

In Search of Excellence in Anesthesiology

Editor's Note: This is the first in a four-part series of Editorial Views on the topic of excellence in anesthesia, which includes how it is designed, how it is measured, and how innovations to improve it might be assessed.

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WE owe it to our patients, our colleagues, and ourselves to strive for excellence in all that we do. Safe, high-quality patient care, good working relationships, and our own professional pride and fulfillment are all at stake. Nevertheless, for all its importance, attempts to explore the many facets of excellence in anesthesiology have been made only recently. This editorial is the first in a series of four in which international anesthesiologists who have recently published on excellence and professionalism in our specialty will outline some of the methods available for the understanding and promotion of excellence.

The goal of the series is to address the following questions: What is excellence in anesthesiology? How do we measure it? What can we do to understand, assess, and improve this essential aspect of our practice?

This line of inquiry is as timely as it is vital. Recent trends in training and assessment in anesthesiology have focused on the acquisition and demonstration of competencies.¹ Although competence is a necessary prerequisite for excellence, it is not in itself sufficient; in setting our sights on competence, we may miss the opportunity to aim higher. Nevertheless, there is still something to be gained from subdividing practice and examining the individual parts. This can lead to higher standards and improvements in professional skill, but the isolated part must be set within the total professional task of the anesthesiologist for these improvements to be realized.

What then constitutes excellence in anesthesiology? To answer this question, we must first set out the characteristics in terms of the knowledge, skills, behavior, and attitudes that define anesthesiology practice. First, we must address adequate knowledge of basic sciences. Fluency at practical tasks is also essential. Methods for defining and measuring both these elements are well developed. However, there is clearly something that binds these together, making us more than mere technicians or theoreticians and setting the context of our practice. This *something* is expressed in our behavior and attitudes and also in our sense of professional identity; it is this *something* that we will focus on in this series.

How can excellence be understood? Given its central importance in our work, there is a surprising lack of literature on the subject. Clearly, the models that biomedical science offers for understanding the world are insufficient for making sense of such a complex phenomenon. It is therefore no surprise that investigators have made use of tools from the social sciences. Some educators have used focus group interviews² and Delphi-type processes³ to develop more extensive lists of desirable qualities with expert panels of anesthesiologists. Other work conducted in Scotland has drawn on understanding and models from industrial psychology to identify the nontechnical skills used in the practice of anesthesiology (ANTS). These encompass such vital practice elements as task management, team working, situation awareness, and decision-making.⁴ In the second editorial of the series, Ronnie Glavin, F.R.C.A., of the Anesthetic Department at the Victoria Infirmary in Glasgow will describe in more detail how the system was developed and how it can be used to develop and assess anesthesiology residents.

Another approach that we in Lancaster have used is to apply qualitative analytical techniques to transcripts of anesthesiologists talking about their knowledge and work and of real-time observations of anesthesiologists at work in the operating room. We aimed to study anesthetic expertise as knowledge in action in the practice context in which it is used by using a qualitative approach in a research team consisting of a consultant anesthesiologist, a former anesthetic nurse, and two sociologists.⁵

Perhaps the main hallmark of anesthetic expertise is the way that different types and streams of knowledge are integrated and reconciled. Anesthesiologists use many different types of knowledge in their conceptualization of the anesthetized patient; for instance, anesthesiologists make use of social, clinical, electronic (by means of monitoring devices) and textual knowledge (through the patient's casenotes). Most importantly, and in contrast to models of knowledge used elsewhere in medicine, we observed anesthesiologists interpreting knowledge from electronic monitoring and constantly balancing this with other sources.⁶ Routines of practice are also a key feature of anesthetic work. Expertise is acquired by working with experts but also, importantly, by working alone; this allows trainees then to embed

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what they have learned into their own personal routines. Expert practitioners develop preferred ways of working, but their preference for one particular technique belies the great diversity of other techniques available to them should the need arise. Routines are also useful as a backdrop against which deviations from normal in the course of an anesthetic can be more easily detected. Also characteristic is the power to determine who may exercise anesthetic knowledge, and in what circumstances. Much of the knowledge necessary to ensure the patient's safe progress through anesthesia is shared by the anesthesia team, but it is the anesthesiologist who ultimately decides how much knowledge the other members may use. Other members of the team may be permitted to take part in the communication routines involving what is said to patients on induction of and emergence from anesthesia.⁷ Further, by virtue of their training and experience, nurses in the postanesthesia care unit are sanctioned to use a core aspect of anesthetic knowledge—the care of the unconscious patient.⁸ However, it is the anesthesiologist who is responsible for setting limits by virtue of the anesthesiologist's expertise, experience and leadership within the anesthesia team.

This arbitration function is but one aspect of the anesthesiologist's leadership role, for it is also the anesthesiologist who leads in assuring the well-being and safety of patients through perioperative planning, optimal conduct of anesthesia, and continuing postoperative care. It is also the anesthesiologist who decides whether a particular event during the process of anesthesia is significant enough to be considered a critical incident.⁹ In general, our work has tried to redirect attention to the importance of practice aspects that cannot easily be reduced into measurable competencies and to encourage teachers to try to emphasize them.¹⁰

Jan Larsson, M.D., of the Clinic of Anesthesia and Intensive Care at Uppsala University Hospital in Sweden has carried out similar work in his interview-based studies.¹¹ In the third editorial of the series, he will explain more about the role of qualitative techniques in anesthesiology education. His focus was on the ways anesthesiologists understand and conceptualize their work; the categories he and his team identified are not only interesting in their own right, but they also demonstrate the many facets of professional identity within our specialty. Finally, John Tetzlaff, M.D., of the Anesthesiology Institute at the Cleveland Clinic will reflect on the components of professionalism in anesthesiology, how it is expressed in our work, and how it might be encouraged.¹²

How should research into, and the practical improvement in, anesthesiology go forward? The first thing is that we must recognize excellence as a dynamic and fluid concept. As practice standards are constantly improving, it must change over time. The most we can hope to do is to delineate a vision of excellence that works to inspire us now, rather than hoping we can

create something that will serve us far into the future. Fortunately, there are many models to inspire and sustain us in developing excellence in practice. Notions of performance, fluency, and virtuosity borrowed from the performing arts may have a place, as may images and metaphors from the world of sport. Larsson's ways of understanding and Glavin's taxonomy of nontechnical skills will help by offering concrete ways of understanding improvement. Finally, however, Tetzlaff reminds us that the impetus to define, achieve, and maintain excellence in anesthesiology can only come from within ourselves.

Future inquiry could usefully focus on a number of areas. Clearly, research into new drugs and techniques must continue because they are vital to the advancement of anesthesia practice. We should also examine tacit knowledge, expertise, and professionalism, despite the methodological difficulties of doing so. We should develop specific, testable educational interventions for both trainees and established specialists to test whether aspects of excellence can indeed be deliberately fostered. We should consider methods of recording the behavioral traits and practical unwritten knowledge exhibited by excellent anesthesiologists, and we should explore the means of making these more widely visible. We could also extend our understanding of anesthesiological excellence by conducting structured interviews with medical and nonmedical colleagues—and patients too. In the meantime, I hope that these editorials will stimulate both thought and action as we strive to be the best we can be.

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References

1. Talbot M: Monkey see, monkey do: A critique of the competency model in graduate medical education. *Med Educ* 2004; 38:580-1
2. Greaves JD, Grant J: Watching anesthesiologists work: Using the professional judgement of consultants to assess the developing clinical competence of trainees. *Br J Anaesth* 2000; 84:525-33
3. Kearney RA: Defining professionalism in anaesthesiology. *Med Educ* 2005; 39:769-76
4. Fletcher G, Flin R, McGeorge, Glavin R, Maran N, Patey R: Anesthesiologists' non-technical skills (ANTS): Evaluation of a behavioural marker system. *Br J Anaesth* 2003; 90:580-8
5. Smith AF, Goodwin D, Mort M, Pope C: Expertise in practice: An ethnographic study exploring acquisition and use of knowledge in anaesthesia. *Br J Anaesth* 2003; 91:319-28
6. Smith AF, Mort M, Goodwin D, Pope C: Making monitoring 'work': Human-machine interaction and patient safety in anaesthesia. *Anaesthesia* 2003; 58:1070-8
7. Smith AF, Pope C, Goodwin D, Mort M: Communication between anesthesiologists, patients and the anesthesia team: A descriptive study of induction and emergence. *Can J Anesth* 2005; 52:915-20
8. Smith AF, Pope C, Goodwin D, Mort M: Interprofessional handover and patient safety in anaesthesia: Observational study of handovers in the recovery room. *Br J Anaesth* 2008; 101:332-7
9. Smith AF, Goodwin D, Mort M, Pope C: Adverse events in anaesthetic practice: Qualitative study of definition, discussion and reporting. *Br J Anaesth* 2006; 96:715-21
10. Smith AF: Reaching the parts that are hard to reach: Expanding the scope of professional education in anaesthesia. *Br J Anaesth* 2007; 99:453-6
11. Larsson J, Holmström I, Rosenqvist U: Professional artist, good Samaritan, servant and co-ordinator: Four ways of understanding the anaesthesiologist's work. *Acta Anaesthesiol Scand* 2003; 47:787-93
12. Dorotta I, Staszak J, Takla A, Tetzlaff JE: Teaching and evaluating professionalism for anesthesia residents. *J Clin Anesth* 2006; 18:148-60