

Nigeria's rainy season means farmers are in the fields - and so are cobras. So when a Fulani man stormed into our remote clinic with a swollen hand, I knew I needed anti-venom. Despite administering three vials at six-hour intervals, he kept urinating blood. The following day, having already transfused 10 pints of blood, I knew the venom had to be removed from his plasma for coagulation cascade to work. So, I removed six pints of blood and transfused six pints of AOB compatible blood in the next 12 hrs; in the next 12 hours, his bleeding stopped, and he recovered soon after. Despite not understanding his grateful mother following the ordeal, her words reinforced a longheld belief - a commitment to grassroots service, through internal medicine, is my calling.

This commitment has informed my research. My research with the Antibiotic Stewardship Program (ASP) increased awareness for using only antibiotics when necessary - crucial in an era of increasing antibiotic resistance; furthermore, we targeted non-teaching community hospitals. As expected, ASP reduced spending by \$400,000 and will also help lower antibiotic resistance. Beyond America, such results indicate that ASP can be scaled throughout the Third World. Additionally, my current research focuses on developing methodologies to diagnose concussions through the lab, instead of solely through clinical diagnosis. Some biomarkers have been elevated, especially mRNA 711, two hours post-injury in concussed patients, and reach a peak at six hours. This research can transform the way traumatic brain injuries are diagnosed.

Grassroots service has also shaped my bedside manner. For example, while working at Baltimore's Cowley Shock Trauma Center, a patient admitted for respiratory failure following a minor surgical procedure was cannulated for VA ECMO and eligible for a research study to administer heparin. But when approached, the patient's wife refused all forms of treatment. So, I gained permission to speak to her. I soon learned that the patient was the victim of a botched medical procedure, resulting in her distrust of doctors. I then told her that when I was in Nigeria, my 3-year-old son contracted cerebral malaria (CM); CM's mortality rate in rural Africa is 99.9%. I told her that I was weeping when a resident approached, asking for permission to perform a lumbar puncture. After repeated requests, I agreed; the next day, my son was cured. I reasoned that despite what had happened, the woman had to trust our staff and the medicine. After some time, she consented; days later, the patient left the hospital unassisted.

My philosophy has also refined my managerial skills, crucial to an integrated hospital setting. The hospital in which I worked in Newbussa, Nigeria, had no stable water supply, relying on a well that routinely dried up and was a source of infection. Fed up, I did extensive research and chanced upon boreholes, providing a sustainable water source. Despite costing \$20,000 and facing the logistical challenge of bringing a drilling company to such a remote area, I completed the project in six months' time; Newbussa had the first stable water supply in its history. My bona fides also facilitated bringing the internet to an area wracked by poor internet service. In 2010, I discovered fast-speed internet could be introduced to the hospital for \$5,000. Having won over the hospital's COO with the borehole project, I was also able to get this project approved. For the first time in Newbussa's history, a hospital had an independent internet connection. Local doctors and staff could now converse and learn with their counterparts from around the globe.

With a chance to address issues such as disease control that affect small town clinics and the Third World, and regarding which scalable opportunities exist, internal medicine (IM) is a

fitting specialty. And by treating ailments affecting a majority of people, IM will allow me to serve the grassroots on a daily basis.