Project Helios
Went on the Road

Ambulatory and Inpatient Road Shows,
A more granular look at what is to come...
Inpatient Experience Map

HENRY FORD HEALTH SYSTEM:
Project HELIOS Changes in Inpatient Care

1. Emergency Department
   - Key Features:
   - High-tech emergency care
   - Fast response to patient needs
   - Advanced diagnostics and treatment

2. Admission
   - Key Features:
   - Comprehensive assessment
   - Quick access to specialists
   - Efficient scheduling of tests and procedures

3. Patient Care Unit
   - Key Features:
   - Individualized care plans
   - Access to medical records
   - Certified nursing staff

4. Operating Room
   - Key Features:
   - State-of-the-art surgical equipment
   - Experienced surgical teams
   - Precision in medical procedures

5. Discharge
   - Key Features:
   - Seamless transition to outpatient care
   - Detailed discharge instructions
   - Follow-up appointments

6. After Care
   - Key Features:
   - Ongoing care management
   - Support from a dedicated team
   - Personalized treatment options

深入了解症状与病情，随时查看健康记录

患者可通过医院的电子健康记录系统随时查看自己的医疗信息，包括病史、检查结果和医生的建议。系统还提供了在线预约和通知功能，确保患者能够及时接收后续治疗的信息。
Helios Implementation Plan

• Elaborate Implementation (roll out) plan was developed, monitored, and improved with each iteration
  ➢ Operational owners were held accountable
  ➢ Systemwide cascaded goal for implementation
  ➢ “Expert” Super Users created across the system
  ➢ PI Specialists were on-site throughout the go-live period to facilitate real time PDCA improvements
  ➢ “All Hands On Deck” for implementation, including black out of vacation time, 24-7 support, external consulting support
Immediate feedback loops

• Well staffed command center on location
• Operated 24-7 for up to 2 weeks
• Daily huddles “11 at 11” to identify and prioritize issues and assign ownership for “fixes”
• Continued improvement with each Go Live
  • Systems put in place to mitigate interruptions in service and care
  • Utilized corporate staff to function as concierges for customer service (we ended up seeing an Increase in customer service during this time)
Measure the System

• Is it doing what is was designed to do?
  • Vendor supported on-site evaluations at 30, 90 days
  • Vigorous feedback mechanism of identifying all issues and constantly prioritizing them (Help Desk Tickets)
  • Transparency with issues (all tickets and status available on website)

• Measure the System with Best Practices
  • Vendor supported education and upgrades
  • National “Safer EHR” Guidelines (AHRQ)
  • Working with national Patient Safety Organization (ECRI) to report and track any error
The Pain

“Healthcare’s path to computerization has been strewn with landmines, large and small”  (Wachter)
How Disruptive Was This?

• It takes a village ... every person needed to be engaged
• Epic was the focus of the entire organization
• At the same time as implementation we attempted a merger (Beaumont)
• Downgraded in bond rating due to expense
• HOWEVER ... Rather than disruptive (which it is), it united us, and energized our transformation to a more integrated and standardized system (standardized policies, workflows, processes, more system conversations)
Is it Safe? National Issues in HIT

- Lack of real inter-operability and standards
- Disruption of personal relationships and communication
- Amount of data entry and inefficiency
- Not enough focus on Human Factors Engineering
- Resistance to Change
- Contradiction between confidential and public document (security vs. sharing)
- Remains difficult to reflect “the personal story” or the multidisciplinary nature of care
- Information and data without wisdom
Physician Dissatisfaction

- Too many clicks
- Inefficient
- Feel like data entry clerk
- Does not tell the story
- Distraction from looking at the patient
- Scribes?
Errors

• HIT improves many metrics in quality & safety (medication management, compliance with certain quality measures), but also causes its own new class of errors

• Most common errors at HFH
  • Wrong patient registration/identification

• Technology beginning to show prominently on top list of patient safety concerns – growing complexity of technology and reliance on technology in delivering healthcare
Top Safety Concerns

• ECRI Institute Top 10 Safety Concerns for 2015
  • #2 – Data integrity: incorrect or missing data in EHR
  • #10 – Medication errors related to pounds and kilogram confusion

• Other identified broader concerns
  • Cybersecurity protection
  • Vulnerability of devices to malware

• April 2015 Sentinel Event Alert – Joint Commission
# HIT Contributing Factors: Q1 2015 HIT Events (40)

<table>
<thead>
<tr>
<th>Incident Classification</th>
<th>Blood</th>
<th>Diagnostic Imaging</th>
<th>Diagnosis</th>
<th>Treatment</th>
<th>Facilities</th>
<th>Equipment</th>
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<th>Specimen</th>
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Sociotechnical Model of HIT

- Hardware & Software
- Clinical Content
- Human-computer interface
- People
- Workflow & communication
- Policies, Procedures & internal culture
- Rules and Regulations (external)
- Measurement & Monitoring

Does the EHR Improve Quality?

- Numerous studies linked to improvements in quality
  - Medication Management
  - Preventive Care
  - Ambulatory and Inpatient Quality Metrics

- Multiple opportunities for clinical decision support to drive high reliability outcomes

- Not “out of the box” improvements
HFHS No Harm Campaign
Combined harm rate 2008 - 2014
Reduction of Medication Errors Reported in RL since Epic Go Live
There Is No Going Back

- Healthcare without computerization is unimaginable
- Beginning of the journey to new models of care – some of which we cannot even imagine yet ...
  - Telemedicine
  - Virtual Care
  - Geography and distance less important
  - Patient involvement and self care (rise of consumerism)
  - Cost – both up and down
The Promise

Next generation of healthcare dependent on better utilization of Health Information Technology
Creating the New Future at HFHS

• Healthy Planet – registry function which will allow us to be successful in MiPCT, PCMH, ACO

• Integration of all services – ultimately with potential outreach in Telemedicine, eICU

• New way of reaching patients (MyChart, Bedside MyChart)

• Care Everywhere – sharing information
  ➢ 1.2 million exchanges across 163 sites

• Epic Link and Community Connect for private physicians
  ➢ 2,000 Link Users
Patient Portals

• 210,000 patient actively using MyChart
• Over 7 million “hits” since Go Live
• 96% patient satisfaction (in a patient survey)
• Immediate release of test results (a few exceptions)
• Online direct appointment scheduling – primary care, mammograms, starting to pilot specialty care
• Inpatient MyChart to allow concurrent viewing of tests, communication with families, daily patient agendas
• Open Note discussions
Analytics

• Performance Improvement depends on accurate and timely data
• Cogito (Epic) is the platform for our electronic data warehouse
• Evaluating benchmark comparison vendors (Optum, Crimson, UHC)
• Challenge is linking private physicians in registry (Wellcentive)
• Developing “real time” quality metrics (Harm 2.0) and dashboards, reports
• Direct reporting of quality metrics (CMS - by 2018)
Scottsdale Institute 2015 – other novel ideas

• Incorporating “Choosing Wisely” recommendations into electronic records
• linkAGES – Dr. Paul Tang (Palo Alto Medical Foundation) – using the EHR to connect elderly patients to prevent loneliness
• Integrated care delivery system (CHI)
• Putting Patients and Caregivers in the Drivers Seat (Billings Clinic)
• Revenue Cycle improvements
• Genomic data
Hindsight is 20/20
What I would have done differently

• Insisted on certain budget items that were cut at beginning (physician payments)
• Started with reporting as the beginning rather than the end (trace back reporting to specific flowsheet rows and then trained on this workflow)
• Ensured long term support for informatics and clinical liaisons
• Re-evaluated and re-developed even more workflows, and trained to workflow changes – dedicating even MORE time to training including post implementation
• Hired more Epic experienced staff for our team
• Provided even more support for physician efficiency
Summary

• Expensive, exhaustive, enthusiastic
• Overall success with caveats
• Starting now and forever, healthcare will be determined by how well these technology systems work
• Transforms the work, the people (staff, physicians, patients), the relationships, the communications, while creating more alignment and standardization – as well as new problems
• The beginning of the future