



International organisations in global surgery: challenges and opportunities

Tarinee Kucchal^{1,2,3}, Manon Pigeolet^{1,4,5}, Myron Rolle¹, Walter D. Johnson^{6,7}, Kee B. Park¹

¹Program in Global Surgery and Social Change, Harvard Medical School, Boston, MA, USA; ²Department of Surgery, Austin Hospital, Melbourne, Australia; ³Department of Surgery, Tan Tock Seng Hospital, Singapore, Singapore; ⁴Faculty of Medicine, Université Libre de Bruxelles, Brussels, Belgium; ⁵Faculty of Medicine and Health Sciences, University of Antwerp, Antwerp, Belgium; ⁶Department of Surgery, Neurosurgery and Public Health, Loma Linda University, Loma Linda, CA, USA; ⁷Center for Global Surgery, Loma Linda University, Loma Linda, CA, USA

Contributions: (I) Conception and design: All authors; (II) Administrative support: T Kucchal; (III) Provision of study materials or patients: All authors; (IV) Collection and assembly of data: T Kucchal, M Pigeolet, M Rolle; (V) Data analysis and interpretation: All authors; (VI) Manuscript writing: All authors; (VII) Final approval of manuscript: All authors.

Correspondence to: Dr. Tarinee Kucchal, MBBS. 641 Huntington Avenue, Boston, MA 02115, USA. Email: tarinee_kucchal@hms.harvard.edu.

Abstract: Over the past decades, single disease programs have garnered significant international attention. In contrast, surgical care has been afforded low priority in some of the world's poorest regions, leaving 5 billion people living without access to safe surgical care. The Lancet Commission on Global Surgery was the first of its kind to shine a light on the gross disparities in surgical access around the world, and called for the coordinated, sustainable, solution-orientated efforts of the global network to ensure universal access to safe, timely and affordable surgical, obstetric and anesthesia (SOA) care. With that, the Global Surgery movement began. This paper explore the roles played thus far by international organisations in the Global Surgery movement, including the World Health Organisation, UNITAR, UNICEF, the World Bank and the regional blocs. Prior to the Commission, the WHO had already initiated efforts to strengthen surgical access and quality improvement by establishing the Emergency and Essential Surgical Care (EESC) Programme, and developing the Surgical Safety checklist, Patient Safety Pulse Oximetry Project, Safe Childbirth checklist, Guidelines for Essential Trauma Care and Standards for Surveillance of Neuro-trauma. Since the Commission, the larger global community began to engage with the initial adoption of the global surgical indicators into the World Bank Indicators, development of the 3rd edition of the Disease Control Priorities, and regional participation in the development of National Surgical, Obstetric and Anesthesia Plans. But as the initial fervour settles, the Global Surgery movement now faces challenges in capturing the public attention, driving national, regional and global participation in ensuring surgical access, and addressing the constrained fiscal space. COVID-19 may appear to pose a new challenge, however this can still be an opportunity. With a shifting global focus on health systems strengthening, international organisations have chance to incorporate surgical systems strengthening as component of pandemic preparedness and reaffirming their commitment to advancing Global Surgery, so it may realize its vision of universal access to safe, timely, affordable surgical and anesthesia care for all.

Keywords: Global health; surgery; international agencies; public health systems research

Received: 14 September 2020; Accepted: 20 October 2020; Published: 25 December 2020.

doi: 10.21037/jphe-2020-gs-10

View this article at: <http://dx.doi.org/10.21037/jphe-2020-gs-10>

The field of Global Health has progressed rapidly over the last 30 years, yet surgical care has been referred as the “neglected stepchild of global health” (1). 2015 marked a pivotal year for surgery in public health with the simultaneous publication of the Lancet Commission on Global Surgery (LCoGS) (2), the World Bank Group’s Disease Control Priorities (3rd Edition) (DCP3) (3) and the World Health Assembly (WHA) resolution 68.15 (4). Together, they collectively characterized the global burden of surgically amenable conditions, called for strengthening surgical systems, and recognized surgical, obstetric and anesthesia (SOA) care as essential components of universal health coverage (UHC). Since then, the impact of global surgery has been observed on many levels. Broad reaching international organizations have supported the upscaling of timely, safe, and affordable surgical services across continents and across hemispheres, development finance agencies have made concerted efforts to invest in SOA care, and regional blocs with shared resources and interests, and focused interests are strengthening access to surgical care through collaboration. We focus on the roles these stakeholders have played in the Global Surgery movement to date, highlight the challenges faced, and explore opportunities for progress.

Multilateral organisations

World Health Organization (WHO)

The WHO, the health technical arm of the United Nations and one of the foremost public health organizations of our times, is “the global guardian of public health” (5,6). Early on WHO understood the need for addressing access to surgical care globally as a component of primary health care (5). Former WHO Director-General Halfdan Mahler’s speech in 1980 remains essential to the collective memory of the Global Surgery Movement, where he stated:

“Social injustice is socially unjust in any field of endeavour, and the world will not tolerate it for much longer. So the distribution of surgical resources in countries and throughout the world must come under scrutiny in the same way as any other intellectual, scientific, technical, social or economic commodity. The era of only the best for the few and nothing for the many is drawing to a close (7)”.

However, in a word of caution, Dr. Mahler pointedly calls for the active engagement of the international surgical community in advancing the surgical agenda for public health, or have it fail. Early on he asked the surgical community to prioritize the training of undergraduate

and postgraduate doctors, nurses, and other healthcare workers in surgery. He asked we prepare training modules in essential surgery for service providers in the first line referral hospitals so they may be proficient in provide quality essential surgical care in operating theatres, pre-operative and postoperative settings, to all who needed it (7).

In the 40 years since, WHO has increased its role in global surgery in line with its mandates and core functions: providing leadership, shaping research agendas, setting norms and standards, articulating ethical and evidence-based policy options, providing technical support and monitoring health trends (8).

WHO currently fulfills the majority of these tasks through the Emergency and Essential Surgical Care (EESC) Programme, which was founded in December 2005 (9,10). The EESC Programme’s activities have included supporting member states in developing evidence-based policies and strengthening their surgical capacity (10). To facilitate its work, the EESC Programme established the WHO Global Initiative for Emergency and Essential Surgical Care (GIEESC), a global forum to foster the exchange of knowledge and sharing experiences between governments, ministries of health, non-governmental organizations and others involved in addressing the critical gaps in access to surgery (9). One of the more tangible deliverables from the EESC Programme was the development of the Integrated Management for Emergency and Essential Surgical Care (IMEESC) toolkit. This includes evaluation tools, disaster management resources, training videos and manuals and surgical manuals for surgical, obstetrics, trauma and anesthesia care for direct implementation at the district level hospital (9,11).

By 2008, WHO identified surgical patient safety as another key domain requiring attention. Together with the World Alliance for Patient Safety, they developed the now widely and globally implemented Surgical Safety Checklist (12,13), which has proven to be effective in reducing post-operative complications and surgery-related mortality in any surgical setting, including both high-income countries (HIC) and low- and middle-income countries (LMIC) (13). However, WHO recognized that greater efforts were required to deliver safe surgical and anesthesia care (14), especially when considering structural lack of pulse oximeters and other monitoring in hospitals—a vital tool required for the delivery of safe anaesthetic services in many low resource settings (15). To address this, WHO, together with the World Federation of Societies of

Anesthesiologists (WFSA), a non-state actor with official relations with WHO, the Association of Anaesthetists of Great Britain and Ireland (AAGBI) and Harvard School of Public Health, organized the WHO Patient Safety Pulse Oximetry Project. This project aimed to develop a low-cost all-round pulse oximeter to be available in every operative room (16).

Finally, the WHA, the governing body of the WHO, which includes all 194 member states, came together to prioritize surgical care at the global level. At the 68th WHA in May 2015, health ministers of 194 countries unanimously adopted the resolution 68.15: Strengthening EESC and anesthesia as a component of universal health coverage (4). Resolution 68.15 firmly established surgery as a vital part of UHC and as a vital part of the global agenda (17). In an effort to keep the member states accountable, the 70th WHA also decided to incorporate surgery into biannual reporting mechanisms on the attainment of UHC by 2030 (18). With the passage of the resolution 68.15 and the Decision Point 70.22, the WHO is accountable for implementing its action points contained in the resolution as well as supporting member states with implementing their portion of the resolution.

The Western Pacific Region, in response to several health ministers that are fully trained surgeons in the region, successfully adopted “safe and affordable surgery” into its Regional Agenda and developed an action framework for member states. In so doing, core resources will be allocated to hire staff to support the implementation of the action framework. Following this example, other WHO Regional Offices such as Africa or Southeast Asia are encouraged to start considering this important step.

As a relatively new program, a key challenge is the lack of dedicated funding and new sources will need to be identified. The WHA resolution 68.15 called for WHO to allocate over USD \$4.2 million over a 2-year period to fund additional personnel at WHO HQ and one dedicated person in each of the regional offices. Unfortunately, actual resource allocations fell far short of this goal. Unless donors come forth to fund hiring several additional employees at WHO headquarters and Regional Offices, WHO will continue to be limited in its ability to fulfil the mandates of the resolution. Not surprisingly, the COVID-19 pandemic has diverted resources, including key personnel, away from surgical care. As of this writing, the position of the Lead for the EESC Programme remains unfilled.

United Nations Institute for Training and Research (UNITAR)

The UNITAR is a more recent entrant to the Global Surgery field, stepping into the arena after the passage of the WHA 68.15 resolution with the intent of expanding its health portfolio (19). UNITAR provides high-quality training and capacity building solutions to governments and individuals within the UN system (19). Over the past 2 years, they have teamed up with major stakeholders to bring surgery into the mainstream global health discussions (20,21). The key activities to date include the imminent publication of the “National Surgical, Obstetric, and Anesthesia Plan (NSOAP) Development Manual”, supporting the development of the NSOAP in Nepal, development of a “Surgical Safety Checklist” App, and scaling up of the Non-Technical Skills for Surgeons training program. Most recently, UNITAR’s global surgery programs have gone virtual with webinars on the impact of COVID-19 on surgical care in LMICs and a series of webinars on NSOAP development planned for the rest of the year. As the main UN agency for training and research, UNITAR has the potential to provide training in policy development as well as surgical skills and support the building up of research capacity in LMICs. The main limiting factor is the availability of funding.

UNITAR also hosts the Global Surgery Foundation (GSF). Announced during the World Economic Forum in January 2020, the GSF can play a key role in large-scale resource mobilization to fund national surgical strengthening projects (22). Because of its close relationship with the global surgery programme within UNITAR, its current focus is to mobilize resources to support the development of NSOAPs in Nepal and the Eastern Mediterranean region, as well as capacity building efforts in Angola, and the development of global surgery training courses (23,24). Since surgical system strengthening is a complex process, the GSF could function as a technical as well as funding partner to the recipient countries. By rigorously evaluating the progress and the final impact of the grants, the GSF could ensure efficient and effective use of grants to build sustainable surgical systems.

As the pandemic rages on, major development donors including HICs are committing funds toward COVID-19 response and preparedness in LMICs. Rather than simply doling out random grants, the GSF could serve as the custodian of these funds and responsibly allocate grants

based on need and income levels, and set up outcome goals and performance metrics to monitor grant effectiveness in achieving expansion of functioning surgical system that can become pandemic treatment capacity when needed.

United Nations International Children's Emergency Fund (UNICEF)

The UNICEF is charged with defending children's rights, reducing child mortality worldwide and help them fulfill their potential (25). With this mandate, UNICEF is very well positioned to take on a leadership role to fight for access to surgery and anesthesia care for the world's children and adolescents.

Unfortunately, UNICEF remains rather absent from the Global Surgery stage at this time, but initial progress appears to be promising. The current advocacy gap at the global stage for pediatric surgical care is partly being filled by the Global Initiative for Children's Surgery (GICS) (26). In their efforts to build surgical capacity and strengthen health systems, GICS works together with various external organizations, including UNICEF (27). It is clear the pediatric surgery arena needs further attention and dedicated support from international organizations to create the traction needed to effect change. UNICEF is perfectly placed to take on this role in collaboration with WHO, where together they can make a change for 1.7 billion children currently lacking access to surgery and anesthesia services (28).

Development finance institutions

The World Bank Group (WBG)

From its origins in 1944, the WBG's purpose has evolved from rebuilding Europe to advancing opportunities for development in LMICs (29). Its mission however remains two-fold: to end extreme poverty to no more than 3%, and to promote shared prosperity by fostering income growth for the bottom 40% of every country (30). This is achieved by providing financial and technical assistance to developing countries to strengthen public sector institutions and spur private sector growth (31). These efforts are coordinated through its five institutions: the International Bank for Reconstruction and Development (IBRD) and International Development Associations (IDA) who provide government loans and grants (and collectively represent the World Bank); the International Finance Corporation

(IFC) who provide loans and equity to stimulate private sector investment in LMICs; the Multilateral Investment Guarantee Agency (MIGA); and the International Centre for Settlement of Investment Disputes (ICSID) (29).

In 2019, the WBG contributed a total of \$62.3 billion in loans, grants, equity investments, and guarantees to partner countries and private businesses around the world (29), and its contribution to health remains significant. In FY2019, health spending accounted for 7.5% (\$3.4 billion) of IRBD and IDA spending collectively, and although this reflects a 20% reduction in health-related expenditure from FY2018, this still represents one of WBG's top 5 investment sectors, after public administration and energy (32).

Within the world of Global Surgery, the WBG's participation has not been financial, but it has been supportive. Following the release of the LCoGS, and under the leadership of Dr. Jim Y. Kim, the WBG's Development and Economics Data Group (DECG) took the first major step to contributing to Global Surgery and recognizing its legitimacy when they included, collected and published data on four of the six primary surgical indicators set forth by LCoGS in the World Development Indicators (WDI): specialist surgical workforce density, number of surgical procedures performed, risk of impoverishing expenditure for surgical care, and risk of catastrophic expenditure for surgical care (33). This marked the very first attempt to systemically and comprehensively collect primary data on surgical systems on a global scale. The WBG's second major contribution to Global Surgery was the publication of a dedicated volume on Essential Surgery in the Disease Control Priorities, 3rd Edition in 2015 (34). This defined 44 essential procedures for developing countries that would address substantial health needs, in a cost effective and feasible way. This further established the importance of surgical obstetric and anaesthetic services as a fundamental component of UHC, and provided health ministries with categorical cost-analysed surgical services that could be included in future health policy. Finally, the ICF has a history of investing in the private health sector. With regards to surgical services, the IFC has played a catalytic role in funding initiatives that improve access to ophthalmological services in China (35), increase importation of medical devices to South Africa (36), expanding hospital access in the Middle East and North Africa (MENA) (37), and treating cataracts in Mexico (38).

While these are notable efforts, the WBG does have the opportunity to do more. Firstly, a review of the WDI in 2020 demonstrates that reporting data on the remaining

indicators remains scant. Since 2017, only 17 additional datapoints have been collected across the board (33). This is no doubt due to the local challenges faced in collecting this information at the national level, and coordinated efforts between governments, experts, health institutions and other stakeholders will be fundamental to making the collection of SOA data sustainable and standard practice (39). The most significant role the WBG can play in Global Surgery would be to facilitate the funding and development of surgical systems strengthening. This can take the form of implementing the NSOAPs, which are country-driven plans that reform governance, finance, workforce, service delivery, infrastructure and information systems for the purpose of improving SOA access. Notably, in the current COVID-19 environment, the WBG has commenced 72 COVID-19 emergency response and pandemic preparedness projects around the world (40) that aim to strengthen systems to improve pandemic-responses. This process in itself provides the WBG an opportunity to consider the significance of SOA services in health systems strengthening as well as their role in emergency preparedness (41), and include these in development plans for the future. The WBG can also support surgery through catastrophic insurance financing. As with the 2014 Pandemic Emergency Financing Facility (PEF) following the Ebola outbreak, and now with COVID-19, surge financing provides catalytic funding for an insurance market for catastrophic expenditure in LMICs (39). The WBG may consider similar mechanisms in the future to create a market that protect against impoverishing and catastrophic expenditures associated with surgical care, and ultimately protect against poverty (31). The IFC's future global surgery strategy can be two-fold; first to engage with private health institutions, as they have previously done India and MENA, to expand access to SOA care, and secondly to engage with private sector stakeholders to seek and fund innovative methods for SOA care delivery.

Global Financing Facility (GFF)

The GFF was launched in order to scale and sustainably finance Reproductive, Maternal, Newborn, Child and Adolescent Health and Nutrition (RMNCAH-N) outcomes (42). As a financing facility, it leverages resources from the IDA and IBRD, domestic government resources, aligned external financing and the private sector (43). By increasing the fiscal space for RMNCAH-N by up to UD\$50–75 billion (42) and improving efficiencies in

financing, it also breaks the cycle of external assistance reliance for LMICs resulting in greater sustainability in RMNCAH-N programs (43). The Global Surgery agenda overlaps and aligns with the GFF's primary objectives to reduce the maternal mortality ratio, under-five mortality rate and neonatal mortality rate and achieving UHC (44). Not only are SOA services essential to UHC, but maternal, under-five and neonatal mortality outcomes are directly impacted by ease of access to emergency SOA care (2).

The GFF has successfully increased the number of assisted deliveries by 14%, and antenatal consultations by 6% in the priority provinces in the Democratic Republic of Congo, improved access to quality obstetric and newborn care in Tanzania by implementing a rating system to evaluate health facilities' structural and service-delivery quality and establish the Basic Health Care Provision Fund (BHCPF) in Nigeria, to name a few achievements (45).

A handful of countries that are actively participating with the GFF have developed NSOAPs. Tanzania is one such country. Despite being invited by the GFF to submit investment cases arising from the NSOAP, no grants from the GFF has been awarded to date. Although, in theory, surgical interventions for children, neonates and mothers are eligible for GFF grants and loans, execution has been difficult. One factor lies with the weak managerial and governance capacity of the ministries of health in these LMICs. Addressing these administrative gaps may be key to accessing the GFF funds.

Future expansion plans seek to expand innovative financing methods, establish its explicit support for the UHC agenda and health systems strengthening, foster multisector engagement, and to target a more systemic approach to implementation (45). It is imperative that the role of SOA services continue to be considered in the development and implementation of future initiatives.

United States Agency for International Development (USAID)

USAID is the primary body for international humanitarian efforts and development for the U.S Government. It supports U.S political and strategic aims by leading initiatives to alleviate poverty, improve health and promote democratic governance globally. It has been responsible for providing over US\$20 billion in assistance to over 120 countries (46). Its global health efforts focus on investments in health systems strengthening and innovation through three strategic categories: preventing child and maternal

deaths; controlling the HIV/AIDS epidemic; and combating infectious diseases (47). Although surgery is not explicitly listed as a priority, initiatives that target maternal and child health and health-systems strengthening undeniably impact surgical care access. Moving forward, USAID similar to the WBG, can provide the technical, administrative and financial support to strengthen surgical systems, particularly NSOAPs. They may also consider broadening the scope of their strategy to include non-communicable disease (NCDs) and surgically amenable diseases; 70% of deaths globally are attributable to NCDs (and climbing), while 30% of globally deaths are attributable to surgically-amenable causes, including NCD's and trauma (48). This represents a significant burden of global disease that impedes health progress, drives poverty, and directly opposes the USAID's objects. Finally, USAID's Demographic and Health Surveys (DHS) Program can play a pivotal role in data collection for surgical indicators globally. While surgical services may be indirectly captured in existing surveys for child health, infant and child mortality and maternal health (49), a dedicated Surgery, Obstetrics and Anesthesia Survey would have a significant impact for the Global Surgery movement. Not only would this enable governments to collection national data on the status of SOA care to better inform health policy but would also directly contribute datapoints to the WDI's and provide a global picture on the current challenges and shortfalls in SOA care provision around the world.

Regional blocs

Regional organizations, using inter-country alliances, attempt to strengthen development efforts through maintaining a balanced structure, promoting ownership among national and local stakeholders, utilizing regional assets, implementing adaptive capacity, aligning with global movements and taking intersectional action (50). By leveraging this collaborative power, global surgery efforts can make a profound impact on populations. Indeed, there are several regional organizations currently leading the Global Surgery movement. However, there are others who have yet to realize their potential.

South African Development Community (SADC)

The SADC is an intergovernmental organization that comprises sixteen member states in Africa, 345 million people, and a collective GDP of USD \$721.3 billion (51).

In general, SADC aims to attain an acceptable standard of health for all citizens through a protocol on health, regional development priority and a comprehensive health policy framework addressing education, research, nutrition, food safety and reproductive health (51).

Specifically, within global surgery, in 2018 a resolution was ratified at the annual senior officials and health ministers conference, formally recognizing the role of surgical care in attaining regional development goals (52). Zambia was the first country to implement the NSOAP and has served as the region's model for the development of surgical care (53). Namibia, Zimbabwe, Botswana and Malawi have all developed an NSOAP. Full buy-in from leading stakeholders has posed a challenge to the region. South Africa, for example, the most populated SADC member state, has been slow to adopt NSOAP as a part of their National Health Insurance which critics say inhibits the full scale of surgical systems improvement limiting progress towards the sustainable development goals.

Caribbean Community (CARICOM)

The CARICOM is a functionally cooperative group of twenty countries: fifteen member states and five associate members all comprising approximately sixteen million citizens from the main ethnic groups of Indigenous Peoples, Africans, Indians, Europeans, Chinese, Portuguese and Javanese (54). Under the pillar of social and human development, the main health arm of CARICOM is the Caribbean Public Health Agency which combines the regional health institutes involved in research, epidemiology, food and nutrition, environmental health and drug testing (54).

With regards to global health engagement, CARICOM has mobilized resources to fight the coronavirus pandemic and have been active in addressing emerging non communicable diseases, cancer screenings and cancer therapies (55-57). Collective global surgery engagement has not been as robust. Isolated training and quality improvement programs have developed for neurosurgery, cardiac surgery and general surgery in various Caribbean countries using an in-country connection with HIC partners (58-60). Natural disasters and hurricanes have devastated some CARICOM nations which opened the door to global health and, more specifically, global surgery. The University of the West Indies, a partner of CARICOM, has the leadership, resources, infrastructure and network with member state governments to spearhead global surgery

efforts. CARICOM is a very fertile organization to develop an NSOAP, however, a systems-based, concentrated global surgery push has yet to fully materialize.

South Asian Association for Regional Cooperation (SAARC)

The SAARC comprises eight member states with the objective to promote welfare, improve quality of life, accelerate economic growth and social progress as well as strengthen cooperation regionally and internationally (61). The SAARC Surgical Care Society (SSRC) is an approved arm of SAARC since 2002 that aims to promote understanding and cooperation amongst Surgeons, Surgical Associations, Colleges, Societies and Organizations in the region (61). The Journal of Surgery Pakistan is directly affiliated with SAARC, offered at a reduced price to contributors from member states. This journal has published on global surgery equity and aims to drive policies and health care guidelines within the region (62). SAARC has placed an emphasis on workforce development through educational initiatives and surveys mapping specialty interests in young surgeons and medical students (63). SAARC has held conferences for individual surgical specialties addressing governance, infrastructure and finance and has convened with heads of state regarding upscaling surgical care (64-66). Despite effectively addressing NSOAP health reform domains through individually separate channels, a cohesive and collaborative global surgery improvement strategy amongst the SAARC member states may prove to be even more impactful.

Association of Southeast Asian Nations (ASEAN)

The ASEAN comprises of ten member states in Southeast Asia, including Indonesia, Malaysia, Singapore, Thailand, Philippines, Brunei Darussalam, Lao PDR, Myanmar, Vietnam and Cambodia (67). Established in 1967, ASEAN's purpose is to accelerate regional economic growth, social progress and cultural development, to promote peace and stability and active collaboration regionally and internationally (67). With a shared vision of a healthier and sustainable ASEAN Community, the ASEAN Health cooperation establishes the organizations health-related objectives, which were first formalized in the ASEAN Post-2015 Health Development Agenda (APHDA) (68). The agenda's priorities were divided into four clusters: (I) promoting healthy lifestyles, (II) responding to all hazards

and emerging threats, (III) strengthening health systems and access to care and (IV) ensuring food safety. The provision of safe, timely and affordable SOA care directly aligns with multiple key cluster priorities, namely the prevention and control of NCD, prevention of injuries, provision of UHC and development of human resources for health (HRH) and health financing (69,70). However, proposed activities to achieve these goals fail to recognize the importance of SOA access, service delivery and human resources. It is estimated that 91.1% of the population in Southeast Asia does not have access to surgical services (71). Without recognizing the significant role SOA care plays in controlling NCD's, preventing injuries and the provision of UHC, ASEAN will fail to successfully or sustainably fulfill these priority areas.

In its most recent best-practice recommendations to member states, the "Strengthening health systems and access to care" report (72) demonstrates a slightly greater recognition of SOA care. This provides strategies for the management and prevention of surgical site infections, shifting of surgical procedural care to cluster hospitals, increasing access to surgical specialists including obstetrics, surgeons and anaesthetists, and guidelines for the implementation of a Best Breast Care program for breast cancer screening and management. These recommendations however are not targets, and uptake is not guaranteed. Finally, in 2019 the 8th ASEAN Plus Three Health Ministers Meeting reaffirmed a commitment to achieving UHC, including financial risk protection and access to essential health services and tasked the Senior Officials' Meeting on Health Development (SOMHD) to accelerate ASEAN's progress towards this (73). A revised statement or strategy is yet to be developed, hindered by the shifting focus to COVID-19. Nevertheless, this provides a unique opportunity, and the ASEAN community should look upon this as a chance to finally include SOA care into development plans targeted towards health systems strengthening in response to COVID-19 (41).

The Pacific Community (SPC)

The SPC is the "principal scientific and technical organisation in the Pacific region, proudly supporting development since 1947." The 26 country and territory members own and govern the SPC. Serendipitously, a small number of ministers of health in this community are surgeons. For example, the Ministers of Health of Fiji, Tonga, and Palau are surgeons. Together, they helped organize an official side event on surgical care during

the 72nd World Health Assembly in May 2019. This was followed by all the health ministers committing to the strengthening of surgical care in the SPC during the Health Ministers meeting in August 2019. These ministers also played a key role in successfully putting surgical care on the agenda during the Western Pacific Regional Committee Meeting in October 2019 in Manila. With such focused leadership, the SPC has the opportunity to transform the region by improving access to timely, affordable, and safe surgical care.

Discussion

Forty years since the first recognition of essential surgery as a fundamental component of primary health coverage and “Health for All”, essential SOA care still remains inaccessible for the majority of the world’s population (74). 5 billion people do not have access to safe, affordable SOA care when needed (2). The inequity in access to surgical care is even more staggering. Where available, only 6% of surgical procedures performed worldwide occur in the world’s poorest regions, where over a third of the global population resides (2). Most importantly, investing in SOA care is affordable, saves lives and promotes economic growth (2). Surgical conditions represent nearly one-third of the global burden of disease and are a leading cause of death and disability worldwide (75). This burden is rapidly increasing as the entire globe shifts from communicable to NCD, and is most noted by evidence that cancer death rates alone will increase by 70% from 2018 to 2040 (76). If we address the burden now, we stand to prevent a cumulative economic loss in LMICs of US\$12.3 trillion by 2030 (2).

The momentum gained in 2015 following the publications of LCoGS, DCP3 and the WHA resolution 68.15 showed promise of progress, particularly with the inclusion of global surgery indicators in the WBG’s WDI and a global push for the development of NSOAPs. Unfortunately, as the initial fervour settles, our progress has begun to slow. Communicable and NCDs have understandably taken precedence in recent times, particularly following the outbreak of COVID-19. With limited resources, many argue that surgical services are not a priority, and are often too challenging to address. But the Global Surgery movement is not advocating for the prioritization of SOA care to the exclusion of communicable, non-communicable or other diseases. We advocate instead for the integration of SOA care as an indivisible, indispensable part of resilient health system that

provides a spectrum of care for every person, around the world.

Surgical care is a cost-effective, cross-cutting public health service that is critical for strengthening health systems, workforces, and health security; for advancing maternal and child health; and for treating NCDs, trauma, infectious diseases, and congenital issues. Without it, we will not be able to reach the UN Sustainable Development Goals or UHC by 2030. Furthermore, the delivery of safe surgery and anesthesia signals the presence of the “staff, stuff, space, and systems” of a responsive health care system (2). Such a system is capable not only of delivering surgical care, but also of treating a broad range of health challenges, whether it be malnutrition, obstetric complications, trauma, disaster response or infectious disease outbreaks and pandemics.

The COVID-19 is a glaring example that has demonstrated to us the importance of surgical and anesthesia services in the pandemic response. COVID-19 did not discriminate between high or low-income nations, and world round, any nation with inadequate critical care staff, anaesthetists, ventilators, PPE and hospital beds and general health workforce faced the consequences. On the other hand, some nations with adequate surgical capacity were able to proactively respond. Where surgical capacity was reduced to essential emergency and category-1 procedures, surgeons, surgical nurses and auxiliary staff were re-deployed to pandemic activities (77). Reducing baseline operating volumes freed up ICU resources for the critically ill COVID-19 patients (77) and unused anaesthetic machines were repurposed into ventilators for wards (78). Personal Protective Equipment (PPE) ordinarily stocked for operating purposes provided a buffer for PPE resources during case surges, until more supplies could be sourced (77). Surgical and anesthesia services provided the surge capacity that ultimately proved vital in a successful pandemic response.

COVID-19 is forcing the world to wake up to the reality that we are not immune to global health disasters and health-systems strengthening will be critical to ensuring global health security. Thankfully, the world is listening, and policy makers and international organisations alike are not waiting for a cure or vaccine. Instead they have sprung to action, focusing on bolstering our health services, filling the gaps in the system and concentrating on long term resilience. As we undertake this colossal effort, now more than ever we are faced with an opportune moment to reconsider the importance of

surgical care not only in our response systems, but our health-systems at large.

Conclusions

Surgical care is unequivocally a fundamental component of universal health coverage. The launch of the Global Surgery movement in 2015 was met with great enthusiasm and encouraging first efforts by international organisations to partake in what appeared to be the next big step in global health delivery. But, as we observe the movement loses some momentum, we must not lose sight of the bigger picture and ultimate goal. Building surgical capacity benefits an entire health system, empowers health workforce, alleviates poverty, ensures gender equity in health and contributes to healthier and more productive populations. Increasing access to safe surgical care also contributes to global health security by stimulating economic growth and national stability, encouraging foreign investment, and fostering regional stability. While acute global health emergencies may arise, we must always remain cognisant of the ongoing, underlying burden of disease the world still faces. As people die from COVID-19, others are still dying from cancer, trauma and complications of pregnancy and labour. However, COVID-19 has also given the world a once in a lifetime opportunity. As we investigate and invest in our health systems in response to the pandemic, it is also our chance to get this right once and for all. In the process of strengthening health systems, organisations must not forget the role global surgery plays in health-service delivery at large. The time to renew our commitment to global surgery and ensuring access for all is now.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the Guest Editor (Dominique Vervoort) for the series “Global Surgery” published in *Journal of Public Health and Emergency*. The article has undergone external peer review.

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at: <http://dx.doi.org/10.21037/jphe-2020-gs-10>). The series “Global

Surgery” was commissioned by the editorial office without any funding or sponsorship. The authors have no other conflicts of interest 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.

Open Access Statement: This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

1. Farmer PE, Kim JY. Surgery and global health: a view from beyond the OR. *World J Surg* 2008;32:533-6.
2. Meara JG, Leather AJM, Hagander L, et al. Global Surgery 2030: evidence and solutions for achieving health, welfare, and economic development. *Lancet* 2015;386:569-624.
3. Bickler SN, Weiser TG, Kassebaum N, et al. Global burden of surgical disease. In: Debas HT, Donkor P, Gawande A, et al. editors. *Disease Control Priorities. Volume 1: Essential Surgery* (3rd edn). World Bank: Washington, 2015:19-40.
4. World Health Assembly. Strengthening emergency and essential surgical care and anaesthesia as a component of universal health coverage [Internet]. Geneva; 2015 [cited 2020 Sep 8]. Available online: http://apps.who.int/gb/ebwha/pdf_files/WHA68/A68_R15-en.pdf
5. Ljungman D, Vaughan KA, Park KB, et al. World Health Organization: Leading surgical care toward sustainable development in the era of globalization. *Surgery* 2018;164:1137-46.
6. World Health Organization. The Global Guardian of Public Health [Internet]. Geneva; 2016. [cited 2020 Sep 9]. Available online: <https://www.who.int/about/what-we-do/global-guardian-of-public-health.pdf?ua=1>
7. Mahler H. Address By Dr H. Mahler Director-General of the World Health Organization to The XXII Biennial World Congress Of The International College Of

- Surgeons [Internet]. World Health Organization; 1980 Jun 29 [cited 2020 Sep 9].
8. World Health Organization. WHO | The role of WHO in public health [Internet]. World Health Organization 2020 [cited 2020 Sep 9]. Available online: <https://www.who.int/about/role/en/>
 9. Abdullah F, Troedsson H, Cherian M. The World Health Organization Program for emergency surgical, obstetric, and anesthetic care: From Mongolia to the future. Vol. 146, Archives of Surgery. American Medical Association; 2011:620-3.
 10. World Health Organization. Emergency and essential surgical care | About us [Internet]. World Health Organization. World Health Organization; 2020 [cited 2020 Sep 9]. Available online: <http://www.who.int/surgery/strategies/en/>
 11. World Health Organization. Emergency and essential surgical care | Integrated Management for Emergency and Essential Surgical Care (IMEESC) toolkit. World Health Organization 2020.
 12. World Alliance for Patient Safety. Implementation Manual Surgical Safety Checklist (First Edition) World Alliance for Patient Safety Safe Surgery Saves Lives. Geneva; 2008.
 13. Haynes AB, Weiser TG, Berry WR, et al. A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population. *N Engl J Med* 2009;360:491-9.
 14. Bolton WS, Aruparayil N, Quyn A, et al. Disseminating technology in global surgery. *Br J Surg* 2019;106:e34-e43.
 15. Hadler RA, Chawla S, Stewart BT, et al. Anesthesia Care Capacity at Health Facilities in 22 Low- and Middle-Income Countries. *World J Surg* 2016;40:1025-33.
 16. World Health Organization. Patient safety | Pulse oximetry [Internet]. World Health Organization 2020 [cited 2020 Sep 9]. Available online: https://www.who.int/patientsafety/safesurgery/pulse_oximetry/en/
 17. Roa L, Jumbam DT, Makasa E, et al. Global surgery and the sustainable development goals. *Br J Surg* 2019;106:e44-52.
 18. World Health Organization. Seventieth World Health Assembly: Resolutions and Decisions [Internet]. Geneva; 2017 May [cited 2020 Sep 9]. Available online: https://apps.who.int/gb/ebwha/pdf_files/WHA70-REC1/A70_2017_REC1-en.pdf
 19. United Nations Institute for Training and Research. Vision, Mission and Core Functions | UNITAR [Internet]. UNITAR 2020 [cited 2020 Sep 9]. Available online: <https://www.unitar.org/about/unitar/mission-vision-and-core-functions>
 20. United Nations Institute for Training and Research. UNITAR and Harvard Medical School's Program in Global Surgery and Social Change to Cooperate on Capacity Building | UNITAR [Internet]. UNITAR 2020 [cited 2020 Sep 9]. Available online: <https://unitar.org/about/news-stories/news/unitar-and-harvard-medical-schools-program-global-surgery-and-social-change-cooperate-capacity>
 21. United Nations Institute for Training and Research. UNITAR to Partner with McGill University's Center for Global Surgery | UNITAR [Internet]. UNITAR 2020 [cited 2020 Sep 9]. Available online: <https://unitar.org/about/news-stories/news/unitar-partner-mcgill-universitys-center-global-surgery>
 22. United Nations Institute for Training and Research. The Global Surgery Foundation officially launched at the World Economic Forum 2020 | UNITAR [Internet]. UNITAR 2020 [cited 2020 Sep 9]. Available online: <https://unitar.org/about/news-stories/press/global-surgery-foundation-officially-launched-world-economic-forum-2020>
 23. Global Surgery Foundation. About the GSF – Our purpose [Internet]. The Global Surgery Foundation 2020 [cited 2020 Sep 9]. Available online: <https://www.globalsurgeryfoundation.org/what>
 24. The Global Surgery Foundation. Programs – Global Surgery Foundation [Internet]. The Global Surgery Foundation 2020 [cited 2020 Sep 9]. Available online: <https://www.globalsurgeryfoundation.org/programs>
 25. UNICEF. What we do | UNICEF [Internet]. UNICEF 2020 [cited 2020 Sep 9]. p. 1. Available online: <https://www.unicef.org/what-we-do>
 26. Global Initiative for Children's Surgery. Philosophy of GICS [Internet]. GICS 2020 [cited 2020 Sep 9]. Available online: <https://www.globalchildrenssurgery.org/about-us/>
 27. Wright N, Jensen G, St-Louis E, et al. Global Initiative for Children's Surgery: A Model of Global Collaboration to Advance the Surgical Care of Children. *World J Surg* 2019;43:1416-25.
 28. Mullapudi B, Grabski D, Ameh E, et al. Estimates of number of children and adolescents without access to surgical care. *Bull World Health Organ* 2019;97:254-8.
 29. World Bank. World Bank Annual Report 2019. Washington DC: World Bank; 2019. doi: 10.1596/978-1-4648-1470-9.
 30. What We Do [Internet]. Washington DC: The World Bank Group;2020 [cited 2020 Sep 9]. Available online: <https://www.worldbank.org/en/about/what-we-do>

31. Peters AW, Pyda J, Menon G, et al. The World Bank Group: Innovative financing for health and opportunities for global surgery. *Surgery* 2019;165:263-72.
32. Fiscal Year Data [Internet]. Washington DC: The World Bank Group;2020 [cited 2020 Sep 9]. Available online: <https://www.worldbank.org/en/about/annual-report/fiscal-year-data>
33. World Bank. World Development Indicators [Data file]. The World Bank Group: Washington DC; 2020 [cited 2020 Sep 9]. Available online: <https://databank.worldbank.org/reports.aspx?source=world-development-indicators>
34. Mock CN, Donkor P, Gawande A, et al. Essential surgery: key messages from Disease Control Priorities, 3rd edition. *Lancet* 2015;385:2209-19.
35. International Finance Corporation. Preventing Blindness in China. [Internet]. International Finance Corporation; November 2015 [cited 2020 Sept 9]. Available online: https://www.ifc.org/wps/wcm/connect/ad5f9269-012b-4445-98e7-c157c7afa366/Aier+Case+Study_FINAL_web.pdf?MOD=AJPERES&CVID=15vnV0S
36. International Finance Corporation. Achieving Pharma and Medical Synergies through Mergers and Acquisitions. [Internet]. International Finance Corporation; December 2016 [cited 2020 Sept 9]. Available online: https://www.ifc.org/wps/wcm/connect/81bfec82-8b01-4efb-acc4-22aa3655535/AscendisCS_12+15+16.pdf?MOD=AJPERES&CVID=1A7W17s
37. International Finance Corporation. Passionate About Relieving Suffering in Challenging Markets [Internet]. International Finance Corporation; September 2018 [cited 2020 Sept 9]. Available online: https://www.ifc.org/wps/wcm/connect/e5f0153d-9ae5-43bf-a1d3-3221b44e99dd/SaudiGerman+Hospital_FINAL_web.pdf?MOD=AJPERES&CVID=mmMoVww
38. International Finance Corporation. Creating an Inclusive Market for Eye Care [Internet]. International Finance Corporation; April 2017 [cited 2020 Sept 9]. Available online: https://www.ifc.org/wps/wcm/connect/604264e6-8a07-47a0-aa2b-8ba6c934395a/01217+IFC+InclusiveBiz+SalaUno%2BCovers_yellow.pdf?MOD=AJPERES&CVID=IKHy0Oh
39. Kamali P, Marksgodfrey I, Vervoort S, et al. Measuring surgical systems worldwide: an update 2018 Feb 12 [cited 2020 Sep 9]. In: World Bank Blogs. Data Blog. Washington DC: The World Bank Group. Available online: <https://blogs.worldbank.org/opendata/measuring-surgical-systems-worldwide-update>
40. Projects [Internet]. Washington DC: The World Bank Group; 2020 [cited 2020 Sep 9]. Available online: <https://projects.worldbank.org/en/projects-operations/projects-list?searchTerm=COVID-19%20Emergency%20Response%20Project>
41. Pyda J, Patterson RH, Caddell L, et al. Towards resilient health systems: opportunities to align surgical and disaster planning. *BMJ Glob Health* 2019;4:e001493.
42. Chou VB, Bubb-Humfries O, Sanders R, et al. Pushing the envelope through the Global Financing Facility: potential impact of mobilising additional support to scale-up life-saving interventions for women, children and adolescents in 50 high-burden countries. *BMJ Glob Health* 2018;3:e001126.
43. Financing Model [Internet]. Washington DC: Global Financing Facility; 2018 [cited 2020 Sep 9]. Available online: <https://www.globalfinancingfacility.org/financing-model>
44. Global Financing Facility. A New Financing Model for the Sustainable Development Goals Era: The Global Financing Facility in Support of Every Woman Every Child. [Internet] Washington DC: The World Bank Group; 2018 [cited 2020 Sep 9]. Available online: https://cerf.un.org/sites/default/files/resources/First-GFF-Replenishment-Document_EN.pdf
45. Global Financing Facility. The Global Financing Facility Expansion Plan. [Internet] Washington DC: The World Bank Group; 2018 [cited 2020 Sep 9]. Available online: https://www.globalfinancingfacility.org/sites/gff_new/files/documents/GFF-Expansion-Plan.pdf
46. Congressional Research Service. U.S. Agency for International Development: An Overview [Internet]. Congressional Research Service; 2020 Aug 14 [cited 2020 Sep 9]. Available online: <https://crsreports.congress.gov/product/pdf/IF/IF10261>
47. Global Health [Internet]. U.S. Agency for International Development; 2020 Aug 27 [cited 2020 Sep 9]. Available online: <https://www.usaid.gov/global-health>
48. Noncommunicable diseases [Internet] World Health Organisation; 2018 June 1 [cited 2020 Sep 9]. Available online: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
49. DHS Program. What We Do: Survey Types [Internet] U.S. Agency for International Development; 2020 [cited 2020 Sep 9]. Available online: <https://dhsprogram.com/What-We-Do/Survey-Types/DHS.cfm>
50. Ruseva M, Chichevalieva S, Harris M, et al. The South Eastern Europe Health Network: A model for regional collaboration in public health. *South East Eur J Public Health* 2020;4:35 | <http://dx.doi.org/10.21037/jphe-2020-gs-10>

- Health 2015;3.
51. SADC Facts & Figures [Internet]. Southern African Development Community; 2020 [cited 8 September 2020]. Available online: <https://www.sadc.int/about-sadc/overview/sadc-facts-figures/>
 52. Truché P, Shoman H, Reddy C, et al. Globalization of national surgical, obstetric and anesthesia plans: the critical link between health policy and action in global surgery. *Global Health* 2020;16:1.
 53. Makasa EM. Universal Access to Surgical Care and Sustainable Development in Sub-Saharan Africa: A Case for Surgical Systems Research Comment on "Global Surgery - Informing National Strategies for Scaling Up Surgery in Sub-Saharan Africa". *Int J Health Policy Manag* 2019;8:58-60.
 54. Who we are - CARICOM [Internet]. CARICOM 2020 [cited 2020 Sep 8]. Available online: <https://caricom.org/our-community/who-we-are/>
 55. Franklin RA, Simeon D. Urgent need to strengthen and expand screening and other cancer control programs in the CARICOM Caribbean. *Cancer Causes Control* 2017;28:1177-85.
 56. Alleyne-Mike K, Sylvester P, Henderson-Suite V, et al. Radiotherapy in the Caribbean: a spotlight on the human resource and equipment challenges among CARICOM nations. *Hum Resour Health* 2020;18:49.
 57. CARICOM coordinates provision of essential COVID-19 supplies for Member States - CARICOM [Internet]. CARICOM 2020 [cited 2020 Sep 8]. Available online: <https://caricom.org/caricom-coordinates-provision-of-essential-covid-19-supplies-for-member-states/>
 58. Leake PA, Qureshi A, Plummer J, et al. Minimally invasive surgery training in the Caribbean--a survey of general surgical residents and their trainers. *West Indian Med J* 2012;61:708.
 59. Angelini GD, Ramsingh R, Rahaman N, et al. Developing a cardiac surgery unit in the Caribbean: A reflection. *J Card Surg* 2020;35:3017-24.
 60. Shah AH, Barthélemy E, Lafortune Y, et al. Bridging the gap: creating a self-sustaining neurosurgical residency program in Haiti. *Neurosurg Focus* 2018;45:E4.
 61. About SAARC [Internet]. South Asian Association for Regional Cooperation 2020 [cited 2020 Sep 8]. Available online: <http://saarc-sec.org/index.php/about-saarc/about-saarc>
 62. Journal of Surgery Pakistan [Internet]. Jsp.org.pk 2020 [cited 2020 Sep 8]. Available online: <http://www.jsp.org.pk/index.php/jsp>
 63. Kumar A, Mitra K, Nagarajan S, et al. Factors influencing medical students' choice of future specialization in medical sciences: A cross-sectional questionnaire survey from medical schools in china, malaysia and regions of south asian association for regional cooperation. *N Am J Med Sci* 2014;6:119-25.
 64. Guragain R. SAARC Countries and ENT Conferences. *NJENTHNS* [Internet]. 1 [cited 2020 Sep 8];1(2):1. Available online: <https://www.nepjol.info/index.php/NJENTHNS/article/view/4750>
 65. Gupta D. Pediatric Surgery: Challenging Speciality in SAARC Region. *JPSB* 2014;1:3-5.
 66. The Times of India. City set to host SAARC orthopedic forum. [Internet] The Times of India; 2014 Sep 30 [cited 2020 Sep 8]. Available online: <https://timesofindia.indiatimes.com/city/agra/City-set-to-host-SAARC-orthopedic-forum/articleshow/43915940.cms>
 67. Overview [Internet] Association of Southeast Asian Nations. [cited 2020 Sep 8]. Available online: <https://asean.org/asean/about-asean/overview/>
 68. ASEAN Post-2015 Health Development Agenda [Internet] Jakarta: The ASEAN Secretariat [cited 2020 Sep 8]. Available online: <https://asean.org/wp-content/uploads/2017/02/APHDA-In-a-Nutshell.pdf>
 69. Health Cluster 3: Strengthening Health System And Access To Care [Internet] Jakarta: The ASEAN Secretariat [cited 2020 Sep 8]. Available online: https://asean.org/wp-content/uploads/2017/02/Agd-8.3_3.-ASEAN-Health-Cluster-3-Work-Programme_Endorsed-SOMHD.pdf
 70. Asean Health Cluster 1: Promoting Healthy Lifestyle, Revised Work Programme, 2016 - 2020 [Internet] Jakarta: The ASEAN Secretariat [cited 2020 Sep 8]. Available online: https://asean.org/wp-content/uploads/2017/02/Agd-8.3_1.-ASEAN-Health-Cluster-1-Work-Programme_Endorsed-SOMHD.pdf
 71. Alkire BC, Raykar NP, Shrimel MG, et al. Global access to surgical care: a modelling study. *Lancet Glob Health* 2015;3:e316-e323.
 72. ASEAN. Strengthening Health Systems and Access to Care. [Internet] Jakarta: The ASEAN Secretariat; 2019 Dec [cited 2020 Sep 8]. Available online: <https://asean.org/storage/2017/02/FINAL-PRINTED-STRENGTHENING-HEALTH-SYSTEMS-AND-ACCESS-TO-CARE.pdf>
 73. ASEAN. Joint Statement, 8th ASEAN Plus Three Health Ministers Meeting. [Internet] Siem Reap, Cambodia: The ASEAN Secretariat; 2019 Aug 30 [cited 2020 Sep 8]. Available online: <https://asean.org/storage/2019/09/8th->

- APTHMM_Joint-Statement_FINAL1.pdf
74. Griswold DP, Makoka MH, Gunn SWA, et al. Essential surgery as a key component of primary health care: reflections on the 40th anniversary of Alma-Ata. *BMJ Glob Health* 2018;3:e000705.
 75. Shrime MG, Bickler SW, Alkire BC, et al. Global burden of surgical disease: an estimation from the provider perspective. *Lancet Glob Health* 2015;3:S8-S9.
 76. Global Cancer Observatory 2018. Cancer Tomorrow [Internet]. France: International Agency for Research on Cancer; 2018 [cited 2020 September 14]. Available online: https://gco.iarc.fr/tomorrow/graphic-line?type=1&type_sex=0&mode=population&sex=0&populations=900&cancers=39&age_group=value&apc_male=0&apc_female=0&single_unit=500000&print=0
 77. Ahmed S, Tan WLG, Chong YL. Surgical Response to COVID-19 Pandemic: A Singapore Perspective. *J Am Coll Surg* 2020;230:1074-7.
 78. Rajan N, Joshi GP. COVID-19: Role of Ambulatory Surgery Facilities in This Global Pandemic. *Anesth Analg* 2020;131:31-6.

doi: 10.21037/jphe-2020-gs-10

Cite this article as: Kucchal T, Pigeolet M, Rolle M, Johnson WD, Park KB. International organisations in global surgery: challenges and opportunities. *J Public Health Emerg* 2020;4:35.