The Surgical Decision-Making Process: Different Ethical Approaches

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> The interaction between patient and surgeon that results in the decision to proceed with an operation is one of the most sacred traditions of our profession. – Steven Charles Stain [1]

> In my observation, doctors sometimes slip into the tempting trap of seeing the law of informed consent as stating the whole of the physician's duty to the patient's autonomy interests. – Carl Schneider [2]

The surgical decision-making process is the crystallization of the uniqueness of surgical ethics. This process, performed several times per day by surgeons all over the world, involves constantly weighing the prima facie duties of beneficence, nonmaleficence, justice, and respect for patient autonomy. It is in this way that the practice of surgery is inherently an ethical discourse—albeit not an explicit one.

Acute surgical decision making is often binary: "go/don't go to OR." A sign of surgical maturity in a trainee is when he or she can commit to this decision and start a presentation with, "This is a patient who needs to go to the OR. He is a 23-year-old male…." However, much of surgical decision making involves urgent, elective, or semi-elective operations where many possible options are available. The optimum surgical encounter is one where the right operation is being done on the right person at the right time for the right reasons and by the right surgeon. The goal of surgical education is to arrive a trainee to this point of excellence in decision making. Focusing on surgical decision making in this way can eclipse the patient's perspective from view. We may recognize that we live in a pluralistic multicultural society with no one dominant worldview and yet forget that the medical perspective is just one of many narratives clamoring for dominance. Hence there is the need to focus on the uniqueness of the patient in front of us during the surgical encounter. However, respecting that uniqueness does not simply collapse into doing whatever the patient requests in an attempt to "respect patient autonomy." In surgery, it is much more complex.

"Shared decision making" (SDM) is the current model of medical decision making that could be considered the "gold standard" [3]. At the core of this approach is the distinctly Enlightenment ideal of individual self-determination as a laudable and achievable goal. In this approach the role of the surgeon is to act in a way that facilitates the actualization of the patient's expression of her autonomous desires about her body and her life. The

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triumph of this model in the twenty-first century is held up against the horrors of paternalism evidenced throughout the twentieth century, where surgeons made decisions on behalf of patients with little to no involvement of the patients themselves. Shared decision making is most appropriate when there is uncertainty as to the best clinical option—when two or more approaches may reasonably address the patient's problem of concern [4]. This chapter will review the principles and techniques used in shared decision making, examine alternate approaches, and discuss some of the difficulties in implementing this approach in surgical cases of varying acuity. The concepts of "surgical buy-in" and the moral agency of the surgeon in declaring someone "not a surgical candidate" will also be discussed, as well as special considerations in the pediatric patient.

One of the oversimplifications made in shared decision making is to assume that the surgeon brings the facts to the equation and the patient brings the values [5]. The problem with this oversimplification is that it supposes that the surgeon has access to a set of value-free objective facts to be discussed. This is rarely the case. Institutional practices, regional variances, and training biases can affect the decision-making process, as well as heuristics and implicit biases [6–8]. These factors affect how the surgeon sees, interprets, and conveys the information about the patient's case and in turn affects how the "facts" are communicated, as well as how any uncertainty about the facts are discussed. Particularly challenging and prone to error are future predictions of quality of life for certain states of health [9]. The challenges to presenting value-neutral facts can seem insurmountable. However, recognition of the inherent uncertainty and fallibility of the assessment of the facts can also create space for allowing patient preferences to develop through a discussion of the uncertainties.

There is a long legal and ethical precedent for the rights of capacitated patients to refuse any proposed intervention, despite the outcome. One example is the debilitated patient who refuses a metastasectomy for an isolated hepatic recurrence of her colon cancer. This is a matter of informed *consent* or informed *dissent* and is discussed elsewhere in this book. Relative to surgical decision making though, following the principle of respect for patient autonomy does not inhere the opposite absolute right for a surgeon to provide a patient any procedure he/she requests. Some argue that the surgeon refusing to provide a requested intervention or even limiting the options presented to a patient entails a form of paternalism. This is not the case. Paternalism is defined by philosophers as "the interference with a person's liberty of action justified by reasons referring exclusively to the welfare, good, happiness, needs, interests, or values of the person being coerced" [10]. It is the professional duty of the surgeon to only offer or provide those operations that can achieve the goals of the intervention. Indeed, this is for the good of the patient, and so part of the definition of paternalism is fulfilled, but it does not amount to coercion. An individual person's right to liberty does not entail gaining access to an operation that is not indicated, or appropriate and second opinions should always be offered. While there are aspects of surgical decision making that seem irreducibly paternalistic, the following discussion is aimed at providing a more nuanced view.

Ezekiel and Linda Emanuel cogently summarized four different approaches to the patient–physician relationship: paternalistic, informative, interpretative, and deliberative [11] (Table 1). *Paternalism* is generally mentioned only to be condemned by bioethicists, as this model represents the "bad old days" where the "surgeon knows best" and the patient's only role is to accept the decisions that are handed down. At its worst, paternalism ignores the specific values and concerns of the patient in favor of pursuit of a goal that is informed solely by the values and determination of the surgeon. At its best, the paternalistic surgeon uses his/her knowledge, experience, and expertise to arrive at the decision that prioritizes the best interests of the patient

Table 1 Four models of patient–MD relationship

Model	Role of autonomy
Paternalism	Assent
Informative	Total control
Interpretative	Self-understanding
Deliberative	Self-development

over all other considerations. The paternalistic surgeon would never let a patient make a decision that would lead to an inferior outcome. The role of the patient is a passive one, as a child being guided and protected by a loving parent.

At the other end of the spectrum from paternalism is the *informative* model. The language of the informative model is prevalent in our contemporary system, which identifies patients as "consumers" and surgeons as "healthcare providers." This merchant–consumer dynamic is superimposed onto the doctor–patient relationship, which then obligates the provider to supply all the relevant information necessary to the patient/consumer so that he/she can make the best decision for himself/herself. Patient choices are maximized. Where the paternalistic model presumes that a surgeon would be able to unilaterally determine the best interests of a patient, the informative approach presumes that a patient would be able to perform the work required to process the information provided and be able to determine a course of action congruous with her goals and values.

The *interpretative* model recognizes that some patients may not have the ability to interpret the medical information for themselves and so requires the surgeon to understand the values of the patient and help him/her apply them to the medical facts and options available. This could be seen as potentially demonstrating the highest respect for patient autonomy, as it aims to assist the patient in elucidating his/her own goals and then offering options to achieve those goals in a nonjudgmental way. If the informative model is the most *laissez faire*, then this model provides more guidance: "Given that your primary goal is to get out of the hospital as quickly as possible and get back home to your family, the below-knee amputation would be the safest way for us to achieve that." In this model the surgeon would say that even if in his/her opinion the best option for the patient would be a femoral–popliteal artery bypass.

The *deliberative* model allows for the surgeon to persuade the patient to make the "right decision," such that in the case above, the surgeon would make a case that a fem-pop bypass is better for the patient given many other considerations that the patient did not take into account. The surgeon is considered a teacher rather than a provider or technician. The idea is that the patient is open to growing in his/her understanding of what health-related values should be important to him/her and that both parties are morally engaged in choosing the "best thing, all things considered" for the patient. The general consensus of the received tradition in bioethics is that the deliberative or interpretative models are the ideal.

Whitney, McGuire, and McCullough proposed a further typology of decision making to help identify when shared decision making is most appropriate [4]. For situations of high risk and high certainty, for example, a GSW (gunshot wound) to the abdomen, the concept of shared decision making does not have much usefulness, and if the patient is conscious, he/she is informed of his/her situation and an operation is performed with presumed consent. It is generally clear in a case like this that without an emergent operative intervention the patient will have a poor outcome. However, in situations of high risk and high uncertainty, the model of shared decision making is the ideal. An example is a young woman with early-stage breast cancer, who has an option for mastectomy or lumpectomy with radiation and an additional myriad of options for breast reconstruction. There is almost certainly no *one* right decision for any given patient and the trade-offs between options are significantly preference-sensitive. There is no way that a surgeon can ethically navigate this without shared decision making.

How then does one actually *do* shared decision making? Elwyn et al. [12] suggest that apart from a foundation of a good relationship and good communication skills, the core of SDM is to confer agency to the patient by providing information and supporting the decision-making process. They offer a three-step approach to use as a technique for conducting a discussion that results in a truly shared decision: choice talk, option talk, and decision talk. Choice talk occurs after a diagnosis is communicated to the patient and involves letting the patient know that more than one treatment option exists. This sets the

stage by introducing the idea that individual preferences matter and that uncertainties may exist about the outcomes. This phase also assures patients that they will not be abandoned to the choices but rather be guided through them. Option talk requires checking what the patient already knows about his/her options and then listing options and discussing the risks and benefits of each option. Decision-support aids (printed literature, graphics, videos, websites, etc.) can be useful during this portion. Before proceeding to the final step, having the patient "teach back" what they understand about their options is important to clear up misunderstandings or miscommunication. Decision talk elicits preferences by asking, "in your opinion, what matters most?" It also asks patients if they are ready to make a decision or not, with the goal of bringing them to a point where their initial preferences have matured into informed preferences. This process requires a deliberation between the patient and surgeon, with the surgeon checking that the patient's decision accords with those values elucidated. The ideal outcome is an intervention that is consistent with the patient's goals [13].

Decision Aids/Decision Support

Decision aids are tools available in a variety of media such as online, print, or video that help inform patients of their options from an evidence-based perspective, encourage active engagement with the decision-making process, and assist patients in thinking through their values so that they can make a choice consistent with those values [14]. Over the past several years, there has been increasing activity at the state and federal level to support the increasing use of decision aids as a part of shared decision making [15]. In 2007, the state of Washington passed legislation to encourage the use of certified decision aids in patients making preference-sensitive decisions about surgery [16]. Hence researchers have endeavored to measure the quality of decisions made using these tools in surgical decision making [17]. The ideal decision is one that is considered clinically appropriate, adequately informed, and consistent with the patient's goals, concerns, and preferences [18]. The decision dissonance score is a survey instrument that has been developed and validated and in a large survey of Medicare patients who underwent CABG, prostatectomy, or lumpectomy or mastectomy for breast cancer showed patients who used decision aids reported being more informed about their decision and scored lower on the decision dissonance score. As more decision aids are developed, these types of instruments will be important to ascertain the effectiveness of these tools. The promise of the routine use of decision aids in surgical practice is that they can potentially standardize the process of shared decision making that is prone to a highly variable enactment by individual surgeons who have more or less time to spend with any one individual patient.

Emergency Patients

Except for trauma surgeons in the busiest of trauma centers, these situations comprise a minority of the patients that a surgeon encounters. The Acute Trauma Life Support algorithm suggests rendering definitive treatment for life-threatening conditions resulting from trauma in the "golden hour." Decision making in these cases is entirely unilateral, with the surgeon determining and performing the life-saving interventions under the aegis of "presumed consent"—that is, engaging the patient to the extent possible about the nature of the interventions being performed but also presumably proceeding despite voiced opposition by the patient. The emergent nature of the situation and the potential loss of life if the surgeon makes a false-positive determination of decision-making capacity in the patient justify the intervention. That is, in an emergency situation, incorrectly interpreting a dissenting comment from a patient as one that truly represents their goals and values and hence forgoing treatment and unnecessarily losing a life is the worse than saving the life of a dissenting patient. The first situation has no recourse due to the finality of death [19]. It is however the surgeon's duty to engage with a patient or surro-

gate decision making postoperatively, after the acute life-threatening situation is over, to discuss ongoing and further interventions and how those fit into the goals of care. At this point there is time to determine what the patient's goals and values are vis-à-vis the proposed treatments. For example, a patient in a motor vehicle collision who is post-op from an exploratory laparotomy to control bleeding, who is found to also have a devastating neurological injury, may have family who—using substituted judgment—determine to forego further life-sustaining interventions by refusing a tracheotomy and removing the patient from the ventilator.

Acute, Not Yet Emergent Patients

The patient who carries a life- or limb-threatening diagnosis but who does not require an emergent operation is often the most difficult situation for both the surgeon and the patient. Unlike the elective surgical patient, where a non-operative approach is generally acceptable and completely up to the patient, the patient with a diagnosis of a slow-growing tumor who wants to adopt a "watch and wait" approach can cause an incredible amount of anguish for the surgeon [20]. These comprise a large number of surgical practices and are ideal situations for shared decision making. Examples include the patient with claudication who is still smoking, the patient with CHF and COPD and a large abdominal aortic aneurysm, and the active person with a few hospitalizations for bleeding diverticulosis. All of these patients could benefit from immediate operations, some could be optimized with "preconditioning" preoperatively, and some could reasonably be observed. These are cases where the surgeon presenting the "one right answer" would be inappropriate. And while the patient may delegate his/her agency to someone else (even the surgeon), these decisions cannot be made without elucidation of the patient's values, hopes, fears, and goals and the surgeon dutifully interpreting the options for the patient. Once established, the nature of the patient–surgeon relationship requires that the surgeon not abandon the patient. Otherwise these are situations when full-blown paternalism might inappropriately occur. For example, "you are at high risk for repairing your aneurysm, so you need to enroll in our pre-conditioning program and we should proceed with repairing this as soon as you are optimized. If you choose not to follow this recommendation, I will not see you when you return with worsening symptoms." This is clearly coercion, and yet it may be the case that the patient is not a surgical candidate when they return to the ER with symptoms from their ruptured aneurysm. However, the professional duty of the surgeon would be to still engage the patient and discuss what options may be left open to them. Ensuring that the patient knows this when he/she makes his/her decisions helps to ensure that the appropriate "nudging" of patients toward a decision does not become coercion. This is when the deliberative model is most appropriate, where the surgeon may not accept an initial refusal of an operation on its face but ask further questions, clarify the reasons for the refusal, and discuss frankly that options that achieve the patient's goals may not be available later.

Elective Patients

The very nature of elective operations is such that some surgeons perform more of them than others. There is a financial advantage to performing elective operations and one often wonders why that one surgeon in the hospital seems to perform more cholecystectomies for symptomatic cholelithiasis than everyone else. Elective cases seem to be a situation where the *informative* model may actually have a place; however even in cases where a non-operative approach may be equivalent to an operative approach, or where the results of the operation are primarily cosmetic, there is still a significant amount of work that has to be done on the part of the surgeon to uphold the professional responsibility that he/she has to the patient. Eliciting the patient's values and goals and discussing risks and benefits of the operation in light of those goals are the heart of the idealized shared decision-making process. A recent review

of studies examining the use of SDM (including decision aids) in decisions for elective operations found that decisional conflict decreased with SDM and decisional quality increased [21]. Framing the discussion in a way that downplays the risks in an effort to nudge the patient toward an operation solely for the financial benefit of the surgeon is ethically suspect. Standardized decision aids for certain procedures may potentially mitigate some of these concerns.

Surgical Buy-In

The idea of "surgical buy-in" is one that has been recently developed and explored by Schwarze [22, 23]. This concept is aimed at describing more fully what non-surgeons have identified as surgeons' "difficulty giving up" on our patients who have a dismal postoperative outcome and require an extensive amount of intensive care. Specifically, the notion of "buy-in" relates to the idea that when a patient agrees to undergo an operation, he/she is also agreeing to all of the postoperative interventions aimed at prolonging life and facilitating hospital discharge. Schwarze has shown that patients do not often realize or understand all that the surgeon thinks have been agreed upon or discussed. Antidotes to this problem include a more thorough discussion preoperatively but also frank discussions postoperatively when a complication or physical deterioration may more tangibly weigh into the decision-making process from the patient and family's perspective. Unfortunately, when a patient is critically ill postoperatively, he/she may no longer be able to participate in the discussion, placing increasing importance on the preoperative discussion. This raises the question of whether a surgeon may rescind an offer to operate if the patient cannot agree to comply with the possible prolonged ICU course postoperatively.

Surgical Candidacy and Moral Agency

The decision of whether or not a particular patient is an appropriate surgical candidate can be contentious. These include the decision of whether or not to accept someone as a living organ donor, whether or not a tumor is unresectable, whether or not to replace a reinfected valve on an active IV drug user, or whether to perform a surgical palliation on a child with trisomy 18 and hypoplastic left heart syndrome. None of these decisions are capable of being made with value-free medical facts, and yet a surgeon may reasonably refuse to perform any of these operations despite requests from the patients and families. In a society that is increasingly hostile to the idea of medical authority and conscientious objection, surgery remains a discipline where there is some finality to the decision that an operation is not warranted. Two concepts undergird this position: the moral agency of the surgeon himself/herself and the professional integrity of the practice of surgery.

"If a patient undergoes a harmful procedure, the moral responsibility for that action does not belong to the patient alone; it is shared by the doctor who performs it. Thus a doctor is in the position of deciding not simply whether a subject's choice is reasonable or morally justifiable, but whether he is morally justified in helping the subject accomplish it" [sic] [24]. Hence it is the case that surgeons infrequently (if at all) perform operations on patients against which they have recommended an operation. Respecting a patient's autonomous decisions about her health cannot induce an action that the surgeon would not offer. "Surgeons are not ethically obligated to provide treatments that they reliably judge will cause more harm than benefit or that will violate appropriate standards of care" [25]. The concern here is the finality of such a decision. Surgeons who refuse to perform a requested operation should encourage the patient to get a second opinion or transfer to another hospital if the patient and family persist in the request. Referring for a second opinion removes the surgeon from being the proximate cause of harm to the patient and is necessary because it recognizes the fallibility of human reason. Forcing a surgeon to operate when he/she feels that the operation is unindicated, futile, or technically impossible or will result in more harm than good is stultifying to surgical virtue.

Surgeon as Mere Technician

Surgeons sometimes face a situation in which the decision to operate has been purportedly made without the surgeon's involvement and he/she is being asked to be the motor end plate of the neuron. The trouble begins when the surgeon disagrees with the surgical decision or discussion that was completed without him/her. A common example is the otolaryngologist who is asked to place a tracheostomy in the neurologically devastated stroke patient with unclear goals of care, or the surgeon called in to "remove the dead bowel" from patient post-op from a complex cardiac operation who has thrombosed his/her SMA and necrosed the entire small bowel and appears completely moribund. Internists have written about the supposed illegitimacy of a surgeon refusing to perform operations in cases like these [26]. However, it is essential to the integrity of the profession of surgery that the surgeon can choose who to operate upon and what operation to perform, keeping her fiduciary responsibility to the patient primary. Some surgeons may find it easier to acquiesce and perform operations that other members of the team have decided upon and ones that he/she personally disagrees with; however this is problematic. A surgeon may decide to operate on someone despite thinking that the harms outweigh the benefits for the patient in order to collect on the billing or to keep the family or referring physicians happy. Both of these reasons are morally corrupt according to a Kantian framework that demands that the individual person be treated always as an end in himself/herself and never only as a means to an end [27]. If a surgeon thinks to himself/herself, "I know this patient is going to die immediately post-op, but I need the billing this month" or "It seems clear to me this patient never would have wanted this operation, but the family and referring MDs want to be able to say 'we did everything' so at least we will be keeping them happy," he/she has violated this fundamental concept of respect for persons.

Medicine and surgery have become so complex that inevitably sick patients have multiple teams that are involved in caring for them. The converse of the above scenarios of medical teams treating a surgeon as a mere "proceduralist" is the surgeon who makes surgical decisions in isolation from the rest of the care teams. Tumor boards and cleft teams are two examples where decisions about patient care are discussed in a multidisciplinary fashion and perspectives from more than just the patient and surgeon are considered. Most patients do not have a coordinated multidisciplinary approach to their care though, and myopia and miscommunication can plague the surgical decision-making process. An example is the patient with metastatic cancer who has developed a gangrenous leg from a thrombosed popliteal artery. The oncology team estimates that the patient has days to weeks to live, but the consulting surgeon performs an amputation because "she will die without an amputation" and the "family wants everything done." A discussion with the palliative care team could have better informed the decision for an operation, as they had multiple discussions about his/her goals of care around his/her end of life. These examples are meant to show that surgeons should embrace the idea of coordinated team decision making and be active participants when possible but should continue to resist the attempts of teams removing the surgeon from the process of applying surgical judgment and experience to the situation.

Pediatric Patients

Generally speaking, pediatric patients do not have legal control over their bodies until the age of 18. Until that time parents have legal authority to make medical and surgical decisions for their children. When a parent signs a consent form to authorize an operation, they are not giving informed consent as much as they are giving *permission* for the surgeon to proceed with the operation [28, 29]. Unlike the concept of "substituted judgment" that a surrogate decision-maker might use to weigh the risks and benefits of an intervention for an incapacitated adult, the classic standard applied to decision making in children is to follow what is in the child's "best interests." This

places great moral authority in the standard of care, and often when a parent refuses an operation thought to be in the best interests of a pediatric patient (e.g., debridement of a full-thickness burn that is making the patient septic), child protective services can become involved, legal guardians can be put in place, and parental wishes overridden. Some have argued that "best interests" are too high of a standard to uphold and that the *harm principle* is a more practical and fair approach. The example of a burned patient requiring debridement is an example of when this principle also applies. It is not just that it is in the best interest of the patient to receive debridement; the patient will suffer harms if the debridement does not occur. John Stuart Mill articulated this principle as one that justifies state intrusion into the lives of citizens [30], and Doug Diekema established this as a dominant concept in pediatric ethics [31].

As a pediatric plastic surgeon, the author most frequently deals with requests for operations that may be unnecessary or not in the patient's best interests. Purely elective cases, that is, instances where there are little or no medical indication for the procedure, should involve the patient himself/herself in the decision whenever possible. Most of these procedures address quality of life, which is best assessed by the pediatric patient himself/herself, and about which we have not yet developed a gold standard for patient-reported outcomes [32]. The AAP states that patients 14 years old and up should be involved in the process and themselves *giving* consent (while parents sign the form that gives legal permission) and the younger than that children should be involved to the extent possible and giving *assent*. The complicated and unique circumstances of pediatric surgery are more fully explored in a subsequent chapter.

While it is clear that a shared decision-making approach is the ethical ideal, surgeons have been weighing the risks and benefits of cutting their patients since the beginning of the profession. The prudent surgeon understands that there is not one model that is appropriate in every scenario and that the good surgeon utilizes different approaches in different cases based on the particular context of the surgical scenario. Many experienced surgeons tacitly understand this, but the challenge is training young surgeons in a way that they appreciate and develop the clinical wisdom to employ the appropriate model in every situation.

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