Improving Emergency Physician Availability for Trauma Cases in a Pod-Based System

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Background

- The role of the EM physician in trauma care varies across the nation and is determined by factors such as: geographic area, available resources, and the regulatory guidelines.[1]
- Due to a robust trauma system in place in our facility, there previously was no defined role for an EM physician within our clinical practice guidelines.
- In 2018, the Pennsylvania Trauma Systems Foundation (PTSF) notified LVHN-CC that it required an EM physician in all Level 1 alerts.
- Per PTSF guidelines, "When the trauma surgeon is not immediately available, the attending physician assumes control until the attending trauma surgeon arrives" as well as "An Emergency Medicine physician must respond to the highest level of trauma alert.".[2]
- A 2007 study found no statistically significant difference between traumas led by trauma surgeons vs EM physicians when looking at ED length of stay and patient survival. [3]

Problem Statement

The aim of this project was to trend the rates of Emergency Medicine physicians attending Level 1 alerts while collaborating with the ED/Trauma Liaison Committee to identify and address system barriers.

Methods

- A multi-disciplinary team composed of physicians, trauma coordinators, and other critical departments was formed. (ED/Trauma Liaison Committee)
- Trauma Activation Clinical Practice Guidelines were updated to establish a role for the EM physician.
- EM Physician response to Level 1 alerts was determined via EPIC use of the .EDTRAUMA1 dot phrase and nursing documentation.
- Real-time feedback helped identify barriers which could be addressed to increase compliance.
- Feedback was discussed at monthly committee meetings in order to rapidly make changes.
- This allowed for multiple Plan-Do-Study-Act (PDSA) cycles within the data collection period.
- Compliance rates were analyzed starting in July 2019 and analysis was completed in December 2019.

Results

Month	PDSA Cycle	Barrier	Intervention	Compliance	Net change
June	1	Staffing concerns due to new responsibility for EM Physicians	Added a new shift for providers during peak trauma times (late evening/early morning)	52.4%	N/A
July	2	Physicians not all aware of change to trauma response and its importance	Email communication by ED Administration	54.2%	1.8%
August	3	Physicians unsure who is supposed to respond to Level 1 alert, alerts not being covered	POD 4 Physician designated as primary Level 1 alert responder	62.0%	7.8%
September	4	Level 1 overhead alert cannot be heard in patient rooms, physicians unaware a Level 1 alert is coming in	New pager assigned to POD 4 physicians to be notified of Level 1 Alerts	82.0%	20.0%
October	5	Physicians unaware if they miss an alert due to not hearing overhead message	Feedback tool created which notifies physicians of alerts that occurred during their shift and their response	90.0%	8.0%
November	6	Providers uncertain as to who is scheduled for alert coverage during shift	ED Physician responsible for alert coverage schedule posted in POD 4	82.0%	-8.0%
December	7	System to notify EM physician of an incoming Alert (Overhead alert, page, ASCOM call) not being used 100% of the time	New Trauma Flow Diagram created to standardize alert process and ensure physicians are contacted	82.4%	0.4%

Figure 1 shows the individual PDCA cycles instituted during the project

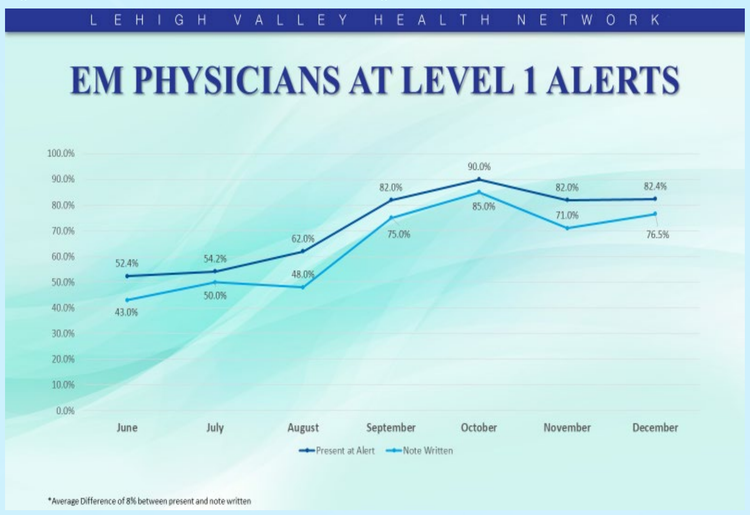

Figure 2 shows compliance rates over time

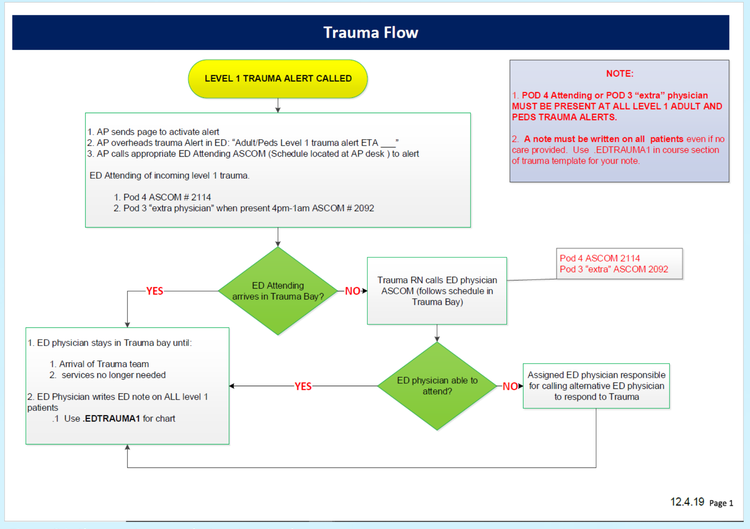

Figure 3 is the new trauma alert system in place

Discussion

- Using repetitive PDSA cycles, the ED/Trauma Liaison Committee was able to rapidly address barriers and create interventions to increase compliance.
  - It is important to note there are other factors which could have also affected the changes in compliance rates each cycle.
- A multi-disciplinary team composed of physicians, administration personnel, and team coordinators allowed for both lateral and top-down leadership.
- The Committee is still monitoring data and implementing changes presently. Current changes include:
  - A checklist to standardize the notification process. This includes steps to ensure the physician is aware and to make sure if they are unavailable a secondary physician is contacted to cover the alert.
- The PTSF does not have a minimum compliance level which LVHN-CC must achieve; therefore efforts are to reach 100% compliance.
- It is important to achieve maximum compliance before the next PTSF review as well as before the move into the new Emergency Department.
  - The current timeline for transition is in December 2020. Maximizing compliance before this would help avoid a possible set back as this transition will increase the number of changes providers and staff have to deal with.

Conclusions

- This project's aim to trend the compliance rates and the efforts of the ED/Trauma Liaison team to increase those rates has shown that while more work is still necessary, the interventions implemented thus far have led to a net increase.
- As there is no direct minimum compliance rate given by the PTSF it is critical for the hospital system to achieve the highest possible compliance rate in order to assure accreditation in the coming review cycle.
- While compliance rates have fluctuated up and down, there has not been a decrease under 80% since that rate was surpassed earlier in the year.
- Further efforts into identifying why physicians are missing alerts they are responsible for will continue to identify barriers which require intervention.

REFERENCES

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