

Date: March 1, 2018

QUALITY IMPROVEMENT PROJECT CHARTER

PROBLEM AND BACKGROUND

What is the core quality issue that you are trying to improve, and what are the factors involved?

Ordering and protocolling computerized tomography (CT) scans after-hours from Emergency Departments (EDs) served by the Joint Department of Medical Imaging (JDMI) has been an inefficient process for ED staff and radiology residents. Most scans required a discussion between the ED staff and radiology resident, leading to multiple phone calls and interruptions. This is in contrast to daytime hours, where scans were protocolled based on information provided with the order from ED staff. The purpose of this quality improvement initiative was to modify this process for CT scans requested from the ED after-hours and observe its impact.

RATIONALE AND BENEFITS

Why is this an important problem to tackle, and what are the expected benefits?

The current workflow process creates significant inefficiencies in workflow for both the ED and JDMI. ED providers constantly interrupt patient interactions to find a phone to receive callbacks from the radiology resident. This problem compounds when there are multiple providers waiting for a response from the radiology resident and providers essentially queue up behind each other for the phone, leading to poor time management. On the other end, the JDMI resident is bombarded with hundreds of pages per shift, many of them repeat pages for a single issue due to the inefficiencies of the pager/switchboard system and phone tag. This causes delays in protocolling scans and scan interpretation. All this results in unacceptable delays in patient care and disposition.

By bypassing the need for a phone call prior to every protocolized scan, this will allow providers to focus on clinical work and minimize task switching.

AIM STATEMENT AND DELIVERABLES

This project aims to improve multiple quantitative and qualitative measures of workflow efficiency and provider satisfaction (see below for specific outcome measures).

We aim to reduce the number of pages the ED sends to the JDMI resident after hours by at least 20%.

We also aim to improve the delay between CT order entry and protocolling, and subsequently from CT order entry to scan completion.

SCOPE

What are the things (people, tasks, processes) that this project WILL and WILL NOT touch on?

A new process will be created that will remove the requirement of paging and discussing ED CT orders that requires resident protocolling. Instead, an electronic list will be created that allows residents to review CT orders. Residents will protocol straightforward requests, and would call the ordering physician when a clinical discussion is required. The change will be introduced on weekdays (1700-2000h) starting April 30, 2018, and extended to weekend daytime hours (0800-2000h) on September 29, 2018.

This change will affect all the EDs served by JDMI (Toronto Western Hospital, Toronto General Hospital, Mount Sinai Hospital). This policy will not elective or outpatient scans.

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MEASURES

Quantitative measures evaluated the effect on efficiency of protocolling and performing scans, volume of pages received by the radiology resident, and CT utilization. Since there were some reservations that by removing barriers to obtaining certain CT scans that its utilization will increase dramatically, this will specifically be measured and compared to a control utilization rate (in this case, non-contrasted CT brain since they never required a call to the radiology resident for authorization).

Due to the difficulty of directly measuring many workflow outcomes (e.g. number of interruptions, task switching, amount of time waiting on hold), we will use perceptions of various measures from the providers as a proxy. Qualitative measures will include a survey of both ED staff and radiology residents to understand perceptions of satisfaction and workflow efficiency.

CHANGE IDEAS

We are implementing a new process of order entry and CT scan protocolling that removes existing legacy barriers by leveraging existing computerized provider order entry (CPOE) systems and functionality in the picture archiving and communication system (PACS).

PROJECT LEADER, TEAM MEMBERS AND RESPONSIBILITIES

Project leader

Joseph Choi, Attending Staff, Emergency Department, University Health Network

- Disseminating new CT-ordering policy to ED physician groups
- Post-implementation survey to ED physician group
- Data collection from UHN DS, MSH DS; data cleaning
- Data analysis
- Dissemination of results

Rajesh Bhayana, Resident, Department of Medical Imaging, University of Toronto; Joint Department of Medical Imaging

- Dissemination of new CT-ordering policy to rotating residents at JDMI
- Post-implementation survey to rotating JDMI residents
- Data collection from JDMI; data cleaning
- Data analysis
- Dissemination of results

RESOURCES

This change in policy has been approved by the chiefs of the emergency department and JDMI. The chiefs and leaders of the respective departments will send out reminders (either electronically or in person) to the affected users of this policy change. Surveys will be sent out by collaborators on this project via Survey Monkey to each department to collect qualitative data. Quantitative data will be obtained from databases managed by UHN Decision Support, MSH Decision Support, and JDMI.

TIMELINES AND MILESTONES

When do you anticipate STARTING to work on this project, IMPLEMENTING this project, and COMPLETING it?

March 2018

- Finalizing modified protocol
- Pre-implementation education campaign (emails, discussions at rounds and business meetings) to socialize providers to the new procedure

April 30, 2018

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- Implementation of phase 1 of the new process (removing the requirement for the previously required phone call for CT scans from 1700-2000)
- Continuous monitoring for potential adverse effects
- Further refining and education to rotating providers
- Ongoing data collection

September 29, 2018

- Implementation of phase 2 of the new process (removing the requirement for the previously required phone call for CT scans from 0800-2000 on weekends, making the new process the standard for all days from 0800-2000)

January 2019

- Survey to the ED and radiology groups
- Quantitative data collection from UHN, MSH, JDMI
- Dissemination of survey results

February 2019

- Data cleaning
- Data analysis

March 2019

- Data cleaning
- Data analysis
- Preparation of abstract and/or manuscript for peer reviewed publication
- Dissemination of quantitative data