

Electronic physician charting in emergency medicine – design and implementation of a documentation system for a high-acuity clinical environment

Martin Luethi

Emergency departments (ED) are commonly among the highest acuity areas in hospitals. They can be characterized as featuring multifaceted care and communication processes among many different clinicians and specialist in a complex environment. Even though many processes in the ED are electronically supported they are often deployed in standalone and weakly integrated department-level systems.

Physician documentation has traditionally been one of the most challenging components to digitize and integrate. Reasons include the semi-structured and often individual nature and phrasing of findings regarding patient history and physical exam. Also, the ability for bed-side data acquisition was limited by the available technical hardware as well as time-consuming and unintuitive data entry methods that resulted in strong user resistance and slow adoption.

The seminar will sketch out the documentation system's design based on web architecture. The underlying data model for the customizable complaint-driven charts will be presented as well as the derived generation of a narrative medical record. Moreover, it will be elaborated what issues were encountered interfacing with registration and laboratory systems in actual hospital settings. It will conclude with a discussion of key personalization and user-interface aspects and a short demonstration of the system.