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## 7 A Study of the Korea Triage and Acuity Scale Using National Emergency Department Information System analysis

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**Introduction:** The Emergency Severity Index plays an important role in the initial evaluation and treatment of emergency patients. In 2016, Korea initiated the KTAS (Korean Triage and Acuity Score) system in emergency departments (ED) nationwide. If its usefulness is verified, KTAS will be extended to the prehospital setting, which we believe will improve the nation's emergency medical services (EMS) system.

**Methods:** This is a retrospective study that uses the National Emergency Department Information System (NEDIS) database. From January - December 2016, we used NEDIS data from patients who visited EDs nationwide. We looked to verify the usefulness of KTAS on the KTAS distribution for Modified Early Warning Score (MEWS), length of stay in ED, and admission duration. We also analyzed KTAS in various conditions to determine the current status of KTAS. **Results:** A total of 5,506,071 patients were enrolled in the study. The KTAS distribution according to the MEWS score shows that the score of the first grade is the highest ( $8.5 \pm 3.6$ ), and the score decreases significantly as it goes down to the second, third, fourth, and fifth grades. And the fifth grade showed the lowest ( $2.3 \pm 2.2$ ). Considering that MEWS is a useful tool for emergency physicians to measure the hospitalization and mortality rate of patients, this indicates that KTAS is a useful tool for severity classification.

**Conclusion:** KTAS is an effective tool for classifying the severity of injury or illness of ED patients. We believe KTAS will improve the Korean EMS system nationwide.

## 8 Multi-Institutional Implementation of the National Clinical Assessment Tool in Emergency Medicine

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**Objective:** The National Clinical Assessment Tool in Emergency Medicine (NCAT-EM) was created at a consensus conference in 2016, and has been adopted within emergency medicine (EM) clerkships across the United States (U.S.). The objective of this study was to collect reliability and validity evidence from multiple sites. We analyzed and described score distributions, effects of student and evaluator characteristics, and rating tendencies of specific institution and evaluator types.

**Design:** Clerkship directors were recruited from geographically and academically diverse sites across the U.S. Each institution used NCAT-EM for assessment of their students' clinical performance and collected demographic data on students and assessors. A secure online database was developed that allows users to assign unique identifiers for students and assessors, and to enter de-identified demographic and NCAT-EM data.

**Method:** We performed descriptive statistics by site, clerkship type, and demographic group; and we also performed reliability, internal consistency, and factor analysis. The study was approved by the University of Arizona Institutional Review Board (IRB). All participating sites either underwent individual IRB review and approval, or ceded review to the University of Arizona.

**Results and Conclusion:** Thirteen sites input data on 748 students from 704 assessors, from 6402 discrete assessment forms. All subcategories on all ratings scales were used, as were all professionalism subdomains. There was a significant "right shift" of entrustability domains and global assessment, similar to other commonly used assessments. Professionalism lapses were noted on <1% of forms. All sites had a Cronbach's alpha >0.8; however, factor analyses revealed significant inter-institutional variability. We found no differences in scores by gender. There was an increase in scores in fourth-year compared to third-year medical students, but no significant increase in students' scores on subsequent rotations. While we found differences in assessor scores based on faculty rank and resident training year, there were no differences by years in practice.

This study is the first large-scale implementation of a consensus-derived, specialty-specific clinical assessment tool for medical students in the U.S. Analysis across multiple diverse settings allows for rigorous assessment of reliability and validity. This benefits all stakeholders. Students receive more accurate and useful feedback on their performance, clerkship directors can assign grades and rankings with greater confidence, residency programs can compare students across institutions, and ultimately patient safety is ensured through improved competence of providers.

## 9 Public Health in Acute Care Settings: Acute HIV in Six Urban Emergency Departments

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