MUSC Health
Medical University of South Carolina

Increasing Efficiency Through Innovation

A Neuroradiology Fellowship QI Project

Background

To ensure the proper study is performed, the radiologist reviews the imaging orders daily to determine the best imaging protocol to reach the proper diagnosis and management of each patient. We receive calls from MRI technologists daily regarding protocols while we are reading studies throughout the day. Disruptions are a well-known factor contributing to errors being made by radiologists. As we face an increasing number of studies with more complex pathologies, we must create an efficient protocoling system to maintain the quality of patient care. The system needs to be undeviating and fast. There are many opportunities to achieve efficiency while reading and performing other clinical duties. Over the past two classes, our fellowship program has chosen to focus on improving our MRI protocoling process.

AIM Statement

Reduce average MRI protocoling time 50% by January 1st 2022.

MUSC Pillar: Innovation.

We improved our process through implementation of a new and more efficient workflow.

Intervention

The 2020-2021 Neuroradiology fellows set out to reduce time spent protocoling by adding a drop-down menu for clinicians to select a specific protocol when ordering an MRI on Epic. They demonstrated approximately a 60% reduction in the average time spent to protocol each study. Our group sought to continue their work by adding a drop-down menu for the Epic radiologist interface of the most frequently utilized MRI protocols. This was most helpful when the ordering clinician did not specify a particular protocol. Over a time period of approximately 3 months, a log was kept to record the number of studies ordered and the time spent to protocol before and after the implementation of the drop-down menu. There was nearly a 70% reduction in time spent protocoling.

Results

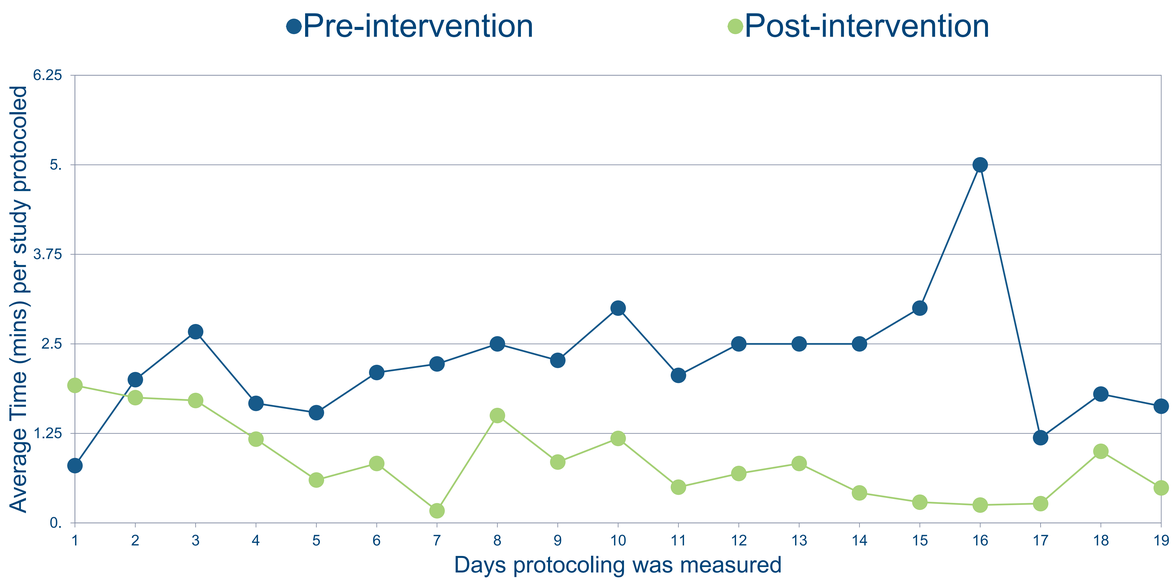

Chart 1. The above graph demonstrates the reduction in time spent protocoling. This allowed trainees to spend more time reading studies and performing other clinical duties each work day.

Contributors

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Barriers

Although we were able to demonstrate a reduction in time protocoling, our project faced several barriers. We work in a very busy reading room making it difficult to consistently track timing spent protocoling. Often while the timer was running, a phone call would need to be addressed to deal with an urgent matter. Providers occasionally request evaluation of several pathologies that require two different MRI orders. For example, a MR angiogram is only designed to look at the vessels and is suboptimal in the evaluation for malignancy. Other times, we would receive orders to protocol from physicians outside of the MUSC network with insufficient information to choose a protocol. Our own bias was an additional challenge. As we progressed through the project, we became more familiar with different protocols and when to use them. This biased skewed the times measured. post intervention.

Next Steps

As we progressed through the QI project, we discovered additional opportunities that could improve our efficiency in the work room as follows:

- Adding all of the available protocols to the drop-down menu.
- Creating a list of general anesthesia cases to be performed each day.
- A link to a website listing which sequences are included in each protocol.
- Giving the technologist the ability to request a MRI order be protocoled through the EMR.