



Assessment of Hanging Protocol Impact on Turn Around Time

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Topic

Productivity & Workflow

Background/Problem Being Solved

Hanging protocols determine the configuration, content, and display parameters of an imaging study presented to an interpreting radiologist and can automate certain repetitive tasks. There is limited research showing the benefits of hanging protocols.

Intervention(s)

Hanging protocols were created for the abdominal, thoracic, and neuroradiology sections of an academic radiology practice. CT studies of the chest, abdomen, and pelvis were consolidated into one hanging protocol. Additional consolidated hanging protocols were made for CT and CTA of the head, neck, and spine; MRI and MRA of the brain, head, and neck; MRI of the spine; and MRI of the abdomen and pelvis. The hanging protocols were made generally available to radiology faculty and trainees without forced use. Data from the last full academic year prior to implementation were compared to data from the first full academic year following implementation with implementation occurring over portions of two consecutive academic years.

Barriers/Challenges

Metadata heterogeneity within DICOM header files, differing user preferences, and inter- and intra-study variability are barriers to hanging protocol development. Protocol design and functionality is determined by the structure and tools available within any given PACS and the design concepts may not transfer between vendors. Interpretation time in an academic setting can be subject to many external factors. To control for non-study factors in report finalization time, only "STAT" inpatient and emergency department studies were included; this resulted in an insufficient number abdomen and pelvis MRI studies for analysis. Report metadata was a limitation in analysis due to a dictation software version upgrade between study periods. Studies with and without trainee involvement were analyzed separately. Hanging protocol utilization was encouraged, but could not be tracked.

Outcomes

The time from study completion to report finalization was normalized against professional relative value unit and compared pre- and post-intervention. For studies with trainee involvement, the decrease in normalized time to finalization was statistically significant for all hanging protocol study groups, ranging from 7%-31% improvement (p0.4).

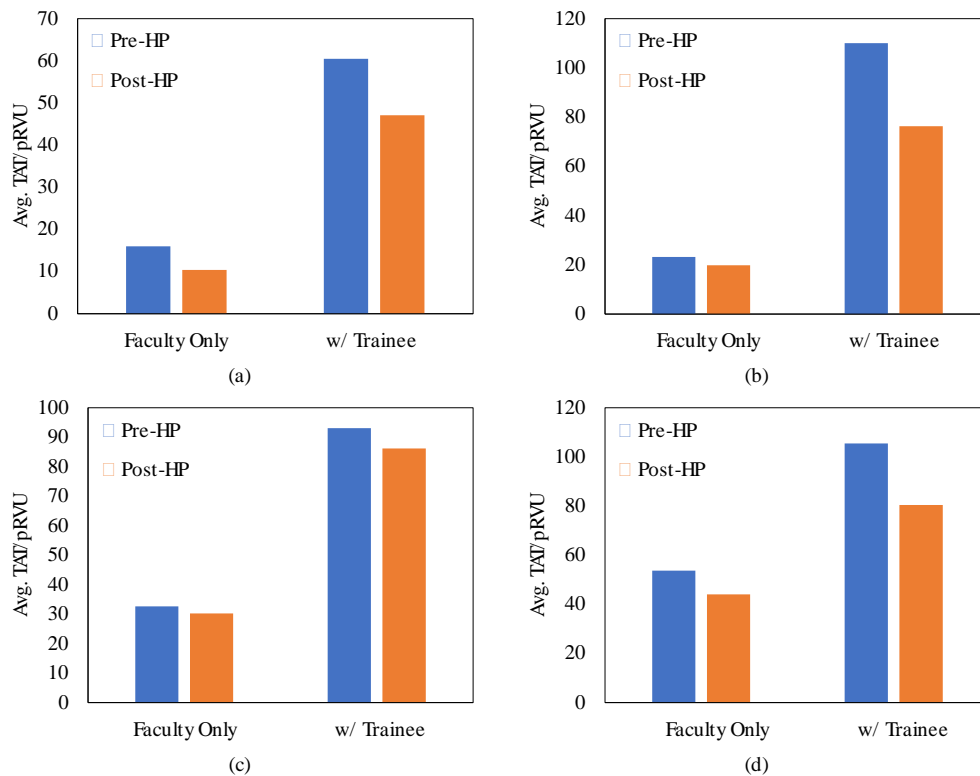
Conclusion/Statement of Impact

Optimized hanging protocols can significantly decrease the duration of image interpretation across a variety of image study types.

Lessons Learned

Hanging protocol creation and maintenance is a dynamic process that benefits from radiologist involvement to incorporate clinically relevant interpretation patterns and image manipulation tasks. Consolidated protocols that accommodate end-user preferences can facilitate long-term maintenance across a practice.

Figures



Keywords