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AOA critical issues symposium**

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Disparities in Access to Musculoskeletal Care: Narrowing the Gap

AOA Critical Issues Symposium

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Abstract: The current health-care system in the United States has numerous barriers to quality, accessible, and affordable musculoskeletal care for multiple subgroups of our population. These hurdles include complex cultural, educational, and socioeconomic factors. Tertiary referral centers provide a disproportionately large amount of the care for the uninsured and underinsured members of our society. These gaps in access to care for certain subgroups lead to inappropriate emergency room usage, lengthy hospitalizations, increased administrative load, lost productivity, and avoidable complications and/or deaths, which all represent a needless burden on our health-care system. Through advocacy, policy changes, workforce diversification, and practice changes, orthopaedic surgeons have a responsibility to seek solutions to improve access to quality and affordable musculoskeletal care for the communities that they serve.

The current health-care system in the United States has a multitude of access barriers to quality musculoskeletal care. These hurdles are a complex and often multifactorial list of cultural, educational, and socioeconomic factors that include geography, transportation, fiscal roadblocks, medical complexity, and health-insurance status. However, what is not as well understood or agreed upon is when these hurdles lead to health-care disparities. As orthopaedic surgeons and musculoskeletal health-care providers, especially those practicing at tertiary referral centers, we can easily recall examples of patient outcomes that were negatively affected by delays or difficulty ac-

cessing to appropriate care. These are often devastating complications that could have been avoided with an accurate diagnosis and timely care. We briefly describe 2 such patient scenarios from our own practices.

The first case was a 57-year-old unemployed African-American man who presented to the emergency department of a local urban community hospital with neck pain. Radiographs were made, and he was discharged with the diagnosis of cervical spine “arthritis.” Three days after his initial presentation, he presented to a second urban community hospital emergency department for continued pain. This hospital has

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a group of 5 spine surgeons on staff. A spine specialist evaluated him, and advanced imaging in the form of computed tomography (CT) of the cervical spine was performed (Figs. 1-A, 1-B, and 1-C). A cervical collar was placed, and the patient was discharged after being told he had “bad arthritis.” Seven days later, he presented to a third hospital for increasing neck pain and a decreasing ability to walk. Repeat CT was performed, and magnetic resonance imaging (MRI) of the cervical spine was

acquired (Fig. 2). Four days later, he was transferred to an academic tertiary referral center (the fourth hospital) after it was noted and documented that he had lost the ability to walk for 48 hours. Despite having full-time spine surgeons on staff, the hospital cited that they “do not have the equipment and personnel to take care of this problem” as the official reason for transfer. On presentation to the fourth hospital, the patient was found to be quadriparetic. Workup at that time revealed a



Fig. 1-A



Fig. 1-B



Fig. 1-C

Fig. 1-A , 1-B, and 1-C CT of the cervical spine that was made at the second hospital, 3 days after the initial presentation.



Fig. 2
CT (left) and T2-weighted MRI (right) scans of the cervical spine that were made at the third hospital, 10 days after the initial presentation.

massive epidural abscess with substantial bone destruction, which had progressed from the previous CT scans. He was diagnosed with spinal osteomyelitis with an epidural abscess and was treated with immediate surgical decompression, antibiotics, and staged spinal reconstruction. He never recovered the ability to walk. Despite clear and progressive osseous changes on advanced imaging, it remains unclear why this diagnosis was not made or considered prior to presentation to the fourth medical center since only the first hospital did not have full-time spine surgeons on staff.

The second case was a 54-year-old unemployed woman with Medicaid insurance who presented with hip pain after a fall. Her comorbidities included depression and chronic pain that was being treated with methadone. She was evaluated at a community hospital with a level-II emergency room and 17 orthopaedic staff surgeons (excluding hand and spine surgeons), all of whom were listed as taking new patients. On presentation, the radiographs demonstrated a left hip fracture (Fig. 3). She was transferred because the hospital's staff "orthopaedic surgeon on call was out of town for the holiday weekend." Both of the described cases highlight the challenges faced by some of the patients in our communities to timely and appropriate musculoskeletal care. So, when do "differences" in musculoskeletal health-care access become "disparities" in care?

Krieger¹ and Whitehead² defined a "disparity" as a difference that is inequitable, unjust, or unacceptable. In 2003, Braveman and Gruskin added that a detailed understanding of the nature and etiology of a "difference" is required³. They believed that an investigation into the avoidability, mutability, and establishment of detrimental impact on disadvantaged

groups was paramount in identifying health-care disparities. The Institute of Medicine defines disparities as "racial or ethnic differences in the quality of health care that are not due to access-related factors or clinical needs, preferences, and appropriateness of intervention."⁴ However, to this day, there is no consensus regarding the definition of health-care disparity because it depends heavily on "who is deciding what is avoidable and unjust, and how it is decided."⁵ The issue is further complicated by the fact that few orthopaedic surgeons and health-care policy makers can agree on the methods of outcome measurement, the categorization of disadvantaged groups, or even what constitutes "unjust."⁶ This widening gap of access to timely and quality musculoskeletal care is one of the most important issues facing our subspecialty.

In a survey of orthopaedic surgeons regarding disparities in health care, 12% of respondents believed that patients receive different health care based on race/ethnicity, 68% acknowledged evidence of disparities in orthopaedics, and 51% believed that lack of insurance was the primary driver of disparities and access⁷. The American Academy of Orthopaedic Surgeons (AAOS) Principles of Medical Ethics and Professionalism in Orthopaedic Surgery state that an "orthopaedic surgeon has a responsibility not only to the individual patient, to colleagues, and orthopaedic surgeons-in-training, but also to society as a whole. Activities that have the purpose of improving the health and well-being of the patient and/or the community in a cost-effective way deserve the interest, support, and participation of the orthopaedic surgeon."⁸

Despite this guidance, patients with state-funded Medicaid and federally funded Medicare insurance plans encounter disparities in their access to musculoskeletal care^{9,10}. Medicaid

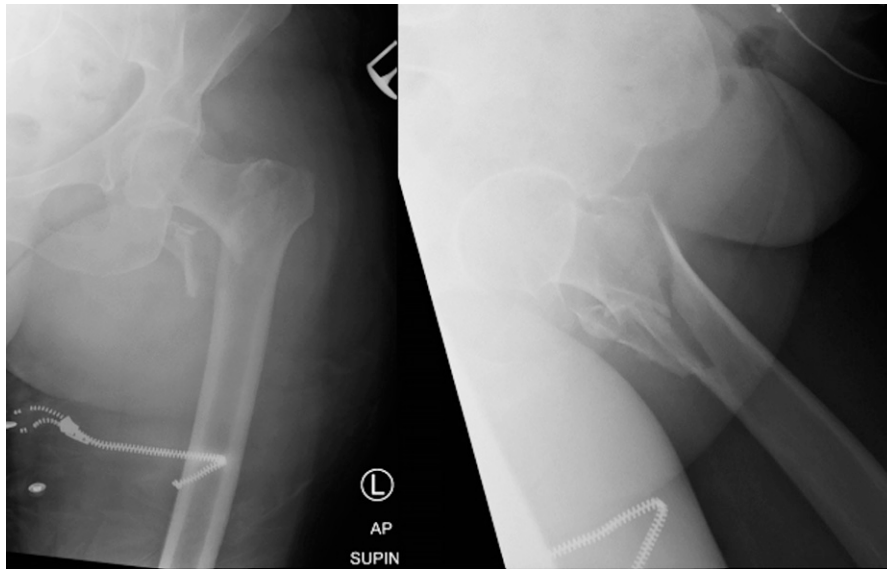


Fig. 3
Anteroposterior (left) and lateral (right) radiographs of the left hip demonstrating an acute displaced proximal femoral fracture.

and Medicare insure more than 70.5 million Americans, according to a recent report from the Centers for Medicare & Medicaid Services¹¹. A 2017 survey of physician appointment wait times and Medicaid and Medicare acceptance rates for nonemergency diagnoses found that the average Medicaid acceptance rate in 15 different surveyed metropolitan markets decreased roughly 10% from 2009 to 2014¹². The survey averaged the acceptance rates of 5 different specialties (cardiology, dermatology, obstetrics/gynecology, orthopaedic surgery, and family practice) and found that the total cumulative average Medicaid acceptance rate decreased from 55.4% to 45.7% in the 5-year span¹². In an average of all 15 markets, <50% of orthopaedic surgery practices that were surveyed accepted Medicaid insurance, and in 5 of the metropolitan markets, acceptance rates were $\leq 25\%$ (Atlanta, 25%; Boston, 75%; Dallas, 20%; Denver, 35%; Detroit, 45%; Houston, 45%; Los Angeles, 15%; Miami, 15%; Minneapolis, 100%; New York, 20%; Philadelphia, 81%; Portland, Oregon, 55%; San Diego, 59%; Seattle, 55%; and Washington, DC, 30%)¹².

Despite varied practice models, this issue affects all of us individually, and the societal responsibility should be borne by us collectively. Reasons among physicians that are cited for not accepting Medicaid included low reimbursement rates, administrative burdens, patients' nonmedical needs, challenges keeping appointments, and compliance with treatment plans. Specific to the practicing orthopaedic surgeons¹⁰, 1 author provided personal insight into the reasoning for not accepting government-funded insurance plans in an article titled "Opting out of Medicare is a personal and professional decision," which was published in *Orthopedics Today* in 2013¹³. He stated that "If you consider the ever-increasing overhead costs of running a practice, the failure to pass meaningful tort reform, the inability to recognize value-driven care based on expertise and volume, the forced pay cuts, and the ever-increasing bureaucracy

of providing care to a Medicare beneficiary and avoiding audits and possible treble damage penalties, you may want to see if you have the emotional and intellectual strength to" opt out of government-backed insurance programs.

In a 2017 national orthopaedic survey, Labrum et al. found that adult patients with Medicaid insurance had limited access to care in 32% of orthopaedic practices (37% of private practices and 13% of academic practices)¹⁴. Additionally, patients with Medicaid were less likely to be offered an appointment within 2 weeks than those with commercial insurance (36% versus 89%, respectively)¹⁴. In a regional study, Patterson et al. had similar findings; they found that 59% of the time, a patient with Medicaid insurance was offered an appointment within 2 weeks compared with 79% of the time for a patient with private insurance¹⁵.

Froelich et al. performed a retrospective review of all new patient encounters at an adult orthopaedic outpatient clinic in an academic tertiary referral center over 1 calendar year (the study group included 774 patients [31.1%] with Medicaid, 653 patients [26.2%] with Medicare, 917 patients [36.8%] with commercial/private insurance, and 146 [5.9%] who were uninsured/private pay patients)¹⁶. They found that the average 1-way distance traveled to orthopaedic appointments was 36.2 miles for patients with Medicaid, 21.3 miles for patients with Medicare, 24.1 miles for patients with commercial/private insurance, and 25.3 miles for uninsured/private pay patients¹⁶. Calfee et al. reported similar conclusions: they found that clinical complexity correlated with increasing driving distance to orthopaedic hand appointments¹⁷. Referring physicians in their region reported that 62% of local surgeons accepted patients with Medicaid insurance, while 100% of local surgeons accepted patients with private insurance. Nearly half of patients with Medicaid insurance or no insurance (44%) who had been refused by local surgeons were unable to drive to a tertiary

center because of limited personal resources¹⁷. Patients with Medicaid insurance (26%) were substantially more likely to fail to arrive for appointments than patients with private insurance (11%), with no-show rates increasing with greater distance required to reach the tertiary center¹⁷.

The literature regarding pediatric access to orthopaedic care is similarly bleak. In a national survey, Skaggs et al. found that 18% (41) of 230 offices would not see a child with Medicaid insurance under any circumstances¹⁸. Children with Medicaid insurance had limited access to orthopaedic care in 88 (38%) of 230 offices that treat children¹⁸. They found that reimbursement rates for Current Procedural Terminology (CPT) codes widely varied by state and that there was a significant relationship between access to medical care for patients with Medicaid and physician reimbursement rates¹⁸.

In a regional study of pediatric access to musculoskeletal care, 50 randomly chosen offices of orthopaedic surgeons were telephoned with the scenario of a 10-year-old child with a “broken arm,” followed by a request for an appointment that week¹⁹. Each office was called twice with an identical script, except for insurance status (one script described a patient with Medicaid, and the other described a patient with private insurance). All 50 (100%) of the offices offered an appointment to see the child with private insurance within 7 days. Only 1 (2%) of the same 50 offices offered an appointment to see the child with Medicaid insurance within 7 days¹⁹. Of the offices that would not see a child with Medicaid, 87% were unable to recommend an orthopaedic office that accepted Medicaid insurance¹⁹. These disparities in care represent a huge burden on the individual and society in general, but more specifically a drain on our health-care system and finite resources²⁰. Inappropriate emergency room visits, lengthy hospitalizations, increased administrative load, lost productivity, and avoidable complications and/or deaths represent societal and monetary cost²⁰.

The health of racial and ethnic minorities, low-income individuals, and other disadvantaged groups in the United States is inferior to the health of the overall population²¹. These individuals have a higher infant mortality rate and a lower average life expectancy, and they score worse on most other health indices²¹. Schoenfeld et al. performed a retrospective systematic review of the orthopaedic literature investigating ethnic disparities in health care²¹. In their results, 91% of the included studies pertained to spinal or joint replacement surgery²¹. Sixty-four percent (21) of the 33 studies documented health-care disparities among patients of differing racial and ethnic backgrounds²¹. The authors concluded that there are crucial gaps in the orthopaedic literature regarding this topic and that disparities are likely underrepresented²¹.

Specific to orthopaedics, trauma, total joint arthroplasty, spine surgery, and amputations are susceptible to poorer outcomes due to disparities related to access, education, and socioeconomic status²²⁻²⁶. These poorer outcomes, including increased morbidity and higher mortality rates, have been linked to delays in diagnosis, poorer access to quality care, and increased time to surgery^{27,28}. Looking specifically at hip fractures, Ryan et al. reported that increasing time to surgery

negatively impacted patient outcomes and significantly increased overall complication rates²⁹. This confirmed what many other studies had previously identified; however, they also investigated the patient-specific factors that were associated with delays in surgery²⁹. They found that both Medicaid insurance status and ethnic background of the patient (Hispanic or African-American) were independent factors that were associated with a delay in surgery of ≥ 2 days²⁹.

Total joint arthroplasty has been heralded and celebrated as one of the most important and successful surgical procedures in history. However, in the United States, African-Americans and Hispanics demonstrate lower utilization rates for both knee and hip arthroplasty compared with Caucasians^{24,25,30,31}. This occurs despite a higher prevalence of osteoarthritis in African-Americans (40%) and Hispanics (44%) compared with Caucasians (25%), and with minorities reporting functional limitations as high as Caucasians, irrespective of age, sex, and comorbidities³². These disparities come with intangible societal costs³³, but they also result in a measurable fiscal burden on the resources of our health-care system³⁴.

In our current system, tertiary referral centers provide a disproportionately large amount of the care for the uninsured and underinsured members of our society. An obvious approach to diminish this fiscal burden would be for more orthopaedic surgeons to provide accessible care to patients with Medicaid and Medicare in their communities. Although simple conceptually, incentivizing this change in practice remains elusive. One potential avenue is through improved reimbursement. A recent study has investigated the impact of Medicaid expansion in 1 metropolitan area that geographically straddles 2 different states to measure its effect on elective orthopaedic procedures³⁴. In 2014, Illinois passed and implemented Medicaid expansion, while Missouri did not. The authors conducted a difference-in-differences analysis for total hip and knee arthroplasty in the greater St. Louis metropolitan area³⁴. They demonstrated that the proportion of total hip and knee replacements paid by Medicaid showed a significant increase from 2.86% in 2013 to 4.18% in 2016 in Illinois³⁴. However, in Missouri, over the same time period, the proportion remained nearly flat, going from 3.12% in 2013 to 2.89% in 2016³⁴. These data may suggest that Medicaid expansion is having a positive effect in increasing access to orthopaedic care for low-income individuals in Illinois, which may be generalizable to other parts of the country in the future.

The 2 case scenarios from our own practices that were described earlier are clear examples of patients who were vulnerable to marginalization, which unfortunately impacted the access, quality, and timeliness of their orthopaedic care. To deter such behavior, the Emergency Medical Treatment and Active Labor Act (EMTALA) was passed by the U.S. Congress in 1986 as part of the Consolidated Omnibus Budget Reconciliation Act (COBRA)³⁵. The law's initial intent was to ensure patient access to emergency medical care and to prevent the practice of patient “dumping,” in which uninsured patients were transferred, solely for financial reasons, from 1 hospital to another without consideration of their medical condition or stability for the transfer³⁵.

From 2002 to 2015, there were 6,035 investigations, with 2,436 (40.4%) found to have merit as EMTALA violations, yet only 192 of the 6,035 (3.2%) actually resulted in fines³⁶. There were 22 cases (11.5%) of inappropriate transfer. Hospitals failed to accept an appropriate transfer in 25 cases (13.0%). Patients were turned away from hospitals for insurance/financial status in 30 cases (15.6%). In 12 cases (6.3%), the on-call physician refused to see the patient, and in 28 cases (14.6%), the patient was inappropriately discharged³⁶. It is our belief that the practice of “dumping” is woefully underreported. Possible explanations for this include being unaware or unfamiliar with the requirements of the law, being afraid about lack of protection for reporting physicians, apprehension over professional retribution, and trepidation over damaging a colleague’s career. If inappropriate care incidents were more commonly reported and the law routinely was enforced, it would likely help diminish inappropriate transfers and improve quality of care.

Additional suggestions for improvement to specialty access include increasing reimbursement rates for government-funded insurance programs, using physician extenders (physician assistants [PAs] and nurse practitioners [NPs]) to deliver orthopaedic services, utilizing technology (telehealth and virtual visits), expanding the role of primary care physicians in musculoskeletal care, and piloting group or batched appointment visits.

Health-care disparities consist of severe, complex, and multifactorial inequities. These gaps in access to care result in inappropriate emergency room usage, lengthy hospitalizations, increased administrative loads, lost productivity, and avoidable complications and/or deaths. These needless burdens on our

health-care system contribute heavily to our fiscally unsustainable health-care delivery system. Orthopaedic surgeons have enormous credibility in our communities; we must use our experience and talents with teamwork as well as critical thinking to actively confront barriers to more equitable musculoskeletal care. Through advocacy, policy changes, workforce diversification, and practice changes, we can develop solutions that improve access, quality, and cost-effectiveness for all. ■

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