Editor's Spotlight/Take 5

Editor's Spotlight/Take 5: How Does Accounting for Worker Productivity Affect the Measured Cost-effectiveness of Lumbar Discectomy?

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Last month in this space, we spotlighted an unusual cost-utility study, which determined that many MRIs ordered to evaluate adults with hip pain do not return value

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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anywhere close to their cost [3]. This month, we are pleased to share a project sponsored by our own Academy that took a more "holistic" approach than most surgical cost-effectiveness studies, by including worker productivity on the value side of the equation in the setting of lumbar spine surgery.

Generally, we try to vary the topics covered in the *Editor's Spotlight/Take 5* section of the journal. I would like to disclose that the repetition of the theme of value in two consecutive issues of *Clinical Orthopaedics and Related Research*® does not reflect any special passion of mine. I am not a medical economist, and my own research has been in other areas. However, this interesting article by Lane Koenig PhD (Fig. 1) and colleagues warrants our repeating the theme two months in a row. The approach they used is generalizable, important, and likely to be

influential in terms of how our specialty conveys the value it generates to interested parties, including commercial payers and the government. This work merits a deeper look from practicing orthopaedic surgeons who do not have a passion for medical economics, as well as spine surgeons.

I will confess to initially approaching this work with something of a jaundiced eye. A study evaluating cost-effectiveness of a procedure performed by the members of a specialty society, supported by that same specialty society, seemed like it could represent advocacy rather than research. My concerns were unfounded. This is research, and good research at that. The analysis of Koenig et al. was evenhanded and the findings were nuanced. The model showed that workers initially missed more days recovering from surgery than they gained in terms of the incremental benefit offered by surgery through nonoperative care. However, as they extended the model out in time — to 4 years, then 8, and beyond — the value of surgery in these patients appeared to be substantiated. Looking at the data

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Fig. 1 According to Lane Koenig MD, the goal of the study was to understand the value of disc herniation surgery after accounting for direct treatment costs and indirect costs..

through this lens, the intervention was indeed cost-effective.

The authors did not overstate their findings, and they disclosed that this added value is contingent on workers' improved productivity related to symptomatic relief being sustained through relatively long periods of time: About 6 years for outpatient surgery, and about 12 years for inpatient surgery (because of the increased costs associated with care delivery in that setting). The reader is left to

decide whether this is likely to be the case. It seems to me that it is, but only time will tell.

Of course, an outside observer may attribute a similar slant to my viewpoint as he or she might to academy-funded researchers trying to demonstrate the value of work of other academy fellows. After all, if orthopaedic surgeons stay in business, the journal does, too. But the best thing about this paper is that its methodology should withstand the scrutiny of even a critical observer. Take a look at it.

Take 5 Interview Take 5 Interview with Lane Koenig PhD and Dr. Michael Schafer MD (Fig. 2), coauthors of "How Does Accounting for Worker Productivity Affect the Measured Cost-effectiveness of Lumbar Discectomy?"

Seth S. Leopold MD: *Would you explain to our readers why it is so difficult (and important) to distinguish costs from patient charges associated with care in research of this kind?*

Lane Koenig PhD: It certainly made quite a few headlines recently when the Centers for Medicare & Medicaid Services released provider charge data [1], showing differences of two to three times or more in provider charges for the same service. The problem is that charges typically reflect neither the cost of providing care nor the

Fig. 2 Michael Schafer MD sees this work as part of a larger program that seeks to analyze the value of treatment of musculoskeletal conditions..

amount paid by insurers and patients. Unfortunately, the distinction between charges, costs, and payments is not always made clear in the media and, in some cases, in published research.

Dr. Leopold: *How did you handle that in this project?*

Dr. Koenig: The overarching goal of our study was to understand the value of disc herniation surgery after accounting for direct treatment costs

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and indirect costs, such as lost wages. From a value standpoint, we believed the relevant questions were (1) what was paid for a service, and (2) what did society receive in exchange? Given this perspective, we used estimates of payments made by insurers and patients, which reflect costs to payers.

Dr. Leopold: *Ideally, analyses like these are generalizable across the healthcare system in which they are done. But as you know, the healthcare system in the United States is not a unified whole: There are geographic differences in payments, costs, and utilization of services. There are also key differences between public and private payers, and a major subset of the spine surgery population (patients treated for workplace injuries) are treated in what sometimes seems a separate system, with incentives and outcomes unlike those observed in the other "markets." In light of those issues, how should a reader — or a politician thinking about value in healthcare — interpret your findings?*

Dr. Koenig: We have attempted to take a broad perspective and used estimates of average outcomes for patients receiving surgery and average payments. When considering the overall value of a service, we believe it is appropriate to consider the average patient. However, all healthcare is local,

with costs and reimbursements varying across providers and markets. Patients also vary with respect to expected and actual outcomes, depending on their physical and mental health and the quality of care received. It is this variation that represents the opportunity to increase the value of healthcare, by taking steps to improve provider efficiency, by improving the quality of care, and by ensuring that the right care is available and provided. Figuring out how to accomplish these positive steps is one of the challenges of health services research.

Dr. Leopold: *The American Academy of Orthopaedic Surgeons (AAOS) has several roles that I imagine sometimes must come into tension: Representing its members in the political process, doing good science, and improving the care for patients come right to mind. No doubt you will want to use good work like this to advance the concept in a political venue that the work orthopaedic surgeons do indeed delivers measurable value to society. At the same time, you do not want the work itself to be mistaken for a form of political action, or it risks being seen as self-serving. How do you balance this?*

Michael Schafer MD: The AAOS leadership has been acutely aware of this concern. We knew that if the research was not balanced and

rigorous, then we would be criticized severely. This is why the AAOS supported seeking peer-review of this and related studies and publishing the methods, which formed the basis for our disc herniation study. The methods paper [2] was published in March 2012 in a peer-reviewed economics journal and describes an innovative approach to estimate the effects of treatment on indirect costs, such as employment, earnings, and disability payments. We believe these reports on value of orthopaedic care for patients and to society stand up to thoughtful criticism and will have significant impacts on decisions from the allocation of NIH research funding to patient access to musculoskeletal healthcare.

Dr. Leopold: *This piece has the flavor of a developing research program, rather than a research project. Where is your group going from here?*

Dr. Schafer: This study is part of a series of papers on the value of treatment for select musculoskeletal conditions supported by AAOS. Studies recently were published on total knee replacement [6], ACL reconstruction [5], and the repair of full thickness rotator cuff tears [4]. This important research on the economic and social value of orthopedic care will continue to gain recognition as additional specific treatment examples are published. We also plan future

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publications regarding the potential public policy implications of this initiative. Thanks very much for this opportunity to discuss our project on value.

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