

PACS: Is It A Measurable Success?

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Pat Berger

Fairview Health Services



Presenters

- Mark Domalewski, MS, MBA
 - Director, Imaging Services
 - 10 years experience in imaging administration
 - Invited speaker and author in imaging management
- Pat Berger, BA
 - Corporate Director, Information Management Services
 - 20 years in healthcare IT – clinical systems

Learning Objectives

- Understand imaging and information technology strategy for a large integrated delivery network
- Understand clinical and financial rationale for PACS system
- Demonstrate dashboard concept for monitoring ongoing progress of PACS implementation

Fairview Health Services

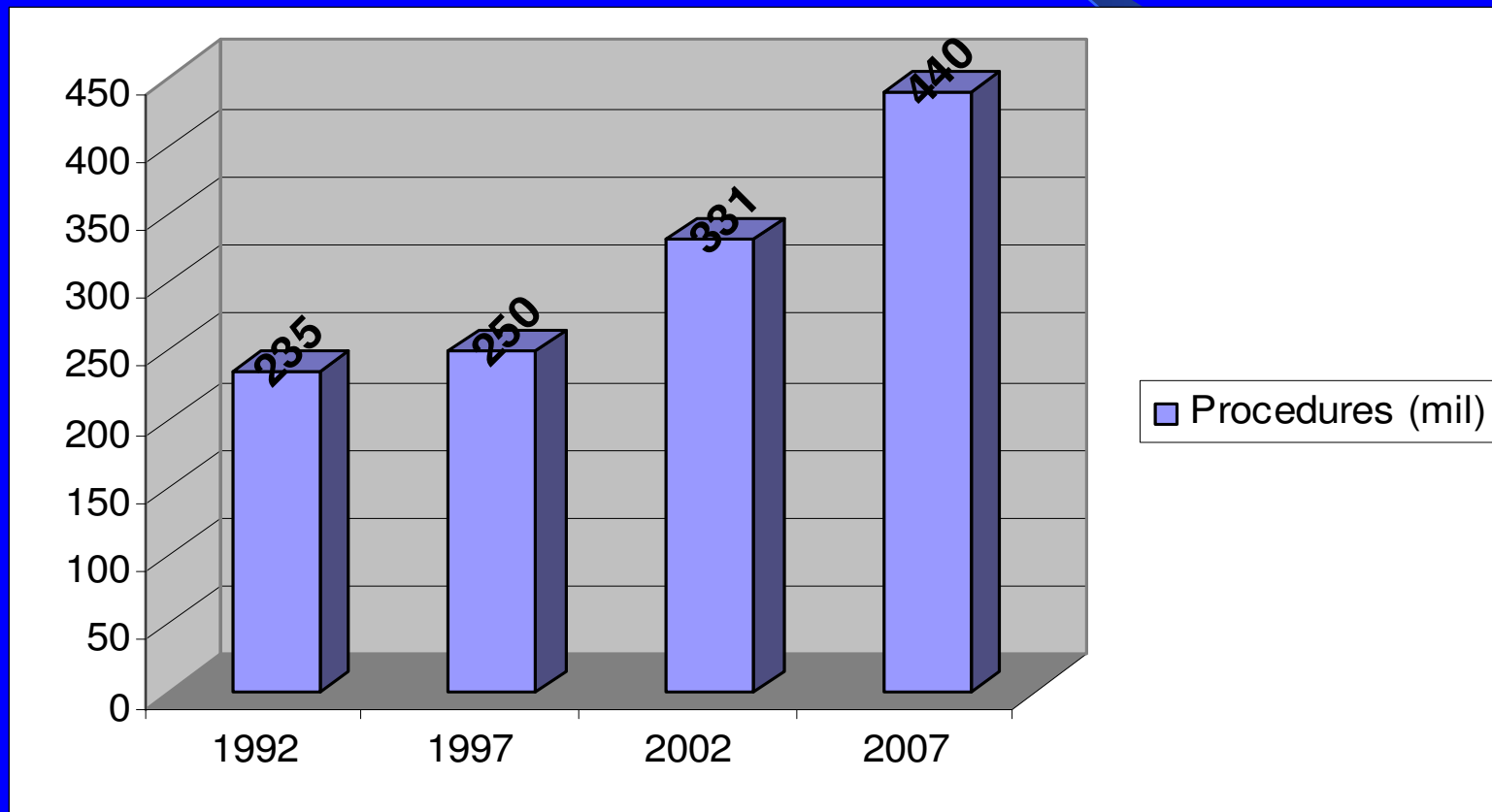
- Facilities
 - 7 hospitals, 41 primary care clinics, 38 specialty clinics, 21 senior care facilities
- Employees
 - Over 18,000
- Physicians
 - Over 6,000 affiliated
- **Imaging procedures = ~550,000**

Fairview Health Services

- Current strategic initiatives – imaging specific
 - PACS
 - Optimizing financial and operational performance
 - Imaging specific process improvement
 - Long term capital planning
 - The recruitment/retention spectrum
 - Retail imaging strategy (new sites)

Imaging Trends

Imaging Procedure Growth



Imaging Modality Growth 2002-2007

Magnetic Resonance Imaging (MRI)	15%/yr
Computed Tomography (CT)	12%/yr
X-ray	4%/yr
Nuclear Medicine	3%/yr
Positron Emission Tomography (PET)	25%/yr
Ultrasound	7%/yr

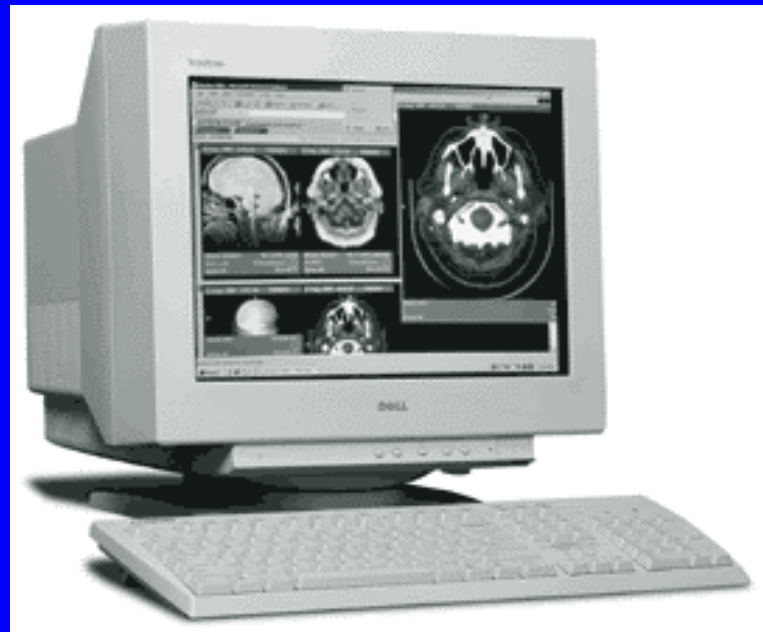
Questions We Ask Ourselves

- Are you driving productivity and workflow improvements?
- How will you deal with the data explosion?
- How are you handling staffing issues?
- Are you fully optimizing your technology investment?
- How will you redesign radiology for the digital age?

Hospitals plan to boost capital spending by 14% annually over the next five years, according to a survey by the Health Financial Management Association, an association of healthcare financial executives. Targeted investments by hospitals include expansion of emergency departments, surgery suites, and inpatient beds, in addition to **new technologies such as digital radiology (PACS) and computerized physician order-entry order systems.**

Wall Street Journal, 3/3/2004

**PACS : Picture Archiving And
Communications System
“Electronic Display Of Images”**



PACS- Clinical Value

Images available at point of care

- Images that can't be lost, taken, or unavailable
 - *Over 25% of film-based radiology studies are not available at the time of care*
- Multiple providers can view data at the same time
- Full disaster recovery

Disaster Recovery With Films



Springtime at the Radiology Warehouse

PACS- Clinical Value

No more delayed results

- Time for a radiologist to interpret goes from days and weeks to minutes
- Images available instantly in multiple locations
- No more lost/unread films

PACS- Financial Considerations

- Film is expensive to buy, store and distribute
- We spent \$1.5 million on film purchases/year
- We needed over 100,000 sq ft to store radiology film
- Imaging had 40+ FTEs whose sole function was to handle radiology film
- Fairview-university hospital distributed over 500 radiology film jackets per day

PACS/RIS At Fairview

- Long-time IDX RIS user
- PACS contract signed with IDX April 2003
- Purchased and installed hardware and software at 5 metro sites
- Integrated over 200 imaging modalities with PACS
- Successfully converted 3 million patient records and over 2 million radiology reports from prior hospital information system

PACS/RIS At Fairview

- All images on-line all the time
- All sites 90% filmless and paperless at go-live
- Voice recognition with academic physicians
- O.R.S at all sites filmless
- Images available to clinicians prior to being read by radiologists
- Employ full-time “physician liaison” for customer service

O.R. Carts



What We Have Achieved

- Vastly improved access to information for all of our customers
- Integration with electronic medical record and portal strategies
- Ease of use for clinicians
- Report availability time reduced from days/hours to minutes
- Data integrity and security





**“Many Things Are Interesting,
Only A Few Are Important”**

What To Measure?

The Imaging Enterprise

Customer Service

Human Resources

Clinical

Business/Financial

Project Specific (PACS)



FAIRVIEW

Imaging Manager Desktop



Imaging Operations Desktop

Imaging Operations Desktop

KPI Summary

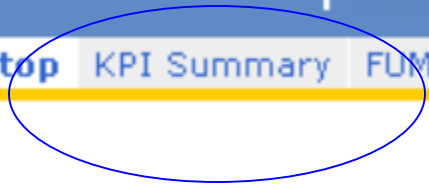
FUMC


FSH

FRH

FNH

FLH





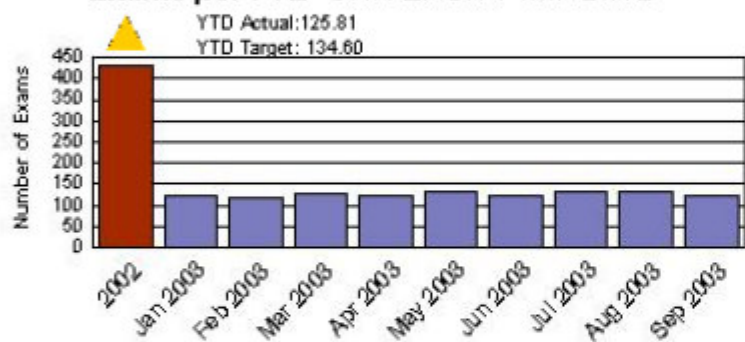
KPI Summary

Imaging Operations Desktop **KPI Summary** FUMC FSH FRH FNH FLH

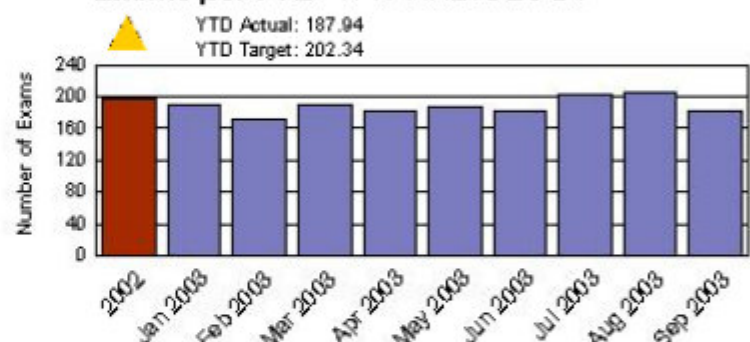
ER Turnaround Time Turnaround Time Film Costs Imaging Availability Operating Margin Productivity Late Charges

Preview 1 of 1

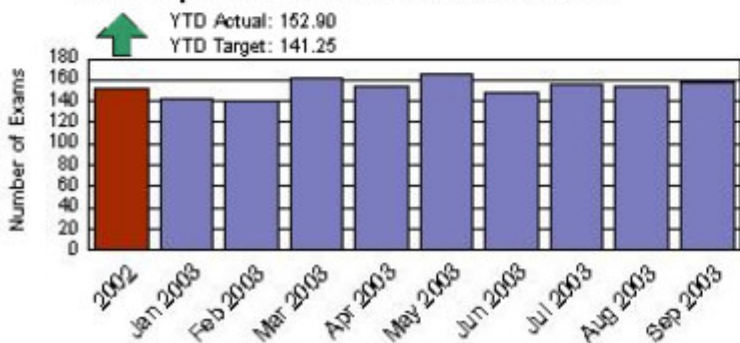
Exams per FTE- UNIVERSITY IMAGING



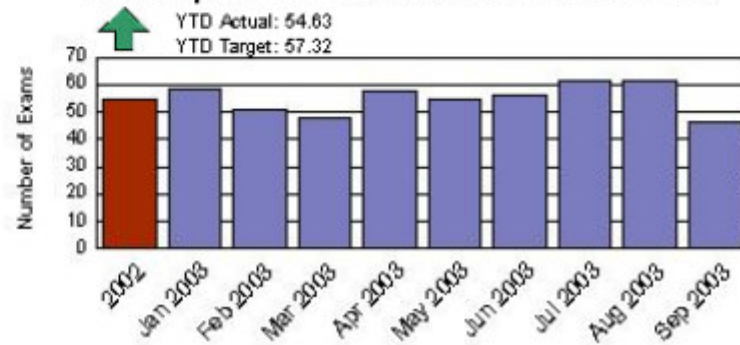
Exams per FTE- 4141 RADIOLOGY



Exams per FTE- 4143 CAT SCANNER



Exams per FTE- 4161 NUCLEAR MEDICINE

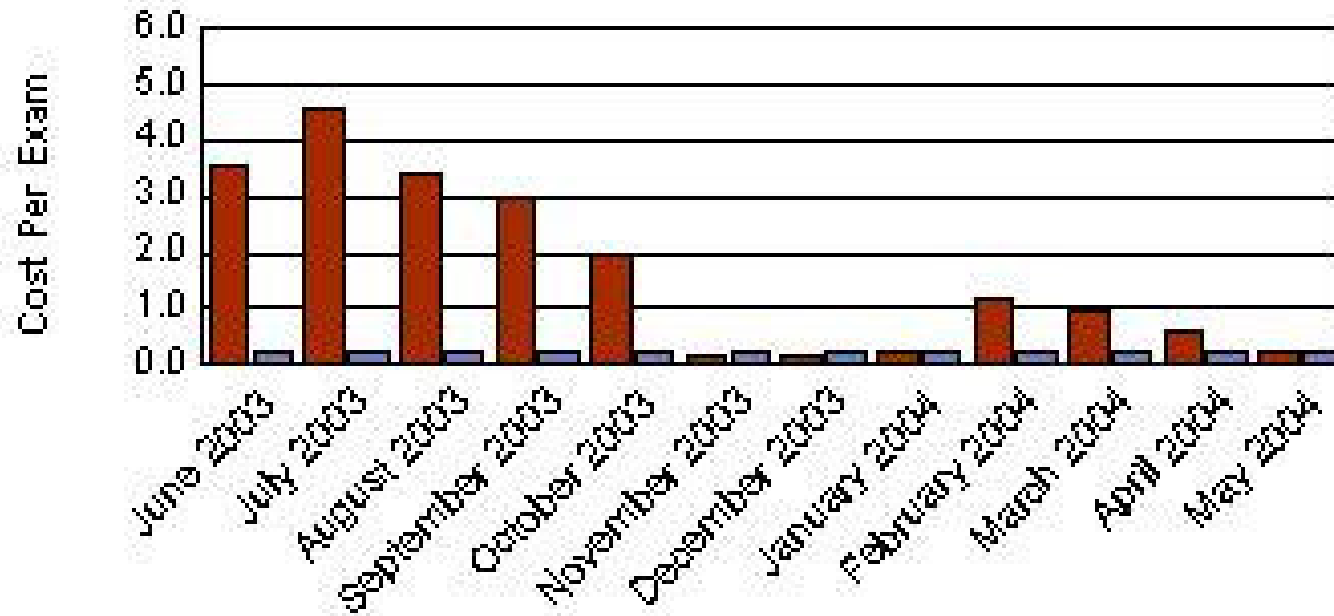




Film Costs - RIDGES IMAGING

Target: 0.23

Actual: 0.20



Actual



Target



Current Dashboard Functionality

- Monthly report turnaround
- Monthly film cost per exam, by facility and by modality
- Monthly operating margin, by facility and by modality
- Monthly tech productivity (exam/FTE), by facility and by modality

Lagging Vs. Leading Indicators

- Lagging

- Monthly exam volumes
- Patient satisfaction
- Referring MD satisfaction
- Employee turnover

- Leading

- Daily exam volumes
- Time from patient arrival to exam completion
- Time to schedule next appointment (3rd)
- Daily (hourly?) Unread report list
- Employee satisfaction

Summary Of Values/Results

- Increased referring physician satisfaction
- Film costs reduced by over \$1 million/year
- Reduced film file personnel costs by over \$400,000/year
- Images now available everywhere immediately
- Reports available faster

Summary

- Projected growth in imaging requires effective management of clinical data
- PACS has become the cornerstone of our improvement efforts in imaging
- Dashboard allows for near-real-time assessment of imaging enterprise performance and success of PACS
- PACS is a key enabler for electronic medical record deployment