of Epic Products

- Stork
- Beacon
- ICU Synopsis
- HOV
- Patient Data
- EpicCare Link
- Epic Everywhere
- NSConnect
- Resolute Billing
- Resolute Billing
- Cadence Scheduling
- Prelude Registration
- EpicCare Ambulatory Medical Record
- EpicCare Inpatient Medical Record
- EpicCare Inpatient Emergency
- EpicCare Orders
- NorthShore University Health System
NorthShore project summary

We have no paper charts in 3 hospitals nor in our 68 employed physician office locations nor in 14 independent office locations.

It was the #1 IS project—it was the #1 corporate project—no conflicts with other priorities.
VISION

- Patient Safety
- Enhance quality and access
- Patient-focused, community based Longitudinal healthcare record
- Inclusive initiative, inpatient, outpatient Medical Group, affiliates
- Increase efficiency of personnel
VISION

- Shared by all key leaders
  - Board of Directors
  - Administration
  - Professional Staff Leaders
  - Nursing
Key Professional Staff actions

- Adoption of rule requiring use of Epic
- Support of Department Chairmen to mandate training
- Involvement of Medical Executive committee to support use in key areas
  - Use of problem list
  - Radiology “wet reads”
Executive Leadership

• Physician Advisory Committee Formed

- Ned Wagner, MD, Chair
- Jorge DelCastillo, MD
- Michael Gillam, MD
- Thomas Keeler, MD
- David Lerner, MD
- Lynn Barnett, MD

- Steve Lipschultz, MD
- William MacKendrick, MD
- Ronald Semerdjian, MD
- Joseph Szokol, MD
- David J. Winchester, MD
- Michael Verta, MD
Big 10 Rules of Engagement

- One time, error free, data entry; Get it right the first time
- Streamline workflows
- Always maintain patient safety and confidentiality
- Do not vary from the Epic standardized approach
- Do what is best for the organization, not what is best for the individual or area
- 100% commitment from everyone to successful implementation
- Maintain common look and feel
- Share information across the enterprise
- Provide users the appropriate tools, training and ongoing support, to maintain maximum productivity, value, and satisfaction
- Do not customize source code
- Comply with all regulatory and legal requirements, including confidentiality
Project Goals

- Comprehensive Electronic Medical Record
- Streamlined and Standardized Work Flows and Cost Improvement
- Patient-focused Record
- Single, Enterprise-wide Registration
- Error Reduction
- Physician Order Entry
- Increased Patient Satisfaction/Convenience/Safety
- Improved Physician Satisfaction
- Access to Enterprise-wide Data
- Facilitate Teaching and Research
- Self Service
Success...

- Clear Corporate Goal
- Only Corporate Goal
  - 2002
  - 2003
  - 2004
Success due to:

- Leadership-executives and Professional Staff
- Physician Champion
- Opinion Leaders-physicians and staff
- Clear Expectations of Behavior
- Commitment of users
- Training
- Communications
- Recognition/Rewards
- Technology and IS staff
- Ownership by all
Existing Model of Information Management
Implementation of Epic
System Selected to:

- Allow one patient centric database across hospitals and physician offices

- Improve patient safety through functions such as Computerized Physician Order Entry
Epic Systems Modules

- Registration
- Patient Scheduling
- Office documentation
- Inpatient documentation
- Outpatient documentation
- Physician Order entry
- Emergency Department
- Pharmacy
- Physician billing
- Web outreach programs

All data in one database
Project Teams

- 6 Teams – one for each application
- 150 people – diverse membership – many clinical staff
- Follow rules of engagement
- Report back to Steering Committee
- User driven; huge change in clinician’s day to day activities
Keys to success

• Training for project team
• Process redesign
• Physician adoption and behavior change
• Software build/testing process
• User training
• Server hardware reliability
• Network reliability
• Maintain current level of infectious enthusiasm
<table>
<thead>
<tr>
<th>Event Description</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Decision to proceed on project</td>
<td>3/2001</td>
</tr>
<tr>
<td>2. Contract signing</td>
<td>8/2001</td>
</tr>
<tr>
<td>4. Training begins</td>
<td>6/2002</td>
</tr>
<tr>
<td>5. Interfaces complete</td>
<td>10/2002</td>
</tr>
<tr>
<td>6. First use of Scheduling</td>
<td>12/2002</td>
</tr>
<tr>
<td>7. First Physician Office—Go Live</td>
<td>1/2003</td>
</tr>
<tr>
<td>10. Second hospital Inpatient—Go Live</td>
<td>7/2003</td>
</tr>
<tr>
<td>11. Third Hospital Inpatient—Go Live</td>
<td>12/2003</td>
</tr>
</tbody>
</table>
Process Redesign

• Redesigned over 500 work flows
  – Inpatient - 150
  – Ambulatory – 70
  – HOV – hospital outpatient visit - 150
  – Registration and scheduling - 80
  – Physician billing – 70

• Grew to over 1500 workflows

• Workflows are required for any changes
Hardware Issues
Training
Training Statistics

- 8 general subjects
- 55 different courses
- 17,734 learners to date (i.e., training encounters)
- 10,605 people trained, including over 1,300 physicians
- More than 150,000 hours of training
- 225+ Epic Training Coordinators across organization
- Recently added inpatient trainers—1500 individual coaching sessions per month
Project Plan

Workflow
Network
Interfaces
Conversions
Computer room hardware

Desktops
Mobile devices
System Build
Testing
Training
Disaster Recovery site
Project Outcomes-following go live
System Selected to:

- Allow one patient centric database across hospitals and physician offices
- Improve patient safety through functions such as Computerized Physician Order Entry
Clinical Outcomes

• Turn around time on test results
  – Lab: 1 day to same day
  – X-ray: 2 days to one day
  – Cardio graphics: 5 days to one day
• Antibiotic first dose 160 → 80 minutes
Administrative Outcomes

- Overall billing denial rate 23% → 12% → 10%
- Denial rate due to registration errors 18% → 4.5% → 3%
- Return mail rate 5% → 0%
- Patients registered when scheduled 88% → 94%
- Copay collection rate 21% → 50% → 92%
- Time spent in one office looking for missing charts 2 hrs/day → 0.5 hrs/day → 0 hrs/day
- Dictation costs in one office: $4800/month → $400/month
Project Outcomes – five years later
Inpatients

- Patients are scored for their likelihood of acquiring a deep vein thrombosis
  - Depending on the score, a recommended order set is presented to the physician
- Facility acquired Pressure Ulcers stage 2 or more --4.3 to 1.5% (Benchmark 3.8%)
- Patient vaccination for pneumonia prior to EMR was 24%; now with the alerts to prompt our staff we are between 96 and 100%.
- Patients are scored for their likelihood to fall
  - Pink banner on their chart if score is high

Could not have moved so thoroughly or so quickly without the EMR
Inpatients

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Could not have moved so thoroughly or so quickly without the EMR
Bed side device integration

- We have interfaced the bed side monitors into Epic. Bedside devices record heart rate and blood pressures.
- Removed the time and the potential errors in the nurse re-keying this data into Epic
- Allows us to record this data more often
- Once entered, this data is available to all clinicians
Emergency Department patients

• In CY2007, NorthShore saw 100,000 ED patients
• Over 55,000 or 55% of those ED patients had a complete record in Epic prior to their arrival at the ED. Records included at least problem list, allergies and medications
• This percentage has grown steadily from 45% in 2004 to 55% in 2007
• This growth is due to over 600,000 office visits we record in Epic each year.
• Our physicians indicate that this information allows them to provide better and safer care to our ED patients.
• We have reached 58% of Emergency patients with full Epic charts as of last month.
<table>
<thead>
<tr>
<th>Date</th>
<th>Type</th>
<th>Department</th>
<th>Provider</th>
<th>Description</th>
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<tbody>
<tr>
<td>04/30/2008</td>
<td>ED</td>
<td>EER</td>
<td>Cooper, Scott A.</td>
<td>Shortness of Breath; Wheezing</td>
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<tr>
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<td>HOV, Comp</td>
<td>XRAYEV</td>
<td>Picketts, Kristina M.</td>
<td>Rib Pain</td>
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<tr>
<td>04/07/2008</td>
<td>Office Visit</td>
<td>IM NSPG ONE</td>
<td>Picketts, Kristina M.</td>
<td>Abrasion NEC (Primary Dx); Rib Pai...</td>
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<td>Other Malaise and Fatigue (Primary...</td>
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<tr>
<td>02/12/2008</td>
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<td>XRAYEV</td>
<td>Picketts, Kristina M.</td>
<td>Cough</td>
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<tr>
<td>02/12/2008</td>
<td>Office Visit</td>
<td>IM NSPG ONE</td>
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<td>Unspecified Asthma (Primary Dx); ...</td>
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<tr>
<td>02/07/2008</td>
<td>Telephone</td>
<td>IM NSPG ONE</td>
<td>Velasco, Nancy E.</td>
<td>URI</td>
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<td>02/06/2008</td>
<td>Telephone</td>
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<td>Fatigue</td>
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<td>Telephone</td>
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<td>Dizziness</td>
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<tr>
<td>01/07/2008</td>
<td>HOV, Comp</td>
<td>XRAYEV</td>
<td>Maks, Jonathan H.</td>
<td>Cough (Primary Dx)</td>
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<td>01/07/2008</td>
<td>Office Visit</td>
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<td>Picketts, Kristina M.</td>
<td>Encounter for Long-Term (Current) U...</td>
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<td>01/03/2008</td>
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<td>IM NSPG ONE</td>
<td>Picketts, Kristina M.</td>
<td>Cough (Primary Dx); Encounter for ...</td>
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<td>12/06/2007</td>
<td>Office Visit</td>
<td>IM NSPG ONE</td>
<td>Maks, Jonathan H.</td>
<td>Vascular Dementia (Primary Dx); U...</td>
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<td>10/29/2007</td>
<td>Telephone</td>
<td>IM NSPG ONE</td>
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<td>Results</td>
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<td>10/25/2007</td>
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<tr>
<td>09/20/2007</td>
<td>Office Visit</td>
<td>IM NSPG ONE</td>
<td>Maks, Jonathan H.</td>
<td>Cor Arterel-Urs Vessel; Congestive...</td>
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<td>06/23/2007</td>
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<td>IM NSPG ONE</td>
<td>Maks, Jonathan H.</td>
<td>Blood Pressure</td>
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<td>06/14/2007</td>
<td>Office Visit</td>
<td>IM NSPG ONE</td>
<td>Maks, Jonathan H.</td>
<td>Unspecified Anemia; Congestive Hea...</td>
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<tr>
<td>07/18/2007</td>
<td>Telephone</td>
<td>IM NSPG ONE</td>
<td>Maks, Jonathan H.</td>
<td>Medication Question/Concern</td>
</tr>
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</table>
Medication Orders

• We check each medication order for interactions with other medications, for allergies and for duplicate meds, while the physicians enter the order, giving them a chance to change the order if necessary.

• December 2005 audit at NorthShore—
  – 6565 allergy alerts fired
  – 33% of allergy alerts result in a removal of the medication being ordered

• Alerts changed the behavior of the physician to increase patient safety. Each of those med orders could have caused a patient reaction and extended the length of stay or worse.

• Translates into more than 25,000 medication orders changed each year by the physicians due to alerts on allergies.
Bar coding & Medications

- We are now bar coding medications and patients at the point of giving the med to the patient.

- This additional safety check allows us to remove one more potential source of error in giving care.

- During our pilot, we recorded 16 “near misses” on two 30 bed units over 2 months.

- This translates to almost 1000 such “near misses” over a full year at our three hospitals. Without the bar coding, these “near misses” would likely have been medication errors and possibly caused harm to a patient.

- A national study in 2003 put the average cost of a medication error at over $5,000 per error.
EMR—new modules

- When installed the system was “one size fits all” or “med surg”
- We have installed specialty modules
  - Oncology-Beacon
  - Obstetrics-Stork
  - ICU
- Same database but making the system more user friendly for the clinicians in these areas
- Developing more interfaces to imaging systems
Patient portal

- Patient has choice to take part
- Patients view their results over the internet
- Can send secure messages to their physician
- Can request renewal of prescriptions
- Can schedule an appointment
- Can pay their bills
  - Hospital
  - Medical group
You have a health reminder
You have 1 new message

WELCOME
To your secure personal health management website.

What's New

- We now offer the ability for our members to retrieve forgotten usernames in addition to passwords online, making it easier to gain access.
- ENMConnect members can view a list of their proxy accounts directly from the main navigation on the homepage.
- Members can view their children's growth charts from within their proxy accounts.

If you have questions about these enhancements or other functionality, please don't hesitate to contact us via the "Contact Us" feature or our support line at 847.425.3900.

☑ TAKE OUR SURVEY

YOUR HEALTH NEWS

Moderate Aerobic Exercise Lowers Diabetics' Liver Fat
THURSDAY, Sept. 25 -- In people with type 2 diabetes, regular aerobic exercise and weightlifting may reduce levels of ... Full Story

Drug Boosts Natural Growth Hormone in Seniors
THURSDAY, Nov. 6 -- An experimental drug can restore the amounts of muscle-linked growth hormone in seniors to youth... Full Story

Gains Against Heart Failure Reported
Health Tip: Living With an Insulin Pump

Read more Diabetes News
Read more Exercise News
Patient Portal--usage

- Over 60,000 patients are active users
- More than 30% of patients use their site in any one month
- December 2008
  - 8200 messages to physicians
  - 1300 prescription renewals
  - 3500 appointments booked or cancelled
  - 600 insurance updates

All of these eliminated multiple phone calls and were at a more convenient time for the patients

Have a goal to reach over 100,000 patients enrolled by 12/2009
EMR Community Benefits

- Access to broad range of informed providers
- Integration of care among multiple caregivers
- Information availability and security (Katrina)
- Ability to attract caregivers who expect this capability as a quality index
- Rationalization of resources based on contribution to common data repository
- Reduced need for acute care based on appropriate preventive care.
EMR Provider’s Benefits

- Access to complete, timely, legible data
- Record always and everywhere available
- Information sources at point of care
- Facilitated compliance with regulatory requirements
- Closed loop ordering / resulting / reporting
- A virtual medical group
Summary of changes 5 years out

- More focus on outcomes and less on transactions
- Data warehouse to assist in outcomes measurement
- More focus on Disaster Recovery/Business Continuity issues
- More patient portal available
- Move from “medsurg” application to more specialized modules
  - Oncology
  - OB
  - SureScripts/RXHUB
What did not change

- User (clinicians) driven for setting priorities with IT taking the responsibility to make it work
- Commitment to workflow improvements to drive IT changes
- Need for good IT staff
  - Have continued with certified training with Epic
- Partnership with vendor
- Continued focus on driving out costs and improving quality
- “How we do business”
Cost Impacts of Epic

- **Implementation**
  - Spent $35 million in capital
  - Spent $7.5 million in operational expenses for training

- Ongoing incremental savings over and above the incremental IT expenses. Finance scores savings.

- Recent incremental staffing additions
- Bond ratings
- Merger
Questions

- Tom Smith, CIO
  twsmith@northshore.org
- Arnold (Ned) Wagner, MD
LMHS Stakeholder Comments

- Nursing/Acute Care clinical perspective
- Hospital/Emergency Dept. physician perspective
- Community physician perspective
Direction for Consideration and Discussion

- Stimulus Package
- Hospital EMR Implementation
- MSO EMR Implementation
- Community Physician EMR
- Extending the Vision
Economic Stimulus Summary LMHS $$ Impact

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**Incentive phase-down for Hospitals adopting after 2013**

**Market basket reductions starting in 2015**

Medicare reform changes will increase value of EMR (medical home, bundling)
Economic Stimulus Summary LMHS $$ Impact

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- Up to **$44,000** per non-hospital-based physician
  - LPG - 70 physicians X $40k = **$2,800,000**
  - Employed Specialists - 36 physicians X $40k = **$1,440,000**

- Incentive phase-down for Physicians adopting after 2013
- Fee schedule reductions starting in 2016 – 1 to 3% per year

**Medicare reform changes will increase value of EMR** (medical home, bundling)
Strategic EMR Plan – Multiple Tracks

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**Implement Epic for Direct to Consumer**

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**Implement Epic in Home Health, Long Term Care**

**Other non-clinical system replacements (HR, General Financials)**
High Level Timeline
Rollout to LMH/HP/CCH/Outpatient Buildings

Legend
= Go-Live
Initial Implementation – Gulf Coast
Rollout beyond Gulfcoast (LMH/HP/CCH/Outpatient Bldgs)
Future apps – Timeline TBD
Cardiant
CPOE and Physician Documentation
Beacon Oncology
Anesthesia
MyChart
Radiant – Radiology
Laboratory

For discussion purposes
### One Time Cost Summary

<table>
<thead>
<tr>
<th>w GCMC</th>
<th>Incremental Capital</th>
<th>Approximately $27.7 million</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Incremental One-Time Operating</td>
<td>Approximately $10.3 million</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Approximately $38 million</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>w LMH/HP/CCH Outpatient Facilities</th>
<th>Incremental Capital</th>
<th>Approximately $23 million</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Incremental One-Time Operating</td>
<td>Approximately $7 million</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Approximately $30 million</td>
</tr>
</tbody>
</table>

| Grand Total | Approximately $68 million |
### Using Sentara’s Model - Hospital benefits of integrated eCare

#### Economic Benefits

<table>
<thead>
<tr>
<th>Hospitals Benefits</th>
<th>SHC 2005</th>
<th>SHC 2007</th>
<th>Lee Memorial</th>
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</thead>
<tbody>
<tr>
<td><strong>2007</strong></td>
<td></td>
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<tr>
<td>Medical records/ Transcript</td>
<td>$ 4.1 M</td>
<td>$3.0 M</td>
<td>$2.7 M</td>
</tr>
<tr>
<td>IT maintenance</td>
<td>4.2 M</td>
<td>3.1 M</td>
<td>2.8 M</td>
</tr>
<tr>
<td>Clinical Errors/ Risk Mgt claims</td>
<td>2.0 M</td>
<td>1.7 M</td>
<td>1.5 M</td>
</tr>
<tr>
<td>Length of stay</td>
<td>3.1 M</td>
<td>3.8 M</td>
<td>3.4 M</td>
</tr>
<tr>
<td>Paper/ storage</td>
<td>2.4 M</td>
<td>2.7 M</td>
<td>2.4 M</td>
</tr>
<tr>
<td>Nursing efficiency</td>
<td>5.2 M</td>
<td>4.9 M</td>
<td>4.4 M</td>
</tr>
<tr>
<td>Lost/ late charges</td>
<td>.7 M</td>
<td>1.0 M</td>
<td>.9 M</td>
</tr>
<tr>
<td>Denials</td>
<td>.6 M</td>
<td>.8 M</td>
<td>.7 M</td>
</tr>
<tr>
<td>Data capture/ analysis</td>
<td>1.4 M</td>
<td>1.0 M</td>
<td>.9 M</td>
</tr>
<tr>
<td>Increased admissions</td>
<td>.2 M</td>
<td>.2 M</td>
<td>.2 M</td>
</tr>
<tr>
<td>Increased outpatient services</td>
<td>3.2 M</td>
<td>2.8 M</td>
<td>1.6 M</td>
</tr>
<tr>
<td>Pharmacy process/ ADEs</td>
<td>2.9 M</td>
<td>2.9 M</td>
<td>2.6 M</td>
</tr>
<tr>
<td><strong>Hospitals Total</strong></td>
<td>30.0 M</td>
<td>$ 27.9 M</td>
<td>$ 24.1 M</td>
</tr>
</tbody>
</table>

- Lee Memorial Health System discharges in 2007 were 67,850 compared to Sentara’s 75,709 discharges in 2007 for our six hospitals (note: our 7th hospital was not in the initial eCare business case and is not included in the above estimates)
Strategic EMR Plan – Multiple Tracks

Implement Epic in Acute Care Settings

- **PHASE I**
  a) Standardize Clinical Documentation, Scheduling/Registration, Revenue Cycle, Pharmacy, EMAR, OR, etc. for all hospitals
  b) Gulf Coast Medical Center first
  c) Cape Coral
  d) LMH/HP

- **PHASE II** - Implement advanced functionality – sequencing TBD
  - Computer order entry (CPOE), physician documentation, clinical alerts, etc.

Extend Epic to additional Physician Office Settings

- LPG - Complete employed primary care LPG rollout (approved/underway)
- LMHS Employed Specialists - Implement Epic in the LMHS employed specialists’ practices
- Community/Affiliated physicians Strategy
  - Provide Epic ambulatory EMR to non-employed community physicians - separate business structure
  - Interconnectivity with physicians offices who have a non-Epic Electronic Medical Record
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  - Make available to schools, county health department, EMS

Implement Epic for Direct to Consumer

- Deployment of Personal Health Record integrated with LMHS EMR (MyChart) – scheduling, access to clinical information
- Automated in-home clinical alerting

Implement Epic in Home Health, Long Term Care

Other non-clinical system replacements (HR, General Financials)
### One Time Cost Summary

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Incremental Capital</th>
<th>Incremental Annual Operating Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed Specialists</td>
<td>$950,000</td>
<td>$480,000 (will reduce over time)</td>
</tr>
<tr>
<td>Community Physician Strategy (Epic)</td>
<td>$550,000 (10 physicians)</td>
<td>$500,000 (will reduce over time or be spread to other installs)</td>
</tr>
<tr>
<td>Integration Strategy for Physicians Having a non-Epic EMR</td>
<td>$??</td>
<td>$??</td>
</tr>
</tbody>
</table>
## One Time Cost Summary

<table>
<thead>
<tr>
<th></th>
<th>Incremental Capital</th>
<th>Incremental One-Time Operating</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>w GCMC</strong></td>
<td>$27.7 million</td>
<td>$10.3 million</td>
<td>$38 million</td>
</tr>
<tr>
<td><strong>w LMH/HP/CCH Outpatient Facilities</strong></td>
<td>$23 million</td>
<td>$7 million</td>
<td>$30 million</td>
</tr>
<tr>
<td><strong>w Employed Specialists</strong></td>
<td></td>
<td></td>
<td>$950,000</td>
</tr>
<tr>
<td><strong>w Affiliate Strategy</strong></td>
<td>$550,000 (10 physicians)</td>
<td></td>
<td>$500,000 (will reduce over time or be spread to other installs)</td>
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</tbody>
</table>
The Healthcare Reform Pyramid

Consumerism
Focus: CDHPs, transparency, PHRs, incentives, value

Coordination of Care
Focus: Primary Care 2.0 Model (the new "Medical Home")

Comparative Effectiveness/Evidence-Based Medicine
Focus: personalized medicine, comparative effectiveness, episode-based payments to acute organizations

Healthcare IT
Focus: e-prescribing, care coordination, administrative cost reduction

Source: Deloitte Center for Health Solutions
Implications

- Will require this be a primary focus of LMHS
  - We have to harvest the benefits...

- Physician Implications
- End user (clinician) staff impact - assignments to project team

- IT Implications
  - Staff Hiring/Training  (Economic Stimulus HITECH Impact)
  - IT Physical Space

- Financial

- Healthcare Reform

- Sense of Community
Impact of waiting...

- **Economic Stimulus Incentives at risk**
- **Long term project – 5 years – “Ramp-up” time is significant**
- Clinical automation needs cannot be effectively met in the interim:
  - Meds automation/bar coding
  - Barcoding patient identification
  - Automation data collection/documentation as by-product of care
  - OR automation
  - **Gulf Coast Medical Center – “an island”** –
    - One-off solutions
    - Continuing use of HCA IT, revenue cycle
- **Existing IT solutions (Siemens/CliniComp) – continued risks, issues, minimal clinical development, continued investments are “sunk costs”**
- **Delaying the opportunity to offer Epic to our community physicians**
- **Healthcare Reform marches forward...**
  - More data
  - Across continuum
  - More manpower/staffing to collect
  - Quality
  - **ICD 10**
- **Delaying opportunity to optimize chronic care delivery in the community**
- **Spending money to maintain current systems is a long-term waste of precious dollars, clinical and IT manpower**
Change is good!

You go first!
This is NOT about the technology.

This IS about enabling the highest quality and highest value care.

A very unique opportunity to make a difference for our community, our physicians, and our clinicians...
Strategic EMR Plan – Multiple Tracks

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Lee Memorial Health System IT Vision

LMHS Information Technology

- NURSING SUPPORT
- PHYSICIAN SUPPORT
- ANCILLARY SYSTEMS
- MANAGED CARE
- OUTCOMES MGMT
- DIAGNOSTIC IMAGING
- REVENUE CYCLE
- TECHNOLOGY INFRASTRUCTURE

EMR

MPI

Lee Convenient Care
Lee Outpatient Centers
Lee Home Health
Regional Network Partners

Community/ Regional/ State

Cape Coral
Lee Memorial (Cleveland)
Mental Health
Rehab.

Health Park Care Center
Children’s/ HealthPark
Gulf Coast

Public/Community Health Services
Employers, Government, Insurance
In Home Services
Schools

Lee Physician Group

Lee Home Health

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Questions/Discussion

Next Steps