

## Health Care in America: An Error-Prone System in Need of a Fix

During the past decade it has become quite apparent that medical errors represent a serious threat to patient safety in all health care settings.<sup>1</sup> More specifically, the Institute of Medicine estimates that “tens of thousands of Americans die each year from errors in their care, and hundreds of thousands suffer or barely escape from nonfatal injuries.”<sup>2</sup> Though some recent work has challenged the Institute of Medicine’s methodology in arriving at its shocking estimates,<sup>3,4</sup> there is nonetheless a widespread perception that there is indeed a serious problem. For example, a recent visit to the web site of the American Medical Association (<http://www.ama-assn.org>) revealed an astounding 6,823 documents matching the query “medical errors, prevention.”

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To underscore the impetus for this large volume of literature on the subject, a recent survey of physicians and the general public found that although the majority of physician respondents (69.7%) believed that reducing medical errors should be a national priority, only 29.1% believed that medical errors represented a serious challenge to the quality of care.<sup>5</sup> However, this contrasted sharply to the views expressed by the public, 68% of whom believed that quality of care is a serious problem, with 60% of the public also indicating the need for a national agency to address medical errors. Not surprisingly, only 24.1% of physician respondents believed a national agency was needed to address the issue of medical errors. Interestingly, nearly all physician respondents (92.9%) believed additional training was necessary in the subject of medical errors, and 60% agreed that it is difficult to differentiate outright negligent errors from unintended errors.

Notwithstanding the differences in perceptions between physicians and the public as to how the issue of medical errors should be addressed, the potential adverse impact of medical errors on the health, safety, and well-being of patients can no longer be dismissed or ignored. Health care providers are repeatedly admonished from the time they first enter professional training “above all else, to do no harm,” and patients entrust themselves to health care providers on the assumption that the provider will do his or her best. But the fact is that medical errors do occur and

can lead to serious safety, legal, and economic consequences.

The term “medical errors” encompasses a spectrum of adverse actions, from the obvious (wrong surgery on the wrong patient) to the not-so-obvious (medication errors, delayed or postponed therapy). Though most would agree that the obvious errors are of major concern, it is actually the not-so-obvious errors (specifically, medication errors) that have long been identified as the most common type of medical error. For example, as far back as 1975 it was reported that the frequency of medication errors was reduced by 82% by conversion to a unit dosing system.<sup>6</sup> A more recent study revealed that implementation of a computerized physician order entry system resulted in a 55% reduction in the frequency of serious medication errors.<sup>7</sup>

To further underscore the widespread prevalence of medication errors, Barker et al reported in their study of 36 health care institutions that 19% out of a total 3,216 prescribed doses were in error.<sup>8</sup> Although only 7% of the errors were rated as potentially harmful, it is of interest to note that the 2 most frequent errors by category were wrong time (43%) and omission (30%), suggesting that either delaying the administration of a prescribed medication or missing the administration entirely is a frequent occurrence in most facilities. Though this study did not differentiate between medications administered orally, parenterally, or inhalationally, these findings do raise important questions for respiratory therapists (RTs) about the matter of delayed or missed aerosolized medication treatments.

In this issue of *RESPIRATORY CARE*, Stoller et al, at the Cleveland Clinic Foundation, report on their findings following a year-long study of missed bronchodilator treatments throughout their facility.<sup>9</sup> Out of a total of 113,554 prescribed bronchodilator treatments (74,921 via small-volume nebulizer and 38,633 via metered-dose inhaler), only 4,012 medication treatments were missed—a surprisingly low 3.5% of the total. The most common reason for missed treatment (31.6% of the time) was the patient being out of the room. The next most common reason (24.6% of the time) was patient refusal. It is of interest to note that only 1.4% of the missed treatments resulted from the RT being called away to administer “as needed” or emergency treatments to other patients.

The work of Stoller et al<sup>9</sup> is important for several reasons. It is the first study to look at the issue of missed aerosol medication treatments in a systematic manner. Accordingly, their reported methodology is a good first step for others who may be inclined to investigate this issue in their own facilities. Second, this work, when coupled with that of Barker et al,<sup>8</sup> firmly establishes that a delayed or omitted aerosolized medication treatment, contrary to the beliefs of some, does indeed constitute a medication error. Though the full consequences of missed medication treatments on patient health, safety, and well-being have yet to be adequately determined, we cannot lose sight of the fact that the present environment is substantially less tolerant of medication errors than had been the case in the not-too-distant past. This lack of tolerance will only intensify as regulatory and accreditation agencies and third-party payors refine their ability to detect medical errors.

The Stoller et al study is also important in that it implies that when respiratory therapy is administered under the guidance of a respiratory therapy consult service using respiratory care protocols, as has been the case at the Cleveland Clinic Foundation for several years now, the over-ordering of respiratory therapies is uncommon. This cannot be said for hospitals in which physician prescribing patterns are variable, inconsistent, and often predicated on habit. In those institutions, respiratory therapy departments expend considerably more resources in an attempt to comply with the prescribed workload. Given the growing staffing problems being experienced across the country, one can only wonder how many treatments are missed because of inadequate staffing.

A solution employed by some hospitals to address the staffing shortage and its impact on missed treatments is concurrent therapy (also referred to as “stacking”), in which one RT administers several—sometimes as many as 5—aerosol therapy treatments at the same time. Aside from the risk of unfavorable and costly reimbursement audits by governmental and commercial payors that such a practice could trigger, the negative impact on patient care must not be discounted. Successful aerosol therapy outcomes are highly technique-dependent, and the continuous intervention of a skilled RT throughout the treatment session is an essential component. Concurrent therapy is therefore professionally and clinically unacceptable; the reader is referred to a recent white paper published by the American Association for Respiratory Care for a more extensive discussion of this matter.<sup>10</sup>

As one might surmise, concurrent therapy is not practiced at the Cleveland Clinic Foundation (Stoller JK, Cleveland

Clinic Foundation, 2002; personal communication), indicating that respiratory therapy protocols, even in the face of a national staffing crisis, have the potential to keep missed medication treatments to a minimum. One must therefore ask what the impact of staff shortages would be on missed aerosolized medication treatments in a similar size hospital where misallocation of resources is common and where concurrent therapy has been practiced in the past but is now curtailed. No doubt the number of missed treatments would be considerably higher than that reported by Stoller’s group—certainly not something an institution’s performance-improvement committee would find satisfactory. In addition to fostering individualized and appropriate therapy, respiratory therapy protocols also have the potential to significantly reduce the incidence of missed aerosol therapy treatments. Score yet another one for therapist-driven protocols!

Given the growing concerns, perceptions, and reported findings surrounding medical errors (more specifically, medication errors), respiratory therapy departments have a unique opportunity to reevaluate timeworn, tradition-bound, and often anachronistic practices in their respective institutions. The timing and the climate simply couldn’t be better.

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