Decreasing Median Fluoro Time: A Multi-Factor Approach

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Topic of Poster: Quality Improvement Initiative

Summative Statement:
Through continuous assessment, review, revision of policies, data collection and analysis, as well as multi-disciplinary education, procedure-related cardiac catheterization laboratory fluoro time/dose can be reduced and therefore patient safety can be improved. It is imperative to review all areas which may contribute to procedure-related prolonged radiation exposure. All contributing factors that impact this important quality metric must be taken into consideration in order to operationalize an optimum radiation safety program.

Abstract:
The CathPCI Registry® reports showed Arnot to have high median fluoroscopy (fluoro) times which directly impacts patient safety through increased exposure to radiation. In reviewing the cath lab and data processes, it was noted fluoro + cine time was being recorded when the registry just tracks fluoro time. By noting this data abstraction and entry issue and resolving to appropriately capture the fluoro-only time in the database, the median fluoro time decreased from 13.15 minutes in July 2012 to 10 minutes in August 2012. However, Arnot's median time was still higher than the registry's benchmark so additional review of the contributing factors was needed.

Further assessment of the data in the registry revealed differences between individual operator's fluoro times as well as discrepancies in labeling the PCI as single vessel versus multiple vessels. Subsequently, all patient outliers were reviewed to determine procedure-related differences amongst operators, which provided an opportunity to determine quality trends of concern and further evaluate the credibility of the data. Following this detailed review, documentation and/or coding errors were corrected in the database.

Columbia University's Dr. Stephen Balter presented and discussed the importance of measuring patient fluoro dose. The Arnot cath lab then changed the exposure on their machines to 15 frames per second (FPS) to help decrease the fluoro dose patients received. Additionally, Arnot began tracking fluoro dose in the CathPCI Registry ® database and notifying operators when they are nearing high levels during cases. Cases that exceed 10,000 mGy are now peer reviewed and fluoro time/dose reports are reviewed quarterly at their Quality Improvement Meetings. Furthermore, the radiation safety committee has discussed the development of a policy regarding patient management based on fluoro dose.

It is a continuous process to improve quality of care and influence the many factors that impact fluoro time. ArnotHealth's median fluoro time has shown a vast improvement ~ decreasing from Q3 2012 (13.8 minutes) to Q3 2013 (9.4 minutes). Discussion of outlier cases will be used to

determine if new factors are introduced into the patient care process that may adversely affect fluoro time and thusly patient care.