

Taxonomies of errors can act as a tool to increase patient safety

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Roughly two-thirds of adverse events in medicine are attributed to human error and thus considered avoidable. To improve risk management, critical incident reporting systems are established. Taxonomies are used to collect and evaluate the data from such reports, as a sensible parent database makes it easier to search for patterns in the data. The categories of a taxonomy should be structured hierarchically, not overlap and cover the space of events to be classified entirely, as ambiguous categories or unclassified events make it difficult to work with the database.

While descriptive taxonomies stick to what is observed, which increases their reliability, they do little to help investigating the causes of human errors and to find starting points for counter-measures. This is the potential benefit of taxonomies relating to inferred causes of failure. Since errors always occur at the interface between man, technology and organization, the sole consideration of intra-psychic aspects is not enough: design issues, working conditions and organizational context have to be taken into account. In general, it can be said that a lack of fit between persons, tasks and resources leads to errors (mismatch concept).

Our research should aim for a systematic, cause-related and multi-dimensional taxonomy of errors and error-inducing conditions that provides clues for action. Such a taxonomy should comprise the following levels:

- Psychological mechanisms and cognitive processes;
- immediate triggers: the actor's internal states (e.g., fatigue) and external conditions (e.g. interruptions);
- error-conducive conditions of technology (design features);
- error-promoting conditions of work organization (e.g., time pressure, conflicting goals);
- institutional and organizational conditions (company policy, safety culture).

The presentation will describe these dimensions and show what can be learned from existing taxonomies.