

Two Decades Since *To Err Is Human* Progress, but Still a “Chasm”

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It has been more than 2 decades since the Institute of Medicine (IOM; now the National Academy of Medicine [NAM]) published *To Err Is Human* in 2000,¹ which concluded that up to an estimated 98 000 deaths each year may result from preventable medical errors. In 2020, as a host of articles appeared to celebrate the anniversary of the report, the COVID-19 pandemic cruelly illustrated the ways in which the US health system has still fallen far short of the goal of providing safe, high-quality care.

That is not to say there has not been progress. Before *To Err Is Human* was published, physicians and hospitals largely enjoyed an illusion of infallibility, and questioning the health care system was unpopular and unheard of. The Agency for Healthcare Research and Quality (AHRQ; then called the Agency for Health Care Policy and Research) had been almost zeroed out of the federal budget in 1995 after an advocacy campaign by back surgeons concerned about an agency report that questioned the necessity and safety of spinal fusion procedures.²

Despite the challenging environment, in 1992 the IOM pushed successfully to center quality as an organization's foremost priority. Unable to find external sponsorship for an initial study, the IOM used internal funds to proceed with a project that was bound to be contentious.

As it turned out, the focus of *To Err Is Human* on patient safety—a strategic choice—was transformational. The report made headlines around the world, and the quality of health care became a political imperative almost overnight. President Bill Clinton announced a series of executive actions requiring quality improvement measures by federally supported health plans.³ On the president's reauthorization of AHRQ, the US Congress appropriated \$50 million annually to support the agency's patient safety research.⁴

The door had been opened for a new “quality movement” in the US, and the IOM no longer lacked support for its quality initiative. *Crossing the Quality Chasm*,⁵ published a year later in 2001 with funding from major health care foundations and the US Department of Health and Human Services, broadened the lens from patient safety to examine 5 additional elements of quality: effectiveness, patient-centeredness, timeliness, efficiency, and equity. In the years that followed, the IOM continued to build on its Quality Chasm Series, exploring topics ranging from health professional education and the role of nurses to health care for rural populations and people with mental illness and substance use disorders.

Meanwhile, organizations like the Institute for Healthcare Improvement, the National Committee for Quality Assurance, and the National Quality Forum found new momentum alongside AHRQ and the IOM and galvanized a new culture of quality and safety in US health care.

The quality movement also found traction outside the US. The United Nations Millennium Development Goals, established in 2000, focused on access to high-quality health care as central to international development, particularly in the areas of maternal health and treatment for HIV/AIDS.⁶ In 2004, the World Health Organization launched a new patient safety program with the goal of accelerating progress worldwide through coordination and dissemination of best practices. In 2012, the United Nations Sustainable Development Goals introduced an emphasis on universal health coverage, defined as access to high-quality, affordable health care for everyone in the world. Although significant work remains, this global movement has yielded clear progress, particularly in the areas of children's health and infectious diseases.

After more than 2 decades of concentrated effort since *To Err Is Human*, the quality landscape in the US has also improved by many measures. Hospital-acquired conditions such as adverse drug events, falls, and infections have steadily declined.⁷ New measurement and reporting requirements and payment incentives hold hospitals and other acute care facilities accountable for adherence to quality standards. Electronic health records have fostered greater continuity of care. Access to data and consumer advocacy groups have enabled patients to make informed decisions and empowered them to demand and uphold system performance. The Affordable Care Act has expanded access and reformed payment methods to incentivize quality and better outcomes.

Yet serious gaps remain, as starkly demonstrated by the COVID-19 pandemic. The US health care system has struggled with emergency preparedness, supply chains, and worker protections. Data collection has been inadequate and inconsistent, and knowledge has not been shared across organizational and geographic boundaries. Importantly, the health care system has failed the most vulnerable. The virus has severely affected nursing homes and rehabilitation facilities and left people with mental illness and substance use disorder unable to access necessary care and support. Black people and other people of color are being hospitalized and dying at disproportionately high rates. Disturbingly, the politicization of the pandemic response has fractured the public health system and impeded efficient collaboration.

Globally, the COVID-19 pandemic threatens to stall or reverse progress that has been made toward universal health

coverage and Sustainable Development Goals, including infectious diseases control and access to essential medicines. To avoid a backslide with serious ramifications for populations worldwide, the US and other wealthy nations must remain engaged and invested in efforts to strengthen health systems in low- and middle-income countries.

Certainly, COVID-19 is a worst-case scenario, one that would strain any health system. But there were quality shortcomings long before COVID-19. Crucially, as the health care community begins to recover after the pandemic, quality must remain a central focus. Now is the time to examine US and global systems through a fresh lens. With the right planning, the COVID-19 recovery efforts could provide the impetus needed to reinvigorate the quality movement and build a system that consistently delivers safe, effective, and affordable care to everyone who needs it.

On the threshold of an uncertain future, and one in which the health care system will be forever changed, 3 Viewpoints in this issue of *JAMA* and related to the 20th an-

niversary of the IOM reports examine urgent areas of focus for the care quality movement. The Viewpoint by Corrigan and Clancy⁸ looks holistically at system performance in the context of the pandemic and according to the 6-element quality checklist set forth in the 2001 report. In their Viewpoint, Singh and Carayon⁹ look beyond the hospital setting, where most quality improvement efforts have focused to date, to the opportunities for ambulatory care and digital health. Acknowledging the interconnectedness of global societies, the Viewpoint by Leatherman and Berwick¹⁰ provides an important agenda for accelerating progress in care quality and safety globally in the quest for universal health coverage.

The next 20 years of the quality movement will be defined by the priorities established today. As infectious diseases, climate change, health inequity, and information warfare reshape society more quickly than ever imagined, there is an opportunity—and an imperative—to design a system of care that learns, adapts, and holds quality and equity at the center.

ARTICLE INFORMATION

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Conflict of Interest Disclosures: Dr Dzau is president of the National Academy of Medicine (previously the Institute of Medicine [IOM]). Dr Shine is a former president of the IOM (1992-2002).

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Searching for the Optimal PEEP in Patients Without ARDS High, Low, or in Between?

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Positive pressure ventilation is lifesaving for patients with acute respiratory failure and has been the cornerstone of care for critically ill patients since the polio epidemic in the 1950s. Increasing end-expiratory pressure in ventilated patients, termed *positive end-expiratory pressure* (PEEP), was noted to be beneficial for acute pulmonary edema as early as the 1930s by Barach et al.¹ However, it was not widely used until 1967, when Ashbaugh and colleagues² “discovered” acute respiratory distress syndrome (ARDS) and demonstrated that PEEP improved arterial oxygenation in some patients with ARDS.



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For decades, the major goal of PEEP was to improve oxygenation or oxygen delivery,³ but over the past few decades, this goal has shifted to minimizing ventilator-induced lung injury, an approach that includes limiting tidal volumes and inspiratory pressures while providing sufficient PEEP to minimize lung collapse.⁴

From a physiological perspective, PEEP may be beneficial by maintaining lung units (alveoli and small airways) open that would otherwise collapse at end expiration, thus improving gas exchange. By keeping additional lung units open, PEEP can reduce injurious shear forces due to cyclic opening and closing of these units during ventilation, and