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What's New in the Patient Safety World

February 2023

The Harvard Medical Practice Study 30 Years Later

For over 30 years we have quoted statistics on hospital adverse events that came from the Harvard Medical Practice Study (Brennan 1991, Leape 1991). That study was conducted on patients hospitalized in New York State in 1984. The study found that adverse events occurred at a rate of 3.7 events per 100 admissions. Of those, 28% were judged to have been caused by negligence, and 16% led to death or permanent disability.

That study played a big part in the publication of "To err is human: building a safer health system." (Kohn 2000), considered a seminal publication in the patient safety movement. We've often criticized that publication in that it sensationalized (at least in the lay media) statistics about adverse events but ultimately had minimal impact on improving care.

In our January 2011 Patient Safety Tip of the Week "No Improvement in Patient Safety: Why Not?" we discussed 2 subsequent studies (Landrigan 2010, Levinson 2010) that were similar to the Harvard Medical Practice Study. Both studies showed little improvement in adverse event rates.

So, another 10 years have passed. Are we doing any better now? We are not, at least according to a new study conducted in a sample of representative hospitals in Massachusetts. Bates et al. (Bates 2023) analyzed a random sample of hospital admissions in 2018. Nurses reviewed the patient charts for adverse events, also using trigger tool methodology, and then physicians reviewed those results to come to agreement on whether adverse events occurred and whether they might have been preventable.

In their random sample of 2809 admissions, they identified at least one adverse event in 23.6% of admissions. Among 978 adverse events, 22.7% were judged to be preventable and 32.3% had a severity level of serious or higher. A preventable adverse event occurred in 6.8% of all admissions. Preventable adverse events with a severity level of serious or higher occurred in 1.0%. Of seven deaths, one was deemed to be preventable. Categories

of adverse events were: adverse drug events 39.0%, surgical or other procedural events 30.4%, patient-care events (defined as events associated with nursing care, including falls and pressure ulcers) 15.0%, and health care–associated infections 11.9%. Somewhat surprisingly, they identified only 10 diagnostic errors that resulted in an adverse event. There was considerable variation in event rates across hospitals, with larger hospitals in general having higher rates.

The authors urged some caution in comparing their results to those of prior studies in that there were some differences in methodologies and that their hospital and patient populations may not be representative of the nation's hospitals as a whole.

Yet, the message should be clear – we still have a long way to go in improving patient safety.

References:

Brennan TA, Leape LL, Laird NM, et al. Incidence of adverse events and negligence in hospitalized patients — results of the Harvard Medical Practice Study I. N Engl J Med 1991; 324: 370-376
https://www.nejm.org/doi/full/10.1056/NEJM199102073240604

Leape LL, Brennan TA, Laird N, et al. The nature of adverse events in hospitalized patients — results of the Harvard. Medical Practice Study II. N Engl J Med 1991; 324: 377-384
https://www.nejm.org/doi/full/10.1056/NEJM199102073240605

Kohn LT, Corrigan JM, Donaldson MS, eds. To err is human: building a safer health system. Washington, DC: National Academies Press. 2000
https://www.ncbi.nlm.nih.gov/books/NBK225182/

Landrigan CP, Parry GJ, Bones CB, et al. Temporal Trends in Rates of Patient Harm Resulting from Medical Care. N Engl J Med 2010; 363: 2124-2134
https://www.nejm.org/doi/full/10.1056/NEJMsa1004404

Levinson DR. Adverse Events in Hospitals: National Incidence Among Medicare Beneficiaries. Washington, DC: US Department of Health and Human Services, Office of the Inspector General; November 2010. Report No. OEI-06-09-00090
http://oig.hhs.gov/oei/reports/oei-06-09-00090.pdf

Bates DW, Levine DM, Salmasian H, et al. The Safety of Inpatient Health Care. N Engl J Med 2023; 388: 142-153
https://www.nejm.org/doi/full/10.1056/NEJMsa2206117