Spreading and Scaling Change Across Institutions

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Learning Objectives

- Leading change across large multi-site institutions.
- Recognizing when to scale down in order to make small tests of change.
- How to scale back up once the small tests of change are proven to work.
About AdventHealth
Leading change thru congestion

- Go see the process
- Talk to front-line staff
- Ask what they think is causing the problem
- Collect data
- Decide how to scale the project
## Problem Statement

Missing Images represents the top CT quality (QA) feedback and is the top-quality opportunity. 0.75% of all post-processed exams in the 3D lab have images missing.

## Background

CT studies submitted with missing images from 72 scanners delays interpretation, causes rework, and delays patient care. Missing images is the most frequent quality issue in our entire process. 700 out of 3000 QA’s are due to missing images. Audits from the 3D lab will be used to measure performance.

## Target State: SMART Goal

Reduce percentage of studies with missing images from 0.75% to 0.30% for studies processed by the 3D lab by 12/31/2020. This would result in a 60% improvement.
SMART Goal

From 0.75% to 0.30% = 60%
Root Causes & Key Drivers

Root Causes
- Auto-send not consistently turned on
- Splitting exams with multiple orders
- PACS workflow not clearly defined

Key Drivers
- Image send automation
- Clear & consistent tech complete process
- Build Lean order set
- Implement Lean protocol
- Clear process for PACS server assigned
Interventions

1. Automation
2. Create combination order
3. Remove Cervical spine curved coronal reformats
Interventions

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RLI Power Hour Webinar Series
Interventions

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Before

- CT Chest with Contrast
- CT Abdomen/Pelvis with Contrast

After

- CT Chest/Abd/Pel with Contrast
Interventions

Before:                     =

- Image send automation
- Clear & consistent tech complete process
- Build Lean order set
- Implement Lean protocol
- Clear process for PACS server assigned

After:                     =
CT Missing Images - from 3D Lab

1. Implemented Lean Protocol
2. Implemented Lean Order Set
3. Reviewed Tech Complete process
4. Auto-send Turned On
5. 3D Lab & Fish Reformat Pilot
6. Turned On

SPECIAL CAUSE VARIATION

POINT OUTSIDE OF THE LIMIT:
Any point on or outside the limit is considered abnormal and requires investigation.

SHIFT (RUN):
A shift is indicated when 7 consecutive points lie continually on one side of the center line.

TRENDS:
Seven consecutive points in an upward or downward direction could indicate special cause.
Improving Prostate MR Image Quality

**Problem Statement**
Non-diagnostic MR prostate diffusion exams can lead to deficient quality images and repeat studies.

**Global Aim**
To improve clinically significant prostate cancer detection and localization.

**Target State: SMART Goal**
To improve the percentage of MR prostate exams that meet criteria from 89% to 94% by November 2022.
SMART Goal

To improve the percentage of MR prostate exams that meet PI-QUAL 4 or 5 criteria from 89% to 94% by November 2022.
Key Drivers

Root Causes

1. There is not clarity around what constitutes “good” image quality
2. Need for a bowel prep
3. DWI parameters are not standardized across the system
4. Protocols are not optimized on the scanners
Interventions

Key Drivers
- Gain alignment around image quality
- Implement a more effective patient prep
- Standardize DWI parameters
- Optimize protocol management

Interventions / Countermeasures
- Implement quality feedback program (3)
- Add images showing good/poor quality to protocol (2)
- Educate techs thru Siemens flex coach & campus MR leader (1)
- Clear & consistent bathroom instructions across sites (2)
- Methods to remove air/feces before & upon arrival (2)
- Use of an enema & refrain from ejaculation Epic scheduling prompt (2)
- Standardize Epic scheduling questions (at prostate order level) (2)
- Update provider with new prep (1)
- Patient has ability to complete MR Hx/Screening form prior to exam (3)
- Develop Epic status pre-screening report (3)
- Implement methods to reduce motion/fecal matter/air on DWI (2)
- Call or email patient prep instructions prior to exam (2)
- Motion reduction techniques (2)
- Develop standards for when to contact a radiologist (2)
- Implement standardized prostate sequence order (1)
- Develop standards for when patients cannot receive contrast (1)

Most impactful interventions
1. Adding references images to the protocol
2. Implementing bowel prep
3. Standardizing scheduling questions/prep
4. Calling the patient 2-3 days prior to exam
5. Motion reduction techniques
6. Standardizing protocol & sequence order
Interventions

- Gain alignment around image quality
- Implement a more effective patient prep
- Standardize Diffusion-weighted (DWI) parameters
- Optimize protocol management
Interventions

- Gain alignment around image quality
- Implement a more effective patient prep
- Standardize Diffusion-weighted (DWI) parameters
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Interventions

- Gain alignment around image quality
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Results- DWI Score

• By the end of the project, we far exceeded our goal of 75% & have been at 82%
Key Learning Points

I. “Don’t be afraid to fail: Fail Fast, Fail Small, Fail Friendly!”
II. Resist the urge to solve the problem upfront and let the process work.
III. Narrow your project scope to start small and intervene sooner.