Improving overnight turn-around-time and restoring on-call resident responsibility in an Academic Medical Center

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The ED is under pressure to make rapid disposition decisions.

Decisions are based on H&P, labs, consults, procedures, and imaging.

The ED demands rapid, high-level interpretations by radiology as part of the ED effort to decrease patient length of stay.
Introduction – Overnight Call Experience

- At our institution, residents gradually lost independence as the ED required higher level reports for overnight exams (from fellows or faculty).

- Residents had been restricted to issuing unpublished drafts, fellows published preliminary reports, and attendings issued final reports the following day, often after medical decision making.

- Our department revisited the resident call structure as we transitioned to providing overnight attending-level reports with a rapid turn-around-time (TAT).
Introduction – Restoring Resident Prelims

- Academic medical centers must balance the demands for rapid turn-around-time (TAT) with the educational value of call for residents.

- A resident task force identified an improvement opportunity when transitioning to attending final reads, based on evidence that greater resident autonomy increased ratings of the educational experience of call.

- The task force recommended residents issue published preliminary reports rather than unpublished drafts.
Methods

Data collection (12/2018-03/2023)
- Final turn-around-time (TAT).
- Resident report contribution (None, Draft, Prelim).
- ED cross-sectional exams from 8:45 PM – 7:30 AM; 7 days a week.

Baseline
- Residents issued an unpublished draft.
- Fellows published a preliminary report.
- Attendings finalized a report the following day.

Intervention
- Residents encouraged to publish prelims.
- Attendings issue final report overnight, with a final TAT expected within 90 minutes.
- Neuro final reports by in house clinical instructors, Non-Neuro final reports by teleradiology.

Note – an additional Swing resident (5PM – 2AM) was added 07/2020 due to increased volumes.

Resident
Contribution: None, Draft, Prelim

Baseline (12/2018 – 12/2019)
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Intervention – Neuro (01/2020)
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Non-Neuro (11/2021) – Chest, Body, CVI, MSK
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Methods

Baseline (12/2018 – 12/2019)

1st Intervention
Neuro Final (01/2020)

2nd Intervention
Non-Neuro Final (11/2021)
Chest, Body, CVI, MSK
Results

Baseline:
• Median final TAT was around 6-10 hours.
• Residents issued drafts for 75% and 90% of Neuro and Non-Neuro ED studies, rarely publishing prelims.

1st Intervention:
• Median Neuro final TAT decreased to 60 min (excluding weeks with 1st year fellow coverage).
• Resident publication of prelim reports for Neuro ED studies increased; 30% (early 2020), 70% (early 2021), 84% (early 2022), and 65% (early 2023).

2nd Intervention
• Median Non-Neuro final TAT decreased to 40 min.
• Residents published prelim reports for most Non-Neuro ED studies (90%).

No increase in ED-reported safety events arising from overread changes was seen despite increases in resident published preliminary reports. No increase in preliminary TAT.
Residents similarly increased their contribution of published preliminary reports for inpatient (IP) exams after each intervention.
DISCUSSION

- Over time, increasing demands for higher-level radiology interpretation has eroded resident autonomy and education during after hours call.

- Independent call represents a pivotal learning experience that forces trainees to apply their knowledge, providing valuable decision-making experience not obtained when directly supervised during the day.

- Here we present an approach that restored resident autonomy. The shift from fellow preliminary reports to rapid attending-level final reports provided the opportunity for residents to publish preliminary reports on call.

- We showed that this call structure facilitated resident comfort with voluntarily publishing preliminary reports, while mitigating patient risk, and without increasing the time until first published report.