



## Research Newsletter Vol. 4 (1) January – April 2015

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### Patient Safety needs the urgent attention of all healthcare professionals

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#### Patient Safety: the problem and its magnitude

Recent advances in modern medicine and medical technology have enabled development of effective life-saving and life-enhancing procedures, which have helped in achieving successful diagnosis, treatment and rehabilitation of majority of the patients. The longstanding medical principle, 'First, do no harm', is universally accepted as the basis of modern medical practice [1]. Healthcare professionals thus try hard to ensure that under no circumstances patients have to experience an 'Adverse Event'. Adverse Event (AE) is an unintended or unexpected harm caused by health care management rather than by the patient's underlying disease process and which might result in an increased morbidity, permanent disability or even death [2, 6]. However, in spite of these efforts by healthcare professionals, evidence suggests that around the world AEs, including those preventable, continue to threaten the safety of a small but significant proportion of patients.

Evidence indicates that even in typically well-funded and technologically advanced hospital settings of developed countries, one in ten patients experience AEs [2, 3]. However, the actual number of such patients can be quite high due to the large number of patients seeking healthcare. In 1999, the landmark publication, 'To Err Is Human' by the Institute of Medicine, USA, was first to raise the alarm by formally reporting the magnitude of this problem [7]. It estimated that between 44,000 and 98,000 people died each year in the US as a result of preventable medical errors [4]. Incidentally, these deaths were found to be even more than those due to motor vehicle accidents, breast cancers or AIDS [4]. This problem continues to remain a cause for concern since recent estimates of the year 2013 indicate that the number of premature deaths due to preventable harm to patients in the US is more than 400,000 per year and about 10 to 20 times more patients suffer from non-fatal injuries [5]. In addition to direct harm to patients, AEs add to the financial burden on the health care system in general and to the patients and their families [6].

Unfortunately, very limited information is available about the number of AEs and the level of unsafe care in developing and transition countries including India, where the probability of patient harm may be even higher due to constraints on the healthcare infrastructure, technology and human resources. Thus, patient safety is indeed a matter of concern and hence, requires attention from all the stakeholders of the healthcare system.

#### 'Systems Thinking': the modern approach to patient safety

Multiple factors such as incorrect diagnosis, poor communication of clinical data, unclear clinical hand-overs, incorrect use of a medical device or its malfunction, infections acquired in hospitals and mistakes in medication and surgery can result in AEs [7]. The traditional approach in healthcare is to blame, name and shame the individual provider who might have committed the error at the 'sharp end', while providing the care directly to the patient. However, this approach overlooks the fact that most errors are committed unintentionally and can happen inadvertently at the hands of hardworking, well-trained professionals. These errors are unlikely to be prevented simply by advising those involved to be more careful. Furthermore, this blame culture also tends to discourage healthcare professionals from reporting AEs due to fear of punitive action by the organisation.

Therefore, the modern approach advocates 'Systems Thinking', which should replace the traditional 'blame and shame culture' [8]. This approach acknowledges that it is difficult to completely eliminate human error and hence, the healthcare delivery 'systems' and 'processes' should be designed to anticipate and prevent these errors or detect them before they cause harm to the patient. It also suggests that focus needs to shift from legal consequences of AEs to constructive efforts aimed at finding effective solutions to prevent AEs. The reporting of AEs needs to be encouraged through 'no blame' policy because analysing these reports helps in identifying weaknesses in the system and taking suitable corrective and preventive actions sooner than later.

In fact, in other high risk industries such as aviation and nuclear energy, this 'systems approach' has demonstrated significant improvements in safety. In aviation it was soon realised that increasing reliability of aircraft and introducing technological redundancies was not enough to reduce accidents. Further improvement in safety could only be achieved by building systems to correct and mitigate the inevitable human error. The tools used to address this problem include rigorous use of checklists, encouragement to open communication and team building among the crew members and improvement in ease of use of cockpit controls [9]. Formal systems for reporting and analysing AEs have remained an essential part of the safety culture in the aviation industry.

### **Checklists and AE reporting: two useful tools for improving patient safety in hospitals**

Taking a cue from these high risk industries, the healthcare industry too is in the process of making the necessary changes. For example, Dr. Peter Pronovost, an Intensivist from the Johns Hopkins Institute, USA, demonstrated that near zero rates of Central Venous Catheter Infection could be achieved by adopting a checklist [10]. A WHO study lead by Dr. Atul Gawande in seven different types of hospitals in different parts of the world, demonstrated significant improvements in safety through use of the WHO Surgical Safety Checklist [11]. Furthermore, in most developed countries, individual hospitals have their local AE reporting systems, which are helpful in introducing appropriate corrective actions to increase levels of patient safety. In some countries, national AE reporting systems further help in judging the overall situation at the country level.

In summary, it is essential to acknowledge that patient safety is an important aspect of modern healthcare systems and increasing awareness of all the stakeholders is an urgent need. Incorporating safety culture into the organisation and systematic use of proven safety tools should become a priority for all healthcare systems. Research aimed at objectively evaluating the effect of various interventions on improvements in patient safety will help in generating the evidence in support of such interventions and will also justify allocation of more resources towards them. All such efforts would go a long way in complementing the advances in modern medicine and medical technology and enhance their benefits to the patients and the society. In subsequent article of this series on patient safety, an important issue of medical technology safety will be addressed.

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