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Editor's Spotlight/Take 5

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Editor's Spotlight/Take 5: Eligibility Criteria for Lower-Extremity Joint Replacement May Worsen Racial and Socioeconomic Disparities

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Disparities in access to musculoskeletal care associated with race and social deprivation have been documented for numerous conditions that orthopaedic surgeons treat [3, 11, 13]. These disparities are serious; some may increase the risk of disability or death [4, 13]. Initial evidence suggests that healthcare reform—which was designed in part to mitigate the harm caused by such disparities—has not yet achieved that goal [11].

Despite the persistence of disparities in care associated with race, gender, and poverty [3, 11, 13], I am certain that each of us feels that we treat each patient as an individual, without prejudice of any sort, and survey data suggest this belief is normative among surgeons [6]. But strong, direct evidence suggests clinicians carry our biases into exam rooms [5]. Why might this be? Both systemic and individual racism are possible explanations, but perhaps the reason is even more insidious.

Ample research suggests that humans, by nature, have preferences for those who seem similar to themselves [2, 10]. And yet we all are educated people; we know we should not carry these prejudices into our interactions, and certainly not into our interactions with patients. But what if there are factors that would cause us to recommend against surgery based on what we believe are good medical reasons, but that may actually result in discriminating against individuals of lower socioeconomic status, women, or black patients in ways that are not medically justifiable?

In this month's *Clinical Orthopaedics and Related Research®*, surgeon-ethicist Casey Jo Humbyrd MD, and her team at Johns Hopkins University School of Medicine [14] modeled a set of philosophical contentions on exactly this subject, harnessing the power of a large, national database to arrive at some surprising and important conclusions.

Dr. Humbyrd and her colleagues looked at smoking and elevated hemoglobin A1C levels, which are seen in larger proportions among some races than others and in lower socioeconomic settings; they also evaluated high BMI, which varies in prevalence by race, affluence, and gender. Dr. Humbyrd's group found that if inflexible cutoffs for arthroplasty are applied using those parameters, such as withholding surgery for patients with a BMI greater than 35 or 40 kg/m^2, considerable disparities in access to life-improving surgery would be imposed on poorer patients, women, and black patients. The unfairness of this is worsened by the fact that the risk factors of smoking and obesity may be much-less modifiable than any of us would like to believe [7, 15], even when surgery is used as a motivational factor [9].

The authors are careful not to advocate performing elective surgery on

A *note from the Editor-In-Chief: In* "Editor's Spotlight," *one of our editors provides brief commentary on a paper we believe is especially important and worthy of general interest. Following the explanation of our choice, we present* "Take Five," *in which the editor goes behind the discovery with a one-on-one interview with an author of the article featured in* "Editor's Spotlight."

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grossly unfit patients. However, while it's clear that patients who smoke cigarettes or have an elevated BMI are at increased risk for complications after surgery, it's equally clear that the large majority of those patients would come through elective joint replacement better off for having had it. That being so, it seems important to let those patients make informed choices, rather than perpetuating what may well be institutionalized—even if unintentional—discrimination. Setting hard cutoffs using "modifiable" risk factors that may not be so modifiable [7, 9, 15], without allowing the patient the chance to opt-in for an extra measure of risk in return for the potential of great benefit, seems coercive and paternalistic.

I'll bet you have questions about this. I do, too. You can count on Dr. Humbyrd—who has taken advanced training in bioethics, in addition to being a service chief in the Johns Hopkins orthopaedic program, and *CORR*'s newest columnist [8]—for some thoughtful answers. Read them in the *Take 5* interview that follows.

***Take 5* Interview with Casey Jo Humbyrd, MD, senior author of "Eligibility Criteria for Lower-Extremity Joint Replacement May Worsen Racial and Socioeconomic Disparities"**

Seth S. Leopold MD: *Congratulations on this thought-provoking and very original study. Let's get the elephant out of the room: Why isn't it just good medicine to avoid doing elective surgery on patients with uncontrolled risk factors for postoperative complications, regardless of race?*

Casey Jo Humbyrd MD: At times, it may be good medicine to avoid elective surgery in patients with uncontrolled risk factors, and I would not argue that every patient is an appropriate surgical candidate. Much of orthopedics is elective, and surgical decision-making should be shared between a physician and a patient. When possible, it is clearly ideal to delay surgery for patients who can improve their health and thus their risk profiles. But this decision should take place in the context of a conversation about risks and benefits that varies from patient to patient and occurs within a shared decision-making construct.

My concern is that in an era of bundled-payment models, physicians and hospitals have a financial incentive to care for the healthiest patients and to avoid caring for sicker ones. This has resulted in the use of inflexible "cutoffs" or benchmarks to determine surgical eligibility. As we discuss in our study [14], these cutoffs have racial, socioeconomic, and ethical implications for patients' autonomy, and it is imperative that surgeons at least consider the impact of these cutoffs on the patients they treat. Additionally, cutoffs can be capricious in practice. A patient who quits smoking, improves her hemoglobin A1C level, and loses weight, but still has a BMI of 41 may be fit enough to have surgery, yet a strict BMI cutoff of 40 would prevent her from receiving care.

Dr. Leopold: *I can't lose 5 pounds, and so I sympathize with my patients who want to lose 50 before their elective knee replacements. I gather that the issue on your mind with respect to surgical disparities and BMI is not simply that elevated BMI is more prevalent among poorer patients, but also that the issue of food deserts—which may be an unfamiliar concept to some readers—make it harder for patients with social deprivation (and perhaps patients of certain races) to lose weight in order to meet BMI cutoffs; can you comment on this?*

Dr. Humbyrd: The causes of obesity are incredibly complex and multifactorial. When I went to medical school in New York City, researchers were documenting how far some patients would have to walk to buy fresh fruits and vegetables. In wealthy neighborhoods, the distance was measured in feet. In poor neighborhoods, it was measured in blocks or miles. These wide areas without available fresh produce are termed "food deserts." There is also the larger issue of the communities where individuals of lower socioeconomic status live. These communities may be less safe and under-resourced in ways that affect health. Another consideration, closely related to food deserts, is "food swamps" or communities with a high concentration of food outlets, such as fast food restaurants, that carry energy-dense, low-nutrient foods.

The cost of healthy food is also a major concern. Fifty calories from soda are a lot cheaper than 50 calories from blueberries. Many patients are making financially rational decisions to eat less healthy food, even if it may not be logical from a health perspective. In the best of circumstances, BMI may be less modifiable than we once believed, and for individuals in certain social and financial situations, it may be even more difficult to change.

Dr. Leopold: *Is there an analogy there for cigarette smoking? Why is that harder on patients of some races and socioeconomic levels than others?*

Dr. Humbyrd: While low-income neighborhoods often lack grocery stores, many have a disproportionately high number of tobacco retailers. The Truth Initiative discusses the deliberate efforts of tobacco companies to target low-income individuals, particularly as more highly educated consumers

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decreased their use of tobacco. These efforts included giving free cigarettes to children who live in subsidized housing and providing tobacco coupons with food stamps. Similarly, tobacco companies have targeted racial/ethnic minority groups, both through increased advertising in these communities and through culturally tailored advertisements [12]. Despite reporting having made the same number or more attempts at quitting than white patients, black and Hispanic patients have less success at quitting, possibly because of less use of smoking cessation treatments (including but not limited to formal counseling about how to quit) [1]. The Truth Initiative also discusses how tobacco advertising targets black neighborhoods. People in certain racial/ethnic minority groups and those of lower socioeconomic levels have a social disadvantage when it comes to quitting smoking.

Dr. Leopold: *As an arthroplasty surgeon, I will admit to being most troubled by your findings regarding a hemoglobin A1C level over 8%. A patient with diabetes and an A1C over 8% has very poor glycemic control over a sustained period of time, and—at least in my experience—I've had better luck helping my patients improve this than I have with smoking cessation or weight loss. If I decline to operate on someone whose hemoglobin A1C is over 8%, am I likely to be potentiating racism or discrimination, or is there another way to think about this?*

Dr. Humbyrd: My field is foot and ankle orthopaedics, and so I care for many patients with diabetes. In the interest of full disclosure, I, too, avoid elective surgery for patients whose hemoglobin A1C levels are above 8%. Even so, I think that recognizing the unequal distribution of health in the population we serve is incredibly important, and I feel strongly that physicians must play a greater role in addressing health inequity. Part of that may be simply recognizing that if all orthopaedic surgeons use inflexible eligibility criteria, we will worsen the already-substantial disparities. I trust that most of us would rather not deliberately worsen those disparities.

Casey Jo Humbyrd MD

When one cares for lower-income patients—as I do—recommendations should be realistic and achievable. It would be poor doctoring to recommend that my patients join a farmshare or that they shop exclusively at organic grocery stores to improve their A1C levels. I typically begin the conversation by explaining the role of diabetes control in wound healing and successful surgery. I then open it up to them—how can we get there together? I am fortunate to work in a healthcare system with phenomenal primary care and endocrinology support, and I often contact primary care physicians to discuss our goals for surgery and formulate a plan on how to reach them.

Often, my patients with elevated A1C levels haven't yet developed diabetic sequelae, such as retinopathy or neuropathy, and I work to frame the conversation as an opportunity to create meaningful lifestyle changes. I have a close family member who has diabetes and who was reluctant to make diet modifications when initially diagnosed. For this family member, the "change moment" came when I was late to our dinner because of having to perform an amputation for a diabetic patient. It was only then that this highly educated individual finally understood the potential consequences of diabetes. It had remained abstract until that day,

despite conversations with physicians. This may be true for many of our patients—that the complications of diabetes are abstract. The inability to pursue surgery until they have achieved better control of their disease may make the disease more concrete. An office visit to discuss the need to improve the hemoglobin A1C level may be an important opportunity to partner with the patient for better health.

Dr. Leopold: *How did you get interested in practical ethics, and what advice do you have for medical students or residents who want to follow in your path as a normative ethicist and surgeon?*

Dr. Humbyrd: I was very fortunate to participate in an ethics fellowship at Oxford University during medical school. When an opportunity like that arises for students or residents, I strongly recommend they take advantage. I used some of my resident research time to work with a medical ethics philosopher on analyzing an ethically complex case that I was able to turn into a publication. There are also opportunities to serve on or to observe clinical ethics consultation services. Most important, for me, was finding mentors in the field of bioethics to guide me in my budding career. None of these mentors are surgeons, but their perspectives often are better because of that. So much of what we consider routine and normal is anything but routine or normal to a philosopher. If a student or resident truly has a passion for this type of work, the American Society for Bioethics and the Humanities has a robust mentorship framework, and the membership fees are very reasonable. And I am always happy to talk orthopaedics and ethics to anyone who is interested.

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