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Editor's Spotlight/Take 5

Editor's Spotlight/Take 5: Longitudinal Urban-Rural Discrepancies in the US Orthopaedic Surgeon Workforce

Seth S. Leopold MD

Our most precious resource is our time. With sufficient political will and money, larger hospitals can be built, more implants can be purchased, and better research can be performed to answer questions about how to best use those buildings and tools. But no amount of money will allow the same surgeon to practice in the Flint Hills outside of Manhattan, Kansas while also working full-time on the upper west side of Manhattan, New York.

Surgeons in the United States choose where they practice. But according to Dr. Jonathan N. Grauer's team (Fig. 1), that very choice has resulted in significant workforce discrepancies, which may result in important access-to-care issues for patients in rural areas of the United States; additional evidence suggests these issues already exist [3, 4].

Dr. Grauer's team also found that other providers (specifically, chiropractors and podiatrists) are stepping in to meet the rural healthcare demand, at least to some degree. The bigger question of how to meet this need—whether by orthopaedic surgeons, other kinds of musculoskeletal professionals, or some combination of both—remains critically important, and presently unanswered.

The work from Grauer and colleagues suggests that we may need to determine what conditions can be managed by providers with other backgrounds, and which clinical problems should be evaluated and treated by orthopaedic surgeons. Quality of care, as opposed to turf battles, must guide this kind of triage.

Projecting potential workforce needs can be controversial and uncertain [1]. It is important to begin by describing the present landscape, and pointing to the key questions that need to be answered. Dr. Grauer's team has done exactly that in this issue of *CORR*®.

Take 5 Interview with Dr. Jonathan N. Grauer (senior author) and Mr. Michael C. Fu (lead author) of Longitudinal Urban-Rural Discrepancies in the US Orthopaedic Surgeon Workforce [DOI 10.1007/s11999-013-3131-3]

Seth S. Leopold MD: *Please characterize the geographic trends you have observed in terms of the orthopaedic workforce in the last 15 years, and share with readers why you believe those findings are important for our profession's ability to meet the needs of U.S. patients?*

Michael C. Fu BS: In the past 15 years, there have been significant

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.''The authors certify that they, or any members of their immediate family, have no commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the submitted article.All ICMJE Conflict of Interest Forms for authors and *Clinical Orthopaedics and Related Research*® editors and board members are on file with the publication and can be viewed on request.The opinions expressed are those of the writers, and do not reflect the opinion or policy of *CORR*® or the Association of Bone and Joint Surgeons®.This comment refers to the article available at: http://dx.doi.org/10.1007/s11999-013-3131-3.

S. S. Leopold MD (✉)
Clinical Orthopaedics and Related Research, 1600 Spruce Street, Philadelphia, PA 19013, USA
e-mail: sleopold@clinOrthop.org

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Fig. 1 The work from Fu (left) and Grauer (right) found potentially important discrepancies in the orthopaedic workforce between urban and rural areas.

and persistent discrepancies in the orthopaedic workforces between urban and rural areas of the country. We found a lower density of orthopaedic surgeons per capita in rural areas, and surgeons in those areas were also older than their urban counterparts. These trends lead us to believe that there may be rural shortages of orthopaedists in the coming years, especially given the increasing demand for musculoskeletal care in our aging population. This is important to our ability to serve our patients because patients regularly voice a preference to be treated close to where they live. Traveling for healthcare can be a significant barrier to specialty care access from the patient's perspective.

Dr. Leopold: *How will we know what the "right" ratios are? Indications—even for the most common procedures we perform—demonstrate severe geographic differences. There even is some evidence that surgeon supply drives demand in a healthcare system that generally pays surgeons to operate. How should this affect a reader's interpretation of your major findings?*

Mr. Fu: This is certainly the biggest challenge in conducting and interpreting workforce studies such as ours. Well-collected and validated data regarding indications and what proportion of demand is driven by surgeon supply are difficult to perform and interpret. It is possible that the urban-rural discrepancies observed in our study are the "right" ratios, and that there should be substantially lower densities of orthopaedic surgeons in rural areas. However, during our study period, we also observed tremendous increases in the growth of nonorthopaedic providers of musculoskeletal care, such as podiatrists and chiropractors, especially in rural areas. While we cannot say for certain if these providers are delivering more care because of a shortage of orthopaedic surgeons, the results of our study suggest that musculoskeletal

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provider workforces are in a state of flux rather than in equilibrium.

Dr. Leopold: *Your manuscript alludes to the idea that other kinds of professionals (podiatrists, chiropractors) may provide care to patients with musculoskeletal diseases and injuries if orthopaedic surgeons are not present in communities; perhaps physician extenders will also be part of the workforce solution. How will we know what distribution of different kinds of professionals will best allow us to meet patients' musculoskeletal needs in areas where there are fewer orthopaedic surgeons?*

Jonathan N. Grauer MD: From an orthopaedic surgery standpoint, while physician extenders are not able to provide surgical care independently, they can perform nearly all other aspects of musculoskeletal care. Our study advocates for the future of our field. If there are true shortages in some areas of the country in the supply of musculoskeletal care that would be best provided by orthopaedic surgeons, we believe they should be addressed promptly. Nevertheless, physician extenders and nonorthopaedic musculoskeletal providers are valuable pieces of the puzzle, and can provide excellent care in partnership with orthopaedic surgeons.

Dr. Leopold*: Geographic discrepancies in care are not simply a U.S. problem. While you did not study this, I know you are aware of how such discrepancies affect access to musculoskeletal treatments around the world. Can you share with our readers a brief summary of the major global themes being discussed on this topic, and what the interested surgeon should read to learn more about this issue?*

Dr. Grauer: On a global level, access to orthopaedic care is an important public health problem that has been underappreciated. A good starting place for reading would be this excellent summary of the global burden of orthopaedic disease by Beveridge and Howard [2]. In short, more than 5 million deaths are attributed to injuries of all kinds on annually. In terms of disability-adjusted life years lost, injuries accounted for more than tuberculosis, diarrhea, and malaria combined. Injuries account for nearly twice as much disability as that attributed either to HIV or cancer. Much of this morbidity and mortality is preventable by addressing the absence of adequate surgical care in many parts of the world. It is a challenging endeavor that involves increasing the number of orthopaedists in developing countries, improving their training in trauma care, and educating other frontline healthcare providers in the basic management of orthopaedic conditions in low-resource settings.

Dr. Leopold: *What are the next "big questions" that you hope to explore in this area?*

Dr. Grauer: Our next step is to determine how these workforce discrepancies are related to the quality of care delivered, specifically with respect to clinical outcomes. We want to examine variables such as functional outcomes, quality of life, length of stay, and postoperative complication rates, to investigate whether these longitudinal urban-rural discrepancies in the orthopaedic workforce have a measurable impact on musculoskeletal health.

References

1. Bernstein J. The folly of forecasting. *Clin Orthop Relat Res.* 2013;471:1415–1418.
2. Beveridge M, Howard A. The burden of orthopaedic disease in developing countries. *J Bone Joint Surg Am.* 2004;86-A:1819–1822.
3. Skolasky RL, Maggard AM, Thorpe RJ Jr, Wegener ST, Riley LH 3rd. United States hospital admissions for lumbar spinal stenosis: Racial and ethnic differences, 2000–2009 [published online ahead of print July 18, 2013]. *Spine*. DOI: 10.1097/BRS.0b013e3182a3d392.
4. Weichel D. Orthopedic surgery in rural American hospitals: A survey of rural hospital administrators. *J Rural Health*. 2012;28:137–141.