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Disparities in Surgery: Access to Outcomes

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Abstract Surgery is an important intervention to sustain human life through its ability to cure disease, heal fractures, avert maternal death, and provide comfort for those suffering. However, surgical care is unevenly delivered throughout the world. More surprisingly, we have little knowledge about the adequacy and quality of surgical resources globally.

The Brigham and Women's Hospital Center for Surgery and Public Health, a joint program of Harvard Medical School and the Harvard School of Public Health, seeks to remedy the knowledge deficit, to provide direction for stakeholders, and direct improvement in public health related to surgical care. To the end of raising awareness of the issue of disparities in surgical care in the United States and the world, an invitational conference on Disparities in Surgical Care: Access to Outcomes was conceived.

The Symposium brought together experts from around the world to critically examine this challenging problem. Surgeons, other clinicians, administrators, and health services researchers came together to develop approaches to translate research into practice to address disparities in access and outcomes in surgical care. The synergy of population-based research and clinical practice may allow the surgical healthcare team of the near future to implement strategies to achieve health equity, an important dimension of quality, in surgery.

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Introduction

Surgery can cure cancers, correct birth defects in the young and heart disease in the old, heal fractures, avert maternal deaths, and alleviate suffering. Thus surgery has become a central and essential tool in the sustenance of human life. For example, the average American has nine operations in her lifetime. More than half of hospital admissions are surgical, and 30 million operations are performed annually in the United States alone. Yet surgical care is surprisingly unevenly delivered throughout the United States and the world. For example, in large territories of Southern Africa and Asia, cesarean section is simply unavailable. When a mother cannot pass a baby through the birth canal, both are routinely left to die. Nevertheless, we have remarkably little information about the quality and adequacy of surgical resources nationally and globally, about who has access to needed operations and who does not, or about how to improve that access and outcomes both in the United States and abroad.

The Brigham and Women's Hospital Center for Surgery and Public Health is a joint program of Harvard Medical School and the Harvard School of Public Health that seeks to remedy the knowledge deficit, to provide direction for patients, physicians, and policymakers, and to direct improvement in public health related to surgical care. It is our aim that the Center for Surgery and Public Health will be a think-tank for research and know-how for the many concerns at the intersection of surgery, public policy, and public health.

Access to surgical care is acutely dependent on both personal and community resources. Societies appear to be unprepared for resource shortages, both nationally and globally. The growing lack of insurance coverage for people in the United States (now over 45 million people)

significantly affects access to surgical care. We have little information about whether and how the uninsured get access to needed surgical care or how access might be improved. Across the globe, public health issues in the developing world have focused appropriately on infrastructure and infectious diseases, especially tuberculosis, HIV/AIDS, and diarrheal diseases. In international public health planning, particularly for developing countries, surgical care receives relatively little attention.

Many people assume that the technology and skills required are simply beyond the capacity of nonindustrialized countries, that spending limited resources on surgical care would be cost-ineffective. Although it is true that, as it is delivered in industrialized countries, surgical care would be cost-ineffective. However, there are several potentially important domains of surgical care in which highly cost-effective, life-saving treatment is possible—caesarean section for mothers with obstructed labor, mastectomies for breast cancer, amputations for gangrene, emergent hernia repairs, and basic trauma care. Developing countries remain without a coherent plan for how such patients should be cared for.

To the ends of achieving access to surgical care and raising awareness of the issue of disparities in surgical care nationally and globally, in 2005 the Center for Surgery and Public Health convened an invitational conference on Disparities in Surgical Care: Access to Outcomes in Boston, Massachusetts. The goals of the conference were fourfold:

- Define disparities in health care from the surgical perspective
- Identify how social factors, access, and systems of care can affect surgical outcomes
- Discuss the local, national, and global impact of lack of access to surgical care
- Identify clinical and research areas to focus research, policymaking, and practice

This article summarizes the proceedings.

Access

In 2003, the National Institute of Medicine report “Unequal Treatment” [1] presented compelling evidence that disparities in care exist for minority populations in the United States, and it made recommendations for the elimination of healthcare disparities. Data are available for chronic illnesses, such as diabetes and cardiovascular disease, but surgical care is an understudied area of healthcare disparities. To date, attention has been focused on documenting disparities in surgical care, but few attempts have been made to systematically study and understand the complex determinants of disparities or to develop strategies to eliminate them.

Nationally, disparities in surgical care are a combination of complex patient, social, and institutional factors. The relative contributions of access and timeliness of surgical care to these disparities is not clear. For some conditions, like cancer, disadvantaged populations may present with more advanced disease. In addition to clinical presentation as an explanatory variable for outcome differences, access to specialists, such as surgeons, may also contribute. For example, in the Community Tracking Study, Bach et al. found that clinicians caring for black patients were less likely to report access to high-quality sub-specialists, high-quality diagnostic imaging, high-quality ancillary services, and non-emergency hospital admission [2]. Thus race and ethnicity may dictate the quality of patient care insofar as it is determined by location and access to providers. In our attempts to improve the quality of care overall, focusing on disparities may be a fruitful target for interventions as the overall quality of care will improve if we eliminate healthcare inequities.

Patient and social factors

In addition to issues of access, patient and social factors affect outcomes. Traditionally, surgical procedures are seen as discrete, episodic interventions where all patients are treated equally. However, several studies have suggested that race may be an independent predictor of poor outcomes following surgery [3–5]. Disparities in surgical care affect a wide range of disease systems, including cancer and cardiovascular care. A recent study using national Medicare data to evaluate the effect of race on postoperative mortality after eight major cardiovascular and cancer procedures [6] found that black race was associated with an increased risk of death in seven out of every eight procedures (88%), even when adjusting for severity of illness using a Charlson co-morbidity score. The effect of race on outcomes was attenuated, however, when controlling for the effect of the hospitals at which patients were treated. The structure of the hospitals in which certain populations receive care may lead to outcomes differences. Eliminating these outcomes differences will be an important step toward improving the overall quality of care.

Henschke et al. wrote a seminal paper that documented disparities between white and black Americans in cancer mortality [7]. Disparities in incidence and survival between blacks and whites have been well documented in prostate, breast, lung, and colorectal cancer [8, 9]. The exact etiologies of these disparities in cancer mortality have not been elucidated. For example, data from the Surveillance, Epidemiology, and End Results (SEER) Program found that black patients were less likely to receive surgical therapy for early stage lung cancer and less likely to survive than

white patients [10]. Hispanic patients have also been found to have lower rates of surgical resection than whites for early stage non-small-cell lung cancer [11]. One study evaluating factors that may account for differences in surgical rates of resection found that blacks were less likely to accept surgical treatment [12]. The underlying reason for these disparities in surgical resection rates has not been addressed, nor have strategies been suggested to eliminate these stark differences in treatment.

The problem of lack of access to insurance

In June 2006, the National Institute of Medicine released Hospital-based Emergency Care: At the Breaking Point [13], a publication that described the nationwide epidemic of overcrowded, underfunded emergency rooms throughout the United States. As the uninsured are more likely to use the emergency room as a source of primary care, the uninsured are disproportionately affected. Black and Hispanic Americans are more likely to be uninsured than whites. If outcome differences of underserved populations are not addressed, public reporting could lead to increased disparities of care as special populations are relegated to more emergency care. This "perfect storm" of poor outcomes combined with lack of access would likely lead to worsening disparities in health outcomes for disadvantaged populations.

Local initiatives in boston

In 2005, in the City of Boston, Mayor Thomas Menino and the Boston Public Health Commission published an extensive report, the Boston Disparities Project, which revealed that minority populations are less healthy than white, native-born Americans, have less access to treatment, and experience worse health outcomes. Boston was the first city in the nation to target the elimination of healthcare disparities as a priority. Mayor Menino brought together healthcare leaders and community-based coalitions to address narrowing this chasm. In response to the Mayor's call to eliminate healthcare disparities, Boston hospitals have begun to incorporate data on race/ethnicity, language, and education in their quality report cards to track disparities [14]. The City of Boston's experience will provide the rest of the nation with lessons learned, barriers to overcome, and progress to date.

The global perspective

The problem of access to surgical services and the resultant deficiencies in outcomes is not just a problem nationally in urban and rural settings but also a problem globally. Many developing countries have limited infrastructure to support surgical care, which requires surgeons, anesthesiologists, and a coordinated team of nursing and other personnel. Diseases and trauma that require surgical procedures are common, but access to surgical services is limited for many populations throughout the world. There has been little attempt to address this widening disparity in surgical care throughout the world.

Disparities in surgical care: access to outcomes conference

Given the complexity of the national and global problem, we believe that a multi-pronged approach to the elimination of surgical disparities in care from access to outcomes is necessary. Strategies on the national level will certainly differ from global strategies, particularly in the realm of health care delivery. As there is an increasing focus on patient safety and quality of surgical care, this is an opportune time to address the issue of disparities in surgical care.

By bringing together clinicians, hospital administrators, and researchers, we believe that practical steps can be designed to address the problem of surgical disparities in care nationally and globally. Identifying disparities in surgical care as a problem for which we need a concrete set of strategic solutions is useful for the community of patients, providers, and policy makers. In a unique manner, this Access to Outcomes conference brought together surgeons, anesthesiologists, nurses, other clinicians, and health services researchers to develop approaches to go from research to practice. The synergy of population-based research and clinical practice may allow the surgical healthcare team of the near future to implement changes to achieve health equity in surgery.

With the remarkable group of leaders in medicine and surgery assembled at this conference, we addressed the issue of disparities in surgical care from local, national, and international perspectives. Quoting the late Thomas "Tip" O'Neill, the 55th Speaker of the U.S. House of Representatives, "all politics are local." All disparities in surgical care are local too, but the impact extends to the global community. In this issue of the *World Journal of Surgery*, we present several articles from experts in the field who address the issues of disparities in surgical care, nationally and globally. John Ayanian, MD, MPP, a noted health services researcher, describes the bridge from academics to the community, using renal transplantation as a case study. Clifford Ko, MD, from UCLA and the American College of Surgeons, sets a research agenda for disparities in surgical care. Jim Kim, MD, PhD, of Partners in Health,

formerly with the World Health Organization, examines the delivery of surgical care in the developing world. Jane Weeks, MD, MPH, Caprice Greenberg, MD, MPH, and Steven Stain, MD led a breakout session that examined disparities in oncological care. Stanley Ashley, MD, and JudyAnn Bigby, MD, the Secretary of Health of the Commonwealth of Massachusetts, discuss the impact of patient–provider interactions on surgical disparities. Paul Farmer, MD, PhD, a champion of global health for the poor, discusses surgery for resource-poor settings.

We hope that this series of manuscripts on the issue of surgical care, access, and outcomes stimulates interest and efforts to improve surgical care delivery throughout the world.

References

1. National Institute of Medicine (2003) Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. National Academies Press, Washington, DC
2. Bach PB, Pham HH, Schrag D, et al. (2004) Primary care physicians who treat blacks and whites. N Engl J Med 751:575–584
3. Ball JK, Elixhauser A (1996) Treatment differences between blacks and whites with colorectal cancer. Med Care 34:970–984
4. Bridges CR, Edwards FH, Peterson ED, et al. (2000) The effect of race on coronary bypass operative mortality. J Am Coll Cardiol 36:1870–1876
5. Godley PA, Schenck AP, Amamoo MA, et al. (2003) Racial differences in mortality among Medicare recipients after treatment for localized prostate cancer. J Natl Cancer Inst 95:1702–1710
6. Lucas FL, Stukel TA, Morris AM, et al. (2006) Race and surgical mortality in the United States. Ann Surg 243:281–286
7. Henschke UK, Leffall LD Jr, Mason CH, et al. (1973) Alarming increase of the cancer mortality in the U.S. black population (1950–1967). Cancer 31:763–768
8. Axtell LM, Myers MH (1978) Contrasts in survival of black and white cancer patients, 1960–73. J Natl Cancer Inst 60:1209–1215
9. Howard J. Hankey BF, Greenberg RS, et al. (1992) A collaborative study of differences in the survival rates of black patients and white patients with cancer. Cancer 69:2349–2360
10. Bach P, Cramer L, Warren J, et al. (1999) Racial differences in the treatment of early-stage lung cancer. N Engl J Med 341:1198–1205
11. Wisnivesky McGinn T, Henschke C, et al. (2005) Ethnic disparities in the treatment of stage I non-small-cell lung carcinoma. Am J Respir Crit Care Med 171:1158–1163
12. McCann J, Artinian V, Duhaime L, et al. (2005) Evaluation of the causes for racial disparity in surgical treatment of early stage lung cancer. Chest 128:3440–3446
13. National Institute of Medicine (2006) Hospital-based Emergency Care: At the Breaking Point. National Academies Press, Washington, DC
14. Boston Public Health Commission Boston Disparities Project, 2005