Triage Training: Improving Access to Care

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**Clinical Leadership Theme**

The Clinical Nurse Leader curriculum theme that is the focus of this project is access to care. This project will accomplish the goal of improved access to care by standardizing and streamlining the triage process on the unit. Over the course the project, the Clinical Nurse Leader will assume the role of Advocate, Team Leader, and Educator (AACN, 2013).

**Statement of Problem**

Triage represents the entry point for many acute-care situations. The decisions and judgements made during the triage process not only protect the health and well-being of patients, but sets the expectations for their coming care. Under the Emergency Severity Index (ESI) 5 tier triage process, each tier represents not only how acute the patient is, but also an estimation of how many resources and/or interventions that patient will require.

The targeted unit for this project falls in a unique space among acute-care units. The unit is part of a military hospital, which places certain roles and obligations on the unit, such as Radiological Contamination (RadCon) response. While this fell in line with the previous designation of the Emergency Department (ED), as of October 2014, the unit was transitioned to an Urgent Care (UC). Despite this rebranding, the unit continues to consistently see higher-tier (3+) triage cases (Essentris, 2016) and continues to have the responsibility of RadCon response.

As a part of being rebranded as a UC, the unit’s hiring practices changed to de-emphasize trauma training among the microsystem staff. As of today, only one physician is a board-certified Emergency physician. The nursing staff, being mostly civilian, retains a larger percentage of acute and emergency training, yet knowledge gaps have appeared among their ranks as well.
To complicate the matter, the rebranding as a UC has coincided with an increase in patient load, with the total number of patients per month increasing 81% (Appendix A). This has not, however, been met with a marked increase in staffing numbers, which results in a staff that continues to see the same high acuity patients with less unit resources. Unfortunately, the number of acute cases presenting to the unit has not decreased, rather the unit has seen a numerical increase in the number of higher-level (3+) triage cases, though not as a percentage of total cases. Because the unit no longer accepts ambulances, virtually all presenting cases do so under their own power, increasing the ambiguity of cases.

As a result, the triage process is vital to the safe and efficient functioning of the unit. Despite this necessity, there has been no effort to train new nursing staff in a standardized triage process. Previous efforts have been made to institute a checklist, but a comprehensive effort has been notably absent.

**Project Overview**

The objective of this project is to improve patient access to care by improving the following three UC metrics: Time-To-Triage (TTT), Registration-To-Bed time (RTB), and Left Without Being Seen (LWBS) rate (Essentris, 2016).

The TTT metrics measures the amount of time from registration to triage. The unit currently uses an older EMR system, Essentris, which requires timestamps to be entered by the nurse. The inefficiency of this system, paired with lack of established triage process, means that TTT is tracked inconsistently and unreliably. However, experienced nurses on the unit have made an effort to provide this information, so an estimated TTT has been obtained. The current estimate is 28 minutes, with an understanding that this is, if anything, a best-case estimate. The goal for this metric is <15 minutes. While best-practice dictates 10 minutes as the target time, it
is expected that post-triage crowding may make significant improvements beyond the 15-minute mark infeasible (Houston, Sanchez, Fischer, Volz & Wolf, 2015).

Registration-to-Bed times have been more consistently tracked, although again the data is not absolute, showing gaps particularly for certain dates. There exists enough data, however, that a strong average can be established. Currently, the RtB time for the unit is 42 minutes, with average peak wait times exceeding an hour. The unit goal is < 30 minutes.

LWBS rates have been described as “a surrogate measure of patient satisfaction and as a quality indicator of the ED and of the hospital as a whole” (Cortez, et al, 2013). LWBS rates are tracked rigorously and provide the strongest evidence of systematic failures. The current average unit LWBS rate is 5.8%. While hospital averages vary widely on this metric, from 0% to over 20% (Hsia, et al, 2011) the national LWBS rate was established at 1.79% (Bourgeois, Shannon & Stack, 2008). The unit target is <2%. As wait time has been strongly associated with LWBS rates (Hsia, et al., 2011) this will be accomplished by decreasing TTT and RtB.

Finally, a direct measurement for the amount of time spent triaging by a nurse is needed. A plan to track this metric has been developed, with a target time of <10 minutes. Best practice for triage time with ESI is stated as 3-5 minutes with a mean time of 9.03, but this does not include organizational requirements such as history taking and data entry into the EMR (Hitchcock, Gillespie, Crilly & Chaboyer (2014).

Ultimately this project aims to improve unit efficiency and patient satisfaction by decreasing wait times and allowing incoming patients to connect with nursing staff earlier in the process. These specific goals will improve patient access to care, and decrease the number of patients who decide not to wait for a provider (LWBS).
Rationale

On October 1st of 2014, the unit officially transitioned from ED to UC. First-year usage metrics for the UC have already been obtained through both Essentris EMR and the Composite Health Care System (CHCS). Initial assessments are based upon this data. Preliminary review of second-year data shows a continuation of identified trends. All comparisons will be between the final year of the ED (Year 0), which was collected between October 2013-October 2014, and the first year operating as a UC (Year 1), which was collected between October 2014-October 2015.

Year 1 experienced an 81% increase in caseload from Year 0. This increase is a direct result of unit rebranding, as no other factors exist to explain the dramatic increase. The UC has also experienced an increase in high-acuity cases, from 4,036 in Year 0 to 5,422 in Year 1, though high-acuity cases make up a smaller percentage of the total caseload, from 34.0% in Year 0 to 23.2% in Year 1 (Appendix B).

The usage statistics have made two things evident. First, unlike a standard UC, a triage protocol is both warranted and necessary. The number of high-risk, high-acuity patients makes the idea of serving patients on a first-come first-serve basis both impractical and irresponsible. Normally a UC would simply turn these patients away, however, since the unit is attached to a hospital with an inpatient unit, it falls under Emergency Medical Treatment and Labor Act (EMTALA) and cannot legally do so. Second, since the unit has not increased staffing, it is necessary to increase unit efficiency to handle the greatly expanded workload.

Originally, the unit had planned to accept and then transfer high acuity patients, for which the CNL student created and implemented the ‘Hot Transfer Protocol’, (Simpson-Crawford, 2015) which remains in use.
Issues with this system quickly became apparent, as transfers done by ambulance are expensive and time consuming, with the average transfer wait time exceeding two hours (Essentris, 2016). In response to the cost, emphasis was placed on retaining patients when possible, whether or not the required interventions fell within the UC menu of services. This emphasis highlighted the staffing and equipment changes that eroded the unit’s ability to deal with both the increased patient load and the increased number of critical cases.

In April of 2016, a tipping point was reached. The hospital commander, through a series of patient and staff complaints, became aware of the issues plaguing the unit. A stakeholder meeting was held with the following stakeholders: the lone ER certified provider, Director of Nursing Services, Director of Medical Service, radiology and laboratory staff, and the CNL student. This meeting conducted a microsystem analysis, determining that triage was a major point of failure in the unit. Specifically, it identified instances of both under- and over-triage, failure or inability to properly report triage levels, long times spent in the actual triage process, and a consistent failure to begin triage in a timely manner, among other issues with the unit.

As a result of this meeting, the CNL student investigated the triage process. First, a process map and root cause analysis was performed to identify potential points of failure (Appendix C, D), which highlighted the failure to formally standardize and train in the triage process as a major issue. After a literature review, the ESI triage process was confirmed as best-practice and a SWOT analysis (Appendix E) and Cost-Benefit Analysis (Appendix F) was performed on implementation. Hospital management focused on several points based on these analysis: low monetary cost that easily fit within the current-year fiscal budget, potential EMR process improvements, ED reversion preparedness, and high potential upside for both access and
patient safety. Based on the identified strengths and low implementation overhead, hospital command approved the plan as a first step measure for improving the unit.

**Methodology**

The planned project is currently in the Do stage in the PDSA cycle. In order to get to this point there have been definitive steps.

The IT Department supported the project through the collection of several metrics, which include the following: (a) left without being seen, (b) triage levels, (c) time from registration to triage, (d) triage to room time, (e) total length of stay, and (f) total population. Time frame for collection was from August 1, through September 30, 2016 (Essentris, 2016). Additionally, IT provided the initial justification metrics, comparing Year 0, Year 1, and the available part of Year 2 (CHCS, 2015).

While metrics were being obtained to both support and justify the project, the budget, mode of education, and evaluation tools were finalized. Pre-program self-assessments (Appendix G), which included each microsystem nurses’ own assessment of knowledge, experience, and previous training on the triage process, were performed to analyze the potential level of impact of the program.

As part of the program, both pre- (Appendix H) and post- (Appendix I) class tests are being performed to validate the program for future use with incoming staff, as well as to verify that the knowledge has been absorbed by current staff.

To complete the project follow-through, a competency check list (Appendix J) was developed and approved by the stakeholders. This check list will be completed for each nurse during the normal working day. To aid in this, the CNL student has identified preceptors for each
shift and will complete those nurses’ competency check personally. Preceptors will provide necessary leadership to during implementation.

As part of the implementation process, a paper tracking chart has been designed for use by unit nurses. This chart consists of the nurse’s name, time triage was begun, and time triage was ended. This tracking sheet will provide accurate triage times and allow unit leaders to diagnose issues with implementation, as well as identify barriers in achieving targeted triage times.

Using Everett Rogers Diffusion of Innovation, the strongest characteristics relative to this project are sustainability, observability, compatibility and relative advantage (Everett, 1995). The ESI triage process is well established in the UC and has also proven compatibility. Observability is achieved by monitoring the experienced UC staff, many of whom worked in the unit when it was still an ED, utilizing the process successfully. The relative advantage to formally teaching the ESI triage process to all nurses is that it will standardize the process and increase the nurses' confidence in triage decisions, decreasing the time it takes to triage the patient, increasing patient safety and access to care. (Cain & Mittman, 2002).

**Data Source/Literature Review**

The literature regarding the ESI triage process strongly supports its use, establishing that it is an effective and consistent tool. However, current information on triage efficiency was harder to come by. It seems that the effect of triage efficiency on wait times is well established and not a subject of modern research.

The PICO search statement used initially was, “Does training emergency room nurses in using the standardized Emergency Severity Index triage process decrease the time to triage
patients?” Using PICO to identify appropriate keywords, this search was performed using CINAHL and PUBMED, focusing on peer reviewed articles from within the past 5 years (September 2011 – September 2016). Initially, due to the specificity of the search terms, finding appropriate material was difficult. After broadening the search terms and re-defining major elements of the question, finding relevant articles was much easier. Once useful articles were identified the databases offered useful suggestions on other relevant articles. Using this as a process refinement, it was possible to find a large variety of material with relevant evidence.

Of primary concern to this project was the need to set a target time for triage. While those times are fairly well established, Castner, (2011) questions their validity in real world practice. Performing a descriptive cross-section survey, the author describes a problem with the way triage is performed in the real world. The author describes, among other things, their own experience in triage, which requires balancing an ever-changing set of real world priorities. In the survey, the author found that this holds true across the demographic surveyed, with a high likelihood that it applies to a much broader scope, despite the limited demographic set. Castner (2011) also highlights the issue of organizational requirements and EMR design in triage, which requires nurses to follow through with steps that are, technically speaking, not part of the triage process. Castner’s (2011) understanding and clear expression of the issues makes discussion of a triage target time more associated with real world factors both possible and fruitful.

Huber (2015), in their thesis project “Improving Emergency Department Throughput: Streamlining the Admission Process and Reducing Triage-to-Provider Time in a Small Community Hospital”, describes a two-stage triage process designed to improve triage efficiency and reduce the time it takes patients to get to a provider. While not a traditional study, this strongly designed project, using the Plan-Do-Study-Act method, walks through a similar project
to the one in question, in intent if not design. Most importantly, the project establishes a strong link between the triage process and provider wait times, showing a 35% improvement (Huber, 2015). While it isn’t possible to generalize the project itself, the results clearly show the value of triage process improvements.

As noted by Castner, (2011), the triage process is largely dependent on the problem-solving skills and intuition of the nurse in question. In “Making better decisions during triage” Minick, (2014), the authors take a different approach to triage process improvements. Using a qualitative design involving descriptive phenomenology, the authors' attempt to quantify the qualities that result in effective triage interactions between patients and nurses. After comprehensive examination of the performed interviews, the study was able to highlight two important aspects of the triage process – establishing rapport and non-verbal communication. As a result, the study emphasizes the importance of strong triage training, as well as experience, on the triage process, clearly spotlighting the effect of good (or poor) communication on triage accuracy (Minick, 2014).

Before strong triage training can take place, however, a strong triage algorithm must be selected. In the article “The Use of and Satisfaction with the Emergency Severity Index” (Singer, Infante, Oppenheimer, West & Siegel, 2012), the authors test accuracy, objectivity, and user satisfaction with the ESI process. The study surveyed those who requested ESI training material from the Agency for Healthcare Research and Quality (AHRQ), (ESI, 2014), along with 19 ED professionals. While the study is limited by its demographics, it does show a high level of satisfaction with ESI among users, as well as establishing that users perceive the process as both effective and accurate. This is particularly important, as microsystem buy-in will largely depend on the perceived usefulness of the process, especially in the mid-to-long term.
Bissinger, et al. (2012), provide the statistical evidence for adopting ESI as best practice. In this study, the authors study the validity, reliability, and accuracy of ESI among elderly patients presenting to the ED. The study includes a broad base of data, focusing mainly on how closely resource usage, disposition, length of stay, and mortality correlated to the assigned triage level for each patient. While this study was conducted at a single site with a limited number of practitioners, the depth of analysis strongly recommends this as a baseline for further research. The study does highlight some risk when using the ESI process on elderly patients, noting a tendency (25.4%) to under-triage, though this may be institutional rather than ESI related. Despite this tendency, the authors regard both the accuracy and objectivity of the process highly.

Finally, it is important to set reasonable expectations on the how much a triage process improvement can do to affect the efficiency of the overall unit. van der Linden, Meester & van der Linden (2016), in “Emergency Department Crowding Affects Triage Process”, examine the imbalance between needed ED resources and those available, focusing on what effect that imbalance has on triage. The study was retrospective, examining a 1-year period in which many variables were considered, including length of stay, ED occupancy, and time-to-triage, among others. Strong statistical analysis concluded that post-triage crowding delayed or prevented triage for incoming patients, though it did not significantly impact final patient disposition. While limited to a single hospital, this study exposes the effect of patient flow on triage, highlighting the need for dedicated and experienced triage personnel. (van der Linden, Meester, van der Linden, 2016)

**Timeline**

Appendix K shows the timeline for the project. August 1st, 2016 marks the start date of the project. The drop-dead date for nurses to finish the training program is October 14th, 2016,
with check list assessments to follow. Evaluation and compliance monitoring to continue indefinitely. No date has been formalized for a decision on program inclusion for newly hired nursing staff.

**Expected Results**

Specific aims of this project are to reduce LWBS, RtB, and TTT rates. Issues with meeting the stated goals are expected, as all of the measured statistics have a myriad of factors that can influence them beyond the triage process.

The time spent performing triage, while without an internal baseline, has a definite goal of <10 minutes, which should be achievable within the current system. It should be noted that the triage target time is expected to improve, as the unit is slated as an EMR beta site, and will have some input on the flow and function of the EMR in the future.

Time to Triage is the statistic most within control of the nursing staff and this project. By focusing nursing attention on the triage process, it is expected that the target time of <15 minutes is achievable.

Registration to Bed times, while dependent on triage efficiency, can also be affected by other factors, such as post-triage overcrowding. While the target time of 30 minutes is probably optimistic, it is achievable. A decrease of at least 7 minutes from the current average time of 42 minutes is expected.

The decision to leave without being seen is a complex one, with time spent waiting but a single factor, if a primary one. Being a military hospital, monetary issues are not a concern, however, so there is a large potential improvement as wait times decrease. Despite this, the unit goal of <2% will probably not be achieved with this single project, but will require continued
improvements throughout the unit. However, it is expected that a drop of at least 1.5% will be achieved.

There are a host of expected results beyond the statistics for this project; improved confidence and satisfaction among nurses, improved microsystem communication, more efficient workflow, and increased patient satisfaction to name a few. Though these are qualitative rather than quantitative improvements, the effect of these changes should be noticeable. At the very least, this should express itself through improved patient and staff satisfaction surveys.

**Nursing Relevance**

The nursing profession is based on standardized care. By using the best evidenced based practice and guidelines, patients receive the safest and best quality of care. The acuity index is standard for prioritizing patients in the emergency department. This is not a new practice, there have been many different indexes used. Currently ESI is the gold standard for emergency departments in the United States. Using a standardized triage process assists the nurse with making decisions in prioritization and use of resources. As overcrowding of acute-care providers, patient acuity, and cost of services rise, less patients are arriving by ambulance for emergent needs, necessitating quick and reliable triage.

This project has potential impacts across the military healthcare system. The unit was transitioned by the Small Hospital Study (SHS) commissioned in 2011. The conclusions drawn by this study are coming into question, leaving the possibility that the unit will regain the title of ED. To support this prospect, and further undermine the SHS, it is necessary to prove the unit’s preparedness to function on the level of an ED. Doing so convincingly would not only
recommend that the unit return to an ED, but support other units struggling under the same constraints, making it possible to return effected units to previous service levels.

The unit, and associated hospital, is also a beta site for the military’s new EMR system. Implementing this project effectively maximizes the amount of productive feedback the unit can provide for that system, with the potential to impact the workflow and efficiency of every unit within the military healthcare system.

**Summary Report**

The project aimed to improve access to care by increasing triage efficiency in the UC. Achieving this meant providing more efficient, safer, and more timely care to Veterans, active duty soldiers, and their dependents of all ages, in a 24-hour acute care hospital setting.

To achieve this goal, the CNL student analyzed both the microsystem and microsystem processes. This analysis highlighted a single major statistic that suggested the unit was failing to provide a high level of access – LWBS was reported as 5.8%, best practice being <2%. Literature suggested that wait time played a major role in this statistic. The unit average for RtB time was 39 minutes – best practice targeted a RtB of < 30.

Triage was identified as a potential roadblock to improved unit performance and was investigated in detail. Upon stakeholder review of these conclusions, the CNL student performed a literature review to determine the best strategy for correcting the issue. The review suggested that the problem could best be addressed by training the microsystem staff in the proper use of the ESI 5 tier triage process.

Before training, each nurse completed both a self-assessment and a pre-triage class knowledge test. Nurses were then given three weeks to complete the online training. Upon
completion of an online triage training class, nurses completed another self-assessment, knowledge test, and an on-shift competency check. Preceptors were assigned to each shift as a resource and to complete competency checklists. All training materials, as well as the pre- and post- course tests were provided by AHRQ. The online course was provided by ESI Triage Research, LLC. Both self-assessments and the competency check were developed by the CNL student with input from stakeholders.

Despite support management, several nurses failed to complete the training within the given period. Given a short grace period after the expected completion date, however, all nurses completed the course. Competency checks were completed without issue.

Direct metrics, including the tests, self-assessment, and competency checks showed strong results from the course. Nurses scored an average of 78% on the pre-test and 94% on the post test, showing an average score increase of 16.25%, with all nurses scoring at least 80% on the post-test (Appendix L). Post-training self-assessments showed increased confidence in triage and general agreement that the course was necessary. Competency checks showed strong triage skills among the majority of nurses, as well as identifying a small number of nurses that would benefit from additional instruction, which will happen in the near future.

A time-in/time-out sheet for triage was developed and implemented for two weeks once all nurses completed the course. Nurses showed diligence using the tool and all but one nurse performed triage during the two weeks. Average time spent triaging during this time period was 8.13 minutes, with a majority of nurses under the goal of ten minutes previously established.

Unit metrics failed to be as clear cut. Changes in hospital management have made gathering TTT metrics impossible at this time, though those metrics should be available in the
near future. Further, analysis of post-training data exposed several flaws (i.e. negative wait times) which required weeding out. Back-checking pre-training data exposed the same flaws. Thus all data was recollected and sanitized, with any obviously erroneous data purged. After this was completed, the unit metrics were analyzed to determine equivalence between pre-training (01Aug16-30Sept16) and post-training (15Oct16-11Nov16) periods. Significant differences were discovered, 01Nov15-11Nov15 saw an increase in average patient load of 52 (s.d.=2.78) to 57 (s.d.=1.96). This increase was concentrated in the 1300-1700-time block (Appendix M) and has been accounted for. No significant change in acuity was discovered (Appendix N).

RtB time was not significantly affected (Appendix O). While several factors should be considered for why this is, preliminary investigation suggests that this is due to post-triage crowding. Further investigation is recommended to determine other methods for improving this metric.

LWBS experienced a decrease of approximately 2% (Appendix P). Paired with a failure to affect RtB times, and without TTT data, observation suggests the cause to be a culture change. The unit has experienced an increase in both collaboration and communication in the triage process, with higher acuity patients being triaged at bedside, and with increased confidence. This suggests an increase in patient satisfaction – confident and competent nurses during the triage process makes patients more willing to endure the wait to be seen.

Moving forward, the program will be sustained through two efforts. First, nurses will complete a new triage competency check every year to evaluate their continued use of the ESI process. Second, nurses new to the unit will be required to complete a unit orientation then take the course before performing triage. Combined, these two measures ensure nurses remain focused on performing triage in an efficient, timely, and effective manner.
References


Essentris ED, CliniComp EMR System, Urgent Care reporting system. Retrieval of triage statistics with permission from Commander James Morris, USNC, 2016.


Appendix A

Total population divided by triage level

<table>
<thead>
<tr>
<th>Year</th>
<th>LWBS</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013 (Year -1 ER)</td>
<td>43</td>
<td>909</td>
<td>4166</td>
<td>2561</td>
<td>151</td>
<td>1</td>
</tr>
<tr>
<td>2014 (Year 0 ER)</td>
<td>60</td>
<td>1701</td>
<td>5918</td>
<td>3639</td>
<td>304</td>
<td>4</td>
</tr>
<tr>
<td>2015 (Year 1 UC)</td>
<td>177</td>
<td>4153</td>
<td>11755</td>
<td>5004</td>
<td>437</td>
<td>4</td>
</tr>
<tr>
<td>2016 (Year 2 UC)</td>
<td>584</td>
<td>3542</td>
<td>11721</td>
<td>5535</td>
<td>712</td>
<td>14</td>
</tr>
</tbody>
</table>
Appendix B
Comparison of Average Daily visits between ED and UC
Appendix D
Root Cause Analysis – Fishbone Diagram

- Staffing Issues (understaffed, undertrained)
  - Staff lacks acute-care experience
- Patients (Elderly, Infants)
- Charge Nurse (conflicting responsibilities)

- Failures/Broken equipment is common
- EMR Inefficient
- Computer Maintenance / Downtime

- Limited equipment/Required sharing
- Ancillary Resources not readily available
- Availability by Time/Day

- Nurse Initiated Protocols/Treatment
- Lack of Standardization
- Case Complexity/Acuity

- Interruptions (Phone, Providers, Patients)
- Waiting Room / New Arrivals
- Arrival Density

- Organization Required Triage Information

- People

- Process

- Resources

- Environment
## Appendix E
### SWOT Analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Low resource usage</td>
<td>- Requires complete Microsystem Buy-In</td>
</tr>
<tr>
<td>- Inexpensive Training</td>
<td>- Doesn’t teach institution-specific triage</td>
</tr>
<tr>
<td>- Small Individual Time</td>
<td>requirements</td>
</tr>
<tr>
<td>Investment</td>
<td>- Unable to meet industry standard</td>
</tr>
<tr>
<td>- Increases Resource</td>
<td>triage times</td>
</tr>
<tr>
<td>Identification &amp; Efficiency</td>
<td>- Does not address backlog during peak</td>
</tr>
<tr>
<td>- Decreased Wait Time</td>
<td>arrival times</td>
</tr>
<tr>
<td>- Increases Patient Satisfaction</td>
<td>Must be integrated into Orientation</td>
</tr>
<tr>
<td>- Lowers Left Without Being</td>
<td>Process for Sustainability</td>
</tr>
<tr>
<td>Seen Rates</td>
<td>- Program Maintainence requires oversight</td>
</tr>
<tr>
<td>- Greater Collaboration (Intra</td>
<td></td>
</tr>
<tr>
<td>&amp; Inter)</td>
<td></td>
</tr>
<tr>
<td>- Increased Patient Safety</td>
<td></td>
</tr>
<tr>
<td>- Standardized Process</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Available Staffing Budget</td>
<td>- Understaffed</td>
</tr>
<tr>
<td>Dollars</td>
<td></td>
</tr>
<tr>
<td>- Beta Site for New EMR; Have</td>
<td>- Non-Acute Care Providers</td>
</tr>
<tr>
<td>Input on process improvements</td>
<td></td>
</tr>
<tr>
<td>- Hospital developing ‘Chest</td>
<td>- Organization does not follow Urgent Care</td>
</tr>
<tr>
<td>Pain Unit’</td>
<td>Menu of Services</td>
</tr>
<tr>
<td>- Possible ED Reversion</td>
<td>- Local Hospital Expanding ED</td>
</tr>
<tr>
<td>- Expanding Active-Duty Patient</td>
<td>- Political Instability; Budgetary Uncertainty</td>
</tr>
<tr>
<td>Population</td>
<td>- Small Hospital Study (Hospital Closure)</td>
</tr>
<tr>
<td>- Only Radiositive Contamination Program Site</td>
<td>- Lags behind in Information Technology</td>
</tr>
<tr>
<td>- Hospital Demographics</td>
<td></td>
</tr>
<tr>
<td>- Change in Organizational</td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td></td>
</tr>
</tbody>
</table>
Appendix F

Cost Analysis

The cost of the formal web based Emergency Severity Index (ESI) triage process training is minimal; educational program cost is $20 a person, to be paid by each attendee. Each of the 11 nurses will receive two hours of overtime for this training, an estimated $104 per nurse, for a total of $1,144. All other resource material for the class were obtained free of charge from the Agency for Healthcare Research and Quality. To ensure the competency of each nurse doing triage, there will be a designated preceptor on each shift that will complete the competency checkoff; no additional overtime will be required. As a student, the nurse overseeing the training process will receive no additional compensation.

This process improvement aims to increase the efficiency and effectiveness of triage within the Urgent Care. Triage improvements increase patient’s safety and access to care, decreases the rate of patients who leave without being seen, increases both patient and provider satisfaction, evolves and orders patient flow, and increases patient throughput. These benefits represent the primary cost savings – it is more cost effective, and a better use of resources, to keep as many eligible members as possible within the military treatment system. Every patient who chooses to stay within that system represents a real and significant cost savings.
Appendix G
Pre-Training Self-Assessment

Pre Triage Class Self-Assessment

Name: ___________________________ Date: _____________________

How long have you been a Registered Nurse? ____________

How long have you been employed at Naval Hospital Bremerton Urgent Care? ____________

Do you have experience working in an Emergency Department/Urgent Care? ____________

Do you have experience using the Emergency Severity Index (ESI) 5 level triage process? ____________

Have you ever attended a formal training class on use of the ESI triage process? ____________

Do you feel that you currently have enough training and/or experience to prioritize and efficiently triage patients in a timely manner? ______

Do you have any suggestions on how triage could be more efficient? ___________________________

Please return this completed assessment to RN Simpson –Crawford before starting your ESI triage training course.

Thanks for your participation and continued dedication to improving patient quality of care and safety.
Appendix H

Sample Pre-test

The Emergency Severity Index
Interactive Web Based Training Course

<table>
<thead>
<tr>
<th>Pre-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>I have been sick for 4 days with the GI bug that is going around. Today, I am really dizzy.</em> Reports multiple episodes of vomiting and diarrhea for 4 days, denies fever or chills, lips are dry and cracked and his skin is cool and moist. This 29-year-old male is healthy, takes no medications and has no allergies. You answer: ESI level 2 is correct. Reason is: A high risk situation. This 29-year-old patient has been sick for 4 days with vomiting and diarrhea. He is now dizzy, has cracked lips, a heart rate of 132 and a blood pressure of 78/48. It would be unsafe for this patient to wait for more than a few minutes for care.</td>
</tr>
<tr>
<td>2. A 19 year old requests to see a doctor for treatment of an ingrown toenail. Nail area is red, tender and draining pus. He denies any medical problems, is on no medications and has no allergies. You answer: ESI level 4 is correct. Reason is: This patient does not meet the criteria for ESI level 1 or 2. He will need an incision and drainage of his toe and resource. Therefore he meets ESI level 4 criteria.</td>
</tr>
<tr>
<td>3. EMS brings in an elderly patient from the nursing home. They were called to the scene for a &quot;possible stroke.&quot; The patient is unresponsive with an obvious facial droop. She has a long medical history and no other information was with the patient from the nursing home. You answer: ESI level 1 is correct. Reason is: This patient is unresponsive, with a respiratory rate of 10 and an oxygen saturation of 99%. This patient will require immediate life saving interventions, including possible intubation.</td>
</tr>
<tr>
<td>4. A 59 year old female presents to triage complaining of nausea and epigastric distress. She feels like this is a GI problem. She denies SOB but complains of &quot;feeling so tired&quot;. You answer: ESI level 2 is correct. Reason is: This patient is a high risk situation. Her symptoms are classic for presentation of acute coronary syndrome in females. She needs an electrocardiogram and rapid evaluation.</td>
</tr>
<tr>
<td>5. The police arrive in the triage area with a disheveled young man in handcuffs who is talking rapidly to himself. The police report that they were called to his home because he was standing on the front lawn naked screaming obscenities to the neighbors and threatening to kill them all. You answer: ESI level 1 is incorrect. The correct answer is ESI level 2. Reason is: This patient is a high risk. He is a danger to himself and others and needs to be placed in a safe environment. Departmental policies will determine where and when the patient should be placed in the treatment area.</td>
</tr>
<tr>
<td>6. A 23 year old female present to triage complaining of generalized abdominal cramping with moderate vaginal bleeding, one week every four hours since she woke up this am. She is 6 weeks pregnant. She denies any localized pain or other complaints. You answer: ESI level 3 is correct. Reason is: This patient will consume a number of resources including labs, intravenous fluids, an ultrasound and perhaps intravenous analgesics. She is at high risk for an ectopic pregnancy.</td>
</tr>
<tr>
<td>7. A 39 year old obese male presents to triage with a chief complaint of chest heaviness, &quot;like someone is sitting on his chest&quot; but denies chest pain. His wife made him come. Associated symptoms include mild nausea, shortness of breath. Symptoms woke him</td>
</tr>
</tbody>
</table>

Vital Signs:
- Temperature 37.2 C (99.2 F) |
- Heart rate 132 |
- Respiratory rate 24 |
- Blood pressure 78/48/palpable |

Vital Signs:
- Temperature 37.3 C (99.8 F) |
- Heart rate 82 |
- Respiratory rate 16 |
- Blood pressure 119/72 |

Vital Signs:
- Heart rate is 98 |
- Respiratory rate 16 |
- Oxygen saturation is 89% |

Vital Signs:
- PMH: high cholesterol, DM |
- Temperature 97.8 |
- Heart rate 84 |
- Respiratory rate 18 |
- Blood pressure 150/90 |

Vital Signs:
- Within normal limits |

Vital Signs:
- Temperature 98.6 |
- Heart rate 88 |
- Respiratory rate 16 |
- Blood pressure 110/80 |

Vital Signs:
- Temperature 98.4 |

http://www.windrosemedia.com/portal/esi/pretest.php
10/28/2016
8. “My heart is pounding in my chest” reports a 26 year old female with a history of supraventricular tachycardia. Note Vital Signs at triage. “I feel like I am going to pass out” she tells you.

Your answer ESI level 1 is correct.

Reason... This patient requires immediate life saving interventions including possible initiation of fluids, vasopressors and medications to increase his blood pressure, and transient cardiac pacing.

Vital Signs:
- Heart rate 188
- Blood pressure 70/40 palpable

9. “Mom thinks I broke my finger. I was playing baseball and caught a fly ball without a mitt.” A healthy 11 year old male points to his right 3rd finger with a deformity. His mother tells you that he takes no medications and has no allergies.

Your answer ESI level 4 is correct.

Reason... This child’s finger will probably be x-rayed to determine if there is a fracture. X-ray is one resource.

Vital Signs:
- Temperature 36.9 C (98.4F)
- Heart rate 82
- Respiratory rate 18
- Blood pressure 102/78

10. “I can’t seem to get the bleeding stopped and I have been pinching my nose for the past hour!” reports a 63 year old male with a history of atrial fibrillation. “About an hour ago I just started pouring blood. I can feel it running down the back of my throat and I think I am going to vomit.” The patient’s skin is cool and diaphoretic.

Your answer ESI level 3 is incorrect.

The correct answer is ESI level 2.

Reason... This is a high risk situation. The patient will continue to bleed unless interventions are initiated. He is high risk for hypovolemic shock and his skin is already cool and diaphoretic.

Vital Signs:
- Within normal limits

11. EMS arrives with a 76 year old female who tripped over her dog and injured her right hip. On exam her right leg is shortened, externally rotated with good circulation, motor and sensation. The patient rates her pain as 5 on a scale from 0 to 10. She denies any complaint prior to tripping over her dog. She has a history of hypertension and medications include a diuretic. She has no allergies.

Your answer ESI level 3 is correct.

Reason... This elderly patient probably sustained a fractured hip. On arrival to the emergency department her pain is 5 out of 10. She does not meet ESI level 2 criteria. If there was no clear history as to why she fell and concern about possible bowel changes, or if her pain was more intense she might be assigned to ESI level 2. This patient will consume 2 or more resources: x-ray, labs tests, intravenous pain medication and an orthopedic consult.

Vital Signs:
- Temperature 37.5 C (99.5F)
- Heart rate 18
- Respiratory rate 18
- Blood pressure 148/80

12. An 82 year old male is brought in by his daughter with a complaint of generalized weakness. The patient was due for dialysis today, but missed the appointment because he feels weak. Denies other problems.

Your answer ESI level 2 is correct.

Reason... This is a high risk patient. He has a significant medical history, is a dialysis patient and feeling weak. The triage nurse does not know what his potassium is not done she know what his electrocardiogram looks like. Therefore he meets the criteria for ESI level 2.

Vital Signs:
- Temperature 99.0
- Heart rate 92
- Respiratory rate 22
- Blood pressure 100/68

13. A 40 year old female presents to triage complaining of a sudden onset of a severe frontal headache after moving her bowels. States the headache is associated with nausea. She denies other symptoms. Holding her head, appears very uncomfortable. Denies medical history.

Your answer ESI level 2 is correct.

Reason... This patient is high risk and in severe pain. The sudden onset of her headache, in combination with nausea, increases the suspicion of a subarachnoid hemorrhage.

Vital Signs:
- Temperature 98.6
- Heart rate 110
- Respiratory rate 24
- Blood pressure 140/95

14. A 55 year old female presents to triage with a sudden onset of acute loss of vision in left eye. She has normal visual acuity in her right eye. She denies any medical history or medication use.

Your answer ESI level 2 is correct.

Reason... High risk. Any sudden loss of vision is a high risk situation.

Vital Signs:
- Temperature 37 C (98.6F)
- Heart rate 88
- Respiratory rate 18
- Blood pressure 140/85

http://www.windrosemedia.com/portal/esi/pretest.php
15. A 70 year old male presents to triage with difficulty emptying his bladder, voiding in very small amounts. He states he is "dribbling". Complains of 4/10 pain.

Your answer ESI level 2 is correct.

Reason is... He will require urinalysis catheterization and a urinalysis. He is not in severe pain or distress and therefore does not meet ESI Level 2 criteria.

16. Medflight arrives with a 32 year old female who was the restrained driver in a high-speed motor vehicle crash. The patient is 7 months pregnant and complaining of pain in her right lower leg and abrasions on her face from the airbag. She appears in no acute distress. Her skin is warm and dry. She asks you if her baby is going to be ok.

Your answer ESI level 2 is correct.

Reason is... This is a high-risk situation based on the mechanism of injury and the patient needs to be closely monitored for subtle changes. She will meet the criteria for a high level trauma alert, based on your protocols. However, her ESI triage level remains a Level 2. She does not meet ESI Level 3 criteria. Trauma and ESI triage levels are two distinct categorization systems.

17. "I shouldn't have eaten those fried clams" the patient tells you as you begin her triage assessment. Her chief complaint is abdominal pain that started two hours ago, which she rates a 8 on a scale of 0 to 10. She has vomited once and continues to be nauseous. She is 48 years old with no past medical history, takes no medications and has no known allergies.

Your answer ESI level 3 is correct.

Reason is... This 48 year old healthy female has abdominal pain that started two hours prior to admission. She vomited once but continues to be nauseous. Her vital signs are within normal limits. This patient does not meet the criteria for ESI level 1 or Level 2. She will need two or more resources: lab tests, intravenous fluids and medications for nausea and pain as well as other diagnostic studies.

18. "My daughter forgot to pack her inhaler", states the mom of a 13 year old girl. PMH of asthma. The daughter denies any shortness of breath or wheezing. They are on vacation and the mom just wants to be prepared.

Your answer ESI level 5 is correct.

Reason is... This patient requires a prescription refill, which does not meet the definition of a resource. She has no physical complaints. She will be examined by a physician or physican extender and then discharged with the needed prescription.

19. A 45 year old male is brought to triage by the police. He was found in the park and appears intoxicated. There is a small laceration to his forehead; he cannot remember how he got there, but denies trauma.

Your answer ESI level 2 is correct.

Reason is... This patient has visible signs of trauma, has no recollection of what happened and smelts of alcohol. This is a high risk presentation. The triage nurse cannot attribute his lack of memory and disorientation to alcohol given the fact he has obvious head trauma.

20. A 17 year old male walks into triage stating: My boss won't let me come back to work until I get a note a doctor. I work in a grocery store stacking shelves. Yesterday I was moving stock and several boxes fell and hit my foot. I'm fine, it doesn't hurt but my boss made me come. There are no obvious signs of trauma to the foot. Vital signs are within normal limits.

Your answer ESI level 4 is incorrect.

The correct answer is ESI level 5.

Reason is... This patient has no complaints and has no obvious signs of trauma. The patient needs to be seen by a physician or mid level provider, examined and discharged. No resources are needed so the patient meets ESI level 5 criteria.

Score:
Total Questions for this quiz was 20
Your score is 17 out of 20 correct.
With a grade of 85%
Appendix I

Sample Post-test

The Emergency Severity Index
Interactive Web Based Training Course

Final-Test

Please note that you have one more chance to take the post-test.
You may return to this screen to review the material before taking the test for a final time.
Once you take the test for the second time this final score will show on your certificate.

To retake this test, click the Retake Test button located at the bottom of this page.

1. "I have been sick for 4 days with the flu bug that is going around. Today I am really dizzy." Reports multiple episodes of vomiting and diarrhea for 4 days, denies fever or chills, lips are dry and cracked and his skin is cool and moist. This 25 year-old male is healthy, takes no medications and has no allergies.

Your answer ESI level 2 is correct.

Reason is: A high risk situation. This 25 year-old patient has been sick for 4 days with vomiting and diarrhea. He is now dizzy, has cracked lips, a heart rate of 132 and a blood pressure of 78/ palpable. It would be unsafe for this patient to wait for more than a few minutes for care.

Vital Signs:
- Temperature: 37.3 C (99.2 F)
- Heart rate: 132
- Respiratory rate: 24
- Blood pressure: 78/ palpable

2. A 19 year old requests to see a doctor for treatment of an in grown toenail. The nail area is red, tender and draining pus. He denies any medical problems, is on no medications and has no allergies.

Your answer ESI level 4 is correct.

Reason is: This patient does not meet the criteria for ESI level 1 or 2. He will need an incision and drainage of his toe - one resource. Therefore he meets ESI level 4 criteria.

Vital Signs:
- Temperature: 37.3 C (99.6 F)
- Heart rate: 82
- Respiratory rate: 16
- Blood pressure: 118/72

3. Medflight arrives with a 32 year old female who was the restrained driver in a high-speed motor vehicle crash. The patient is 7 months pregnant and complaining of pain in her right lower leg and abrasions on her face from the airbag. She appears in no acute distress. Her skin is warm and dry. She asks you if her baby is going to be okay.

Your answer ESI level 2 is correct.

Reason is: This is a high-risk situation based on the mechanism of injury and the patient needs to be closely monitored for subtle changes. She will meet the criteria for a high level trauma alert, based on your protocols. However, her ESI triage level remains a Level 2. She does not meet ESI level 1 criteria. Trauma and ESI triage levels are two distinct categorization systems.

Vital Signs:
- Heart rate: 100
- Respiratory rate: 28
- Blood pressure: 140/82

4. "Mom thinks I broke my finger. I was playing baseball and caught a fly ball without a mitt." A healthy 11 year old male points to his right 3rd finger with a deformity. His mother tells you that he takes no medications and has no allergies.

Your answer ESI level 3 is incorrect.
The correct answer is ESI level 4.

Reason is: This child's finger will probably be x-rayed to determine if there is a fracture. X-ray is one resource.

Vital Signs:
- Temperature: 36.9 C (98.4 F)
- Heart rate: 82
- Respiratory rate: 18
- Blood pressure: 102/78

5. An 62 year old male is brought in by his daughter with a complaint of generalized weakness. The patient was due for dialysis today, but missed the appointment because he feels weak. Denies other problems.

Your answer ESI level 2 is correct.

Reason is: This is a high risk patient. He has a significant medical history, is a dialysis patient and feeling weak. The triage nurse does not know what his potassium is nor does she know what his electrocardiogram looks like. Therefore he meets the criteria for ESI level 2.

Vital Signs:
- Temperature: 99.0
- Heart rate: 92
- Respiratory rate: 22
- Blood pressure: 100/68

6. "I shouldn't have eaten those fried clams" the patient tells you as you begin her triage assessment. Her chief complaint is abdominal pain that started two hours ago, which

Vital Signs:
- Temperature: 37.3 C (99.2 F)
- Heart rate: 132
- Respiratory rate: 24
- Blood pressure: 78/ palpable

http://www.windrosemedia.com/portal/esi/posttest.php
10/28/2016
she rates as 6 on a scale of 0 to 10. She has vomited once and continues to be nauseous. She is 48 years old with no past medical history, takes no medications and has no known allergies.

Your answer ESI level 3 is correct.

Reason is... This 48 year old healthy female has abdominal pain that started two hours prior to admission. She vomited once but continues to be nauseous. Her vital signs are within normal limits. This patient does not meet the criteria for ESI level 1 or Level 2. She will need two or more resources; lab tests, intravenous fluids and medications for nausea and pain as well as other diagnostic studies.

7. A 59 year old female presents to triage complaining of nausea and epigastric distress. She feels like this is a GE problem. She denies SOB but complains of “feeling so tired”.

Your answer ESI level 2 is correct.

Reason is... This is a high risk situation. Her symptoms are classic for presentation of acute coronary syndrome in females. She needs an electrocardiogram and rapid evaluation.

8. A 70 year old male presents to triage with difficulty emptying his bladder, voiding in very small amounts. He states he is “drinking”. Complains of 4/10 pain.

Your answer ESI level 3 is correct.

Reason is... He will require urethral catheterization and a urine culture. He is not in severe pain or distress and therefore does not meet ESI Level 2 criteria.

9. EMS brings in an elderly patient from the nursing home. They were called to the scene for a possible stroke.” The patient is unresponsive with an obvious facial droop. She has a long medical history and no other information was sent with the patient from the nursing home.

Your answer ESI level 1 is correct.

Reason is... This patient is unresponsive, with a respiratory rate of 20 and an oxygen saturation of 89%. This patient will require immediate life saving interventions, including possible intubation.

10. A 55 year old female presents to triage with a sudden onset of acute loss of vision in left eye. She has normal visual acuity in her right eye. She denies any medical history or medication use.

Your answer ESI level 2 is correct.

Reason is... High risk. Any sudden loss of vision is a high risk situation.

11. A 30 year old obese male presents to triage with a chief complaint of chest heaviness, "like someone is sitting on his chest" but denies chest pain. His wife made him come. Associated symptoms include mild nausea, shortness of breath. Symptoms woke him from sleep. Skin is warm and moist.

Your answer ESI level 1 is correct.

Reason is... This patient requires immediate life saving interventions including possible intubation of fluids, vasoactive medications to increase his blood pressure, and transthoracic pacing.

12. "I can't seem to get the bleeding stopped and I have been pinching my nose for the past hour" reports a 63 year old patient on warfarin (coumadin) for atrial fibrillation. "About an hour ago it just started pouring blood. I can feel it running down the back of my throat and I think I am going to vomit." The patient's skin is cool and diaphoretic.

Your answer ESI level 2 is correct.

Reason is... This is a high risk situation. The patient will continue to bleed unless interventions are initiated. She is high risk for hypovolemic shock and her skin is already cool and diaphoretic.

Vital Signs:
- Blood pressure 142/84
- Heart rate 98
- Respiratory rate 29
- Temperature 37.2 C (99 F)

Vital Signs:
- Temperature 97.7
- Heart rate 77
- Respiratory rate 20
- Blood pressure 110/80

Vital Signs:
- Heart rate is 96
- Respiratory rate 10
- Oxygen saturation is 89%

Vital Signs:
- Temperature 37C (98.6 F)
- Heart rate 88
- Respiratory rate 16
- Blood pressure 140/85

Vital Signs:
- Temperature 98.4
- Heart rate 30
- Respiratory rate 16
- Blood pressure 75/50

Vital Signs:
- Within normal limits
13. "My daughter forgot to pack her inhaler", states the mom of a 13 year old girl. PMH of asthma. The daughter denies any shortness of breath or wheezing. They are on vacation and the mom just wants to be prepared.

Your answer ESI level 5 is correct.

Reason Is: This patient requires a prescription refill, which does not meet the definition of a resource. She has no physical complaints. She will be examined by a physician or physician extender and then discharged with the needed prescription.

Vital Signs:
- Temperature 98.6
- Heart rate 74
- Respiratory rate 16
- SpO2 100% on RA.

14. A 45 year-old male is brought to triage by the police. He was found in the park and appears intoxicated. There is a small laceration to his forehead; he cannot remember how he got this, but denies trauma.

Your answer ESI level 2 is correct.

Reason Is: This patient has visible signs of trauma, has no recollection of what happened and items of alcohol. This is a high risk presentation. The triage nurse cannot attribute his lack of memory and disorientation to alcohol given the fact he has obvious head trauma.

Vital Signs:
- GCS is 14
- Temperature 98.2
- Heart rate 95
- Respiratory rate 18
- Blood pressure 150/90

15. A 17 year-old male walks into triage stating: My boss won't let me come back to work until I get a note from a doctor. I work in a grocery store stocking shelves. Yesterday I was moving stock and several boxes fell and hit my foot. I'm fine, it doesn't hurt but my boss made me come. There are no obvious signs of trauma to the foot. Vital signs are within normal limits.

Your answer ESI level 5 is correct.

Reason Is: This patient has no complaints and has no obvious signs of trauma. The patient needs to be seen by a physician or mid level provider, examined and discharged. No resources are needed so the patient meets ESI level 5 criteria.

Vital Signs:
- Within normal limits

16. The police arrive in the triage area with a disheveled young man in handcuffs who is talking readily to himself. The police report that they were called to his home because he was standing on the front lawn naked screaming obscenities to the neighbors and threatening to kill them all.

Your answer ESI level 2 is correct.

Reason Is: This patient is high risk. He is a danger to himself and others and needs to be placed in a safe environment. Departmental protocols will determine when and where the patient should be placed in the treatment area.

Vital Signs:
- Within normal limits

17. EMS arrives with a 76 year-old female who tripped over her dog and injured her right hip. On exam her right leg is shortened, externally rotated with good circulation, motor and sensation. The patient rates her pain as 5 on a scale from 0 to 10. She denies any complaints prior to tripping over her dog. She has a history of hypertension and medications include a diuretic. She has no allergies.

Your answer ESI level 3 is correct.

Reason Is: This elderly patient probably sustained a fractured hip. On arrival in the emergency department her pain is 5 out of 10. She does not meet ESI level 2 criteria. If there was no clear history as to why she fell and concern about possible mental changes, or if her pain was more intense she might be assigned to ESI level 2. This patient will consume 2 or more resources; x-ray, lab tests, intravenous pain medication and an orthopedic consult.

Vital Signs:
- Temperature 35.7 C (96.2 F)
- Heart rate 78
- Respiratory rate 18
- Blood pressure 148/90

18. A 23 year-old female present to triage complaining of generalized abdominal cramping with moderate vaginal bleeding, one pad every four hours since she woke up this am. She is 6 weeks pregnant. She denies any localized pain or other complaints.

Your answer ESI level 3 is correct.

Reason Is: This patient will consume a number of resources including labs, intravenous fluids, an ultrasound and perhaps intravenous analgesics. Her
19. A 40 year old female presents to triage complaining of a sudden onset of a severe frontal headache after moving her bowels. States the headache is associated with nausea. She denies other symptoms. Holding her head, appears very uncomfortable. Denies medical history.

Your answer ESI level 2 is correct.

Reason is... This patient is high risk and in severe pain. The sudden onset of her headache, in combination with nausea, increases the suspicion of a subarachnoid hemorrhage.

20. "My heart is pounding in my chest" reports a 26 year old female with a history of supraventricular tachycardia. Note Vital Signs at triage. "I feel like I am going to pass out" she tells you.

Your answer ESI level 1 is correct.

Reason is... This patient requires immediate life saving interventions. She needs to be seen immediately by a physician and a nurse. The patient is currently unstable and requires intravenous access, intravenous medications and perhaps cardioversion.

Vital Signs:
- Temperature 98.6
- Heart rate 110
- Respiratory rate 24
- Blood pressure 140/95

Vital Signs:
- Heart rate 188
- Blood pressure 70/ palpable

Score:
Total Questions for this quiz was 20
Your score is 19 out of 20 correct.

With a grade of 95%

Please take some time to evaluate the ESI Web Course Evaluation Click here.
# Appendix J

## 5 LEVEL TRIAGE COMPETENCY

Demonstrates Competency in the Following Areas:

<table>
<thead>
<tr>
<th>Application of Knowledge and Skills</th>
<th>E</th>
<th>M</th>
<th>NI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumes responsibility for completion of triage competency assessments at designated time intervals. (Triage Class, Competency Exam)</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Maintains current knowledge of, and conducts all job duties in accordance with established hospital policy, BUMED directives, Joint Commission and other regulatory requirements.</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Assesses, treats, and care for patients presenting to the Urgent Care in a manner appropriate to the age of the patient.</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Minimum of 3 shifts with triage preceptor. Utilizes Emergency Severity Index (ESI) 5-level triage algorithm to categorize urgent care patients by acuity and resource needs.</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

### PATIENT RELATIONS / CUSTOMER SERVICE

<table>
<thead>
<tr>
<th></th>
<th>E</th>
<th>M</th>
<th>NI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greets patients, families and visitors in a kind and professional manner.</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Assesses patient for emotional and social impact of acute or chronic illness or hospitalization.</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Assesses and recognizes cultural beliefs about illness and health care of ethnic groups that are significantly represented.</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Maintains patient and family’s rights (confidentiality, privacy, safety, security, and decision making), and provides appropriate information and instruction.</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Utilizes interpersonal communication skills in order to exchange information in a clear and accurate manner with: internal and external customers, volunteers, physicians</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

### COMMUNICATIONS

<table>
<thead>
<tr>
<th></th>
<th>E</th>
<th>M</th>
<th>NI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actively communicates with the charge nurse, and Staff Urgent Care Physician regarding the status of the Triage waiting area.</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Accurately documents in Nursing/Initial Assessment Form</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

### PLANNING & DECISION MAKING

<table>
<thead>
<tr>
<th></th>
<th>E</th>
<th>M</th>
<th>NI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides correct, effective, and prompt triage for UC patients based on standard of practice, facility specific protocols and sound nursing judgment.</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
## 5 LEVEL TRIAGE COMPETENCY

<table>
<thead>
<tr>
<th>Description</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reviews and assesses information before making decisions and solving problems.</td>
<td>2</td>
</tr>
<tr>
<td><strong>Supervision</strong></td>
<td></td>
</tr>
<tr>
<td>Manages patient flow through the Triage space. Ensures that corps staff continues to follow the current practice and policies of the department and facility.</td>
<td>2</td>
</tr>
<tr>
<td><strong>Information Management</strong></td>
<td></td>
</tr>
<tr>
<td>Ensures confidentiality of patient's records and respects confidentiality by using discretion in discussion of patient information</td>
<td>2</td>
</tr>
<tr>
<td>Maintains computer (ADP) security, data security, safeguards password, and locks workstation when unattended.</td>
<td>2</td>
</tr>
<tr>
<td><strong>Performance Improvement</strong></td>
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<tr>
<td>Supports, participates and communicates performance improvement processes commensurate with position, communicating ideas for improvement to the Chain of Command.</td>
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<tr>
<td><strong>Professional &amp; Regulatory Requirements</strong></td>
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<tr>
<td>Completed Triage course</td>
<td>Y</td>
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<tr>
<td>Successful completion of Triage written exam</td>
<td>Y</td>
</tr>
<tr>
<td>Current Registered Nurse license.</td>
<td>Y</td>
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**COMMENTS**

I have read and understand the Performance Evaluation and the criteria under which I will be evaluated.

Name/Signature _______ Date _______

Preceptor/CNS _______ Date _______
# Appendix K
## Project Gant Chart

<table>
<thead>
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<th>8/16</th>
<th>8/31</th>
<th>9/15</th>
<th>9/30</th>
<th>10/15</th>
<th>10/30</th>
<th>11/14</th>
<th>11/29</th>
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<tbody>
<tr>
<td>Metrics</td>
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<td>Nursing self assessment pre triage class</td>
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<td>Pre test triage class</td>
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<tr>
<td>Post test triage class</td>
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<tr>
<td>Nursing self assessment post triage class</td>
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<td>Preceptor Competency list</td>
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<td>Triage start and stop time sheet</td>
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### Appendix L

**Individual Results for Nurse Testing**

<table>
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<tr>
<th>Nurse #</th>
<th>Pre-training Knowledge Score</th>
<th>Post-training Knowledge Score</th>
<th>Post-Training Competency Score</th>
<th>Average time spent in Triage</th>
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<td>80%</td>
<td>34</td>
<td>6.941176471</td>
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<tr>
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<td>100%</td>
<td>34</td>
<td>6.488372093</td>
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<td>3</td>
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<td>100%</td>
<td>34</td>
<td>8.814814815</td>
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<td>4</td>
<td>70%</td>
<td>100%</td>
<td>30</td>
<td>8</td>
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<tr>
<td>5</td>
<td>100%</td>
<td>100%</td>
<td>31</td>
<td>6.214285714</td>
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<td>6</td>
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<td>90%</td>
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<td>95%</td>
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<td>Difference</td>
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Appendix M

Average # of Patient Registrations By Hour

X axis is the hour of the day.
Y axis is the average number of patient registrations.
Appendix N

% of Patients Triaged ESI 3+ by Hour

X axis is the time of day.
Y Axis is the percentage of patients who triage at tier 1, 2, or 3 (High Acuity).
Appendix O

Average Time from Registration to Bed by Time of Day

X axis is time of day.
Y axis is the average wait time, in minutes.
Appendix P

% of Patients LWBS By Hour

X axis is the time of day.
Y axis is the percentage of patient population that chooses to leave without being seen.