Is the number of reported critical incidents relevant?

Frey, B
Is the number of reported critical incidents relevant?

Bernhard Frey, MD

Bernhard Frey
Department of Intensive Care and Neonatology
University Children’s Hospital
CH-8032 Zurich, Switzerland

E-mail: Bernhard.Frey@kispi.uzh.ch

Tel: 0041 44 266 73 59
Fax: 0041 44 266 71 68

Key words: intensive care; newborns; patient safety; incident reporting; outcome

Word count (excluding references): 792
First of all, critical incidents are reported and analyzed to spot patient safety problems and to improve patient safety by system changes. This qualitative approach has sharpened our understanding of system problems which we previously had not been aware of. Soon, a quantitative aspect arose. It has been debated whether the number of reported incidents correlates with quality of care (that is with the true number of incidents and patient outcome) or whether the number reflects the safety culture in a health care institution (1, 2). For both approaches it is essential to make as many critical incidents as possible known to the intensive care team. The technique of voluntary, anonymous, non-punitive critical incident reporting was implemented to reach this goal (3). However, whereas a decreasing number of reported incidents indicates improving quality in the former case, a persisting high number of reported incidents is anticipated and regarded as continuing good safety culture in the latter case. In accordance with this latter concept, we even observed increased numbers of critical incident reports after the introduction of a system change, probably because intensive care unit personnel was more aware of the specific problem (4). Conversely, Ligi and co-workers recently presented their results of critical incident reporting in a neonatal unit (5). They calculated rates of critical incidents per 1000 patient days and they claimed that this prospective method will allow the effect of prevention strategies to be assessed (5). Others have argued that the number of reported critical incidents can not be used to track quality of care as there are numerous uncontrollable factors affecting the number of reports in a voluntary reporting system. So, it has been shown that nurses are more likely to report of their own medical errors than doctors (6). Furthermore, regular feedbacks about the reported incidents, evidence of system changes because of reports, anonymity of reporting, and even use of electronic formats for reports (as opposed to paper forms) have all been shown to increase reporting (6, 7). Some of these factors
and therefore the number of reported incidents may be influenced by the climate or safety culture of the institution (8).

It is to the merit of Snijders and co-workers that they studied the relationship between aspects of safety culture and number of reported critical incidents (9). This multicenter study, presented in this issue of Critical Care Medicine, was performed concomitantly with the introduction of voluntary, non-punitive reporting of incidents in eight neonatal intensive care units and one surgical pediatric intensive care unit in the Netherlands. Analysing the applied method of critical incident monitoring, two particularities have to be mentioned, because they have been previously shown to influence the number of reports: in the study of Snijders, health care personnel has been encouraged to report non-anonymously (as opposed to anonymous reporting) and patient safety committees provided unit personnel with planned preventive actions related to incidents, obviously without active involvement of the whole intensive care team in the analysis of critical incidents (10).

Applying vigorous statistics, Snijders and co-workers found that the number of self-reported incidents was positively associated with a non-punitive response to error, and negatively associated with overall perceptions of safety and hospital management support for patient safety (9). While the former finding is in line with the assumption that the number of reported incidents equates to the prevailing safety culture, the latter two findings contradict to this concept. One would expect high perceptions of safety and excellent management support for patient safety to encourage health care personnel to report on safety issues and therefore positively impact on reporting. However, the results of this study suggest that some aspects of safety culture (non-punishment) increase critical incident reporting ("many reports is
good”) whereas decreasing number of reported incidents may correlate with the
achievement of certain other safety culture aspects (“many reports is bad”). In the
end, as a user of critical incident reporting, I am uncertain whether I should be happy
or concerned if a great number of critical incidents is reported.

Snijders and co-workers have done an important contribution to the understanding of
critical incident reporting behaviour. However, as they acknowledge, further research
has to be done in this field. Important covariates influencing reporting rates have to
be considered: profession of reporters, case mix and illness severity, number of
admissions, anonymity. Furthermore one has to bear in mind, that the monitoring of
critical incidents alone does not guarantee improved quality of care. What counts is
patient outcome. So, in future research, aspects of safety culture in neonatal and
pediatric intensive care should be correlated with outcome measures such as
standardized mortality ratio (SMR), rate of accidental extubations (per 100 intubation
days) or frequency of actual drug errors (per 100 patient days or 100 drug orders) (4).

REFERENCES
1. Cullen DJ, Bates DW, Small SD, et al: The incident reporting system does not
detect adverse drug events: a problem for quality improvement. Jt Comm J Qual
Improv 1995; 21:541-548
in intensive care: AIMS-ICU. An analysis of the first year of reporting. Anaesth
Intensive Care 1996; 24:320-329


