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COMMENTARY

IATROGENIC ILLNESS: A CALL FOR DECISION SUPPORT TOOLS TO REDUCE UNNECESSARY VARIATION

Steel *et al* raised a red flag for the medical community in 1981 when they articulated the serious risks associated with hospitalization.[1] They identified a lack of progress in the 15 years that followed a previous report of the same problem. The many advances in diagnostic and therapeutic interventions that had appeared during those 15 years were not matched by a reduction in iatrogenic illness suffered by patients in hospital. They identified the types and magnitudes of several risks without assigning blame or claiming that the iatrogenic illnesses were preventable; 36% had at least one iatrogenic illness, 9% had a major iatrogenic illness, and 2% sustained an iatrogenic illness that contributed to death.

Interestingly, iatrogenic illness occurred in several different clinical settings within the medical service they studied. One of the strengths of their study lies in the inclusion of all new patients admitted to medical and metabolic wards and to both an intensive care unit and a coronary care unit. Iatrogenic illness was encountered in all of these settings. As expected, the intensive care settings accounted for more of the iatrogenic illness than did the others. However, when subjected to a logistic analysis, the unit in which the patient received care was not a determinant of iatrogenic illness; only the referring site (home, hospital, nursing home, etc) and the assessment of the patient's condition on admission by the house officer were important determinants. This suggests that both patient and system (environment and clinician) attributes contributed to iatrogenic illness. One might be tempted to argue that the increasingly large information burden borne by clinicians is responsible for the current but not for past (at least distant past) iatrogenic illness. This seems unlikely since human cognitive ability is so strikingly limited and so small compared with the information clinicians encounter and have encountered for over a century.[2] It is more likely that iatrogenic illness and other forms of errors in healthcare delivery are linked to limitations in human decision making and to defects in the healthcare delivery system.[3]

Steel *et al* sounded an appropriate and currently applicable call for a response from the medical community. They requested technological, educational, and administrative advances to meet the investigative and clinical needs of this important problem. In their discussion they consider the adverse effects of continual monitoring and point to the danger that newer monitoring techniques might lead to increased diagnostic and therapeutic interventions, both of which carry risk of iatrogenic illness. This is a prescient pointer to the extensive use of pulmonary artery catheters in the seriously ill,[4] an issue under current investigation by the National Institutes of Health/National Heart Lung and Blood Institute Acute Respiratory Distress Syndrome Network. While Steel *et al* are careful to avoid judgments about culpability and the risk/benefit ratio for patients admitted to hospital, they emphasize the need for further research into untoward events among hospitalized patients. They note, correctly, that patients may still benefit from health care even when they encounter important risks in so doing. We now have adequate evidence that many of these risks are unnecessary and avoidable.[3]

Interestingly, their method included a standardized process (study instrument) for medical record abstraction. Like many study methods, it embraced a standardized approach for obvious investigative reasons. This provides an ironic contrast with one of the causes of a subset of the iatrogenic illness they addressed—namely, those resulting from error in the clinical setting linked to the lack of clinical standardization (unnecessary variation in practice).[5] Many clinicians respond openly that such standardization interferes with individualization or tailoring of treatment to the needs of a specific patient. This was the position adopted by the US Office of Human Research Protection in the recent controversy concerning the protocols used by the National Institutes of Health/National Heart Lung and Blood Institute Acute Respiratory Distress Syndrome Network. The Network argued—and was supported by the reviews of many independent experts—that individualization of treatment was maintained within the constraints of the evidence-based therapeutic protocols.[6]

A recent publication of the favorable impact of a checklist used in the intensive care unit to identify patient goals for all members of the clinical staff is sobering.[7] This simple paper based checklist evokes images of the US Federal Aviation Agency mandated checklist used by airline and other pilots. Its implementation was followed by more successful communication and by a decrease in the length of stay in the intensive care unit.[7] Other examples exist of similar strategies carried out with more complex tools.[8] These more complex tools require electronic structures that could constitute barriers to implementation.[9 10] The simple paper based checklist does not. Both are examples of decision support tools effectively brought to the point of decision making.

The reduction of iatrogenic illness will depend on many factors, including the reduction of error.[3 8] This can be achieved in part by reducing unnecessary variation in care[5] with decision support tools.[7 8] Error reduction can also be achieved through identification and abandonment of unnecessary diagnostic and therapeutic interventions, a demanding but sorely needed activity that will require carefully conducted clinical trials. To this end, decision support tools can provide the adequately explicit methods necessary to maximize credibility of many clinical trials.[11 12]

A H Morris

Pulmonary and Critical Care Divisions, Departments of Medicine, LDS Hospital and University of Utah School of Medicine, Salt Lake City, Utah 84143, USA; ldamorri@ihc.com

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