

# **Improvements Using PACS**

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## *Hidden Capabilities in PACS*

- Documented improvements: from 8% to 0.3 %
- Unexpected: increase in interpretation accuracy (WW/LEVEL for CT)
- Other sites: transport of patients decreased
- Length of stay; correlation to PACS unknown?
- Research benefits
- Training benefits
- Redesign workflow
- Patient safety and error reduction
- Security has actually become more tight

## *PACS Causes Increase in Errors?*

- Change in type of errors
- Overall decrease in errors
- Errors can propagate
- Screen refresh could also cause problems
- Technologists getting used to system
- Less people getting involved
- Verification done at PACS by tech
- Training is critical

# *Why are Some PACS Users not Satisfied?*

- New PACS purchases by existing customers
- Switch vendors because of:
  - Latest technology
  - Poor service
  - Relationship
- Relationship is like marriage!
- Migration is issue; could take half a year or more!
- Migration is error prone
- Dissatisfied by vendor because of communication

## *Dissatisfaction (cont)*

- Even for same vendor, migration is issue
- Characteristics for 2<sup>nd</sup> buyers: do not use RFP's
- Half of new PACS might be from existing customers in few years
- Plan for the migration when purchasing!
- Vendor selection is like a marriage

## *Benchmarking PACS Functionality?*

- Vendors and customers do not benchmark well, even although PACS data is available
- Manual studies done for now, digital dashboard needed!
- PACS can serve as benchmark for room utilization, wait time, etc.
- Vendors do not have tools as of today
- Preventive maintenance instead of re-active is needed
- Better tools and sharing needed, also clinical

## *View into the Future of PACS*

- Major changes to be expected
- Workstations to be more intelligent
- Trend towards more PACS intelligence, especially Electronic Medical Record
- Trend from passive reviewer to active navigator
- Increase in volume and complexity
- Chest radiography adds dual energy to PA and LAT
- US and tomo-synthesis



## *Future of PACS (cont)*

- CAD for mammo, CT, radiographs
- EMR, decision support tools
- Requires more intelligent systems and better navigations
- Same applies for clinicians: EMR, MPR and 3-D

## *What is TRIP?*

- Transforming the Radiology Interpretation Process, initiated by SCAR
- New ways to take information in and apply decision support tools
- Little research done in viewing, organizing, etc.
- Use experience from outside of medical imaging

## *Conclusion*

- Users are often replacing film with PACS without studying workflow
- VA had 59 steps: PACS only eliminated 9 steps
- Integrated paper and re-engineering workflow from 59 to 8-9 steps
- PACS might cause workflow to become less efficient if not re-engineered!
- Workflow analysis is critical
- Only then there can be a major impact! E.g. cost cut by 25% productivity by 35-40%