Simon N. Whitney

A NEW MODEL OF MEDICAL DECISIONS: EXPLORING THE LIMITS OF SHARED DECISION MAKING

Shared decision making is widely accepted as an ethical imperative and as an important part of reasoned clinical practice. Major texts in decision analysis, medical ethics, and evidence-based medicine all encourage physicians to include patients in the decision-making process.

One reason for this emphasis on collaboration is the inequality between patients and physicians. In theory, a patient has near-absolute control over his or her own body and treatment; in practice, the physician is more powerful in many ways. Shared decision making is, among other things, a way to ensure that the patient's voice is heard as choices are made. Because patients have differing preferences for both the processes and outcomes of care, their participation is vital for decisions such as lumpectomy with radiation therapy compared to mastectomy for early breast cancer or systemic methotrexate compared to laparoscopic salpingostomy for tubal pregnancy.

These two examples have an important commonality: both are close cases. Yet there is a second class of decisions in which there is only one realistic option. If a woman has inflammatory breast cancer rather than infiltrating ductal carcinoma, her values are less relevant, because lumpectomy is much less likely to cure her than chemotherapy followed by mastectomy.

Similarly, if a woman with a tubal pregnancy experiences sudden abdominal pain and develops unstable vital signs, her consent to surgery represents a kind of collaboration; however, she has no real choice, so it is not the kind of collaboration usually envisioned in the literature on shared decision making. Discussions of shared decision making pay scant heed to these obvious decisions, precisely because they are obvious. Nevertheless, they are common in clinical practice, and the appropriate allocation of decisional priority within them should not be ignored. It is also noteworthy that these are major decisions that will have a substantial impact on a patient's life. There is a second group of more modest importance that may invite a different approach to decision making. This article proposes a typology or model to simplify the complex universe of different decision types.

Although the model presented here focuses on the central decision makers, the patient and the physician, they do not deliberate alone. Patients have friends, families, and coworkers to consider, and physicians have colleagues and consultants. Their decisions may also be influenced by a wide range of outside factors, such as an insurance company's policies or a coach's wish to have an injured player returned to the field quickly. These influences do not lessen the validity of the preferences of the patient and the physician.
A new model of medical decisions

This model uses two key characteristics—importance and certainty—to array medical choices on a decision plane, so that specific types of decisions populate identifiable zones of the plane. These zones have distinct features that may be used to predict how fully decisions will be shared and the type of conflict that will arise if a patient and a physician disagree. This model owes much to both Deber and coworkers,12,13 who have found that most patients wish to defer to physicians when a problem has a single correct solution, but many wish to participate in decisions when one of several alternatives must be chosen, and to Braddock and his colleagues,14 who proposed that two dominant characteristics of a medical decision are its effect on the patient (herein called “importance”) and its degree of medical consensus (herein called “certainty”). As described here, this model is a theoretical construct informed only by the ordinary observations of everyday practice, not structured research. Its empirical validity remains to be demonstrated.

Decisional authority and priority

Throughout a clinical encounter, a patient maintains decisional authority—the right to accept or reject any reasonable intervention (e.g., a diagnostic test, psychotherapy, a procedure, or a medication). However, the physician is the logical decision maker in some types of decisions. Consequently, decisional priority may lie with the patient, with the physician, or with both. For instance, a patient with severe hypothyroidism would ordinarily accept a physician’s judgment that exogenous thyroid hormone is required. Here, the physician has decisional priority, meaning that he or she is better situated than the patient to make this decision. Therefore, the physician will normally take the lead, even though the final decision is still the patient’s. In contrast, the patient should have decisional priority for other types of decisions, including, for instance, the choice of whether or not to undergo a coronary artery bypass graft procedure for angina.

This model depicts a monotonic shift in who should have decisional priority from one participant to the other as importance and certainty change. It is possible, however, that patients’ and physicians’ preferences follow a U-shaped curve that does not reflect this linear transition. As an example, most patients might believe that physicians should make minor decisions but would want greater participation in the decision-making process when the decisions have moderate importance. But as the stakes continue to rise, some patients may wish their physicians to reassume the role of decision maker, so that if the chosen therapeutic course goes badly, the patient need not suffer blame—from self or family—for a poor outcome.13

Key characteristics of decisions

Importance

Some decisions are major, others are minor. The importance or seriousness of a medical decision begins with its probable effect on a patient’s health and well-being, but it also reflects the moral, financial, social, legal, and esthetic repercussions of the decision for the patient and others. The importance of a decision reflects both medical facts and personal values and may be viewed differently by different parties. As an example, a patient and a physician may disagree about whether it is more important to treat hypertension or maintain normal sexual function. Because the patient’s perspective is always at the core of good decision making, physicians are well advised to understand patients’ priorities. Importance is a continuous characteristic, but for the purposes of discussion, it may be mapped onto a 4-point scale (Table 35.1). Of course, any choice may have profound
Table 35.1 Levels of Importance of Medical Decisions

<table>
<thead>
<tr>
<th>Importance</th>
<th>Example</th>
<th>Rationale for Choice of Level</th>
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<tbody>
<tr>
<td>Major</td>
<td>Delivery of an infant via postmortem cesarean section performed on a woman who has died of a gunshot wound</td>
<td>Performing the surgery may save the infant's life, but at the cost of severe hypoxic damage; a tough choice with major consequences</td>
</tr>
<tr>
<td>Important</td>
<td>Initiating evaluation for abuse in a child with suspicious injuries</td>
<td>Significant legal and clinical consequences if abuse is present but unreported</td>
</tr>
<tr>
<td>Routine</td>
<td>Choice of anesthetic for a patient with impaired liver function</td>
<td>An error would be harmful but is not difficult to avoid</td>
</tr>
<tr>
<td>Minor</td>
<td>Timing of blood work to confirm response of anemia to iron</td>
<td>Whether this is checked in 1 month or 2 is usually unimportant</td>
</tr>
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consequences, but this happens less often for minor than for major decisions.

Major decisions grip our attention (and attract ethicists), but minor decisions fill physicians' workdays. Primary-care physicians probably confront major decisions rarely, important decisions occasionally, and routine and minor decisions frequently.

Certainty

For a physician, certainty reflects the degree to which a decision-analytic approach using good-quality data would demonstrate that there is a single preferred intervention. In the absence of suitable data, certainty is present in practical terms if expert opinion holds one intervention to be superior. Clinicians do not always agree with one another, of course, and in fact, two clinicians may each be quite confident that his or her own approach is superior. When a physician feels that one choice is better but knows that other clinicians disagree, the patient should be informed of the controversy and offered a second opinion from someone holding the other view.

A decision that is high in certainty has a widely accepted clinical response (e.g., treating neonatal sepsis with parenteral antibiotics). In contrast, a decision is low in certainty if the available interventions are very similar, if there are scant relevant data, if there is controversy over the optimal treatment, or if there is good evidence that suggests little difference in outcomes between treatments. Patients should have maximal decisional priority in situations in which medical certainty is low. When the decision is also of major importance, physicians should educate their patients to help them synthesize the available information and decide on the best course of action. Kassirer and Pauker call uncertain decisions "toss-ups" and comment.

Even when the analysis shows a slight benefit of one option (such as surgery), factors such as a preference for long-term medical therapy or an unwillingness to be hospitalized and away from one's family for several weeks may well sway the decision toward a competing choice (such as medical therapy).

An example of how levels of certainty might be arrayed is provided in Table 35.2.

One example of a low-certainty decision is the choice of a generic compared to a brand name drug. In the absence of a therapeutic difference, a patient may reasonably request one form or the other on the basis of cost, size, or prior reaction to a dye or preservative. As another example, two low-certainty choices may use different
may save the infant's life, are hypoxic damage; a to consequences clinical consequences if unreported harmful but is not difficult ed in 1 month or 2 is usual

<table>
<thead>
<tr>
<th>Certainty</th>
<th>Physician's Preference</th>
<th>Example</th>
<th>Rationale for Choice of Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Strong</td>
<td>Exploratory thoracotomy for a patient with penetrating trauma to the chest and shock</td>
<td>Experts agree that the patient will probably die without surgery</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Some</td>
<td>Limiting the use of premarin/progesterone therapy after menopause</td>
<td>There is good evidence showing some overall health risk, yet symptomatic benefits may be significant</td>
</tr>
<tr>
<td>Low</td>
<td>None</td>
<td>Trimethoprim-sulfamethoxazole compared to nitrofurantoin for an uncomplicated urinary tract infection</td>
<td>Both medications are effective, so prior experience, cost, the size of the pill, or similar factors may tip the scales</td>
</tr>
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here is controversy over , or if there is good little difference in treatments. Patients should priority in situations it is low. When the importance, physicians and patients to help them information and decision. Kasirer and Pau decision analysis shows [such as surgery], difference for long-term unwillingness to be from one's family for to sway the decision choice (such as medical care, treatment). certainty might be Table 35.2. certainty decision is labeled a brand name therapeutically different request one forms from drugs, size, or prior results. As another example, may use difficult interventions to reach the same outcome (e.g., the use of an arm sling compared to a figure-of-eight brace for a midshaft fracture of the clavicle) or different interventions to reach different outcomes (e.g., mastectomy compared to lumpectomy and radiation for a small breast mass). The patient should have decisional certainty for these choices, although the patient's preferences may have to compete with cost, the physician's convenience, and resource availability.

Patients' preferences become less determinative, however, when the medical preference for one choice is compelling. So, for instance, a woman in labor might reasonably reject operative delivery even if she has a marginal placenta previa: if she has a complete placenta previa, however, her physician is likely to vigorously recommend a cesarean section. Here, as elsewhere, even when decisional priority shifts to the physician, decisional authority remains with the patient, and she may accept or reject her physician's recommendation.

The decision plane

A medical decisions may be mapped onto a plane on the basis of their importance and certainty (Figure 35.1). The location of a particular decision, will vary with the circumstances of an individual patient, and if those circumstances change, its location will also change. Consider, for example, the treatment of streptococcal pneumonia with antibiotics. All physicians administer antibiotics to previously healthy patients with pneumonia, but many physicians would not recommend an antibiotic for a patient with pneumonia who already has severe dementia and advanced cancer with
intractable suffering. In each case there is a consensus (high certainty) about the best management of the pneumonia: in the former case, antibiotics are recommended, and in the latter, they are not. As a patient’s underlying condition progresses by stages from good health to the last hours of life, the characteristics of the decision will move from the certainty of the first case (provide antibiotics), through an intermediate zone of low certainty, and on to the certainty of the last case (withhold antibiotics). A patient in the intermediate zone might, for example, have advanced cancer with dyspnea and pain that is only partly relieved by medication. In view of this patient's suffering, if he or she develops pneumonia, the decision of whether or not to administer antibiotics would be characterized by substantial medical uncertainty. The choice of whether to treat the pneumonia or to allow it to progress unhindered should be made by the patient if he or she is capable of making the decision.

The decision plane may be divided into specific zones, as discussed below.

Zone of patient priority

Decisions that have high importance and low certainty are, or should be, the patient’s (or the surrogate’s) to make (Figure 35.1). One classic preference-sensitive decision is the choice between mastectomy and lumpectomy with radiation for localized breast cancer; decisions like these have been of particular value in honing our respect for patients’ autonomy.

Zone of physician priority

Patients retain authority over all decisions, but few patients are likely to want to make decisions that are clearly minor and for which there is one best choice. Consequently, these decisions are customarily made by physicians. For example, adding oblique views to an X-ray of the finger, adding oblique views to an X-ray of the finger, sometimes reveal a fracture that was not visible on a two-view study, and the only way to prevent Rh sensitization after an Rh-negative woman miscarries is to administer Rh immunoglobulin. Sometimes these choices are discussed with patients and sometimes they are not, but patients are not ordinarily asked to provide their views or explore their values with regard to these choices.

Zone of shared priority

The zone of shared priority constitutes the remainder of the plane. Decisions in this zone should be negotiated, although the way in which decision making should be shared will depend on the specific choice at hand. For some choices, a very detailed informed consent process that pays careful attention to a patient’s preferences is appropriate, as, for instance, when a patient with an ischemic leg may be better served by amputation than by a third attempt at revascularization. For other choices, a concise description of the proposed plan is adequate, as when a physician tells the mother of a child who is fatigued, “I’d like to check a blood count” and obtains her approval with a nod. A physician who provides only a cursory explanation of the pros and cons of amputation flouts fundamental principles of consent and patient autonomy; one who spontaneously provides a careful description of the merits of checking a blood count violates common norms of appropriateness and economy of time.

Zone of potential conflict

Decisinal priority reposes with patients for decisions that have major importance and with physicians for decisions that have high certainty. Some decisions have both features; this is the zone of potential conflict. Because these
to an X-ray of the finger, a fracture that was studied, and the only way to make it after an Rh-negative, administer Rho immune choices are discussed. Studies they are not, but the hypothesis to make one medically acceptable choice, physicians may feel strongly that such patients are making a critical mistake.

Unfortunately, the usual dynamic in this situation is for physicians to make strong recommendations and for patients to accept them. However, serious conflicts may arise when patients reject physicians' recommendations, no matter what the reason for patients' preferences. Consider, for example, a pregnant woman who has three young children and has aggressive cervical cancer. Her physician might believe strongly that she should undergo a hysterectomy, which would maximize her chance of cure but at the cost of the fetus's life; the woman might be unwilling to terminate her pregnancy, preferring to endanger her own life rather than sacrifice that of her fetus. Although each case like this must be judged on its own merits, physicians generally can rely only on persuasion to prevail, because decisional authority remains with the patient. This zone is the well-known classic bioethics cases like those of Dax 18 and Baby K, as well as entire genres of ethical dilemmas, like the rejection of life-prolonging treatment by patients on religious grounds.

### Implications

#### Improving Theory

Shared decision making is much advocated but inconsistently achieved; studies have shown that patient involvement in decisions in both inpatient and outpatient settings to be less than ideal. Domineering physicians, meek patients, a lack of time, and limited patient education and understanding certainly form part of the explanation. This model suggests an additional explanation: some types of choices are inherently ill suited to shared decision making. Minor decisions that have one medically preferred choice are probably quite common, and it is entirely possible that even intelligent, self-aware patients would yield decisional priority for these decisions to their physicians. This hypothesis may be tested by asking patients their preferences with regard to this type of decision; if the hypothesis is confirmed, decisions of this type would be an exception to the general recommendation that patients and physicians share decision making.

### Improving Clinical Practice

Although this model suggests that physicians should make many medical decisions, decisional priority for choices of high importance and low certainty should rest unequivocally with patients. These decisions may also be made by physicians if that is their patients' unambiguous and adequately informed preference. Clues that indicate a decision to be of this type include a clinician's feeling that a decision is difficult or that different physicians might make different recommendations.

### Conclusion

This model provides a new perspective on medical decision making, one in which the characteristics of an individual decision suggest whether decisional priority should remain with a patient, be assumed by his or her physician, or be shared. It reserves an important place for shared decision making and suggests an explanation for why many decisions are shared minimally or not at all. Structurally, this model is a form of typology — a two-dimensional, conceptual classification. It was developed from an ideal of what ought to be, not from empirical demonstrations of what is.
This model is exploratory, not definitive. Although it describes some characteristics of medical decisions, it does not do full justice to the complex interactions that exist between patients, physicians, and the environment, nor does it integrate the impact of culture and the structure of care, including such factors as resources available and insurance. This is therefore but a first step.

**Notes**

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