

Guest editorial

How to tackle the orthopedic maze

Surgery can be emotionally and physically demanding. It takes certain personal traits and a substantial ego to cut people open. Anyone else doing this would be sentenced to jail, but surgeons are paid to do it. Helping people who are ill or injured is also a rewarding dimension of the job. The overall aim—to provide the right care to the right patient at the right time and in the right place—is, however, a delicate matter. Surgical decision-making is a fundamental part of clinical practice and is as important a skill as the ability to operate.

Beyond checklist manifestos, evidence-based medicine, and reimbursement models, the final decision, to operate or not to operate, is determined by the attending surgeon. Context matters. When death or survival are not relevant outcomes for a surgical procedure, zooming out and changing the lens can contribute to a more fine-grained view of surgical decision-making, taking into account the traits we herald in becoming orthopedic surgeons.

Operative success has many layers including individual and societal aspects, and temporal aspects with regard to recovery time, as well as complications. Some are avoidable, i.e. what today are commonly called “never events”. Error can occur on an individual level but also on a societal level. The total costs for surgical errors should be included in cost–benefit analyses for transparent and precision-based surgical decisions.

Human-factors engineers state that medical errors are often the result of a faulty system within the context of a weak culture of safety at an institutional level (Karsh et al. 2006). Culture is a wide concept overarching the physical environment and includes teamwork abilities, stress, time pressure, fatigue, and financial incentives, which may all affect surgical decision-making.

On an individual level, knowledge, skills, and attitudes must be collectively addressed when tackling the orthopedic maze. To process imperfect information, weighing correlation and causality at the heart of the matter, remains a challenging task for the practicing orthopedic surgeon. Clinical methodology, critical thinking, and surgical skills underpin successful outcomes. Individual traits of the surgeon deciding on treatment also play an important role (Meunier et al. 2017,

in this issue of *Acta*) but often fly under the radar of clinical governance. Cognitive abilities associated with ageing have also been brought to the surgical agenda (Bhatt et al. 2016). Through startling examples of authentic cases, Atul Gawande, surgeon and author of the excellent book *Complications: A Surgeon's Notes on an Imperfect Science* (Gawande 2002) alludes to both the power and the limitations of medicine with a sharp view from the blade of the scalpel. *Complications* unravels an imperfect and perplexing science including the human parts of the surgeon, not always addressed as integral parts of decision-making.

In our endeavour for error-free health care, both technical and non-technical skills as well as surgeons' individual traits deserve due attention. The impact of human factors in medicine requires more focus if we want to take health care to the next level and transform it into a true high-reliability organization just like, for example, aviation, and off-shore or nuclear industries. In addition to human factors and traits, we must also manage limited resources wisely so that we provide the right care to the right patient at the right time, in the right place and don't crack under external pressure. It will not be easy but it is definitely our obligation.

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