

## More Than Just Taking the Keys Away . . .

I wasn't sure whether or not to be offended when James Eisenach, M.D., Editor-in-Chief of this journal, asked me to write an editorial on a very simple but provocative article, "Association Between Anesthesiologist Age and Litigation," by Tessler *et al.*<sup>1</sup> in this volume of ANESTHESIOLOGY. The article raises important questions about aging anesthesiologists and potentially declining clinical performance. Was our editor asking because I have expertise in aging and physician performance? Obviously not, because as a part-time administrator who has oversight of physicians, I, like others, struggle mightily when confronted with decisions on when older colleagues should step away from clinical practice. Was he asking because I am getting older and personally am experiencing declining performance? Potentially, because as an anesthesiologist practicing in a residency-training environment, I can attest that it is difficult to stay even with our residents, fellows, and younger faculty in current medical knowledge and clinical practices that have changed dramatically since I finished training three decades ago. Regardless, I agreed to participate because I think the invitation came to me precisely because I'm not an expert on this topic – and it's a topic that many of us will address administratively and all of us will consider or confront as we near the ends of our careers.

Tessler *et al.*<sup>1</sup> have taken a very unique situation in Canada and put it to good use. First, most anesthesiologists in Canada are assigned cases based on department policies (*e.g.*, specialty expertise) and are not selected by surgeon or patient preferences or requests. Second, the authors had complete billing data during a 10-yr period from January 1993 through December 2002 for all physician-patient interactions performed by anesthesiologists in three provinces of



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ings, they also reported that billing data suggest that anesthesiologists 65 and older cared for fewer patients on average and that these patients underwent procedures of lower complexity than those provided care by younger anesthesiologists. In essence, anesthesiologists older than 65 provided care for patients undergoing lower complexity procedures but as a group had a higher frequency of litigated claims against them (1.94 ratio) and a higher average cost per litigated case (3.04 ratio) compared with anesthesiologists 50 years of age or younger.

What do these findings mean to us in practice? Do they imply that there may be an age, as with commercial pilots in most countries, when anesthesiologists should no longer provide acute (*e.g.*, intraoperative) care? If these findings are replicated and confirmed in other countries or populations, how would we apply them in our practices, rules, and regulations? Most importantly, why do older anesthesiologists have these problems at a higher frequency than younger col-

their country. These three provinces, British Columbia, Ontario, and Quebec, include approximately 80% of all Canadian anesthesiologists. Third, the Canadian Medical Protective Association handles all litigation for virtually all Canadian anesthesiologists, has a system to ascribe responsibility for adverse events leading to litigation, and also tracks all complaints filed against anesthesiologists with the licensing colleges in each province. These factors provide a treasure trove of consistently defined and collected data.

The authors found that anesthesiologists older than 50 years of age, and particularly those 65 and older, had a higher frequency of litigation filed against them and a greater severity of injury defined by cost associated with litigated cases than did their younger colleagues. Augmenting these find-

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leagues, and can any identified factors be modified through interventions? Tessler *et al.*<sup>1</sup> appropriately plead that their study should be used as a catalyst to trigger additional research into these and related questions.

A number of the readers of ANESTHESIOLOGY have faced similar questions with aging parents. Should you – and when should you – take the car keys away from elderly parents? It's a difficult but pervasive public question. For example, Florida between 2002 and 2003 had 242,480 licensed drivers 85 years of age or older, and 20% of those had mild-to-moderate dementia.\* The crash rate in the United States in 2002 of drivers with cognitive impairment or dementia was 7.6 times higher than it was for unaffected drivers.<sup>2</sup> The National Cooperative Highway Safety Research Program found factors beyond cognitive impairment/dementia to play roles in this high crash rate: (1) visual impairment that affects functions, including static and dynamic visual acuity, contrast sensitivity, and glare sensitivity; (2) cognitive changes, such as working memory, selective attention, and processing speed that deteriorate; and (3) reductions in strength, flexibility, and range of motion brought on by arthritis or other conditions that hinder accumulation of visual cues and reaction times.

Despite these findings, few states have taken preventive actions such as requiring driving assessments or additional driver's education at the time of renewal of licenses for the elderly. One reason is that the potential risk from a single crash is relatively small. In contrast, the risk from a crash of a commercial airliner is distinctly higher, and public opinion in most countries has led to age restrictions on commercial pilots. Education programs, unique vision tests, and other approaches to distinguish drivers at risk for crashes or to reduce their potential risk for crashes have been equivocal, at best, in their impact on frequency or severity of crashes. In addition, and fortuitously, the vast majority of elderly U.S. drivers appear to self-restrict their driving, starting by limiting their travel to local sites that are quite familiar and driving only during daylight hours. They finally decide to stop driving, primarily for the public good.

What about older anesthesiologists? Could physician-related factors, perhaps some of the same factors associated with elderly drivers, explain the higher “crash” frequency found in the current study of litigated cases and provider-specific complaints made to the provincial licensing colleges? There are many studies that show associations between physician underperformance and increasing years since initial clinical training. For example, older physicians are less likely than their younger colleagues to have the most recent knowledge of medical conditions and their treatment.<sup>3</sup> Unfortunately, this lack of up-to-date knowledge is not the only problem. While older physicians compensate well for this limitation through their accumulated experiences, especially

related to diagnosing problems that they have experienced in the past, they may have decreases in their memory capacity for new information and less ability than younger physicians to reason and assimilate unexpected information or large volumes of information.<sup>4</sup> Their processing speed essentially deteriorates.

The lack of comprehensive current knowledge in many older physicians offers hope. It suggests that tailored educational experiences may lead to performance improvement. For example, simulation experiences, especially related to rare event identification and treatment, may help. The American Board of Anesthesiology was the first of the member boards of the American Board of Medical Specialties to recognize the potential value of simulation experiences in maintaining current knowledge and began to require these experiences within its Maintenance of Certification in Anesthesiology (MOCA<sup>®</sup>) process in 2010. For now, most experiences provided at centers endorsed by the Simulation Education Network of the American Society of Anesthesiologists involve rare event simulations as well as opportunities to improve team-based communication skills. In general, targeted continuing medical education courses have varied in their success of improving physician performance, and more studies are needed on this specific topic.

It's not clear how to improve deficiencies identified in older physicians for processing unexpected information or large volumes of information. Simulation has been proposed as one model but has largely been untested in medical environments for these purposes. There are data from aviation simulation studies related to cognitive processing that suggest simulation may be helpful. Another promising approach is more useful presentation of complex data. Clinical anesthesiology can result in overwhelming data input, especially in acute situations and crises. These inputs, especially if they involve unexpected information (*e.g.*, complex dysfunctional cardiac rhythms, unanticipated sepsis) can lead to confusion. A number of institutions worldwide currently are studying acute episodes of care, including intraoperative management, to understand the most critical data elements in decision-making used by physicians and how to best present them logically to assist with rapid assimilation, diagnosis, and treatment selection.

Of course, there could be a simple reason for the findings by Tessler *et al.*<sup>1</sup> Canadians may preferentially wish to start medicolegal actions against older compared with younger anesthesiologists. Plausible, but unlikely. The association of increased severity of injury with litigation cases involving older anesthesiologists suggests that these cases have some basis in fact. There also are no data that litigation against older physicians in any country is more successful for plaintiffs than cases brought against younger physicians.

### What Should We Do with the Findings from This Important Study?

First, we must modify readily identified factors that contribute to age-related decrements in anesthesiologist perfor-

\* Florida At-Risk Driver Council, Department of Highway Safety and Motor Vehicles: The effects of aging on driving ability (2004). <http://www.flhsmv.gov/dcl/atriskdriver.pdf>. Accessed November 30, 2011.

mance. The most obvious of these is fatigue. Multiple studies suggest that work modifications to reduce fatigue (*e.g.*, reduced night call and schedule lengths) will result in decreased decision-making errors. Ironically, reductions in the complexity of cases and comorbidities of patients appear to have little impact on anesthesiologist performance. Shifts of practice to ambulatory patients as anesthesiologists age may result in improved performance, but primarily by reducing opportunities for fatigue and elimination of night time work. A better solution may be to change the practices of older anesthesiologists away from acute care settings when performance in those settings appears to have declined. As practices adopt the surgical home model that encompasses the entire perioperative episode of care, there will be increasing opportunities for anesthesiologists to care for patients in less acute care settings such as preoperative clinics and postoperative pain management services. These environments may play to the strengths of memory and experience of older anesthesiologists and remove them from the rapidly changing inputs that they encounter in acute care (*e.g.*, intraoperative) environments.

Second, we must encourage funding of studies to evaluate the efficacy of simulation training and data processing on improved decision-making and treatment. For example, the Anesthesia Patient Safety Foundation and the Foundation for Anesthesia Education and Research have been quite supportive of studies related to simulation training and assessment of performance, and additional funds to them targeted at studies on aging anesthesiologists would be useful.

Third, the findings of Tessler *et al.*<sup>1</sup> should be confirmed in other populations to determine if litigation, as a surrogate marker of underperformance by older anesthesiologists, is ubiquitous or limited to certain nations, regions, or types of

practice. For example, cases in the American Society of Anesthesiologist's Closed Claims Project may have sufficient information to confirm these findings and might provide details in their narrative descriptions that would lead to new hypotheses.

Finally, we should not rush to "take away the keys" from older anesthesiologists. Until additional evidence complements the surrogate litigation findings from this study that older age leads to underperformance of anesthesiologists and patient harm – and we are not able to modify age-related underperformance through active interventions – we should rely on peer review, outcomes measurement, and comparative norms to detect problematic clinical performance.

Congratulations to Tessler *et al.*<sup>1</sup> for making good use of the unique opportunities in Canada to study the issue of aging and anesthesiologist performance. They have provided thoughtful findings that will guide others as they explore this increasingly important patient safety topic.

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