

**Current practice of in-hospital trauma triage and activation of trauma teams
in Dutch Emergency Departments**

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Introduction: To assess and treat a seriously injured patient optimally, emergency department (ED) staff can activate a trauma team. Some EDs have one trauma team available for every incoming trauma patient. Other EDs use a tiered response with the possibility to activate two or more different trauma teams. To decide if a trauma team is needed and what kind of team should be activated, ED staff mostly uses information that the emergency medical service (EMS) provides. This decision making process is called in-hospital trauma triage. In this study we investigated current practice of in-hospital trauma triage and activation of trauma teams in Dutch EDs.

Methods: A cross-sectional survey was conducted between May 30, and July 26, 2011 among managers of all 102 EDs in the Netherlands, using a semi-structured online questionnaire. The questionnaire contained items about type of in-hospital trauma triage system, composition of trauma teams at the ED and the criteria used to activate these teams.

Results: Ninety out of 102 (88%) ED managers responded, 77 (76%) questionnaires could be included in the analyses. Most EDs use a one-team trauma triage system (64%), 19 EDs (25%) use a two-team system and 4 EDs (5%) have three different teams available. Only 5 EDs (6%) have no defined trauma team. The number of trauma team members varies from 3 to 16 professionals. 96% Of the EDs receive a pre-notification from EMS, mostly by telephone (92%). 40% Of the pre-notifications is communicated directly, 31% via an Emergency Medical Dispatcher (EMD), 20% by both EMS and EMD and 9% in another way. The ED nurse usually receives the pre-notification (96%), whereas the decision to activate a team is made by the ED nurse (45%), ED physician (27%), by multiple professionals (20%) or other persons (8%). Information mostly available in pre-notification is: blood pressure (84%), pulse rate, age and gender (all 81%). The following criteria are mostly used for trauma team activation: Glasgow Coma Score (85%), Airway, Breathing, Circulation (84%) and Revised Trauma Score (83%). Only 56% of the EDs were satisfied with the current situation on in-hospital trauma triage and found their system useful.

Discussion: We identified different in-hospital trauma triage systems and a large variation in the number and composition of trauma teams. How and by whom information about the incoming patient is communicated between EMS and the ED and by whom the decision for trauma team activation is made differs. The pre-notification is not always communicated directly from EMS to the decision maker at the ED, what means that information may be lost. A system with a tiered response may contribute to the efficiency of the in-hospital trauma triage process by better resource allocation, improved cost containment and in terms of patient outcomes. Some Dutch EDs already use a tiered trauma team response, but the effects are unknown. Future research needs to address the criteria that could be used to safely reduce the number of trauma team members and in what way decision makers in Dutch EDs can be supported in the in-hospital trauma triage process.