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# "Not Everyone Who Needs One Is Going to Get One": The Influence of Medical Brokering on Patient Candidacy for Total Joint Arthroplasty

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***Background***. *Many patients in Ontario, despite being appropriate candidates for total joint arthroplasty (TJA), are not offered surgery. To understand this discrepancy, the authors sought to explore the process by which physicians determine patient candidacy for TJA.* ***Methods***. *Six focus groups (2 each of orthopedic surgeons, of rheumatologists, and of family physicians) and subsequent in-depth interviews were conducted with 50 practicing clinicians in Ontario.* ***Results***. *Health care system constraints, including extensive waiting lists, lack of homecare and postoperative support, and, for surgeons, access to operating rooms and resources, are perceived by physicians to routinely influence the ultimate choice of candidates for TJA. Medical brokering, defined as strategies used by physicians in a constrained health system to prioritize patients and to negotiate relationships with other physicians, was an important factor in determining candidacy for TJA. Because individual physicians and surgeons appear to use their own criteria for making these decisions, and because these criteria are modified from time to time in response to specific institutional and system conditions, brokering results in varied decisions about candidacy regardless of patient suitability.* ***Conclusions***. *Lack of consensus on the necessary patient characteristics for TJA candidacy does not in and of itself account for the discrepancy between the number of patients who are suitable candidates for TJA and those who receive the procedure. Until the process by which health care system constraints affect and complicate the decision-making process around TJA candidacy is more fully explored, patients may not receive appropriate and timely access to this procedure.* ***Key words:*** *health care constraints; medical brokering; decision making; candidacy for orthopedic surgery; prioritizing; waiting lists.* ***(Med Decis Making XXXX;XX:xx–xx)***

Total joint arthroplasty (TJA) is an efficacious[1,2] and cost-effective[3,4] treatment for advanced hip and knee osteoarthritis. Yet in Ontario, many patients who have moderate to severe arthritis and are willing to accept the procedure—that is, many for whom TJA is a suitable intervention—are not offered surgery.[5,6] The reasons for this discrepancy are not clear. In Canada, TJA is a publicly funded procedure, which should obviate a patient's economic resources as a candidacy factor. However, it has been demonstrated that family physicians, rheumatologists, and orthopedic surgeons in Ontario systematically differ in their opinion about the profile of patient characteristics for which TJA is indicated.[7–11]

This lack of consensus may contribute to the noted discrepancy. Family physicians and rheumatologists (who, as gatekeepers in the system, identify appropriate candidates for surgical referral) disagreed on how patient characteristics affected their decisions about whom to refer to knee arthroplasty: family physicians disagreed on 28 of 32 patient characteristics and rheumatologists disagreed on 26.[8] Furthermore, orthopedic surgeons disagreed on 20 of 34 characteristics.[9]

Given the lack of consensus in this regard, a study was undertaken to discover how patient characteristics, individually and in composite, affect candidacy decisions at both primary and tertiary care levels. A series of focus groups and follow-up interviews with family physicians, rheumatologists, and

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orthopedic surgeons were conducted to explore the process by which physicians determine candidacy. During these discussions, an unanticipated factor additional to patient characteristics came to the fore: that of constraints and imperatives imposed by the present health care system, which appeared to routinely influence the ultimate choice of candidates. Because the allocation of health care resources is an issue of current public concern, these factors became the focus of our investigation.

We will propose that "medical brokering" is an important practice shaping determination of candidacy for TJA. Medical brokering here refers to strategies used by physicians to prioritize patients in a system where needs exceed resources. Physicians act as brokers, defined as intermediaries between patient and system, by taking health system conditions into account in prioritizing among patients deemed appropriate. As such, brokering results in varied decisions about candidacy for TJA regardless of patient suitability.

## PARTICIPANTS AND METHODS

In a related study, the 141 practicing rheumatologists and a random sample of 455 family physicians and 201 orthopedic surgeons in Ontario were recruited to participate in a survey to determine the certainty and reliability of physician opinions about patient characteristics determining candidacy for total knee arthroplasty.[12] Participants in the current study were volunteers from this prior sample and included 18 family physicians, 15 rheumatologists, and 17 orthopedic surgeons. Physicians came from across Ontario, with 30 (60%) from areas outside metropolitan Toronto. The study was approved by an ethics review committee at the University of Toronto.

Six specialty-specific focus groups were held in Toronto in the fall of 2001: 2 each of family physicians, of rheumatologists, and of orthopedic surgeons, with an average of 9 physicians per group. Discussions took place in the neutral setting of a hotel conference room to encourage open discussion. Participants from outside Toronto received airfare, accommodations, and meals during their stay, and all participants received a $500 honorarium. Each received a package in advance outlining the aims of the project and a description of the technique of focus group interviewing. A health researcher experienced in moderating groups of clinicians led the discussions using a semistructured guide developed during brainstorming sessions among the investigators (of whom 3 were orthopedic surgeons and 1 was a rheumatologist) and 2 pilot focus groups with orthopedic residents.

Discussions began with the question, "What do you consider when deciding to refer a patient for TJA/to perform TJA surgery for a patient?" Building from responses to this general question, the moderator generated discussion around the influence of these patient characteristics: age, weight/obesity, comorbidity and perioperative risk, gender and caretaker roles, social support and income earner. For example, following mention of patient age, the moderator might pose the question "What are other people's experiences and perspectives on the issue of age?" as a way to draw out differing points of view. Participants were then asked how they would prioritize, if required to do so, among 6 potentially suitable TJA patients (appendix). The intent of this exercise was to clarify which patient characteristics appeared most influential to actual referral practices.

Following group discussion, in-depth interviews with each participant were conducted due to concern that some physicians may have been reluctant to disclose any uncertainty about their opinions. Those physicians unable to schedule in-person interviews participated in 30- to 45-minute telephone interviews. The interviews were conducted using a semistructured interview guide, which included a brief review of the main issues raised in their focus groups, an opportunity to express views they felt uncomfortable sharing in the group, and questions about their approach to managing potential TJA patients.

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## DATA ANALYSES

Focus groups and interviews were tape-recorded and transcribed verbatim. Transcripts were later verified to ensure adherence to the original recording. Supplementary data included recorder notes taken during the focus groups and interviewer notes taken during and after each interview. NVivo, a qualitative data analysis software package, was used to store and manage data.[13]

Data were analyzed using a combination of interpretive research methods, primarily grounded theory.[14,15] Open coding[14] on an initial cross-section of half of the focus group and interview transcripts was used to specify factors influencing decision making. Open coding refers to researchers' initial labeling of sections of text without reference to any specific conceptual framework. Questions such as, What is happening here? What is the main concern faced by participants? What accounts for the resolving of this concern? are "answered" with codes or concepts.[16] The initial findings were reviewed by the 2 lead investigators and senior author, who verified consistency of the emerging coding framework with the impressions of team members present as observers during the focus groups. The framework was subsequently refined through the process of coding the remaining transcripts.

As analysis proceeded, we noted many codes were related to constraints in the health care system in addition to those concerning the influence of patient characteristics on decision making for TJA candidacy. How physicians perceive the health care system to be implicated in their decisions about patient candidacy for TJA became the primary focus of analysis, the findings of which are reported below.

## FINDINGS

Three themes—Health Care System Constraints, Prioritizing Patients, and Negotiating Relationships Among Physicians—and a new concept of Medical Brokering were identified. Each will be described with representative examples from the transcripts to elucidate how participants viewed these factors as influential in determining TJA candidacy.

### Health Care System Constraints

The exercise in which participants were asked to prioritize among 6 potential TJA candidates generated considerable discussion that constraints imposed by the health care system were often overriding factors, regardless of candidacy on the basis of patient characteristic criteria.

Three main constraints were described: extensive waiting lists, lack of home care and postoperative support, and, for surgeons, access to operating rooms and resources. One orthopedic surgeon put it succinctly:

> The indication for total joint replacement depends on the resources available. There is no question that they are done for different indications in the United States than Canada and in my last practice I had a 2-year waiting list to do a hip. And you are very much more rigorous in who you are going to do and under those circumstances, everyone who needs one isn't going to get one. So this is a real factor in decision making in Ontario today.

#### *Extensive Waiting Lists*

The issue of extensive waiting lists, a well-publicized frustration in the Canadian health care system,[17] sparked many conversations about patient need versus how many TJA procedures are actually performed. Physicians across the disciplines perceived that waiting lists influence decisions about patient candidacy and create a scenario whereby at least some patients who are suitable for TJA do not get the procedure:

> If we changed the question, and asked how would we respond if orthopedic surgeons were told that they could do more TJAs, I'm sure that all of us could go back in our files, and find more patients. (Rheumatologist)

Waiting lists prompted some physicians to refer patients earlier than they would have in the past, cognizant that the time delay may result in the consult when really necessary. It was suggested early referral could also initiate a relationship between the surgeon and patient, thereby ensuring the patient a place in the queue when the need arose:

> I find that I'm starting the wheels in motion at an earlier stage. . . . I'm looking at 9 months to a year for the initial consultation, and then . . . whatever time after that to get the surgery. So I find I'm trying to anticipate who is going to run into a problem. (Family Physician)

Thus, the anticipation of clinical course as a strategy to prioritize patients in the referral and surgical queues may contribute to physicians' variability with respect to the criteria they would normally use as basis for referral to a surgeon.

### *Lack of Home Care and Postoperative Support*

In Ontario, home care and physical therapy are sometimes covered by employment-based insurance; other patients are able to pay privately. Many patients, however, rely on publicly financed care. Physicians from all 3 disciplines expressed concerns about the availability in the public health care system of necessary postoperative support for TJA patients. Some family physicians and rheumatologists reported that they refrain from referring individuals who would have greater postoperative needs than can currently be met:

> When I think of older women who might be candidates who are alone . . . I don't initiate it [referral] because I think the resources will be lacking; the emotional support and the physical support. (Family Physician)

In the same vein, a family physician spoke of delaying referrals:

> I can't get physio without prescribing what patients can't afford . . . so there is no point. So you wait and see how they do with more time. (Family Physician)

Surgeons also acknowledged these limitations, noting that postoperative care strategies sometimes rely on home care coordinators to work aggressively to ensure adequate support.

### *Surgical Constraints*

Orthopedic surgeons also referred to institutional constraints impacting TJA decision making, most notably limited availability of operating room time:

> If I had time to do all of them [appropriate candidates] I would, but I just am not able to get the operating time I need.

The effects of this constraint impacted the practices of other professionals as well:

> I find I am blocked with the orthopedic surgeon. You know I probably would refer 2 or 3 times as many patients if I could get them to actually get the surgery. (Rheumatologist)

## Prioritizing Patients

It became clear in the analysis that referral practices were often shaped as much by health system conditions as by patient characteristics.

In the first instance, referring physicians prioritize whom to send for a surgical consult in light of limitations in the number of surgeries that can be done:

> If we are sending 92-year-olds for surgery, then presumably a 50- or 60-year-old is going to have to wait longer or not have it done for awhile. So, I think we have to be cognizant of the fact that we can't give everyone the procedure who might deserve it. There may be in a 92-year-old other options. You know, they are not that active. He doesn't need to be that mobile perhaps. (Rheumatologist)

Surgeons subsequently prioritize as well. How surgeons prioritize patients for TJA—and thus their working definitions of patient candidacy—also varies from one surgeon to the next. Definitions are rarely explicit:

> The decision to do TJR is an easy one. The decision to prioritize a patient is a hard decision. These are decisions we are being asked to do every day as individuals. There is no common ground for it. (Orthopedic Surgeon)

As a result, referring physicians also lack a common basis upon which to model their referral criteria:

> Can you imagine if this was a real scenario and we sent a 92-year-old to orthopedic surgeons? [Whack, hand motion] I told you I was only prioritizing and you are sending me a 92-year-old? (Rheumatologist)

Such comments revealed that referring physicians perceived a rebuttal for sending a surgeon inappropriate TJA candidates despite acting in accordance with available criteria.

A sense of discomfort around prioritizing was common across all physician groups:

> Actually having to prioritize our patients . . . and that puts us in a hell of a pickle because how do you do it? (Family Physician)

> These are the gray zones, but most people are in the gray areas. . . . I don't feel comfortable in that role. (Orthopedic Surgeon)

The task of prioritizing differs from the decision-making process with which physicians were accustomed: one based on ascertaining, for individual patients, a diagnosis and appropriate treatment options. Particularly relevant in the Canadian context was how the health care system's constraints differentially affected access to health care; for example,

> If you can't get home care you are going to bring in the fittest, the best-abled people to get done because those are the ones that are not going to get into problems post-op. (Orthopedic Surgeon)

This comment highlights how prioritizing relates to notions of who, from a particular physician's perspective, is most able to benefit rather than simply who is an appropriate candidate.

### Negotiating Relationships Among Physicians

Negotiating relationships among physicians refers to the maintenance of professional credibility and networks, for both patient referral purposes and the viability of one's own practice. At times, negotiating relationships was also perceived to conflict with patient care and needs. For example, physicians sometimes walked a fine line between alienating another physician and securing a second opinion to optimize patient care.

> That relationship can sometimes—I'm left thinking well, you know, do I tread on this [surgeon's] toes and send [the patient] to another surgeon, because I think, this [patient] is a primary breadwinner . . . and to me he meets all the criteria. (Family Physician)

Maintaining one's position in the health care system also pertained:

> There are still a lot of general practitioners who are reluctant to refer to rheumatologists. They will refer to an orthopedic surgeon because then they will stay central to the decision-making system. (Rheumatologist)

Furthermore, the notion of middleman or broker was explicitly raised in this context.

> I would refer them to Dr. X because that is the way the family doctor would have referred them and I want to maintain my being the middleman. If I upset that referring physician by referring them to someone that they would never consider, then next time I won't get into the picture. They would cut me out and refer across. (Rheumatologist)

### Medical Brokering

Prioritizing and negotiating were conceptualized as an overarching concept of medical brokering: a procedural strategy used by physicians when demands in a system are perceived to exceed resources.

> Don't you feel a little bit like a broker when you kind of sit there and say, "okay, you're doing really bad, so you need to go to this guy his waiting list is very short" . . . and you are kind of sizing them all up. (Rheumatologist)

A broker is one who acts as an intermediary,[18] a function physicians and surgeons engage in when required to determine who are "best" rather than simply appropriate candidates for TJA. Brokering differs from advocacy in that it connotes adjusting and discriminating. That not all patients who could benefit will receive a TJA suggests that family physicians and rheumatologists must adjust criteria on a case-by-case basis to discriminate among those for whom they will broker a surgeon's attention. Furthermore, they must decide when to begin the brokering process.

By this definition, surgeons, too, act as medical brokers. Forced to choose among the appropriate candidates in the face of institutional limitations, they also participate in the mediating process. In so doing, surgeons adjust their criteria according to immediate operational and postoperative considerations.

Brokering additionally involves the relational work that physicians do with each other to maintain peer networks and their own position in the care of TJA candidates. Surgeons were often the objects of relational work among the physicians. Some participant views suggested that the brokering role is an uncomfortable one: the account of "being in a pickle" is an example. Physicians can be placed in an unavoidable conflict when asked to discriminate between patients and yet simultaneously advocate for all.

Discomfort can also stem from not knowing the rules of the game, exemplified by referring physicians who are not clear about what kinds of patients are being prioritized by the surgeons to whom they are referring.

## DISCUSSION

The problem articulated by one surgeon—that "everyone who needs one isn't going to get one"—speaks directly to the discrepancy between the number of patients who could benefit from TJA and available resources to fulfill those needs. Physicians at both primary and tertiary care levels do more than identify medically appropriate candidates for TJA surgery based on their individual-level characteristics. Prioritizing and negotiating, previously undescribed processes conceptualized here as medical brokering, are responses to the complexities of decision making in a constrained health care

system in which physicians are often required to determine "best" candidates for TJA rather than appropriate candidates. Salient in terms of public policy is how individual physicians and surgeons appear to use their own criteria for making these decisions. Furthermore, those criteria are modified from time to time in response to specific institutional and system conditions.

Our intent is not to suggest that brokering is needed to secure TJA for every patient nor on every occasion, nor used by every physician in every institutional context. The study participants were 50 self-selected physicians practicing in Ontario at the time of the focus groups, from whom demographic information other than sex was not collected (male and female physicians were represented). Thus, although generalizability of findings in a statistical sense is not available, participant perceptions of a link between their experiences in determining TJA candidacy and the particular institutional contexts in which they work is novel and important. Precise and current estimates of the prevalence of medical brokering among physicians are needed.

Despite this limitation, our data suggest that medical brokering exists expressly because all patients who would benefit from the procedure are either not put forward or not put forward in a timely manner. Prioritizing has been discussed in the bioethics literature in the contexts of resource allocation[19] and gatekeeping.[20] In a gatekeeping system, referrals to specialists are authorized by a primary care provider.[20,21] Willems suggests that physician gatekeepers must coordinate and balance multiple issues including justice, needs, and efficiency; however, to fulfill the role adequately, they require resources and training to balance budgetary and justice considerations quite apart from medical ones.[20]

Medical brokering differs from gatekeeping in that gatekeeping focuses on restraining people from overusing health care[20] while brokering is about the discriminating among patients (all of whom are appropriate candidates for treatment) and negotiating that can occur when available resources are lacking. Given existing constraints, the lack of a shared understanding among physician groups in our study about whom and when to refer patients for TJA suggests that they are currently operating with less than optimal tools for appropriate brokering. More explicit information is required about whom to prioritize and how to ensure that prioritized candidates make their way through the system in a timely fashion.

The development of clinical priority assessment criteria (CPAC) is a mechanism for making the prioritization process more transparent. An example provided by health services researchers in New Zealand highlights challenges and limitations of such initiatives.[22,23] Based on interviews with 65 general practitioners, surgeons (including 6 orthopedic surgeons), and administrators about their use of, and attitudes to, CPAC in determining access to elective surgery, McLeod and colleagues[22] concluded that variability in how CPAC tools are used meant they did not provide a transparent and equitable method of determining access to surgery. They also point out, much as we have in this report, the influence of resource constraints on establishing patient candidacy: a gap between the clinical threshold (for surgery) and the volume of surgery allowed by an institution's available budget constituted a barrier to accurate and consistent completion of CPAC scores, with some surgeons "manufacturing CPAC scores where they felt the actual score did not (or would not) accurately reflect a patient's level of need" (p. 98). The Canadian and New Zealand health care systems are sufficiently similar (predominantly publicly funded and involving general practitioners as gatekeepers to secondary and tertiary care) to assume that CPAC tools may be similarly limited in Ontario without further development of an evidential basis for identifying patients who will benefit the most from surgery.[22]

Increased health care funding may improve access and quality of care for patients requiring TJA by augmenting, for example, operating room time thereby reducing surgical waiting lists. It would not, however, address the nuanced relationships we discovered among clinicians. The concerns of referring physicians about how they are perceived by the orthopedic surgeon to whom she or he refers patients may continue.

Unless referral managers akin to discharge planners are contemplated, referring physicians must be engaged more explicitly in the brokering process for TJA candidates. Such a forum should be ongoing in nature to accommodate priority shifts and change. In that respect, administrators and possibly policy makers who are at the forefront of shifting health care funding priorities should be included in the forum. Furthermore, the conditions that affect the brokering process—the when, for whom, and why physicians choose or not choose to broker—should be investigated. The data suggest physicians perceive a link between their practices and the health care system in which their work is accomplished. An institutional ethnography approach to investigation might provide for more direct analyses of what physicians actually

do rather than what they say they do, and may reveal how and to what extent the broader organization of health service delivery is shaping their work processes. One might also determine whether physicians may be blaming the lack of available surgical resources rather than their own difficulties in referring patients for needed care, or reveal potential biases physicians may have for nonreferral of TJA candidates.

In conclusion, lack of consensus on the necessary patient characteristics for TJA candidacy does not in and of itself account for the discrepancy between TJA need and delivery of TJA interventions. Health care system constraints affect and complicate the decision-making process around candidacy for TJA. As a result, physicians must engage in medical brokering to determine best rather than appropriate candidates on a case-by-case basis. This, in turn, contributes to the variability in patient profiles used in decision making about candidacy. Until the process is more fully explored, and strategies developed to mitigate the necessity for medical brokering, interventions to ensure appropriate and timely patient access to TJA must be found.

## APPENDIX
## Prioritization Exercise

How would you react to the following scenario? You have been informed by your hospital that your OR time has been cut in half and you may not be able to consider all of your potentially suitable patients. If you could only recommend three patients, how would you prioritize the following six patients?

- Patient #1: *Joan* is a retired 87-year-old woman with the following symptoms: *night pain, pain at rest, non-responsive to drugs or other modalities with radiographic evidence of severe knee arthritis*
- Patient #2: *Mary* is a 70-year-old recently retired woman who has *night pain, pain at rest, is non-responsive to drugs or other modalities with radiographic evidence of severe knee arthritis*. She is reluctant to have TKR because of "horror stories" she has heard, yet she is in a lot of pain.
- Patient #3: *Paul* is a 52-year-old retired male who has *night pain, pain at rest, is non-responsive to drugs or other modalities with radiographic evidence of osteoarthritis less severe than other candidates* yet demands a TKR because he can't play golf like he used to.
- Patient #4: *Bob* is a 67-year-old university professor who has *night pain, pain at rest, is non-responsive to drugs or other modalities with radiographic evidence of severe arthritis* who has been given a 10% perioperative mortality risk.
- Patient #5: *Roger* is a 60-year-old construction worker who has high physical demands at work and is the sole breadwinner for his family. He has *night pain, pain at rest, is non-responsive to drugs or other modalities with radiographic evidence of severe knee arthritis*.
- Patient #6: *Lillian* is a 5'6", 300 lb 63-year-old secretary with *night pain, pain at rest, who is non-responsive to drugs or other modalities with radiographic evidence of severe knee arthritis*. She has been trying for 14 months to lose weight yet has been unsuccessful.

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