

Surgical innovation: the health sector conundrum?

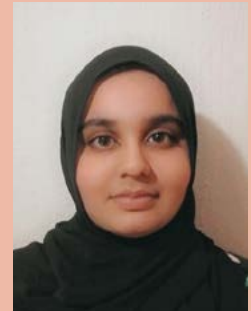
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Authors's biography

I am currently a third-year student at the Nelson R. Mandela School of Medicine in Kwa-Zulu Natal. My journey to medicine was inspired by my fascination with the field and its immense impact, my grandfather's unwavering motivation to have me pursue my passion, and the core belief that our purpose in this world is to make a difference – to offer our unconditional assistance and support to as many people as possible. I aspire to explore the different facets of this profession, particularly the cardiovascular discipline, and to hone my skills in order to make a meaningful contribution to society. My interest lies in not only improving the understanding of the medical field through research, but also developing a positive influence in patients' lives. Whilst I am passionate about medicine, I also thoroughly enjoy learning languages, reading, writing and sketching.



As we plunge into a new decade, South Africa enhances its attempts to transition into a more efficient health system by incorporating various surgical innovations as part of the 'Global Surgery in Africa' initiative. However, it will be in our favour to tread this path carefully, considering the health resource disparities within the nation.

It has been established that surgical conditions contribute to approximately 11% of the global burden of disease and 25 million disability-adjusted life years (DALYs) in Africa, the region with the highest aggregation of DALYs.¹ In addition, Africa carries almost 25% of the global burden of disease whilst only having about 2% of the global healthcare workforce at its disposal.¹ This, along with the lack of basic surgical resources, limits the necessary surgical services that Africa is capable of offering.

The South African Constitution states that every human has the right to health and with this comes the right to requisite vital surgical services.¹ Can we claim to uphold justice when we cannot afford our people equitable access to this necessity?

Surgical innovation is undeniably beneficial; economically and socially. Minimally invasive surgery with cutting edge technology reduces the patient's recovery time significantly, allowing reduced hospital expenses and fewer leave days for the patient. Moreover, it reduces the required doctor-patient interaction time, availing the doctor to others while allowing the healthcare system to benefit financially. However, is it wise to invest in resources and training for modern surgical techniques when we are still unable to provide enough resources and skilled healthcare workers for essential life-saving surgeries?

How can we, in good conscience, invest in innovation for more efficient surgeries when it has been determined that "development of safe, essential, life-saving surgical and

anaesthesia care in low-income and middle-income countries (LMICs) has stagnated or regressed"?² It is time to realise that the lack of vital, life-saving surgery is only going to cost us, because failure to access surgical procedures timeously will necessitate major resource-intensive surgery at a later stage.¹ This is costly in terms of time and money. Research has estimated that if LMICs expand surgical services to rival rates achieved by presently leading LMICs, two-thirds of these countries will attain the capacity to offer a minimum of 5 000 surgical procedures per 100 000 population by 2030.² However, failure to do so will likely result in cumulative loss approximating US \$12.3 trillion between 2015 and 2030.² Therefore, timely basic surgery is a cost-effective strategy. Further evidence of this observation is found in the role of male circumcision in preventing HIV and saving many lives.¹ Thus, it is important to invest in the necessary requisites first before turning to innovation, as this investment is affordable, as well as socially and economically promising.²

Repercussions of innovation on those who live in poverty need to be assessed, especially in a country with such high poverty levels, because these innovations will likely not be a cheap purchase. It is no secret that healthcare services are poorly accessible to poverty-stricken people. This is evident in the vast maldistribution of hospitals in South Africa, with fewer public hospitals per uninsured population in comparison with private hospitals per insured population.³ There are also only 1.95 functional operating theatres per 100 000 people in the public sector compared to the 12.21 per 100 000 in the private sector, implying an obvious deficiency in the public sector's surgical services.³ This lack of the basic surgical services available to the people indirectly leads to high mortality for otherwise curable illnesses, such as appendicitis, hernias and congenital anomalies.² The resultant negative effects include a depleted workforce. So, not

only for economic benefit but also for the sake of humanity, it is time we even out the playing field.

Some may argue that this cutting-edge surgery will provide South Africa with recognition for medical advancement, painting our country in a positive light. Ground-breaking procedures such as the world's first heart transplant in 1967 and the world's first penis transplant performed in 2015 have been known to attract international acclaim and may even provide wonderful educational opportunities for students in the field of healthcare.^{4,5} However, while much of our country is plagued with a shortage of labourers and an excess of child-headed households, due to prolonged debilitating ailments resulting from lack of access to basic surgical services, we must ask whether it is not then our duty to fix this crisis before delving into a new quest of determination and willpower. Accordingly, it can be said that innovations provide patients with more comfort, and possibly a better quality of life, but choosing that over affording families the opportunity to thrive and children the opportunity to live normal, guided childhoods is compromising our integrity as a just system. Can national growth truly be born if we constantly put modernisation above the basic needs and rights of much of the population? This is like the analogy of a high school teacher only focusing on getting the brightest of the class to achieve their goals but expecting the entire grade to produce an A average. It is unrealistic and iniquitous.

Just as we cannot solve a complex maths equation without knowledge of basic addition and subtraction, so too innovation cannot work without sufficient essentials being in place first. If we try investing in this innovation before solving the crises of so many of our citizens left without access to basic surgical services, our entire health system may crumble down. This is because we cannot fix an economy when half the nation cannot access the required healthcare

to be healthy enough to work. Additionally, what is the point of investing in a mere idea of comfort and efficiency when we have not provided adequate funds for reliable life-saving surgeries? We cannot be humanitarians when we favour luxury over necessity. It is simple: surgical innovation is inclusive of basic surgery, and until we can ensure that we have undoubtedly provided good, safe essential surgical services to all the nation equitably, surgical innovation will be an attempt in futility.

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