Global Surgical Oncology: Addressing the Global Surgical Oncology Disease Burden

T. Peter Kingham, MD¹ and Sandra L. Wong, MD, MS²

¹Department of Surgery, Memorial Sloan Kettering Cancer Center, New York, NY; ²Department of Surgery, University of Michigan Health System, Ann Arbor, MI

Cancer care is quickly becoming a key component of global public health efforts. At the same time, the cancer incidence rate in low- and middle-income countries (LMIC) continues to increase dramatically. Only 15 % of cancers reported in 1970 were in LMIC, but 70 % is the proportion predicted by 2030.¹ Global organizations, including the United Nations, the World Health Organization, and their International Agency for Research on Cancer, the U.S. National Cancer Institute Center for Global Health, and the Lancet Global Surgery Commission, have recognized the increasing severity of this problem. Approximately two-thirds of worldwide cancer deaths now occur in LMIC.²

In addition, the distribution of types of cancers seen in LMIC is shifting, concurrent with the global cancer transition characterized by increasing incidence rates of cancers with noninfectious etiology, such as breast, prostate, colorectal, and lung cancers.³ Explanations for this shift include the aging of and lifestyle changes within populations, both of which are attributed to economic development.

Wide disparities exist between LMIC and high-income countries with respect to cancer patients' access to care and rates of survival. Specifically, the ratio of incidence of cancer to mortality from cancer is low (46 %) in high-income countries and high (75 %) in LMIC.⁴ Factors contributing to the high mortality rate are many: poor alcohol and tobacco management, lack of vaccination

strategies to prevent infectious causes of malignancy, absence of screening programs, struggling health care infrastructure, shortage of health care workers (with few career training programs focusing on oncology), unaffordability of oncology care (specifically chemotherapy), limited access to surgery and radiation, and few palliative care efforts. Although this list is daunting, the challenge is similar in size and scope to that faced by the health care community when HIV/AIDS first appeared.

Surgeons are often at the center of cancer treatment efforts in LMIC, making diagnoses, offering surgical treatments, and frequently providing chemotherapy. Despite this pivotal role, there are few large-scale efforts to improve access to oncologic surgical care. Thus, it is imperative for surgeons to assume a leadership role in addressing the burden of global cancer. In this special issue of *Annals of Surgical Oncology*, we present a series of review articles that highlight global surgery issues spanning the domains of training a sustainable surgical workforce, improving specific aspects of clinical care, and establishing research collaborations.

First, Chandra Are and Charles Balch discuss the development of training programs in the world's oncology community, highlighting both clinical and academic needs of surgeons treating cancer in LMIC. The continued development of streamlined surgical training programs that include dedicated oncology training is reviewed in the context of health care needs in LMIC.

We then shift our focus to examples of successful clinical efforts to address cancer care in LMIC. Ben Anderson highlights the Breast Health Global Initiative and their work in engaging key stakeholders and using resource-stratified clinical care guidelines. Next, Lyn Denny describes her work in low-resource settings focusing on cervical cancer screening, including work related to large randomized clinical trials.

Global surgery initiatives and research collaborations are highlighted by Lisa Newman, who has bridged studies of triple-negative breast cancer from Ghana to the United States. Peter Kingham then describes his work in prospective data collection in Nigeria on colorectal cancer and screening with colonoscopy. This initiative focuses on building robust databases and a biobank. Finally, Murray Brennan discusses the role of cancer centers in global health delivery.

It is our hope that this series of articles will serve as an educational resource and also highlight some of the ongoing work in global surgical oncology. Humanitarian outreach efforts will require continued collaborations to help develop a sustainable workforce and maintain research collaborations while attending to the growing need for oncology care in LMIC.

DISCLOSURE The authors declare no conflict of interest.

REFERENCES

1. Boyle P, Levin B, editors. World cancer report, 2008. Lyon: International Agency for Research on Cancer; 2008. <http://www.iarc.fr/en/publications/pdfs-online/wcr/2008/>. Accessed January 4, 2015.
2. Economist Intelligence Unit. Breakaway: the global burden of cancer—challenges and opportunities. August 2009. http://graphics.eiu.com/upload/eb/EIU_LIVESTRONG_Global_Cancer_Burden.pdf. Accessed January 4, 2015.
3. Bray F, Jemal A, Grey N, Ferlay J, Forman D. Global cancer transitions according to the Human Development Index (2008–2030): a population-based study. *Lancet Oncol*. 2012;13:790–801.
4. Farmer P, Frenk J, Knaul FM, et al. Expansion of cancer care and control in countries of low and middle income: a call to action. *Lancet*. 2010;376(9747):1186–93.