Title: Assessing burden of surgical disease in Cambodia

Authors: Ma Wai Wai Zaw¹, Hui Xiang Chia², Kim Savuon³, Pheak Chhoun⁴, Hang Leang Taing⁵, Siyan Yi⁶, Hiang Khoon Tan⁷, Chee Hsiang Liow⁸

Affiliations:
¹Consultant, Department of Anaesthesiology and Intensive Care, Singapore General Hospital; member, SingHealth Duke-NUS Global Health Institute, Singapore
²Research Assistant, Saw Swee Hock School of Public Health, National University of Singapore
³Deputy Director, Department of Hospital Services, Ministry of Health, Cambodia
⁴Research Fellow, KHANA Center for Population Health Research, Cambodia
⁵Research Assistant, KHANA Center for Population Health Research, Cambodia
⁶Director, KHANA Center for Population Health Research, Cambodia
⁷Director, SingHealth Duke-NUS Global Health Institute, Singapore
⁸Vice-Dean (Education), Saw Swee Hock School of Public Health, National University of Singapore

Correspondence: Ma Wai Wai Zaw (email: ma.wai.wai.zaw@singhealth.com.sg)

Background: Despite growing recognition on the importance of global surgery and theoretical models suggesting highest unmet needs in Southeast Asia (SEA), there is paucity of literature characterising the burden of surgical diseases within each SEA country. We sought to evaluate burden of surgical diseases in Cambodia to inform health planning and priority-setting.

Methods: An anonymised survey was electronically administered with the support of health ministry and district representatives to healthcare providers to determine the proportion of patients who should or would require a surgeon in their management for a given disease category, regardless of the need for surgery. Survey was available in Khmer and English, and was endorsed by health ministry and district representatives. The proportions were then multiplied by estimates of burden of disease in Cambodia taken from the Global Burden of Diseases 2019 study to derive surgical disease burden.

Results: A total of 214 respondents participated in the survey. Thirty-seven were surgeons or anaesthesia providers. 53.5% of participants worked in national hospitals, and 43.2% interacted with surgical patients daily. Cancers, digestive and liver diseases were disease categories with the highest ratings in terms of surgical input required. Overall, respondents estimated that surgical conditions constituted 30.1-34.5% of total disease burden in Cambodia, depending on whether burden is defined in terms of deaths or Disability-Adjusted Life Years (DALYs) lost. Providers from CPA-3 and national level hospitals predicted 35.7% and 31.2% of Cambodia’s burden of deaths and DALYs lost to be surgical, respectively. Burden estimates were interestingly lower for surgeons than non-surgeons. However, no statistically significant differences were observed between surgeons versus non-surgeons, or between higher and lower levels of care.

Conclusion: Surgical disease burden estimates in Cambodia are above prior global estimates, underscoring the value of upscaling surgical health services to meet a significant portion of the country’s health needs.

(300 words)

Keywords: Cambodia, disease burden, global surgery
Acknowledgements: The authors are grateful to the Cambodian Ministry of Health, district health and hospital representatives from participating institutions, without whose help and support this would not have been made possible.

Funding – This project was supported by the SDGHI and SSHPSH Joint Funding Initiative on Global Health Research in Asia, which is administered by Saw Swee Hock School of Public Health, Singapore.

Footnote

Conflicts of interest – None to declare.

Ethical Statement – The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.