EDITORIAL

Pediatric neurosurgery

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WE now live in a world with over 7.4 billion people. There are an estimated 258 births per minute compared with 108 deaths per minute. Whereas population growth in the northern hemisphere remains static, growth in the southern hemisphere remains high, particularly in low- and middle-income countries.² If one considers that it takes 2 children per mother for 0 population growth while the average mother in Africa has 5 children and the average mother in Northern Nigeria has 7 children, one can see the growing need for pediatric care. In many low-middle-income countries, the portion of the population 18 years and younger approaches 50%. Worldwide, the percentage of the population 14 years and younger exceeds 25%, with the total number of children in that age group approaching 2 billion (<https://data.worldbank.org/indicator/SP.POP.1564.TO.ZS?view=chart>).

It is with this growing need in mind that Dewan and colleagues report the best and most recent available data, which examine the number of neurosurgeons available to care for these children and the distribution of neurosurgical providers.¹ In a detailed web-based survey of international societies of physicians and surgeons, the authors catalogue the numbers of providers, where they work, what percentage of the population has to travel great distances to access their care, what the providers' levels of training and experience might be, what equipment and needs they have in providing care, and whether those providers would have interest in collaborating with other pediatric neurosurgeons around the world.

The authors received responses from 459 surgeons in 76 countries from which they were able to estimate the following: 1) There are an estimated 2297 pediatric neurosurgical subspecialists worldwide. 2) Eighty-six percent of these subspecialists practice in high-income countries. 3) In low- and middle-income countries, there are 330 pediatric neurosurgery subspecialists for 1.2 billion children. 3) In Africa, there are 24 pediatric neurosurgeons (1 per

30 million children). 4) Forty-three percent of general surgeons provide emergency pediatric care. 5) One-third of a general neurosurgeon's practice worldwide is pediatric. 6) Nearly 90% of patients in low- and middle-income countries must travel more than 2 hours for neurosurgical care.

If one considers that 400,000 children are born each year with hydrocephalus, that 950,000 hydrocephalus operations are performed worldwide each year, and that 3 million children sustain a traumatic brain injury per year, it is no surprise that respondents are comfortable in treating these conditions. Where they need better expertise is in dealing with the 1.4 million children per year born with epilepsy, those with craniofacial conditions, and those with tumors and vascular disorders. Interestingly, in high-income and upper-middle-income countries, pediatric neurosurgeons felt that they needed additional training in the management of dysraphism, as it has become a vanishing disease in those nations.

Over 80% of respondents reported the need for a microscope and microinstruments, and 60% reported the need for a drill. They also noted that for pediatric neurosurgery to be successful, providers need pediatric anesthesiologists, pediatric intensivists, and specialty nurses. In low- and middle-income countries, 99% of respondents stated that they would welcome international collaboration in an effort to improve on what they are able to provide for their patients.

Dewan and colleagues are to be congratulated on their work, which highlights the disparities in high-end health-care and its distribution. As the authors state, the global unmet need of an estimated 5 million neurosurgical cases per year currently exists, which would take an additional 22,500 neurosurgeons to provide care.³ We have some work before us!

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Disclosures

The author reports no conflict of interest.

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