

Emergency Department Triage Protocols: Improving Length of Stay for the Low Acuity Patient

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Description of the Problem

Background:

Emergency Department (ED) overcrowding has been linked to a 45% increase in mortality, a 75% increase in poor quality of patient care, and 100% of patients reporting their condition was much worse (Badr et al., 2022). The purpose of this quality improvement project was to identify a way to improve (ED) length of stay (LOS) for low acuity patients. The triage area was identified as an area that could be changed and is the initial location for patients seeking care in the ED. A patient's LOS can be affected by several factors such as, number of patients in the department, ED admission holds, and staffing census.

Purpose Statement:

The purpose of this quality improvement project was to decrease LOS for Emergency Severity Index (ESI) level IV & V patients in this Level II 48 bed trauma facility by implementing an educational initiative for ED nurses to increase the use of existing triage protocols.

Clinical Question:

Can an educational initiative for ED nurses on triage protocols increase the use of protocols and reduce the LOS in low acuity patients in the ED?

Specific Aims:

1. Reduce the current LOS for low acuity patients seen in the ED to 80 minutes or less. The arrival to departure time for Level IV & V patients was collected following the education intervention. This data will continue to be collected weekly for three months.
2. Increase the triage protocol usage to 80% by ED nurses. The data for the usage report was collected by running a 48-hour triage report from Sunday-Monday for ESI level IV & V triage charts. The triage reports were collected weekly for 3 weeks following the education intervention and will continue to be collected weekly for three months.
3. If the above goals are reached, sustain LOS and triage protocol use percentage measuring these same outcomes quarterly for one year. If they are not reduced, continued monthly monitoring and measurement for needed changes to meet goals.

Synthesis of Evidence

In a retrospective review performed by Beczek et al., (2022) it was discovered that a prolonged length of stay in the ED increased medication errors, hospitalizations, pressure injuries, and mortality. Triage protocol implementation is one method that can be useful in decreasing ED LOS. Patients with a lower acuity score or patients expected to be discharged can benefit the most from triage protocols.

Protocols can reduce the time spent in a bed and help the provider reach a diagnosis and disposition more quickly. In a study measuring length of stay in low acuity patients where blood was drawn using a nursing protocol, there was a decrease in length of stay by over 20 minutes (Zaboli et al., 2020). In another study evaluating the triage and treat model, minor injuries like wound care complaints, is a safe and effective model that can reduce length of stay (Van Donk et al., 2017).

Project Description

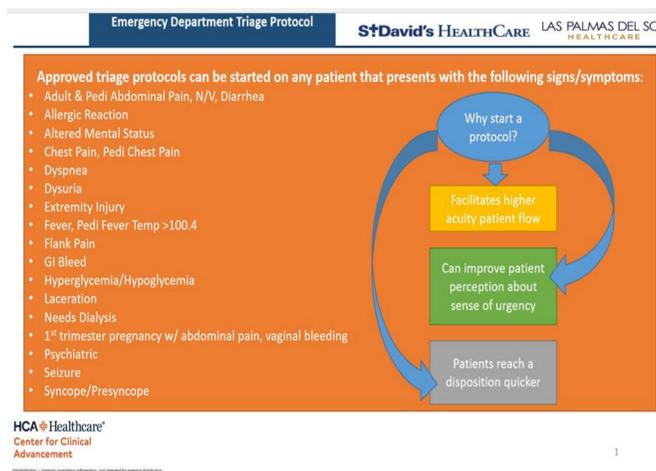
Edward Denning's modified Plan, Do, Study, Act (PDSA) framework was used and continues to be used to guide this quality improvement project (Shaw, 2019, p.25).

A before and after design was used to conduct this quality improvement project. This design was the most feasible for the facility and unit due to flow of the ED. The setting was a level II trauma facility in Central Texas. The participants for the project were Ed patients assigned ESI level IV or V by the triage nurse and ED nurses assigned to triage who entered the ESI levels for patients were eligible. ED leaders were encouraged to engage their nursing teams to participate in education. Only aggregate, non-identifiable data was collected from patients charts and staff members.

Implementation

- The first step of the project was to calculate the baseline LOS prior to beginning the education initiative.
- Retrospective length of stay data was collected from September 2022-February 2023 on low acuity patients by the ACNO of the level 2 trauma center. This data was displayed on a run chart.
- A manual audit was done on the 48-hour report to determine which patients qualified for a triage protocol n=26. The 26 charts were reviewed to determine which patients had a documented triage protocol. Only 4 % of nurses documented a triage protocol was started for the low acuity patients.
- Education focused on re-educating staff regarding the purpose of the triage protocols and how to document when a protocol was started.
- A huddle card was built to explain the purpose of a triage protocol. The triage protocols were also printed as a resource. Lastly, examples were made to show the nurses how to document when a triage protocol is started in their electronic medical record.
- Measurement of post education LOS occurred weekly following the educational initiative for 3 weeks and will continue to be evaluated for the next 3 months.

Protocol Huddle Card



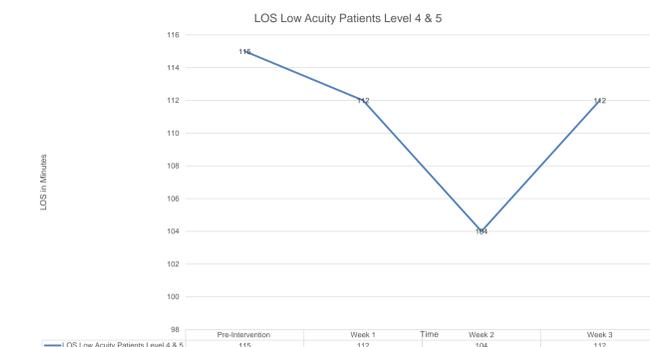
ED Triage Protocol Orders

ED Triage Protocols				
****If ordering a UA, also order a Urine Pregnancy on every female patient unless post-hysterectomy, post-menopausal, or premenarchal****				
Chief Complaint	Nursing	Labs	Medications	Radiology
Abdominal Pain, N/V or Diarrhea	IV, NPO, EKG if diabetic or elderly	CBC, CMP, Lipase, UA	Zofran 4mg ODT for N/V	
Pedi Abdominal Pain, N/V or Diarrhea	NPO	UA (if toilet trained)	Zofran 2mg ODT if 8 kg to 15 kg Zofran 4 mg ODT if >15 kg	
Allergic Reaction	IV		Benadryl 50mg IV Decadron 10mg IV	
Altered Mental Status	IV, D-stick	CBC, CMP, ETOH, UA, UDS		
Chest Pain (ACS concern)	EKG, IV	CBC, BMP, Troponin	ASA 325mg PO	1 view CXR
Pedi Chest Pain	EKG			1 view CXR
Dyspnea	EKG, IV, O2 if sat <92%	CBC, BMP, Troponin, BNP		1 view CXR
Dysuria	UA			
Extremity Injury	Ice pack on injury IV (or EMLA) if deformity		Ibuprofen 400mg PO (or 10 mg/kg)	3 view X-ray of injured joint/extremity
Fever (sepsis concern or immunocompromised)	IV	CBC, CMP, Lactate, UA, BC X2, urine culture	APAP 1000mg PO if none in past 4 hours	1 view CXR
Pedi Fever (temp > 100.4)			Ibuprofen 10 mg/mg (age >6 mo) APAP 15 mg/kg	
Flank Pain	IV	CBC, BMP, UA		
GI Bleed	IV	Type & Screen, CBC, CMP, PT (if on Warfarin)		
Hyperglycemia	IV, D-stick	CBC, BMP, Acetone, VBG, UA		
Hypoglycemia	IV, D-stick	CBC, BMP, UA	D-50 25gm IV for BS <60	
Laceration	LETS Gel to wound		Ibuprofen 400mg PO (or 10 mg/kg)	1 view CXR
Needs Dialysis	EKG, IV	BMP		
1 st Trimester Pregnancy (with abd pain or vaginal bleeding)	IV	CBC, Type and RH, Serum Pregnancy & Quant HCG		1 st trimester pelvic US
Psychiatric	IV	CBC, CMP, ETOH, UA, UDS		
Seizure	EKG, IV, D-stick	CBC, BMP		
Syncope/Presyncope	EKG, IV, D-stick	CBC, BMP, Troponin, UA		

Results

Aim 1 was to reduce the current LOS for low acuity patients to 80 minutes or less. The weekly post intervention mean LOS was compared to the 12-month pre-education mean LOS identified in the retrospective review. The change in LOS data is displayed in a run chart to show changes in LOS over time. There was a slight significant in LOS post education intervention.

Aim 2 was to increase the triage protocol usage to 80% by ED nurses. Weekly reports were run over a 48-hour period from Sunday-Monday of Level IV & V triage charts. These charts were audited for ED nurse protocol documentation and then the percentages were calculated and compared over the 3-week period. The percentage of nurse's week 1 was 4.5 %, Week 2 was 4.5%, and 0% for week 3.



Implications for Practice

The current triage process has proven ineffective at ensuring patients are seen and discharged in a timely and safe manner. The current process improvement plan has the potential to help redesign the triage flow, reduce patient safety incidents, and improve quality of care for the ED patient.

The current length of stay of >120 minutes and only 2% triage protocol usage shows that improvements need to be made. The re-education intervention and data abstraction were used to help bring awareness to the triage flow process.

The sustainability of the project will rely on unit leaders and clinical staff to be invested and committed to the use of triage protocols. If data can support the use of triage protocols, then this process could be applied to higher acuity patients.

The use of additional personnel in triage during peak times is something that could also be considered.

Takeaway Message

The triage process in place prior this project was ineffective at ensuring patients were seen and discharged in a timely manner, increasing the risk of harm to the patient. The process improvement plan had the potential to help redesign the triage flow to decrease patient safety incidents and improve quality of care for this hospital population. In the ED decreasing LOS and ensuring patient safety are always major goals, thus the lessons learned in this project could be applicable to other ED's within the facility's partnership.



Photo by Nguyen Hiep on Unsplash

References upon Request.