

regarding the safety and efficacy of MILS<sup>7</sup> and wide variability in MILS technique, we would welcome the development of a consensus statement regarding how MILS is to be applied and the clinical endpoints to be achieved. We need to understand what MILS truly *is* before we can determine what it truly *does*; to determine if MILS is safe and effective or, possibly, otherwise.

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## All Glucose Measurements Are Not Equal

*To the Editor:*—We read with interest the study by Bilotta *et al.*<sup>1</sup> comparing intensive insulin therapy to conventional treatment in two cohorts of neurosurgical patients. When an arterial catheter was not available for glucose determination, capillary blood was measured with the HemoCue point-of-care device (HemoCue, Angelholm, Sweden). This was a wise choice, as this system has been shown to be accurate, even at low glucose concentrations.<sup>2</sup> What is not commonly appreciated is that most other point-of-care glucose measurement devices are not sufficiently accurate for critical care use, and that such devices originally approved and regulated for home self-monitoring by patients with diabetes have migrated into the hospital setting without further regulatory scrutiny. In fact, it has been specifically recommended that point-of-care devices designed for patient use at home, yet sometimes used in hospitals, should not be used in critically ill patients.<sup>3</sup>

Although their use of capillary blood for glucose determination is understandable, it should be pointed out that arterial blood glucose concentrations have been demonstrated to be a better representation of plasma glucose as compared with simultaneous capillary measurements.<sup>4,5</sup> This may be secondary to a variable time constant in the fingertip blood pool. Furthermore, hypotension, hypoxia, and acidosis, which are common problems in the critical care population, can significantly affect these capillary readings.<sup>6</sup>

Not all glucose measurements are equivalent, and care must be taken in their interpretation, especially at low concentrations.

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*In Reply:*—Dr. Rice *et al.* have raised a very interesting question about our article published in the March 2009 issue of *ANESTHESIOLOGY*,<sup>1</sup> that concerns the accuracy of the glycemic measurements on capillary blood samples. We agree that the most reliable measurement for blood glucose concentration is on blood samples obtained by arterial line. Generally, the measurement of blood glucose concentration through the HemoCue B-Glucose analyzer (HemoCue, Angelholm, Sweden) with peripheral capillary blood is considered to be reliable in noncritical patients.<sup>2,3</sup> Thus, previous studies even in critical care patients have used this approach, including the one by Van den Berghe *et al.* that specified: "The dose of insulin was adjusted according to whole-blood glucose levels, measured at 1- to 4-h intervals in arterial blood or, when an arterial catheter was not available, in capillary

blood, with the use of a point-of-care glucometer (HemoCue B-glucose analyzer, HemoCue)."<sup>4</sup> Our protocol is similar to that of Van den Berghe *et al.*, but we hypothesized that in our patients population, which is relatively younger than in previous studies, the risk of hypotension, hypoxia, and acidosis is lower.

Nevertheless, as we have mentioned in our article, to overcome the risks of this bias we have performed the measurements of blood glucose concentration exclusively on capillary blood samples only in few cases (*i.e.*, patient in which was difficult to get arterial blood sample: <5% of the measurements). Thus, "in all patients, glucose concentrations were measured in whole blood or on undiluted arterial blood rather than capillary blood samples." Furthermore, as we reported in the paper, we have made systematic cross controls

between blood glucose concentration obtained by arterial and capillary samples and found in our study group nonsignificant differences between the values obtained with the two approaches.

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## Professionalism Considerations

*To the Editor:*—I applaud Dr. Tetzlaff for having taken on the difficult task of defining the meaning of professionalism in anesthesiology in the editorial which appeared in *ANESTHESIOLOGY*.<sup>1</sup>

For far too long, some anesthesiologists have ignored the importance of representing themselves professionally, often with the assumption that respect was simply a result of past medical training. By shining a light on the importance of professionalism and actively incorporating its teaching into our residency programs, we will take a major step toward correcting many misperceptions that the public, our patients, and our other medical colleagues have concerning our image. In this regard, the American Society of Anesthesiologists has just embarked on an intensive branding campaign called the Lifeline Campaign,\* primarily to help educate the public that anesthesiologists are physicians who are critical for their safety in operating rooms, pain clinics, and critical care units. In fact, it would be unimaginable for 21st-century medicine to exist without the involvement of an anesthesiologist. However, for the Lifeline Campaign to really succeed in spreading the image of anesthesiologists as professionals, it requires that every anesthesiologist be on board. There are some 40,000,000 anesthetic procedures in the United States each year, and an anesthesiologist is involved in 90% of these; not to mention pain clinic visits and critical care unit interventions. This means that if every anesthesiologist were to introduce him- or herself to each patient as the physician who will be directing their care, and helping him or her through this stressful period, it would be a key method for promoting our specialty and emphasizing our professionalism. The value of this free advocacy effort is incalculable, if multiplied by not only the number of patients we see but by the members of the family present during our visits, as well as all the people they later talk to about your care. Basic marketing research tells us that someone who is impressed by the experience will tell at least seven other people. Some of us know this and act accordingly, but it is surprising how many of us do not.

Although Dr. Tetzlaff's introduction of professionalism into resident training is extremely important, we do not have the luxury to wait for future generations of graduating residents to infuse these basic professional practices into our patient encounters.

Another point I would like to congratulate Dr. Tetzlaff on is his emphasis as one of his four essentials of professionalism, "physician well-being." The American Society of Anesthesiologists agrees with this assessment, and the 2008 American Society of Anesthesiologists House of Delegates passed a resolution promoting the development

of an American Society of Anesthesiologists-sponsored integrated wellness program for anesthesiologists. Such a program is on the way and should be ready to support this facet of anesthesia professionalism this year.

However, I was disappointed that Dr. Tetzlaff did not also recognize "involvement" as a factor central to professionalism. Dr. Tetzlaff does give a nod to "participation in the business of the hospital, state, and national societies" as a professional obligation, but only listed it among other professional obligations, such as lifelong learning. I think involvement is so incredibly important to modern medicine that it should be taught to residents as one of the five core principles of professionalism. The days of being able to provide quality patient care with the highest level of safety and expertise, and then departing home expecting to be able to continue providing similar care without abatement far into the future, is naive to an extreme. How many anesthesia departments have suddenly been replaced by the hospital administration, though the anesthesiologists' thought they have been providing great care. In almost every case the replaced anesthesiologists have not participated or been involved with their hospital administration. The needs of the anesthesia department and the needs of the hospital were never openly communicated, leading to decisions which ultimately were detrimental to all involved. Involvement in hospital committees and active contact with the hospital administration on a regular basis is necessary for the maintenance of the professional standing of the group. Similarly, state and federal legislators, judiciary, and regulators can change the way we practice with the stroke of a pen. We need to be involved in finding out what is going on behind the scenes and then taking action when needed to protect our profession. There are forces that are working against anesthesiologists' interests in providing quality care. Without anesthesiologists all united and actively involved in our profession, the face of our profession could change radically and not for the better.

Dr. Tetzlaff has hit the nail on the head with promoting the teaching of professionalism in residencies. In addition, each anesthesiologist needs to make professionalism a vital part of his or her everyday involvement with every patient.

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