Measuring the Value of Health Care Procedures and Treatments

A summary of findings from “Modeling the Indirect Economic Implications of Musculoskeletal Disorders and Treatment,” published in Cost Effectiveness and Resource Allocation
Modeling the Indirect Economic Implications of Musculoskeletal Disorders and Treatment: Measuring the value of health care procedures and treatments

In an increasingly cost-conscious health care environment where many common health services and procedures, including orthopaedics, have come under scrutiny, patients, policymakers and payers are demanding greater value from our health care system. As a result, providers must be able to demonstrate not only the clinical benefits, but also the economic value of their services.

However, definitive data on the direct and indirect costs and economic benefits of specific procedures – obtained through large, lengthy and expensive clinical studies – often are limited. While many studies have quantified the burden of musculoskeletal (MSK) disorders and cost-effectiveness of treatment, few studies have addressed the value these services provide to workers and their families, employers and society.

To fill this critical gap, the American Academy of Orthopaedic Surgeons (AAOS) has launched a research project to measure the societal and economic value of MSK care for a range of common conditions and treatments. The study, titled “Modeling the Indirect Economic Implications of Musculoskeletal Disorders and Treatment,” appears in the peer-reviewed health economic journal Cost Effectiveness and Resource Allocation.

Methodology to Assess Value

By modeling the relationship between bone and joint health limitations and economic outcomes, the AAOS conducted the most comprehensive assessment to-date of the economic impact of MSK disorders and the value of specific orthopaedic surgical procedures. In the absence of randomized clinical trials required to provide definitive information on the short- and long-term economic implications of these procedures, this information will provide a more complete picture of the burden of MSK disorders and the benefits of treatment.

Our Approach

AAOS developed a novel method of estimating the overall value – including impact on a comprehensive set of indirect costs – of orthopaedic surgical procedures using publicly available information (Figure 1).

Figure 1

- Using data from more than 185,000 people included in the National Health Information Survey (NHIS), we measured the relationship between physical limitations associated with MSK disorders and indirect indicators of cost, including employability, missed days of work, household income and disability income.
- Using the NHIS findings and data from clinical studies of people who had undergone total hip or knee replacement, researchers then created an index that estimated the impact of specific orthopaedic surgical procedures on physical limitations and indirect costs.
The Burden of Musculoskeletal Disorders

MSK disorders are the leading cause of disability in the United States, affecting the physical, financial and emotional well-being of millions Americans each year (Figure 2).

MSK disorders cause pain, loss of physical function, and decline in mental health, all of which adversely affect a person’s productivity or ability to find employment. For instance, the presence of MSK-related conditions significantly increases the number of work days missed. Current health trends, such as an aging population, increased obesity rates and sedentary lifestyles, will exacerbate the problem.

Findings and Future Research

This published research suggests that:

- Physical impairments associated with MSK disorders reduce the likelihood of employment and household income, and increase missed work days and disability pay for those who are employed.
- Appropriate treatment of MSK disorders has the potential to significantly reduce indirect costs.

The study’s findings demonstrate that appropriate treatment for specific MSK conditions is associated with net economic benefits to society. Importantly, this model provides a foundation to assess the value of procedures and health services, both within and beyond the field of orthopaedics, where extensive primary data are limited. In an increasingly cost- and value-conscious health care environment, further exploration of the economic costs and benefits of a variety of common procedures and services could have a significant impact on patient care.

The model currently is being applied to several orthopaedic procedures in an effort to highlight the value of high-quality orthopaedic care.

Bone or joint pain:

- Caused more than one in 10 Americans to miss work in the past year
- Is the reason why 440 million days of work are missed annually
- Sent one-third of Americans to the doctor in the past year
- Causes more than half of all chronic conditions in people over age 50

Caused 29% of all workplace injuries and illnesses that required time away from work in 2010

Demand for hip replacements will increase by 174% by 2030

Demand for knee replacements will increase by 674% by 2030

Is the leading medical cause of disability claims — 27.5% of new claims in 2010
What is the Value of Orthopaedic Care?

When orthopaedic surgeons restore mobility and reduce pain, they help people get back to work and to independent, productive lives.

From the perspectives of the patient, employers and society, the value of appropriate medical treatment extends beyond current and future medical expenditures. Value includes: whether a person can remain productively employed, avoid payments for disability or long term care, avoid expenditures related to reduced mobility (e.g., home modifications) and improve overall quality of life.

About AAOS

With more than 37,000 members, the American Academy of Orthopaedic Surgeons, [www.aaos.org] or [www.orthoinfo.org] is the premier not-for-profit organization that provides education programs for orthopaedic surgeons and allied health professionals, champions the interests of patients and advances the highest quality of musculoskeletal health. Orthopaedic surgeons and the Academy are the authoritative sources of information for patients and the general public on musculoskeletal conditions, treatments and related issues. An advocate for improved care, the Academy is participating in the Bone and Joint Initiative (www.usbjd.org), the global initiative to raise awareness of musculoskeletal health, stimulate research and improve people’s quality of life.

More than one in four Americans have bone or joint health problems, making them the greatest cause of lost work days in the U.S. A Nation in Motion® (ANationInMotion.org) is an AAOS public awareness campaign dedicated to showcasing hundreds of inspiring patient stories of people at every stage of life whose lives and mobility have been restored because of their orthopaedic care. To learn more, or to submit your own story, visit ANationInMotion.org.

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Disclosure: AAOS commissioned KNG Health Consulting, LLC (KNG Health) and its partner, IHS Global Inc., to prepare this study.