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Background

- Trauma team activations are tools used to group resources efficiently to aid in the evaluation of the injured patient.
- The multidisciplinary Trauma Council identified an opportunity for improvement in timely chest radiographs for trauma activations.

Problem and Significance

- The goal for door to chest x-ray time is 10 minutes, measured from the time the patient is admitted to the Emergency Department to the time the chest x-ray is completed.
- The chest x-ray should be included in the primary survey to evaluate for life threatening injury.
- In early 2018, CRHS door to chest x-ray time averaged 25.14 minutes.

Clinical Question

- Does use of orange, high-visibility Trauma Vests reduce door to chest x-ray time in trauma resuscitations?

Objectives

- Clearly identify the primary nurse as leader and director of the resuscitation to promote coordination of care.
- Decrease door to chest x-ray time for trauma activations.
- Improve efficiency in trauma resuscitations.

Methods

- The project was limited to activated trauma patients from February 2018 to September 2018 admitted to Conway Regional Medical Center.
- Patients who did not receive a chest x-ray after admission to the emergency department were excluded.

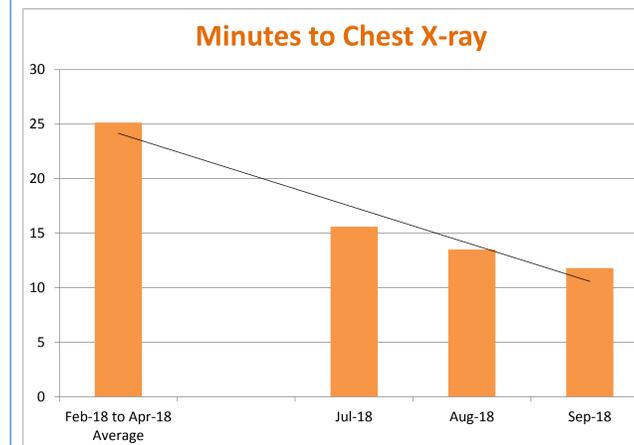
| Pre-Intervention | Post-Intervention |
|-----------------------|-----------------------|
| February – April 2018 | July – September 2018 |
| N=35 | N=39 |

- The project workgroup was the multidisciplinary Trauma Committee including administration, surgeons, anesthesia, orthopedics, emergency medicine, radiology, quality, laboratory, education, respiratory, case management and clinical nurses. A senior level nursing student assisted with data collection and evaluation.
- Potential barriers to implementation of the vests were identified as:
 - Knowledge deficit among team members about the vests
 - Physician ordering discrepancies regarding chest x-rays
 - Under utilization of the vests

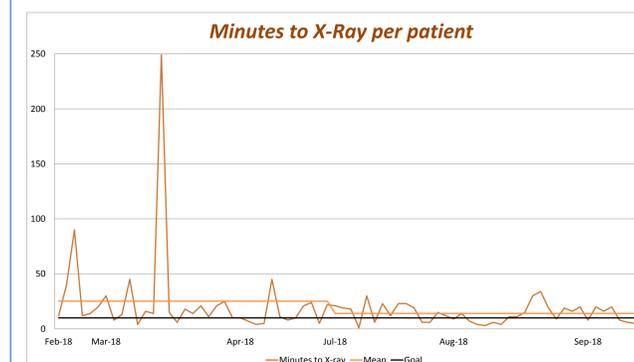


Results

- The baseline mean prior to any intervention was 25.14 minutes from arrival to the emergency department to receiving the chest x-ray which decreased to 14.05 minutes after implementation.



- After implementation there was a mean difference of 11.09 minutes from pre-intervention to post-intervention average times when measuring door to chest X-ray times.



- Most notably, there was a 79% decrease in variation after the orange vests were implemented (omitting 1 significant outlier in the pre intervention group) or 96% including the outlier.

Conclusion

- The use of high visibility vests during trauma resuscitation significantly impacted door to chest x-ray times. Using non-verbal measures to drive leadership for the trauma team has proven successful.
- Anecdotal feedback from frontline staff utilizing the high visibility vest was positive. New and seasoned nurses alike reported the vest was an easy identifier, and helped them coordinate the trauma team during resuscitations. Additionally, the surgeons responding to these activations also reported improved communication, and easy identification.
- Moving forward, the team's objective is to learn how to control variation and minimize its impact. Since variation in this process has been significantly reduced, the team plans to continue collecting data to test and fine tune interventions to further improve quality of care.

References

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- Ford, K., Menchine, M., Burner, E., Arora, S., Inaba, K., Demetriades, D., & Yersin, B. (2016). Leadership and Teamwork in Trauma and Resuscitation. *The western journal of emergency medicine*, 17(5), 549-56.

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