5-31-2017

Shedding Light on the Off-Hours Coverage Gap in Radiology: Improving Turnaround Times and Critical Results Reporting

Gilda Boroumand, MD
Thomas Jefferson University, gilda.boroumand@jefferson.edu

Jaydev K. Dave, PhD, MS
Thomas Jefferson University, jaydev.dave@jefferson.edu

Christopher G. Roth, MD, MS-HQS
Thomas Jefferson University, christopher.roth@jefferson.edu

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Recommended Citation
Boroumand, MD, Gilda; Dave, PhD, MS, Jaydev K.; and Roth, MD, MS-HQS, Christopher G., "Shedding Light on the Off-Hours Coverage Gap in Radiology: Improving Turnaround Times and Critical Results Reporting" (2017). House Staff Quality Improvement and Patient Safety Posters. Poster 64.
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Shedding Light on the Off-Hours Coverage Gap in Radiology: Improving Turnaround Times and Critical Results Reporting

Gilda Boroumand MD, Jaydev K Dave PhD MS, Christopher G Roth MD MS-HQS
Department of Radiology

Background
- Delays in radiology reporting have direct ramifications on patient care & outcomes, patient safety, and costs
  - Per The Joint Commission, “Delay of treatment” ranked as the sixth most frequently reported sentinel event in 2016
  - Traditionally, off-hours radiology coverage is disproportionately limited:
    - Daytime subspecialty teams cover inpatient studies from 8AM-4PM
    - On-call subspecialty teams cover off-hours for isolated residents/fellows
      - With the exception of resident Night Float (not pictured)
    - Critical information systems (CIS) needed to capture delayed reporting and current patient status
  - Obtained from analytics software using data from the radiology information system
  - Evaluation of pre & post implementation metrics:
    - Evaluated multiple subspecialty teams for isolated residents/fellows
      - Neuroimaging, Body Imaging: staggered shifts, 12-8PM
      - General (plain film): extended shifts, 7:30AM-8PM
    - Establishment of Emergency Radiology mini-fellowship
      - Senior resident ER coverage, 7 PM-12 AM
      - Decrease Junior resident call burden
    - Change Emergency Radiology faculty hours to extend early AM attending coverage
      - Throughout morning call shifts until 8PM
  - Multiple staffing changes implemented as of July 5, 2016:
    1) Subspecialty team-based evening call shifts until 8PM
      - Neuroimaging, Body Imaging: staggered shifts, 12-8PM
      - General (plain film): extended shifts, 7:30AM-8PM
    2) Establishment of Emergency Radiology mini-fellowship
      - Senior resident ER coverage, 7 PM-12 AM
      - Decrease Junior resident call burden
    3) Change Emergency Radiology faculty hours to extend early AM attending coverage
      - Throughout morning call shifts until 8PM
    4) Extend resident Night Float shift by 1 hour
      - With the exception of resident Night Float (not pictured) and faculty General shifts, work hours were not increased

Objective
- Devise a plan to optimize off-hours faculty and trainee staffing within the Department of Radiology
- Measure the magnitude of patient safety gains in terms of report turnaround times (TAT) and critical results communication times (CRC)

Intervention

Intervention (cont’d)
- As part of the Radiology Operational Excellence Program (ROE), a team of radiology faculty, trainees, and technologists was tasked with revising off-hours coverage through a 5-step Kaizen process
  - Multiple staffing changes implemented as of July 5, 2016:
    1) Subspecialty team-based evening call shifts until 8PM
      - Neuroimaging, Body Imaging: staggered shifts, 12-8PM
      - General (plain film): extended shifts, 7:30AM-8PM
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    4) Extend resident Night Float shift by 1 hour
      - With the exception of resident Night Float (not pictured) and faculty General shifts, work hours were not increased

Results
- Structure Measures
  - Replaced subspecialty teams for isolated residents/fellows
  - Added faculty members to evening coverage
- Process Measures
  - Obtained from analytics software using data from the radiology information system
  - Evaluated pre & post implementation metrics:
    - Radiology imaging turnaround times (TAT)
    - Percentage of studies exceeding departmental benchmark of 6 hours TAT
- Outcome Measures
  - Critical results communication (CRC) times for pneumothorax (PTX) and intracranial hemorrhage (ICH) pre & post plan implementation
  - Survey results: faculty, resident and technologist perceptions

Results (cont’d)

Conclusions
- Better matching of radiology staffing with inpatient imaging workflow patterns improves turnaround times and critical results reporting
- Expect improved reporting of imaging findings to translate into fewer delays in patient care and improved patient safety
- Further improvements/future directions ➔ enterprise solution, optimizing inter-disciplinary communication, addressing hospital operational inefficiencies

References