From RIS to Radiant: In Retrospect

PennChart Radiology Implementation

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Agenda

• About Penn Medicine
• Enterprise-Wide Project Scope
  – Cultural Change
  – Technical Change
• Project Execution
• Lessons Learned
ABOUT PENN MEDICINE

The University of Pennsylvania Health System was created in 1993 and consists of three hospitals (Hospital of the University of Pennsylvania, Presbyterian Medical Center, Pennsylvania Hospital), a faculty practice plan, a primary care provider network, two multi-specialty satellite facilities, home care, hospice and a nursing home.

<table>
<thead>
<tr>
<th>Licensed Beds</th>
<th>1,893</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Employees</td>
<td>24,293*</td>
</tr>
<tr>
<td>IT Employees</td>
<td>419</td>
</tr>
<tr>
<td>IT Operating Budget</td>
<td>$112,396,932</td>
</tr>
<tr>
<td>Operating Revenue</td>
<td>$4.9 Billion</td>
</tr>
<tr>
<td>Adult Admissions</td>
<td>83,994</td>
</tr>
<tr>
<td>Outpatient Visits</td>
<td>2,837,864~</td>
</tr>
<tr>
<td>Physicians</td>
<td>2,846~</td>
</tr>
</tbody>
</table>

Total Figures as of FY14
*Includes CCA, CORP, CPUP, HCHS
+ Includes CCA/CHCA
+ Includes CHOP
~ Includes physicians with privileges at more than one hospital.
NEW BUILDINGS The combined cost of the capital projects over the next two years is expected to total more than $200 million.

Penn Medicine University City
Summer 2014
$38 million

Pavilion for Advanced Care at Penn Presbyterian
Winter 2015
$127 million

Henry A. Jordan, M ’62 Medical Education Center
Fall 2014
$38 million

RESEARCH
Penn Medicine is an internationally recognized leader in discoveries that advance science and pave the way for new therapies and procedures to improve human health. Sixty-eight Penn Medicine researchers are elected Members of the Institute of Medicine, one of the highest honors in medicine. The basic and clinical research findings emerging from Penn Medicine's laboratories and hospitals improve the treatment of a wide range of medical conditions and provide the foundation of knowledge on which many of medicine's next generation of cures will be developed.

*Figures & Statistics as of FY13 (http://www.uphs.upenn.edu/news/facts.htm)
The Hospital of the University of Pennsylvania is annually recognized as one of the nation's best hospitals by the *US & World Report* in its Honor Roll of best hospitals.

**Penn Presbyterian Medical Center** is consistently recognized for delivering superior patient safety and high-quality care and as a center of excellence for cardiac surgery, cardiac care, orthopaedics, and ophthalmology.

**Pennsylvania Hospital** is the nation's first hospital (cofounded by Benjamin Franklin in 1751), with many expert clinical programs, including the Women's Cardiovascular Center, the Center for Bloodless Medicine and Surgery, orthopaedics, and maternity.

The **Chester County Hospital and Health System**, which became part of Penn Medicine in fall 2013, includes a 245-bed hospital complex in West Chester and satellite locations in Exton, West Goshen, New Garden, Jennersville, and Kennett Square.

**The Perelman Center for Advanced Medicine** is a state-of-the-art, outpatient facility containing 321 exam rooms (including the new south-tower expansion in 2013), with diagnostic and treatment facilities designed to be in close proximity for patient-focused care.
Penn Medicine Radiology

- Divisions
  - Imaging
    - GI, Abdominal, Cardiovascular, Thoracic, Musculoskeletal
  - Interventional Radiology
  - Breast Imaging
  - Neuroradiology
  - Nuclear Medicine

1,000,000+ visits per year
Pennsylvania

Phoenixville Hospital
King of Prussia
Penn Medicine Valley Forge
Chester County Hospital
Penn Presbyterian Medical Center
Hospital of the University of Pennsylvania
Perelman Center for Advanced Medicine
Kennett Square

*Penn Medicine Southern Chester County

Penn Medicine Bucks County

Penn Medicine Radnor
Penn Medicine University City
Pennsylvania Hospital
Penn Medicine Rittenhouse
Penn Medicine Woodbury Heights

New Jersey
Go-Live Schedule

PennChart ED
PAH
January 23, 2015

PennChart ED
PennChart Transplant
HUP
February 20, 2015

PennChart ED @ PMC
PennChart Radiology Enterprise
March 21, 2015

Unified Exam Codes, Part A
Jan 20, 2015

Unified Exam Codes, Part B
Feb 17, 2015

Appointment Conversion
Feb 27-Feb 28, 2015

PennChart Radiology Scheduling Go-Live
March 2, 2015
Live Applications

• Applications already live on Epic:
  – EpicCare Ambulatory
  – Prelude
  – Cadence
  – Professional Billing
  – Outpatient Willow
  – OpTime
  – Identity
  – Beacon
  – ASAP (Jan 2015)
  – Transplant (Feb 2015)
  – Radiant (March 2015)

• Coming Soon (Fall 2016/Spring 2017)
  – ADT
  – EpicCare Inpatient
  – Hospital Billing
  – HIM
  – Inpatient Willow
  – Home Health and Hospice
  – Cupid (Fall 2017)
Project Scope

• BIG Culture Change

  “More than a radiology system...it is an EMR!”

• Consolidation and standardization of multiple processes and workflows
  – Scheduling process
    • Allowing 12 ambulatory practices to schedule studies
    • Standardized scheduling instructions
  – Standardized Protocols and Templates for the Enterprise
  – Paperless Initiative
    • Tablets for Mammo, Dexa, and MR patient questionnaires
    • Using MyChart
Project Scope

• BIG Technology Change
  – Remained a RIS-Driven Radiologists’ Workflow
  – Unified Exam Codes
    • Requirement for go-live
    • Standardization of 1300+ exam codes (description name, CPT, CDM)
    • Required multiple resources and teams to build and test
  – Appointment Conversion
    • 17,000+ appointments
    • Required staff training one month prior to go-live
    • Required Radiant build one month prior to go-live

Unified Exam Codes, Part A
Jan 20, 2015

Unified Exam Codes, Part B
Feb 17, 2015

Appointment Conversion
Feb 27-Feb 28, 2015

PennChart Radiology Enterprise
Go-Live
March 2, 2015

PennChart Radiology
Enterprise
March 21, 2015
Project Scope

• Custom Epic Development for Penn
  – Image Linking
  – Silent Scheduling : multiple modalities, inpt and ED
  – Critical Results with the ED
  – Mammo Hologic Integration
  – Epic Thin Client, GE PACs/PS360 Integration

• Mammo
  – Penn Medicine is the first site in North America to implement full dictation using Smartforms
Project Scope

The Complexity of Radiology Interfaces
Project Execution

• **Staffing**
  – 1 Project Manager; 2 IS Leads; 2 Operational Leads; 5 analysts; 2 consultants; 1 Report analyst; 1 Conversion analyst

• **Training**
  – 1 Principal Trainer, 3 Credentialed Trainers trained 1500+ users

• **Go-Live**
  – *One* go-live date across the Enterprise vs. Phased Go-Live
Command Center Logistics

• Central Command Center
  – Located at PMC since ED was going live on the same day
  – CTs were at the command center

• Local Entity Satellite Command Center
  – HUP
  – PAH
  – Radnor

• Floor Support
  – 80 Penn Super Users
  – 6 Epic Support
  – Blue vests
Lessons Learned

• Planning
  ✓ Determining number of IS/Ops resources to handle scope of project
  ✓ Review resources and time line closely
  ✓ Set clear expectations, especially with all existing applications
  ✓ Validation sessions did not go through the full details of the workflows
  ✓ Review the budget
  ✓ Strong operational support and analysts
  ✓ Phenomenal team!
Lessons Learned

• Build
  ✓ First-time builders! Huge shift for all the analysts
  ✓ Time lines are very tight
  ✓ Radiologist Worklist was very difficult
  ✓ Security
    • Get an early start and build in PROD, even prior to training
Lessons Learned

• Testing

  ✓ Complete build before testing
  ✓ Revenue Cycle testing delayed due to build
  ✓ Scripts need to be detailed
  ✓ Load approx 3 days of volume in order to accurately review the worklist
  ✓ Test all intricate workflows from end to end
  ✓ Lack of User Acceptance Testing
    • super users for approx 2 weeks (out of clinical rotation)
  ✓ End User Dress Rehearsal
Lessons Learned

• Training
  ✓ Complete build before training
  ✓ Partner close with the IT Training Department
  ✓ Test your training environment
  ✓ Create tip sheets prior to go-live
  ✓ Define post-live training strategy
Lessons Learned

• Go-Live
  ✓ Define the Super User role
    • Should be available as floor support, not working
  ✓ Ensure Mammo and IR resources dedicated to these areas
  ✓ Command Center Structure
    • Staff all command centers with appropriate resources
    • Require a Security and Hardware resource during go-live
    • Twice daily status calls with team and leadership
    • Central Issue Tracker
Lessons Learned

• Post-Live
  ✓ Support for ongoing issues
  ✓ Resources went back to operations too soon
Questions?

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