Medical Errors:Much Ado About Nothing?

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Risk-prone industries, such as aviation and nuclear power plant operations, have been addressing the issue of erroneous design and behaviour in systematic ways over the last decades. In general terms, an error is the failure of planned actions to achieve their desired goals. Failures of the execution of an adequate plan are often called slips and lapses, whereas designing an inadequate plan is often called a mistake (irrespective of the execution) (Reason 1990; 1995).

Healthcare practice is a risk- and error-prone field as well. Until a few years ago, however, the impact of medical errors most likely had been underestimated. "To Err is Human", a sentinel publication from the Institute of Medicine (IOM), has helped to bring this issue to the attention of clinicians and administrators certainly in the United States, if not worldwide. In the IOM report, a medical error is defined as the failure of a planned action to be completed as intended, or the use of the wrong plan to achieve an aim. An adverse event is defined as an injury caused by management rather than the underlying condition of the patient. According to the report, more than 44,000 deaths annually may be attributable to medical errors in the US, rocketing them to one of the 10 leading causes of death there (Kohn et al. 1999). Rates of adverse events in hospitalised patients have been estimated as approximately 4 to 11%, and about 30 to 70% of those cases were most likely preventable. The excess length of hospital stay, mortality, and charges due to medical errors have been estimated to reach 11 days, 22%, and $ 57,000/case, respectively (Venkatesh et al. 2006; Zhan and Miller 2003).

Patients in intensive care units (ICUs) are frequently exposed to medical errors. In an early study, Donchin and colleagues had identified approximately 1.5 medical errors per patient each day in an Israeli university hospital ICU over a four-month period. About one third of those errors were graded as potentially very harmful, and communication problems were thought to be the largest contributor to the rate of medical errors (Zhan and Miller 2003; Donchin et al. 1995). In a 24-hour prevalence study in 205 ICUs worldwide, Valentin and co-workers recently found approximately 40 unintended events compromising patient safety per 100 patient days (Valentin et al. 2007). The most frequent events were related to lines, catheters and drains; events related to the prescription or administration of drugs were the second most frequent observation; and equipment failures were the third most frequent observation (approximately 15, 11, and 9 events per 100 patient days, respectively).

In common with other complex technologies, medical errors usually result from a frequently unpredictable combination of active human failures, and latent organisational flaws (e.g. organisational structure, device design, decision pathways complexity). Whereas it is usually quite easy to find and blame the malefactor explicitly, it is often not so easy to detect the systems' flaws – if they are investigated at all. However, organisational contextual factors are amenable for improvement, whereas individuals remain prone to erroneous behaviour under certain circumstances no matter how well they have been trained and scrutinised (Reason 1990,1995; Kohn et al. 1990). Similarly, if medical errors are compared to injuries in general, humans will continue to take risks. Therefore, safety features of potentially dangerous materials, objects, consumer goods, or procedures need to be improved to allow for less harm once risks have materialised (Haddon 1970; Michalsen 2003). Like injuries, medical errors are not extinguishable, but most of them are preventable.

Conclusion

The impact of medical errors and adverse events is substantial both by frequency and severity. Therefore, preventing medical errors or at least decreasing their toll remains an important goal within the healthcare sector. Much still can be done! Beyond the realisation of the problem, we can all strive to increase our knowledge about the determinants of both actual medical errors and socalled near miss events (Reason 1995; Kohn et al. 1999; Donchin et al. 2007). We might then attempt to reduce a few specific hazards (Provonost et al. 2006). However, "the biggest challenge in moving toward a safer health system is changing the culture from one of blaming individuals for errors to one in which errors are treated not as personal failures, but as opportunities to improve the system and prevent harm" (IOM 2001).