

Indications for Daily Chest Radiographs In Intensive/Critical Care Unit Patients

A Clinical Audit

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BeRemarkable.

Disclosures

None of the authors have any disclosures



Introduction & Methods

Background and Aims

- At our institution, many ICU and CCU chest films are ordered without an indication for the study
- As the interpreting radiologists, we are at a disadvantage, as we have essentially no clinical information



Background and Aims

- Electronic medical records have made it much easier to order imaging (often inappropriately)
- However, even with written orders, missing indications were a common problem¹
- Intervention has been shown to reduce order omissions for inpatient chest radiographs²



Example

The screenshot shows a software interface for a radiology order. The main window is titled "Radiology" and contains a section for "Details for XR Chest 2 Vi". Below this, there are tabs for "Details" and "Order Comments". A dropdown menu is open, listing various reasons for the exam: "Line Placement- Sepsis", "Line Placement-Poor Peripheral Access", "Mass, Site:", "MVA", "Other-", "Pacemaker Failure", "Pain w Trauma", "Pain Without Trauma", "PE-Pulmonary Embolism", "Pleural Effusion", "Pneumonia", and "Pneumonia F/U". The "Other-" option is currently selected. Below the dropdown, there is a field for "Additional/Other Reason (Type-in):".

*Requested Start Date/Time: 17/2016 14:09 EDT Routine, Reason: Other-, x1, Day(s)

*Priority:

*Reason For Exam: Other-

Additional/Other Reason (Type-in):

Reason for Exam: **Other-**

Order Comments: **N/A**



Principal Location of Audit

- St. Joseph Mercy Oakland
 - Community teaching hospital in suburban Michigan (45 minutes North-West of Detroit)
 - 443 beds



Standard

All radiological examinations must have a valid indication



Target

For daily ICU and CCU chest films, 100% should have a clearly stated reason for the exam



Methods

- ICU and CCU routine chest x-rays performed during July 2015 were found in PACS (n=229)
- Each study was reviewed for the presence or absence of a specified indication



First Cycle

First Cycle Results

- 65 of the 229 chest radiographs (28.4%) obtained for ICU and CCU patients did not have an indication
 - i.e. "other" was selected by the ordering physician from the drop-down menu, with no additional comments



Interventions

Interventions

- Since residents are the ones who order most ICU/CCU chest films, our department held a formal lecture emphasizing the importance of properly specifying the indication for all imaging studies
- Attending physicians at our hospital were asked to discuss this issue with residents during rounds



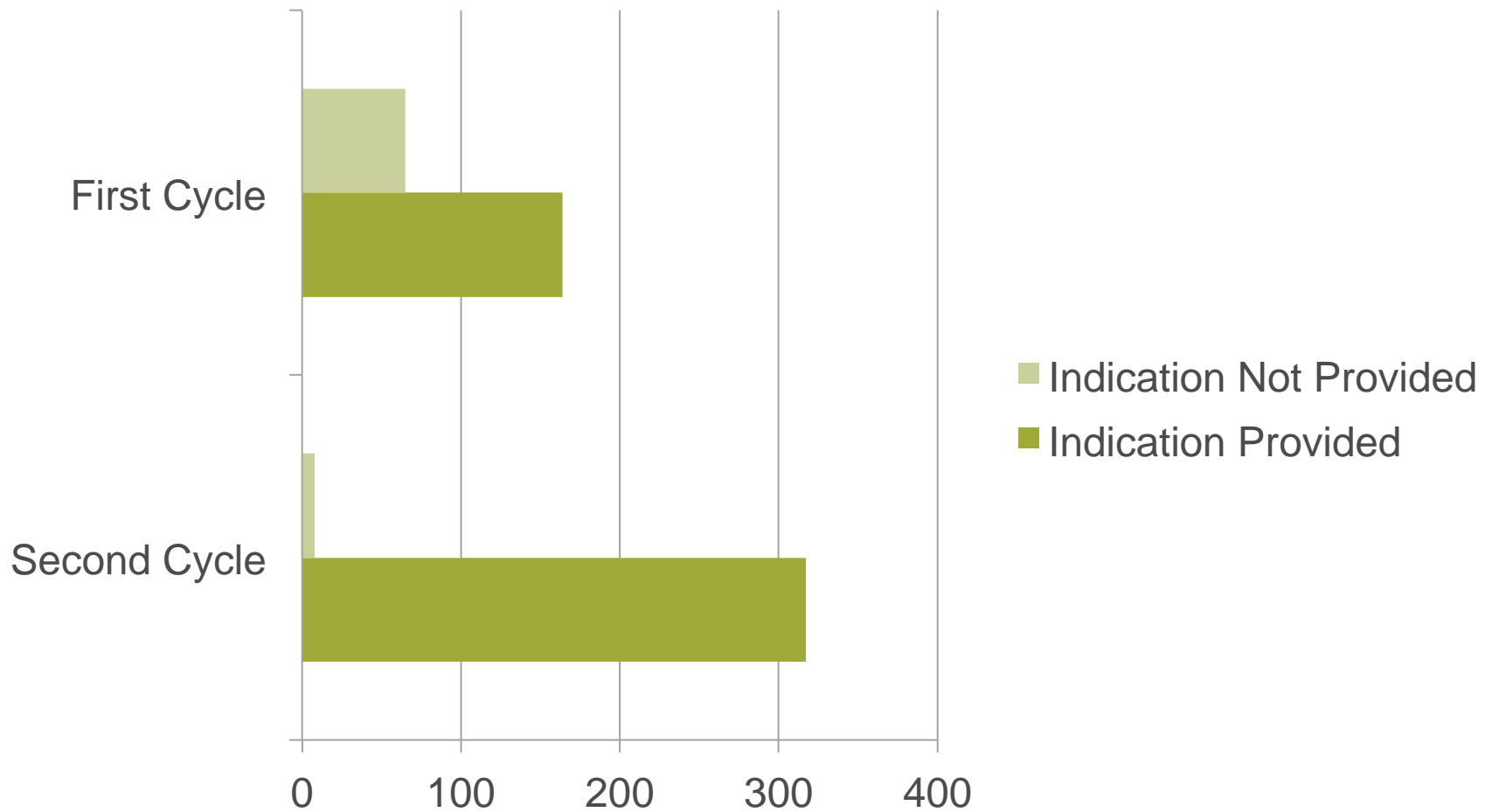
Second Cycle

Second Cycle Results

- All ICU and CCU routine chest radiographs ordered in January 2016 were reviewed (n=325)
- Only 8 did not have an indication (2.5%)
- 97.5% of radiographs were ordered with a valid indication, compared to 71.6% in the first cycle (p<0.01)



Second Cycle Results



Conclusions

- It has previously been shown that interpreting imaging without clinical information decreases accuracy³
- After successful intervention, more imaging studies are being ordered properly, potentially leading to improved diagnostic accuracy



References

1. Cohen M, Curtin S, Lee R. Evaluation of the Quality of Radiology Requisitions for Intensive Care Unit Patients. *Acad Radiol.* 2006;13(2):236-240.
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3. Loy C, Irwig L. Accuracy of diagnostic tests read with and without clinical information. *J Am Med Assoc.* 2004;292(13):1602-1609.



Thank you!

- Questions?
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