Improving Turnaround Times for Inpatient Examinations

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BACKGROUND

Evening hours provide a prime opportunity to perform inpatient radiologic examinations outside of the busy daytime hours used for routine outpatient imaging. However, this practice often results in an increased time-to-interpretation (TTI) of inpatient examination, as after-hours emergency radiologists do not typically have time to interpret these studies between emergency cases. In order to combat this, our institution implemented incentivized reading hours from 5:00 pm-9:00 pm on weekdays. This policy provides daytime staff radiologists a per-case compensation for interpreting evening inpatient exams in order to decrease turn-around-time (TAT) and to offload the case burden for the following morning.

MATERIALS AND METHODS

Our institution's picture archiving and communication system (PACS) was reviewed for all inpatient CT and MRI cases finalized between 5 pm and 9 pm on weekdays during the pre-intervention last quarter of 2020 and during the post-intervention last quarter of 2021. The time from scan initiation to the time of finalized read (TTI) was compiled, excluding outliers that occurred due to report addendums. Data analysis was then performed to evaluate the TTI for inpatient studies interpreted between the hours of 5 and 9 pm on weekdays before and after the initiation of per-case evening inpatient examination compensation.

Initiation of Inpatient Excess Case	Number of Accessions	Time to Finalized (minutes)	Time to Prelim (minutes)
Pre-Intervention (Aug-Dec 2020)	679	101	88
Post-Intervention (Aug-Dec 2021)	974	88	87

RESULTS SUMMARY

Data analysis before and after changes in radiology policy demonstrated a 13-minute decrease in TTI (Time to Finalized) for evening inpatient examinations, while the time to preliminary stayed consistent, showing the decrease in turnaround time occurred only at the staff radiologist level, and not at the resident level. While the clinical impact of the faster TAT for evening inpatient examinations is still to be determined, this policy's implementation has improved daytime radiologist wellness by alleviating the burden of inpatient studies queued for urgent interpretation in the morning.

Image A: Multiphasic CT study in a patient with liver cancer, biliary stents in place and new duodenal bleed. This complex case was scanned after hours and read earlier due to incentivized reading hours.

CONCLUSIONS

This study demonstrated that inpatient TAT could be decreased by offering financial incentive to daytime staff radiologists, which also aids to offload the work day the following morning.

CLINICAL IMPLICATIONS

Decreasing TAT for inpatient studies can provide diagnostic information to clinical teams earlier than the following morning, thus decreasing the time to implementation for vital clinical management. Our research shows a modest decrease in turn around times after the initiation of incentivized reading.