

Clinical Practice Statement

Triage Nurse-Ordered Testing in the Emergency Department Setting

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Recommendations:

- 1) Triage nurse-ordered testing reduces Emergency Department length of stay, though the overall decrease in time is small. The decision to utilize triage nurse-ordered testing should weigh the potential time saved versus the risk of extraneous testing.**
- 2) Limited data suggests that triage nurse-ordered testing is reasonably accurate for the ordering of limb x-rays, though less accurate for labs. If utilized, it is important to ensure sufficient training, education, and oversight.**

Introduction:

Emergency Departments (ED) provide critical access to the health care system and are essential to the early identification of epidemics and disease trends, stabilization of critically ill or injured patients, and care of the under-resourced and uninsured. In 2016, EDs in the United States treated over 145 million patients,¹ representing a steadily increasing number of annual visits when compared with the previous 10-year period.² Emergency Medicine has been the safety net for American healthcare for decades, providing services 24 hours per day and 365 days per year, without regard for patients' social or economic status. Despite the steady increase in ED visits, available resources have decreased. Hospitals are increasingly being closed, with more than 10% of hospitals shutting down over the past two decades.³⁻⁵ Moreover, the number of available inpatient beds in the United States has declined from 1.5 million in 1975 to 924,000 in 2020.³⁻⁵

These trends have contributed to ED overcrowding, which occurs “when the identified need for emergency services exceeds available resources for patient care in the ED, hospital or both.”⁵ Emergency Department overcrowding has many negative effects on patient care. It limits the ability to provide care to patients waiting to be seen, strains resources, overburdens staff, and delays time to treatment and time to disposition. ED overcrowding has also been linked to an increase in the number of patients leaving without being seen by a physician. Emergency Departments may also feel pressure exerted by the Centers for Medicare and Medicaid Services value-based purchasing program, which requires that times to various benchmark events are reportable. Failure to meet those benchmarks can be potentially costly for the institution. As a result, many EDs now employ a doctor in triage or have implemented standing order sets that can be entered by the triage nurse based on the patient’s chief complaint. These efforts are viewed as potential remedies for prolonged door-to-doctor times with a goal of shortening throughput times and decreasing the ED length of stay (LOS). However, this may increase overall testing and it is unclear if this will actually reduce ED LOS.

This guideline sought to assess two questions. Does triage nurse-ordered labs and imaging reduce time to disposition among ED patients? To what degree does triage nurse-ordered labs and imaging correlate with physician ordering?

Executive Summary

We searched PubMed from inception to November 30, 2019 using a combination of the following keywords: “triage,” “nurse,” “protocol,” and “emergency”. The search yielded 982 articles, which were screened for relevance, with 13 articles selected for inclusion because they addressed one or both of the study questions. Each of the selected articles was subjected to detailed review by all of the authors and assigned a grade of evidence based on focus, research design, and methodology (Table).

Ten studies assessed ED LOS and one study assessed time to diagnosis.⁶⁻¹⁶ Among these, seven articles found that triage nurse-ordered testing decreased LOS,^{6-8,11,13-15} two demonstrated no effect on LOS,^{10,12} and one identified an increased in LOS in the triage nurse-ordered testing group.¹⁶ Additionally, Lindley-Jones et al.⁹ found a decrease in time to diagnosis with triage nurse-ordered testing. While most decreases in LOS were statistically significant, the overall time savings was small and of limited clinical significance.

Three studies compared triage-nurse ordered testing with physician testing in the ED setting.^{11,17,18} All three studies found reasonably good correlation between physicians and triage nurse-ordered imaging protocols with 10.9% to 12.9% disagreement in two studies^{11,17} and a kappa of 0.65 to 0.68 in the third.¹⁸ One study analyzed the correlation between physician and triage nurse-ordered laboratory protocols, demonstrating a moderate correlation for laboratory studies ($k = 0.48$ to 0.54).¹⁷

Conclusion

We found data supporting the fact that triage nurses have reasonably similar accuracy as physicians in ordering limb x-rays and moderate accuracy for laboratory testing. However, we did not identify a clinically meaningful decrease in ED LOS. Impacting the LOS for all ED patients is multi-factorial and the mean LOS is unlikely to be significantly altered by only one intervention due to the complexity of EM and variability among the providers ordering testing and consults. Future studies should assess the financial cost of extra

testing ordered by triage nurses and the impact of incidental finding on patients and physician documentation.