

Challenges and opportunities in training surgeons in rural areas

Surgery and perioperative care have been severely neglected in rural areas, with funding priorities in Africa typically targeting infectious diseases, although it is a well-known fact that basic surgical care at district hospitals is typically more cost-effective than, for instance, antiretroviral therapy for HIV.^[1] Globally, injuries constitute the greatest surgical burden, followed by cancers, congenital anomalies, and complications of childbirth.^[2] The number of surgical procedures performed in Africa is dwarfed by the number in the developed world.^[3] There is very little accurate information on surgical specialists in rural areas, while national surveys are generally lacking.^[4] Most surgical procedures in rural areas are performed by generalists.^[5] While subspecialty training centres for rural areas have been planned through regional surgical associations, support for programmes of this type remains poor. Rural postgraduate surgery struggles to recruit trainees, as the majority of undergraduates prefer positions in the field of infectious diseases.^[6] Occupational exposure to infectious diseases, poor working conditions and infrastructure, inadequate compensation, and length of training all contribute towards putting young doctors off the idea of a surgical career in rural areas. The World Health Organization has attempted to alleviate the situation with the development of the Integrated Management for Essential and Emergency Surgical Care programme, which was implemented co-jointly with ministries of health, academia, professional societies and non-governmental organisations to strengthen capacities of district hospitals in low-income countries through the Global Initiative for Emergency and Essential Surgical Care.^[7,8]

The two essential strategies for developing a successful rural surgical training ground are: (i) supporting recruitment and retention of rural surgeons by preparing trainees across a range of surgical specialties for rural practice; and (ii) facilitating high-quality cost-effective surgical services to rural areas.^[9] The problems with establishing a training ground for surgeons in rural areas are multiple and complex, and revolve around a number of issues. The clinical load for each training specialist precludes having sufficient time to study. Typically, rural trainees are inundated with clinical cases, as the number of surgical patients per doctor is far higher in rural areas because of the shortage of medical staff. In addition, there is typically an acute lack of the high-quality teaching and training consultants who would galvanise academic training in central academic complexes. Apart from shortages of personnel, there are also often considerable gaps in diagnostic infrastructure such as computed tomography and magnetic resonance imaging, as well as in therapeutic infrastructure such as operating theatres and catheterisation laboratories, all of which are essential for appropriate 21st-century academic surgical training.

Historically, two approaches to improving surgical care in rural areas have been described. The first (bottom-up) approach is to improve basic health and district health at grassroots level and to use this as the main platform to build up a more sophisticated healthcare system. The model proposes that basic healthcare leads to improved regional healthcare and eventually to improved academic healthcare. The other (top-down) approach is the establishment of a well-equipped and modern tertiary healthcare system, thereby attracting high-quality specialists who would otherwise never have relocated to rural areas. The presence of these specialists will then create a critical mass, attracting more specialists and also generalists, who can then

be employed in regional and district hospitals that cover the entire rural area.

As we reported previously, Limpopo Province is unique in that it has been implementing these two approaches simultaneously to improve its surgical service from a very low base.^[10,11] This approach has not only proved to be rather successful in improving rural surgical care in the province, but in addition has the further benefit that the surgical training ground has been substantially extended. For example, during the past two years a number of subspecialist units have been established and are now rapidly expanding. These include cardiothoracic surgery, ear, nose and throat surgery, plastic surgery, orthopaedic surgery, gastroenterology and vascular surgery. In this special edition of the *SAMJ*, we specifically report on the difficulties encountered by a number of these units. Although significant progress has been reported, the ongoing need is still substantial and includes surgical trauma units and intensive care units. We are currently busy focusing on these areas and hope to report on them in the near future. Training to become a surgeon in rural areas may have its challenges, but it also has rewards. To become not just a surgeon, but a resilient surgeon, has proved to be of great benefit in the long term.^[12]

Resilience cannot be taught, but has to grow through experience. Finding a sense of purpose is pivotal to building resilience.^[13] Just *being* in a place of need offers a great sense of purpose. Working in an under-resourced rural area will enhance your own ability to cope with the stresses of life, which can also build resilience. The word 'resilience' is derived from the Latin verb '*resilire*', which means to leap or spring back, and implies the ability to recover or bounce back from stressful events. Instead of being static and passive, it describes the capacity of a dynamic system to adapt successfully to disturbance.^[14] Surgeons will become more confident in their own abilities, including the ability to respond to and deal with ongoing crises, further enhancing resilience for the future. Rural areas have a tendency to stimulate activities – finding creative solutions instead of simply waiting for a problem to go away on its own, which usually prolongs the crisis. Starting to work on resolving issues immediately reduces stress. While there may not be any fast or simple solution, just taking immediate steps towards improving a situation makes surgeons more resilient. Another great way of building resilience is by focusing on the achieved change and progress made, and there is no doubt whatsoever that a surgeon trained in a rural area can change more for the better than a surgeon trained in an age-old stale academic institution.

Surgeons of the future, build resilience ... and train rural!

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