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Summary and conclusions

Summary

There is no “best” measure of safety. Safety is too multidimensional to be represented in a single score. It is also clear that measures taken to improve safety, when performed without due regard for the total context, are often ineffective and can even be detrimental. One man’s improvement may be another’s latent condition. Ideally safety should be embodied throughout the institution, minimizing possible latent causes that might combine to produce injury. This continuing search to improve safety with small incremental measures is very similar to the quality concept of continuous quality improvements.

The safety of an organization can be improved by investigating and correcting the many processes that shape performance at the “sharp end”. Errors do not occur of themselves, but arise within the context of the work environment. Where the environment is one that makes errors by individuals more likely, we can identify the underlying problems that will have been present in the system, often recognized but long tolerated. The factors that make errors more likely, or more dangerous, can be characterized as Latent Risk Factors (LRFs). LRFs, that is, staffing, training, communication, planning & coordination, design, maintenance, equipment, teamwork, team instructions, housekeeping, situational awareness, hierarchy and procedures. Understanding how LRFs affect safety should enable us to design more effective control measures. Improving the recognized LRFs will tilt the safety balance in the advantageous direction. Recognition of their importance and acting to improve these factors will likely be more effective in improving safety than personally directed approaches.

In chapter 2 a general overview of LRFs is given. Each one of these LRFs is the responsibility of the organization rather than of individuals, which is

why they form an appropriate level of description for the system-based approach, as opposed to the person approach that refers to individual performance factors such as skill or vigilance.

In chapter 3 the development of the Leiden Operating Theatre Intensive Care Scale (LOTICS) is described as an instrument to detect the underlying causes of medical errors proactively by measuring LRFs. In the prospective survey, items can be either indicators of either potential problems or good practice. It shows the strengths and weakness of an organization, allowing the possibility of data-driven interventions. Changes in patient safety performance can then be monitored and the effects of interventions to improve the level of patient safety can be evaluated. Similarly, LOTICS can be used for comparison of different hospital, clinical areas and disciplines within the medical system.

In chapter 4 an approach to a successful implementation of a patient safety program is described in the Operating Theatre. The favourable change of the LRFs: material and staffing resources concurred with a decrease in perceived and reported error rates in the relevant categories. This type of intervention can provide direct benefits to the staff of an OT, because the changes on the working environment were both visible and resulted in improvement in task performance and are therefore likely to be accepted.

In chapter 5 the relationships between Latent Risk Factors (LRFs) and well-being in anaesthesia teams of three university hospitals in the Netherlands were investigated. The results indicate that the job satisfaction, stress and intention to leave are predicted rather well by the LRFs. Importantly, this finding shows that unfavorable working conditions

not only result in potential hazards for patient safety, but also negatively affect employees' job satisfaction, job stress and increase intention to leave the job. Most studies on safety issues in anaesthesia have focused on anesthetists, but the results of this study show that, in addition to anaesthetists, other anaesthesia team members should be included in studies to get a valid impression of the theatre room's safety health.

In chapter 6 we focused on the influence of the clinical area (Operating Theatre vs. Intensive Care Unit) and disciplines on reported scores in an inquiry on patient safety. We observed that the ICU staff reported fewer problems for training, communication, team instruction and hierarchy than the OT staff. This could be the result of the entirely different process, compared to OT or ward work. The OT had more favorable perception, on design and equipment resources. We found differences between disciplines on all Latent Risk Factors. We speculate that this is the result of differences in work organization content and professional training.

Conclusions

The prospective identification of Latent Risk Factors (LRFs) can lead to removal of error-inducing conditions before they can contribute to patient injury. Identifying LRFs will improve patient safety by improving the conditions that set the working environment for the occurrence of errors. Interventions aimed at unfavorable LRFs detected by the LOTICS, may contribute to the improvement of patient safety in the OT. This thesis has shown that staff from OT and ICU is able to detect these shortcomings but differ in their scope of the present risks. Unfavorable LRFs can act as stressful triggers at the workplace. If staff cannot control such stress this

may negatively affect their well-being. The key to a healthy workplace is to control the deficiencies in the structure of the working environment.

The willingness of staff to speak up about a patient-safety concern is an important part of safety in the Operating Theatre and Intensive Care Unit. Therefore there needs to be a culture of openness. We think a first step in this approach is to build a strong foundation of safety awareness among staff. This may best be done by implementing concrete and visible improvements. We think staff perceptions of safety are a high priority issue within the Operating Theatre and Intensive Care Unit, which will eventually motivate staff to take greater ownership of and responsibility for patient safety.

