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Variations in Health Care, Patient Preferences, and High-Quality Decision-Making

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Practice variation in clinical care for preference-sensitive decisions should be a call to action to optimize clinical decision-making. Preference sensitive are those that involve considerable tradeoffs and do not have an option that is clearly superior in all respects.[1] Practice variations, which may be influenced by factors that are extrinsic to the patient, occur among physicians, hospitals, healthcare organizations, regions, and healthcare systems.[1] The variations in practice should disturb physicians not merely because they may indicate wasteful practices, but because of the possibility that they are not optimally serving the best interests of patients. The health care system should allow some variation in practice, provided that variation is based on patient differences rather than other factors such as payment method, geography, or system proclivities.

Of the 10 rules for the redesign of health care from the Institute of Medicine's *Crossing the Quality Chasm*, 4 reflect the need to optimize medical decision-making and involve patients, including customization based on patients' needs and values; the patient as the source of control; shared knowledge and the free flow of information; and evidence-based decision-making.[2] Despite these aspirations, physicians' actions may fall short. Too often, patients do not know key facts that are critical to making decisions.[3,4] Despite the interest of patients to participate in decisions,[5] clinicians are often unaware of patient preferences, cannot predict them, and weigh risks and benefits differently than their patients.[6,7] Perhaps it is time to recognize our current variation as a potential indicator of a weakness of the current approach to decision-making.

Medical students diligently learn about disease and illness, but there is little education about the science of decision-making and particularly how to elicit preferences from patients, present information, avoid cognitive bias, and ensure that the final choices are aligned with the patient's values and goals. Perhaps not surprisingly, current practice patterns often do not involve the patient. Fowler and colleagues, in a survey of Medicare beneficiaries, found that among patients undergoing coronary artery stenting, only 16% were asked about their treatment preferences.[8] Moreover, many physicians are unaware of the ways that local

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culture, explicit and tacit incentives, and marketing might influence their interpretation of data, affect recommendations, and ultimately shape practice patterns.

Two articles in this issue of *JAMA*, focused on coronary angiography, reinforce the need to ensure that practice variation is not evidence of care that is not truly patient-centered.[9,10] Coronary angiography is ideal for the study of practice variations and decisions because the evidence, guidelines, and appropriateness criteria provide substantial opportunity for discretionary judgment, which ought to be based on the patient's characteristics and preferences. The study by Ko and colleagues compares the use of coronary angiography in Ontario (n=54,933 patients) and New York State (n=18,114 patients).[9] In prior work, these authors demonstrated that the population rate of coronary angiography in New York State was twice that of Ontario.[11] The current study demonstrates that the differences in the rates of coronary angiography in the 2 regions with 2 very different payment systems were associated with differences in patient selection and resulted in differences in the diagnostic yield of the test. The study by Matlock and colleagues demonstrated that procedure rates were higher in Fee-For-Service compared with Medicare Advantage (for angiography, 25.9 vs. 16.5 per 1000 person-years, and for percutaneous coronary intervention, 9.8 vs. 6.8 per 1000 person years, respectively, with similar rates for coronary artery bypass graft surgery (3.4 vs. 3.1 per 100 person-years)). The investigators also observed 3- to 4-fold differences in rates of angiography and percutaneous coronary intervention among regions for both payment types.

Regions that perform fewer procedures may reduce cost but do not necessarily optimize care. In an earlier report by Ko et al., regions with fewer procedures had a lower percentage of inappropriate procedures, based on criteria from the American College of Cardiology/ American Heart Association classifications, but also a lower percentage of appropriate procedures.[12] The findings highlight the challenge in determining the ideal rate, as rates do not convey well whether the best decision was made each time.

Although descriptions of variation, its determinants, and its consequences are useful, perhaps even more emphasis should now be placed on producing innovations that optimize decision-making and ensure that any variation is based on differences among the patients and not the tendencies of the healthcare practitioners, organizations, or payment systems. While ongoing efforts to improve the value of healthcare delivery may lessen some of the variation due to payment incentives, much less attention had focused on ways to ensure that discretionary decisions incorporate the preferences of well-informed patients. Here are some potential next steps.

First, set standards for high-quality decisions, develop metrics for assessing the quality of decisions, promote performance, and encourage quality improvement activities.[13] If high-quality decisions are valued, methods are needed to define their properties and measure them. These measurements can help clinicians become accountable for the conduct of decision-making and protect against approaches that steer patients according to the interests of others. Elwyn and colleagues have proposed a model that introduces choice, describes options, and explores preferences.[14] Meanwhile, promising research is identifying key measurable facets of decisions, such as decision-specific knowledge, decision-specific

values, and treatment undergone.[15,16] For example, the quality of truly informed consent for percutaneous coronary intervention could be elevated if, at a minimum, patients had a clear understanding of their options, including optimal medical therapy, the comparative risks, benefits, and costs of the strategies (including the absence of a survival advantage), and the track record of their healthcare team in performing the procedure.[17]

Second, codify the skills in guiding high-quality decisions, teach the science of clinical decision-making, and establish it as a competency for those in the medical professions. Decision-making and guiding patients through decisions should be considered a technical skill to be acquired, honed, and demonstrated, all within the context of team-based care. The medical care system is just beginning to test strategies to teach the skill of high-quality decision-making and its effect on practice.

Third, develop tools including charts, audio or video aids, and interactive media to facilitate high-quality, patient-centered decisions. There is a need for data-driven, patient-centered tools that, while standardizing approaches, support individualized decision-making according to the needs and preferences of each patient. Such tools can improve patient knowledge of the options, help them make choices that are consistent with their values, ensure that they are not burdened by the responsibility, connect them with others who have faced similar decisions, and assist them to participate more fully in the process.[14,18,19] For example, a tool for patients who are contemplating mastectomy versus breast-conserving therapy produced higher knowledge, less decisional conflict, and greater patient satisfaction.[20] Another randomized trial of patients with chest pain demonstrated that a decision aid produced greater knowledge, more engagement, and less diagnostic testing.[21]

Scientists have documented variation in health care and have identified non-patient factors that influence practice. However, too little attention, for too long, has been directed toward ensuring the quality of preference-sensitive patient decisions. Moreover, if high-quality decisions, under the wide range of circumstances in medicine, are a worthy goal, investment is necessary to advance the science of clinical decision-making, including increasing the understanding of the vulnerabilities of current approaches and developing ways to improve performance and ensure that the patient's interests are served. Ultimately, the goal is not to eliminate variation but to guarantee that its presence throughout healthcare systems derives from the needs and preferences of patients.

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