

The impact of using presenting complaints on a modern 5-level triage system – a Danish cohort study

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with and without the use of presenting complaints. The aim of this study was to validate and compare two 5-level triage systems used in Danish emergency departments: “Danish Emergency Process Triage” (DEPT) based on vital signs and presenting complaints and a locally adapted version of DEPT (VITAL-TRIAGE) using vital signs only.

Methods: This was a retrospective cohort in five Danish emergency departments. All patients attending an emergency department during the period of 1-4-2012 until 31-12-2015 were included. Validity of the two triagesystems were assessed by comparing urgency categories determined by each triagesystem with outcomes that resembles an urgent hospitalization: 24-hour ICU admission, two-day mortality, critical illness, surgery within 48 hours, 4-hour discharge and length of stay.

Background: Five-level triage systems are being utilized in Danish emergency departments

Results We included 632,196 patients in the analysis. Sensitivity for 24-hour ICU admission was 0.79 (CI 0.78 : 0.80) for DEPT and 0.44 (CI 0.41 : 0.47) for VITAL-TRIAGE. The sensitivity for two-day mortality was 0.69 (CI 0.67 : 0.70) for DEPT and 0.37 (CI 0.34 : 0.41) for VITAL-TRIAGE. The sensitivity to detect diagnoses of critical illness were 0.48 (CI 0.47 : 0.50) for DEPT and 0.09 (CI 0.08 : 0.10) for VITAL-TRIAGE. The sensitivity for predicting surgery within 48 hours was 0.30 (CI 0.30 : 0.31) in DEPT and 0.04 (CI 0.04 : 0.04) in VITAL-TRIAGE. Length of stay were longer in VITAL-TRIAGE than DEPT. The sensitivity of DEPT to predict patients discharged within 4 hours was 0.91 (CI 0.91 : 0.92) while VITAL-TRIAGE was higher at 0.99 (CI 0.99 : 0.99). The odds ratio for 24-hour ICU admission and two-day mortality was increased in high-urgency categories of both triage systems compared to low-urgency categories.

Conclusion: High urgency categories in both triagesystem are associated with adverse outcomes. The inclusion of presenting complaints in a modern 5 level triage system led to significantly higher sensitivity measures for the ability to predict outcomes related to patient urgency.