Optimizing Workflow in a High Volume Reading Room: Quantification of Interruptions and Reduction Utilizing a Targeted Intervention of Technologist Protocoling

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Introduction

- Academic radiologists and trainees perform many non-interpretive tasks such as
  - Phone calls
  - Protocols
  - Consent

- Certain tasks may
  - Lead to interruptions
  - Diminish patient care
  - Lessen the educational experience of trainees
1. Objectively assess the **frequency and type** of non-interpretive tasks in a high volume reading room

2. Create a **targeted intervention** to reduce non-educational interruptions
Materials and Methods

- Each trainee recorded the number and category of non-interruptive tasks for two months (from 7:30 AM to 5:30 PM, Monday to Friday) in an abdominal radiology reading room at a tertiary academic hospital.

- Data was tallied on a table that included 5 broad categories for these tasks:
  - protocoling imaging exams
  - in-person consultations
  - other
  - clinical calls
  - secretarial tasks
Requests from techs or outgoing calls to ordering providers to modify protocols (e.g., CT abdomen → CT abdomen/pelvis) or pretreatment for allergies. Please include each call, email, or page as a separate tally. Please include emails about future protocols (i.e., 7 days ahead)
Preliminary reads, questions regarding best study to order, call backs about critical results, questions about previously finalized reports, outside hospital imaging review, consultation for/from another reading room, checking a scan for a patient who is on the table (e.g., fishbone for pelvic MRI, adrenal protocol CT, anesthesia patient). Do NOT place Lasix injections, cystograms, or rectal contrast in this column. Please record them under the OTHER category.
Wrong number, **transferring to another person in the same reading room**, transferring to another reading room, IR consults, etc.
Pre-intervention Results

- Average number of interruptions: 33.5 +/- 13.2 per day and 14.2 +/- 5.1 per person
- Median of 2 data collectors per day
- Protocols were the majority of tasks
Targeted Pilot Intervention

• Two experienced technologists protocoled routine CT and MRI exams for 30 minutes a day each (total 1 hr/day) under attending supervision

• 14 weeks after the intervention, the data was recollected for 2 weeks using the same methodology
Post-intervention Results

• The average number of daily interruptions decreased

Non-interpretive Tasks

<table>
<thead>
<tr>
<th></th>
<th>baseline</th>
<th>post intervention</th>
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<tbody>
<tr>
<td></td>
<td>33.5 +/- 13.2</td>
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<tr>
<td></td>
<td>20.7 +/- 12.3 (p=0.02)</td>
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The percent of protocoling reduced from 61.7% to 53.8% (p= 0.01)
Post-intervention Results

• Technologist protocoling was highly accurate.
• Only 8 imaging quality assurance reports were submitted out of a total of 2,219 technologist protocols (0.4%)
Conclusion

• There are a high number of interruptions in an academic radiology reading room, the majority of which are related to exam protocols.

• Technologists protocolling exams for only 1 hour a day can significantly reduce the number of non-interpretive tasks performed by radiologists, freeing up more time for patient care and education.