Interobserver Agreement between Triage Nurses and Physicians for Respiratory Difficulty

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Introduction and purpose: With ED overcrowding an ever-increasing problem, triage nurse assessment of patients for risk of deterioration is critical for maintaining the safety of patients in the waiting room. There is a paucity of research evaluating triage nurse ability to accurately assess respiratory difficulty. We conducted a prospective investigation to evaluate interobserver agreement between triage nurse and physician assessments of respiratory status.

Methods: This was a prospective, observational study conducted at an inner-city, academic ED. We enrolled a convenience sample of consenting, adult patients with a respiratory-related chief complaint, and, then, recorded demographic information on a structured instrument. In a blinded fashion, the triage nurse and study physician assessed several facets of respiratory status including the following ratings of work of breathing which were modified from the Canadian Triage and Acuity Scale: mild (no obvious increased work of breathing and able to speak in complete sentences), moderate (speaking in phrases or clipped sentences), and severe (fatigue from excessive work of breathing, with single word speech or being unable to speak). Categorical data are presented as frequency of occurrence; continuous data as means+/-SD. Kappa values (κ) were calculated to assess for interobserver agreement for the components of respiratory assessment between triage nurse and physician.

Results: 39 eligible patient encounters were evaluated; 61% male, 56% age > years of age, 72% Hispanic, 21% privately insured, 33% discharged home, and 13% admitted to the ICU. Nurses evaluating the patient had a mean practice experience of 9.4+/-5.3 years with respect to assessment, triage nurses reported that the work of breathing for patients as mild (43%), moderate (51%), and severe (2%) while physicians rated those patients' work of breathing as mild (41%), moderate (51%), and severe (8%), respectively. Interobserver agreement between triage nurse and the study physician were as follows for the following aspects of clinical assessment: Work of breathing (0.8, substantial), Types of respiratory intervention initially required i.e. non-invasive ventilation positive pressure ventilation vs oxygen/medications vs. none (0.9, almost perfect), projected disposition i.e. discharge to home, floor admission, ICU admission (0.8, substantial).

Conclusions: Interobserver agreement for work of breathing was substantial between triage nurses and the study physician. Large-scale studies with a broader group of physicians and nurses are warranted to confirm our results.