

## HEALTHCARE DELIVERY

# Surgical training and capacity development in the South African internship programme

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Medical practitioners in South Africa manage a quadruple burden of disease. Junior doctors, who contribute significantly to the health workforce, must complete 2 years of internship training and 1 year of community service work in state health facilities after graduation to register as an independent medical practitioner. The aim of this article is to give a critical appraisal of the current national internship programme and why it was implemented, and outline suggestions for future changes. There is a compelling need to train competent, confident doctors while ensuring that the requirements and demands of our health system remain a central concern.

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South Africa (SA)'s health system manages a quadruple burden of disease, consisting of infectious diseases such as HIV/AIDS and tuberculosis; maternal, newborn and child health problems; non-communicable diseases; and trauma due to injury and violence.<sup>[1]</sup> SA's disease burden is driven by many systemic factors, one of which is the stark inequalities between the rich and the poor that reflect the legacy of apartheid and colonialism. Mayosi *et al.*'s<sup>[1]</sup> argument that these inequalities extend into the quality of healthcare accessed between races and between income classes was supported by a 2015 systematic review on health inequalities in SA.<sup>[2]</sup> The effects of the provision of inequitable healthcare services throughout the apartheid era in SA are long lasting, and this history must be considered in every analysis of the SA healthcare system.<sup>[3]</sup>

Additionally, data show that staff shortages remain a significant barrier to quality healthcare in SA.<sup>[4]</sup> Interviews with healthcare users also concluded that the number of healthcare workers is 'not sufficient for the number of patients', further complicated by absenteeism, leave and compulsory training.<sup>[5]</sup> The COVID-19 pandemic has highlighted the stark reality of the fragility of healthcare workers in sustaining the health system.<sup>[6]</sup> To increase access to healthcare in SA and to ensure that the quadruple burden of disease is adequately managed, the country needs more medical personnel, and personnel who are adequately trained and prepared for the healthcare system and their responsibilities therein. Medical interns remain an important part of the system, and continuing to place, train and empower this cohort is integral to solving, or at least mitigating, the human resources challenge faced by the SA healthcare system. This is particularly true in view of the recurring problems newly qualified doctors experience during the annual placement process allocating them to their compulsory posts.

## Characterising the internship population

The 2030 Human Resources for Health report states that there were 43 503 doctors in South Africa in 2016,<sup>[7]</sup> while the Health Professions Council of South Africa (HPCSA) had 43 901 medical practitioners registered in April 2020, with not all actively practising in the medical workforce.<sup>[8]</sup> The HPCSA states that there were 4 458 interns in posts in April 2020.<sup>[8]</sup> If we extrapolate from the data in these two reports, medical interns comprise ~10% of all practising doctors in SA, making the adequate placement and training of medical interns, and the optimisation of their function, a critical component of ensuring health service delivery to patients around the country.

## What does the internship programme entail?

Training to be an independent medical doctor in SA consists of undergraduate study at one of nine universities offering undergraduate medical training in the country or at one of the various international medical schools that our high school graduates can attend, followed by a compulsory 2-year internship period at an accredited institution regulated by the HPCSA.<sup>[9]</sup> Students officially become doctors and embark on their internship programme after completing their medical degrees, but are only able to register with the HPCSA as independent medical practitioners once they have completed the 2 years of the internship programme and their single year of community service. The internship period is designed to ensure that doctors make an effective transition from the more theoretical knowledge and skills learned during their tertiary education to the practical experience they need to function as safe and competent medical practitioners during their community service. This transition has in the past been directed almost exclusively by the individual doctors themselves, with some assistance

from their internship hospital. A 2018 consensus report released by the National Department of Science and Technology together with the Academy of Science of South Africa has recommended that universities and senior clinicians play an active and concerted role in assisting young doctors to make the transition in the most effective, reflective and helpful way possible.<sup>[10]</sup>

The internship period has been a part of the process of becoming a medical practitioner in SA since the 1950s, while the single year of remunerated compulsory community service was introduced in 1999. The internship period was introduced by the South African Medical and Dental Council and is now regulated by the HPCSA. It was a 1-year period until July 2004, when the HPCSA increased the duration to 2 years to ensure that all young medical graduates are adequately prepared to work in a district hospital during their year of community service. The change in length was in response to concerns that the 1-year programme was not sufficient to meet the goals of the internship period, namely 'to assist young graduates to obtain hands-on experience under supervision in approved teaching hospitals as clinical preparation for entering medical practice'.<sup>[11]</sup>

The 2-year intern apprenticeship model has been in place since July 2004, and continues to be the official programme. The programme is guided by a host of regulatory boundaries provided by the HPCSA to ensure that interns around the country leave with similar basic competencies. These include regulations limiting working hours, indicating levels of supervision required and teaching responsibilities of training institutions, and other issues related to the internship programme and its 4 458 interns in posts in April 2020.<sup>[8,9]</sup> A recent development in the programme is that as of 2021, all interns have a 6-month rotation in family medicine, where they work in different and diverse settings to prepare them better for their community service year. The administration of the programme is led and organised by the individual hospitals or hospital complexes where interns are placed, and therefore ultimately falls under the leadership of the relevant provincial departments of health. Newly qualified doctors must complete the programme before being appointed to a community service medical officer post for 1 year, after which they are permitted to practise as an independent medical practitioner, whether in private practice or specialising in a field of particular interest to them. The current situation is therefore that newly qualified doctors are bound to the National Department of Health (NDoH) for 3 years before they are allowed to decide independently where and how they wish to practise.

This apprenticeship model is also completely reliant on the provincial departments of health and the NDoH to create, fund and support the internship and community service posts, and on the national Internship and Community Service Programme under the NDoH to match the newly qualified doctors with the posts created across the country.

One of the challenges with the current internship programme is the process of allocation and placing of posts. Numerous administrative problems result in the relevant authorities frequently missing self-imposed deadlines, with the result being that placement occurs unacceptably late in the year, leaving young doctors with no idea about where they will be placed until the very end of the year. As internship posts usually begin on 1 January the following year, this situation leads to high levels of uncertainty and stress, and avoidable disillusionment about the NDoH even before the first day of employment begins. At the time of writing (September 2022), after many appeals throughout preceding years, the placement process for the 2023 cycle appeared to be proceeding more quickly than in previous years, but full allocation of all interns to internship posts was still incomplete.

Further complicating the issue is that there regularly seems to be a mismatch between the number of posts created and funded each year, and the number of graduates who will be applying for these posts. This is particularly evident now that many SA graduates returning from studying medicine at Cuban universities also need to be placed as medical interns in order to become independent practitioners. This mismatch is of concern and should be addressed as a matter of priority – especially given the aforementioned shortage of internship and community service posts.

### Why this model?

The aim of the internship period is to provide teaching and practical experience over the 2 years, so that medical graduates are safe and competent to practise medicine independently. However, there is little published research that has evaluated the internship period and its efficacy, so it is difficult to draw evidence-based conclusions about whether or not the period is reaching the expressed goals of the NDoH.

Among the few articles is a national survey conducted by Bola *et al.*,<sup>[12]</sup> which states that there was a 'significant failure in providing supervision of interns performing interventional procedures for the first time'. It is important to note that this study was conducted in 2013 and is therefore slightly outdated, but considering that there is little else to draw from in the literature and that there has not been a large-scale change in the programme since then, we feel that this article is worth analysing. Bola *et al.* found that 33.0% of interns had performed a procedure for the first time without supervision, and 25.6% had experienced an adverse event while having no senior help available. They hypothesised that this situation promotes a cycle of 'confident incompetence', which had been similarly described by Marteau *et al.*<sup>[13]</sup> in another context. It was found that experience without feedback or supervision increases confidence but not skill. Most (77.8%) of the interns surveyed by Bola *et al.*<sup>[12]</sup> said that this compromised patient safety, and 4.4% said that it compromised patient safety every single day. The findings suggest that the level of supervision during internship in SA may not be satisfactory, creating a situation in which a large proportion of the healthcare workforce is not well equipped or well supported. This state of affairs is concerning, especially when we consider the clinical responsibility placed on the internship cohort around the country. New research is needed to guide interventions that will ensure that our internship programme meets its desired goals.

Training, with supervision and practice, significantly improves clinical competence and confidence of practitioners, something that any internship programme should consider. Research shows that surgical skills workshops for trainees increase confidence and competence of medical students, regardless of pre-training confidence, and that, after training, increased confidence is associated with increased competence.<sup>[14]</sup> Given the goals of the internship programme, resources and efforts need to be allocated wisely to ensure that there is a higher level of intern supervision throughout the 2 years. This will promote intern competence, thereby protecting the health of patients during the internship period and securing the skills and competence of the health workforce for the future.

The then NDoH Head of Communications and Stakeholder Management, Mr Popo Maja, stated at the beginning of 2019 that 'health stakeholders [have entertained] the idea of internship training being reviewed' as a response to the possibility of a single-year internship.<sup>[15]</sup> The Solidarity Occupational Guild for Medical Practitioners expressed support for the change, as 'these [internship] programmes are known for the poor management, limited leadership, inhuman working environments, and enormous workloads'.<sup>[16]</sup>

Subsequently, however, the HPCSA announced that the internship period will remain a 2-year programme for the foreseeable future and that there will be extended training on the primary healthcare platform and an equal emphasis on preventive and curative care.<sup>[17]</sup>

In 2018, the National Department of Science and Technology together with the Academy of Science of South Africa released a consensus report entitled 'Reconceptualising health professions education in South Africa'.<sup>[10]</sup> This was based on a 10-member panel of experts who used existing literature and expert opinion to create a framework for the advancement of the creation of the health workforce into the future. Some of their recommendations are summarised below, and we will incorporate this work into our own final recommendations.

The report centres around empowerment of the intern group through structured reflection with senior clinicians using digital platforms where appropriate, collaboration through peer review, and reflection of case portfolios and innovation through community engagement. The panel also suggests restructuring of the community service year, renaming it postgraduate year 3 and using it to support young doctors in their academic interests, preparing them for their specialty training by providing the time and resources for them to pursue courses such as Advanced Trauma Life Support (ATLS), Advanced Paediatric Life Support (APLS) and refresher courses for specialist exam preparation.

## Identifying areas that need to be addressed

The internship time is an important period for skills acquisition and development of junior doctors and is beneficial to the health system. Despite the level of uncertainty in recent times about the ideal duration of internship, no consensus has been reached on the optimal length of internship in SA. It is not known whether a truncated internship period would affect surgical or clinical skills, and it is not known how major stakeholders (medical students, current interns, intern curators and heads of departments) would respond to such a change. There are also few data evaluating training in obstetric and surgical skills, and whether this is adequate to prepare interns for community service.

Moreover, there is a need to provide South Africans with access to quality, affordable healthcare, which includes surgical, obstetric and anaesthesia care. The Lancet Commission on Global Surgery concluded in 2015 that providing access to quality and affordable healthcare will not only reduce premature death and disability, but also provide many other benefits, which include 'boosting welfare, economic productivity' and increasing long-term human development.<sup>[18]</sup>

A study evaluating internship training in SA looked at self-reported knowledge and skills in the various disciplines that are rotated through during the internship period.<sup>[19]</sup> This survey was done in 2012, surveying interns who had completed their internship in 2011. Young doctors self-reported their knowledge and skills in various domains of practice. For most of these domains, the respondents reported a score of more than 4 out of 5 for their knowledge and skills. One of only three domains where interns scored themselves less than 4 was in obstetrics skills and knowledge, indicating that there is/was a need to improve the obstetric experience during internship. Caesarean section is the most widely performed surgery in the world, has been classified as essential surgery, and should be accessible timeously in district hospitals.<sup>[18]</sup> The majority of deaths from caesarean sections occur in district hospitals, where patients are often operated on by junior doctors. The Saving Mothers Report for 2014 - 2016 shows that in 39% of

all maternal deaths with avoidable factors, lack of knowledge and skills of doctors was a contributing factor.<sup>[20]</sup> These studies, taken together, suggest that capacity building and additional training for SA interns may be valuable in decreasing maternal mortality and birth complications.

There is limited literature examining the impact that the current 2-year internship and 1-year community service programme has on medical graduates, and whether it actually meets the goals it was designed to achieve. Anecdotally, it is seen by most as a period of expected hardship that has to be endured and overcome, rather than as an exciting and formative step in the careers of junior doctors. For many, separation from family and social support systems, and placements in remote locations, are sources of great distress. There is no evidence examining the future practice intentions of these doctors before and after internship and the role that this time plays in forging their future. There are provincial and local quality improvement programmes that are ongoing – perhaps there is a way to coalesce these interventions via a national quality improvement team of some sort, to ensure that the hard work that is being done across the country can be supported and better implemented in the various internship hospitals.

Internship models and lengths differ around the world. For example, Zimbabwe-trained and Japan-trained medical doctors must complete a 2-year internship before independent practice, while medical graduates in the UK, Egypt and Argentina must complete a minimum of 12 months' supervised clinical training at an approved institution after their medical school training.<sup>[21-25]</sup> The variation in lengths of time of the internship programme highlights the importance of an efficient internship – where some nations believe that they can meet the goals of their internship period in only a single year. However, in our opinion, its structure should be context specific, and factors that we need to bear in mind include lack of surgical skills training and lack of adequate supervision.

The authors of this article comprise one Head of the Department of General Surgery, one Deputy Dean, one Head of District Surgical Services, one Head of the Global Surgery Division, two final-year medical students (at the time of writing) and one first-year intern (at the time of writing). This gives us a vast array of experiences in managing interns and leading health services in the state health system, together with the perspective of young doctors and persons who are about to enter the internship programme. Based on the above literature, and our own experiences, we suggest the following as recommendations for the medical internship programme.

## Recommendations

- Interns should be selected and informed of their allocation with a minimum of 6 months' notice, so that they can plan their lives accordingly. The current situation, where allocations are released between mid-November and mid-December for work beginning on 1 January the following year, is completely unacceptable and erodes the trust and fortitude of SA graduates. This must be urgently addressed.
- The increasing number of medical graduates resulting from increased admissions to medical schools in SA and the return of foreign-trained SA doctors needs to be properly accounted for when planning for remunerated internship and community service posts. The NDoH and National Treasury must prioritise the placement of newly graduated doctors, for the good of the SA health system and its population. Failure to place medical graduates and young doctors compromises the health of the population and the wellbeing, career prospects and desires of young health professionals.

- More research needs to be done to evaluate the internship programme in SA. There is little published research in the literature, and most of what does exist is unfortunately relatively dated and does not evaluate the programme in its current form. Research should also consider the recent positive step of the addition of a 6-month family medicine rotation into the programme, and whether this makes interns feel more comfortable and competent for their community service year.
- Government, interns, internship curators, community service medical officers and members of leadership committees should work collaboratively with medical interns to ensure that there is clarity surrounding work expectations and roles that interns should play within the health system. This must consider intern competencies and health system needs.
- The transition from medical school to internship and the transition from internship to community service must be carefully evaluated to ensure that practising doctors are both competent and confident in delivering care to the population, especially care that involves procedural skills, clinical and biological knowledge, and experience. This should be facilitated by the provincial departments of health, the individual hospitals/hospital complexes and the faculties of health science throughout the country where relevant.
- Interns must be acknowledged as an important part of the health workforce, contributing significantly to the functioning of the health system across the country. This acknowledgement must translate into greater academic, social and structural support for these young doctors as they begin their careers. The transition from student to independent health practitioner is an essential part of the professional growth of health workers. When this transition is managed correctly, it lays the foundation for the rest of the practitioner's career and can be hugely enriching. When poorly managed, it contributes to cynicism, moral injury, disaffection and burnout.
- The quality of independent health workers is as important as the quantity thereof, and the internship period must bear this tension in mind by training and supporting interns throughout their 2 years.
- More transparency about the governance and administration of the internship period is necessary. Specifically, there should be clarity surrounding the roles of the NDoH and the provincial departments of health, and access, for relevant stakeholders, to data on the number of available posts, the number of incoming interns, the number of unplaced interns, the number of doctors who reject their posts (and the reasons for this), and the percentage of interns who complete their 2-year period after starting the programme. This transparency will allow members of the healthcare system and the public to hold the NDoH accountable and will enhance collective efforts to improve the medical internship period, and by extension the quality and efficiency of the wider healthcare system. This recommendation is equally applicable to the community service year, where there are similar problems around placement and administration.

## Conclusion

The medical internship period is vital to develop a skilled, competent health workforce in SA. Interns make up at least 10% of the practising doctors in SA, and the SA health system places a high workload and heavy responsibilities on them, so making improvements to the internship programme is critical to creating a functional health system. The aim of the internship programme is to create functional, independent and enthusiastic practitioners

committed to a career in the health sciences, but there appears to be a mismatch between the intentions of the NDoH and the realities experienced by interns and community service doctors. While there is limited research surrounding our internship programme, the existing literature suggests a need to improve the level of support for interns, particularly in the surgical disciplines. Independent practitioners must be able to manage surgical, obstetric and anaesthesia cases confidently and competently, to the benefit of the communities they serve. We posit that the relevant departments of health prioritise researching, designing and implementing an internship and community service period that emphasises the clinical skills, reasoning and quality of an independent practitioner. This evaluation must consider input from interns and student representatives as well as from health academics, leaders and civil society advocates in order to gain broad perspectives on how to create an internship period that not only provides skills, training and support to our newly qualified doctors, but consciously harnesses their tremendous potential within our health system.

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