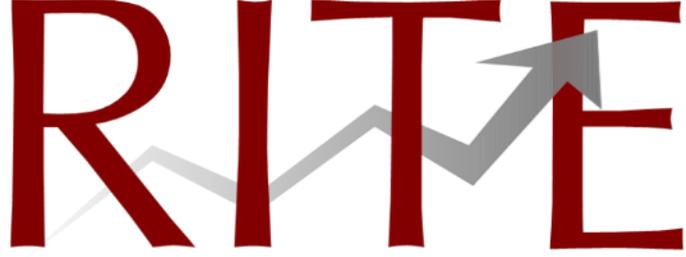


RITE



**INCREASE THE PERCENTAGE OF EXAMS THAT HAVE
ADEQUATE REASONS FOR EXAM INFORMATION**

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- ▶ None of the authors or their immediate family members have a financial relationship with a commercial organization that may have a direct or indirect interest in the content of this presentation.

Problem Statement

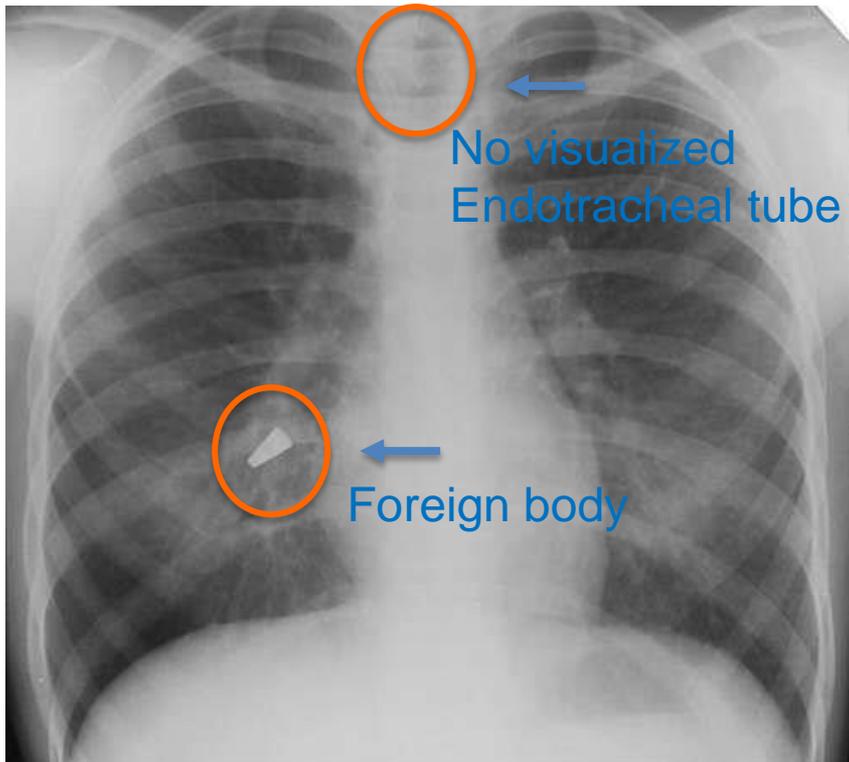
A large percentage of plain films ordered through the ICU contain inappropriate or inaccurate indications. This leads to increased time spent per study, misinterpretation of the exam and in some instances unanswered clinical inquiries.

Background

Upon further investigation, it was found that plain films were ordered in batches through a single epic order. A single indication was given to the order and applied to all exams. For example, many times the initial indication for an exam was “chest tube”, but the chest tube was taken out the next day. Despite the tubes removal, the remainder of exams in the order would have indications of “chest tube”. This led to confusion and time wasted contacting ordering providers to ensure that the patients chest tube had not dislodged.

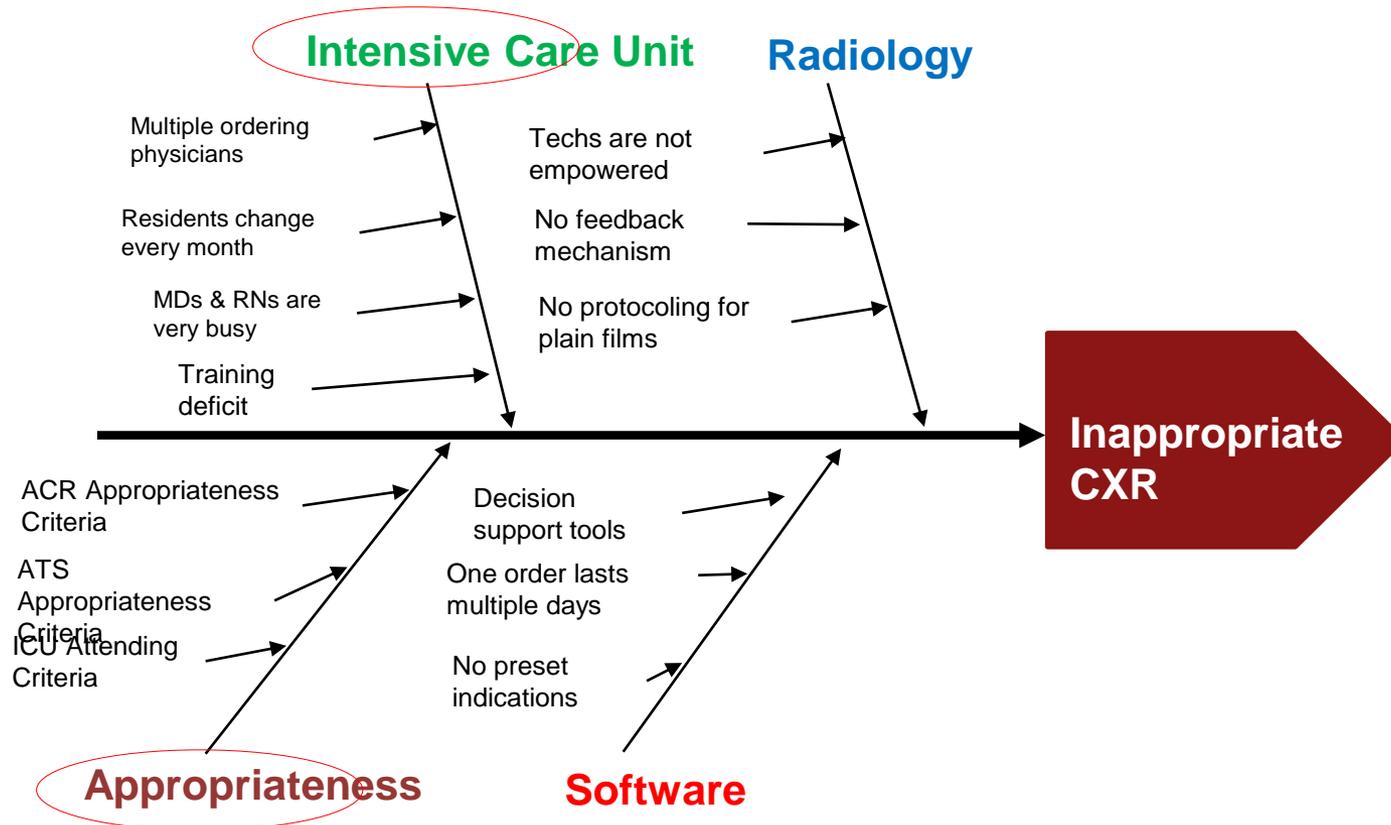
SMART Goal

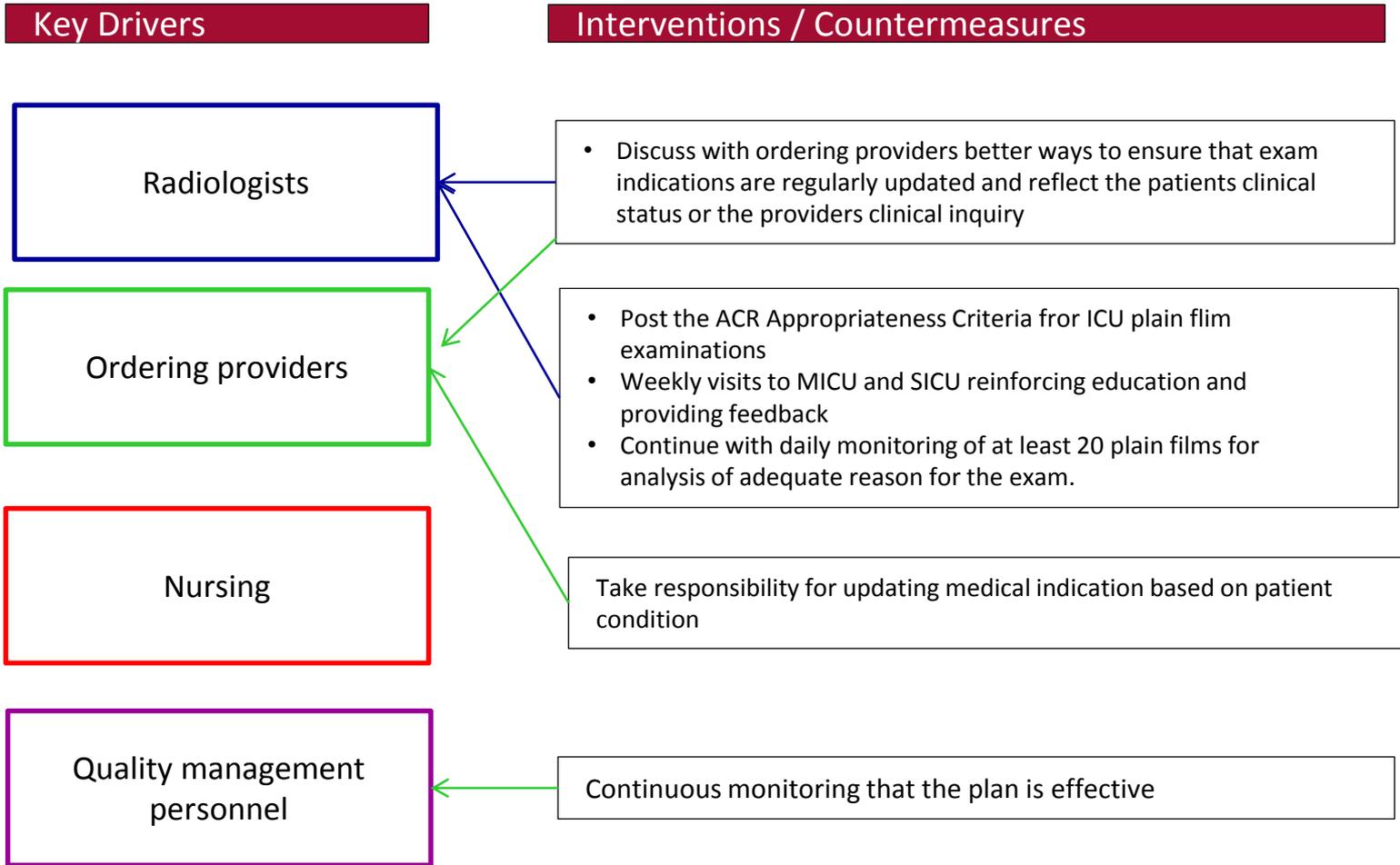
Our goal was to decrease inadequate exam indications from 64% to less than 10% by September 1, 2016. The scope is limited to SICU and MICU for chest radiographs and KUBs.



Clinical
histories are
important!

Cause Root Analysis





Posted ACR Appropriateness Criteria In MICU and SICU



CHEST X-RAYS IN THE ICU

Eliminating routine daily chest radiographs did not affect mortality, length of stay in the hospital or ICU, or ventilator days (Oba 2010).

This represents a statistically significant 32% reduction in the use of chest radiographs without sacrificing quality of care or safety (Hejblum 2009).

Decreased resource utilization in ICUs employing an indication-driven chest radiograph ordering pattern (Hejblum 2009).

See ACR Appropriateness Criteria for further details regarding intensive care unit patients.

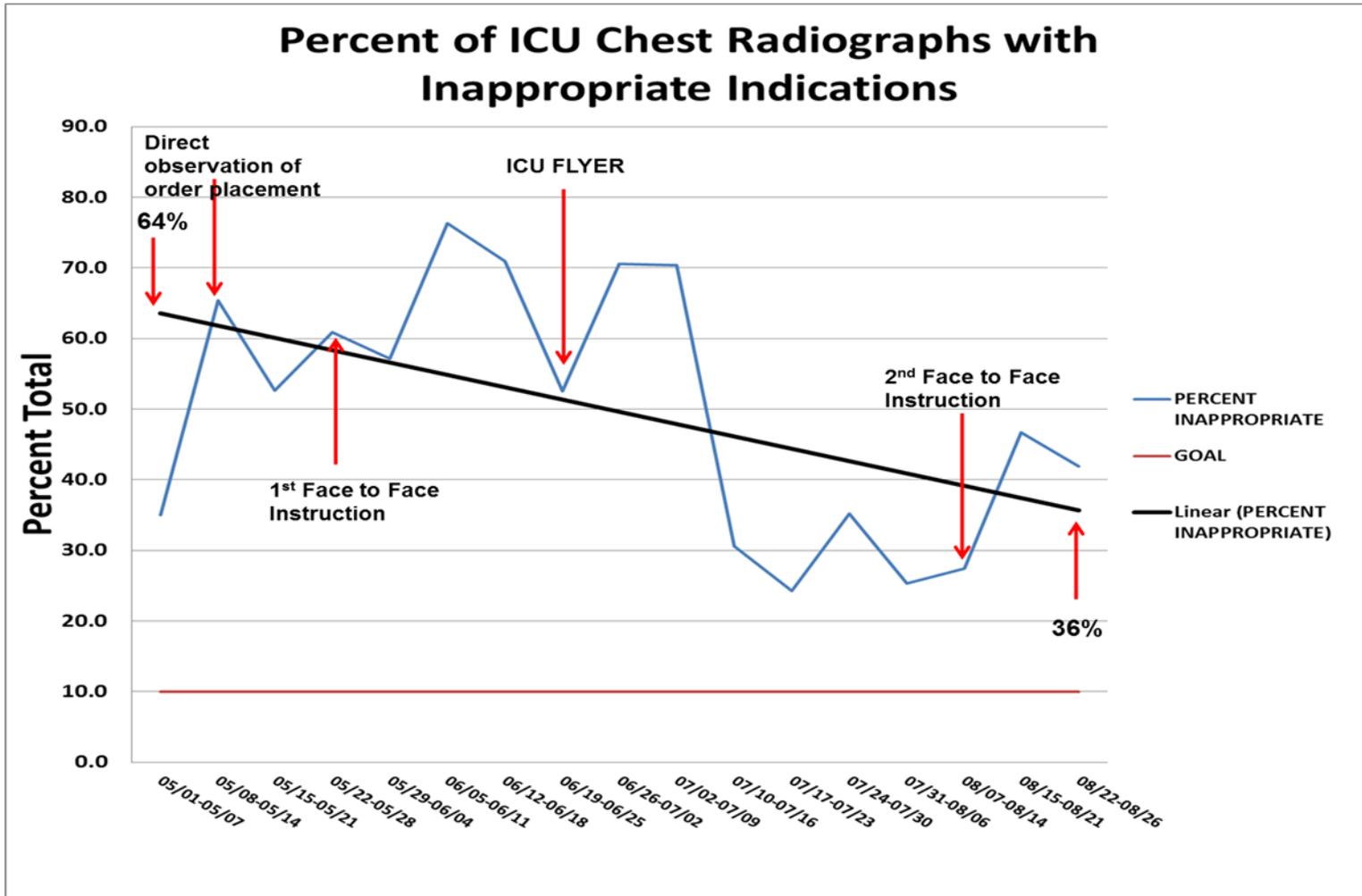
Example **Appropriate** indications in the ICU:

- Admission or transfer to the ICU
- Patient with clinical worsening
- Post-insertion of tube or catheter
- Post-chest tube removal

Example **Inappropriate** indications in the ICU:

- Stable patient without clinical change
- "ICU"
- "Chest"
- "Ventilated"
- "Daily CXR"

- ▶ We were successfully able to reduce the percentage of inappropriate ICU chest radiograph indications from 64% to 36%.
- ▶ We found that giving face to face education to ordering clinicians and posting appropriateness criteria helped reduce inappropriate indications.
- ▶ Unfortunately, some of these gains were lost at the beginning of each new month due to influx of new residents that had not been educated. Once the new residents had received instruction, inappropriate indications began to trend downward once again.
- ▶ We address this problem in our sustainability section outlined below.



Activity to sustain	Owner	Sustain method and frequency	Report to
ICU residents receive ordering guidelines during monthly on-boarding (1)	ICU fellows Chief residents	During monthly changing of new residents in the ICU, the fellows and/or chiefs will brief them on ordering guidelines for ICU chest x-rays	ICU Fellow
Ensuring that the appropriate order indications are used to order chest x-rays from the ICU (1)	First year radiology resident on chest service	On the third Friday of the month the first year resident reviews indication for ICU chest x-rays and documents patients with inappropriate indications	Chest radiology section chief
Technologist confirm appropriate exam indication (2)	Tech Supervisor	Technologists will be educated on appropriate indications for a chest x-ray on an ICU patient.	Technologist manager

Reliability Level ():

(1) Individuals: Feedback, checklists, training, basic standards

(2) Procedures: Embedded standard work, reminders, constraints

(3) Systems/culture: Process redesign, built-in quality, automated systems, fail safes, physical structure, social norms, “mindfulness”

▶ Overall learning points

1. Change doesn't come easy, but it has to be worthwhile in order for it to happen
2. Not all changes are actual improvements
3. The importance of collaboration and effective communication
4. Always start with the problem, not the solution

▶ Challenge:

- Obtaining accurate data

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