The Global Neurosurgery Committee: Progress Made Towards the Assimilate Objective

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Introduction

In 2019, the World Federation of Neurosurgical Societies (WFNS) created the Global Neurosurgery Committee (GNC). The GNC's Global Action Plan is comprised of 5 objectives: 1) **amplifying** access to neurosurgical care, 2) **aligning** global neurosurgical activity, 3) **advancing** relevant research, especially from low-and-middle-income country (LMIC) authors, 4) **assimilating** neurosurgical capacity building into surgical systems planning and 5) **advocating** for (neuro)surgical care within universal health coverage. The goal to assimilate global neurosurgery (GNS) into surgical system planning is further divided into 2 specific goals for 2021: 1) Increasing participation of neurosurgeons in >50% of efforts to strengthen national surgical systems, and 2) increasing the rate of participation by neurosurgeons in major global surgery conferences by >20%. In this paper, the importance of the assimilate objectives will be reviewed, current progress towards the first Assimilate objective will be highlighted, and next steps will be discussed.

Why is it important to assimilate neurosurgical capacity building into surgical systems?

Global surgical and neurosurgical efforts overlap in many domains (i.e. the need for operating rooms, shared surgical equipment, etc.); therefore, it is important to avoid duplication and complement all efforts to strengthen surgical systems. Nevertheless, there are significant disparities in subspecialty surgeries, such as neurosurgery. While high-income countries (HICs) typically have a ratio of one neurosurgeon per 80,000 patients, the ratio in LMICs was found to be one neurosurgeon per 10 million patients.[1] This is unacceptable when the global burden of neurosurgical pathologies is considered.

For example, to be equally recognized (i.e. service delivery, financing, infrastructure, information management and governance). Thus, the direct involvement of neurosurgeons – in the planning/implementation of policy-level initiatives – allows a more nuanced approach to addressing each country's specific neurosurgical needs.

Have neurosurgeons participated in >50% of efforts to strengthen national surgical systems?

When this objective was first created, progress tracking was not considered. Currently, there are no resources to track national efforts to strengthen surgical systems in LMICs. Therefore, it is difficult to know which stakeholders have participated in these processes, preventing an accurate way to track the participation of neurosurgeons in policy-level initiatives
Due to the lack of a formal tracking-system, we conducted an internal review and a series of email correspondences for this paper. Through this process, we determined the participation rate of neurosurgeons in the national surgical system strengthening efforts of 14 countries. These countries included: Nepal, Pakistan, Fiji, Tanzania, Nigeria, Zambia, Rwanda, Ethiopia, India, Cambodia, Cook Islands, Palau, Tonga, and Vanuatu. The results from this process are provided in Table 1 below.

YES	NO
Nepal*	Cook Islands*
Pakistan*	Palau*
Fiji*	Tonga*
Tanzania*	Vanuatu*
Nigeria*	
Zambia*	
Cambodia	
Rwanda	
Ethiopia	
India	

Table 1: Responses from the internal review and email correspondences to gauge neurosurgical involvement in national surgical system strengthening plans. * denotes that the country was involved in a National Surgical, Obstetric and Anaesthesia Plan (NSOAP).

The four countries that had no neurosurgical involvement in their national surgical system strengthening plans were the Cook Islands, Tonga, Palau and Vanuatu. Many pacific island countries do not have neurosurgical capacity (i.e. they have no neurosurgeons in the country), and patients are often referred overseas for tertiary-level services . For example, for severe TBIs, the Cook Island physicians stabilize their patients, and then send these patients to physicians in New Zealand for tertiary-level neurosurgical services.

Has the rate of participation by neurosurgeons in major global surgery conferences increased by >20%?

Conferences play a crucial role in the global neurosurgery movement, offering pivotal networking opportunities for LMIC and HIC researchers. At conferences, researchers can also share best practices about neurosurgical practice and training. In a study done by Sharma et al., a total of 19 conferences were identified to have included global neurosurgery sessions from 2015 to 2020.[4] However, an exhaustive list of conference attendees and their specific occupations was not compiled. Similar to the first Assimilate objective, progress tracking was not considered when the second Assimilate objective was created; therefore, progress made towards this objective is unclear.

Next Steps

A key example of a policy-level effort to strengthen surgical systems is a National Surgical, Obstetric, and Anaesthesia Plan (NSOAP). Before a country begins their NSOAP process, it is common to compile a list of key stakeholders. However, information about these stakeholders – such as their specific occupation, age, and gender – is not readily accessible. These metrics should be stored in a public database or dashboard. This would make an endeavor, such as determining the involvement of neurosurgeons in policy-level initiatives, more attainable. In addition to the involvement of subspecialists, a database could also help policymakers and advocates gauge whether there is equitable inclusion of all demographic groups (i.e. race, gender, etc.). This database can also assist other countries – with similar demographics or surgical burdens – with their own NSOAP process.

In addition, members of the GNC 2.0 can look into addressing the second Assimilate objective; gauging participation rate of neurosurgeons in global surgery conferences. The first step would be to identify a specific time frame. Then, the researchers will have to identify all the global surgical conferences held during this time. Afterwards, a cross-sectional survey can be dispersed to the various conference organizers. This survey should include questions about participation rate by various demographic metrics and specialty information.

Challenges/Limitations

Considerable efforts were made by the Assimilate team to get data for both objectives; however, the lack of formal tracking mechanisms made both tasks difficult. In total, there are over 50 countries in various stages of their NSOAP process. However, due to a poor response rate, we only received information about neurosurgical involvement from 10 country representatives. A level of selection bias may have been introduced as well, since the respondents could have been more inclined to reply to our correspondences if they had neurosurgical input during their country's surgical system strengthening plans.

Conclusion

The Global Neurosurgery Committee will continue to advocate for the involvement of neurosurgeons in policy-level initiatives. This will ensure that neurosurgical conditions are considered in all plans to strengthen surgical systems. If the unmet neurosurgical burden is not addressed adequately, the weight of the global surgical burden will only intensify.

References

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