

Clinical associates in South Africa:

optimising their contribution to the health system

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As a resource, clinical associates are less costly than doctors, and provide good value, but their potential is only fully realised through appropriate supervision and leadership.

This chapter considers the role of the clinical associate in achieving sustained improvement on healthcare indicators in South Africa, and in the context of the Human Resources for Health 2030 strategy.

An integrated and clinically intensive three-year undergraduate training programme provides each clinical associate with sound generalist competencies in management of common conditions in the district health system. Clinical associates work under supervision and mentorship of a medical practitioner, and further training is augmented by postgraduate opportunities currently under development. Efficiency, effectiveness and equity each provide a lens through which the clinical associate role is considered within the South African health system.

As a resource, clinical associates are less costly than doctors, and provide good value, but their potential is only fully realised through appropriate supervision and leadership.

Increased production and better distribution in a blended public/private healthcare system under the proposed National Health Insurance will provide a foundation to harness the clinical associates' contribution to universal healthcare coverage. Quality of care requires teamwork and communication, and including clinical associates in the human resource organogram calls for close attention to these collaborative practices.

After a 10-year period and over 1 000 graduates, the 2018 Clinical Associate National Task Team Report provides a summary source for much of the evidence. This experience now allows scope of practice and job descriptions to be clarified, and the prescribing authority to be properly regulated.

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Introduction

South Africa has made significant strides towards improving health outcomes, particularly in the areas of HIV and tuberculosis (TB).¹² However, this improvement has not been widespread^{3,4} and initiatives to strengthen the health system through primary health care (PHC) re-engineering and the ramping up of services in National Health Insurance (NHI) pilot sites have met with limited progress,^{5,6} reinforcing the perception that the challenges in our health system are intractable.⁷

Shortages of healthcare workers and their maldistribution between the public and private sectors and urban and rural areas are persistent challenges facing our health system.⁸⁻¹⁰ The current focus on developing a new human resources for health (HRH) strategy for the next decade, and the phased introduction of universal healthcare coverage (UHC), provide a strategic opportunity to explore innovations and solutions to some of the country's healthcare challenges.

This chapter provides an overview of clinical associates in South Africa, including their training, scope of practice, and impact on the health system. Primary and secondary data sources were used in the study, originally compiled for a 2018 briefing report by the Clinical Associate National Task Team.¹¹ The chapter focuses on the contribution of clinical associates towards improving the efficiency, effectiveness (including quality) and equity (including access) within the health system. Finally, recommendations are made to strengthen the role of these health workers and to improve their training in order to enhance their contribution.

History of clinical associates

Health professionals similar to clinical associates have existed globally for more than 100 years and provided essential medical care, particularly in rural and underserved regions.¹² Professional titles vary from country to country, with the lack of a unifying global term limiting universal recognition and respect.¹³ Historically, clinical associates fall under the term 'mid-level health worker', defined by the Global Health Workforce Alliance as "a group of cadres who are trained for two-to-five years to acquire basic skills in diagnosing, managing common conditions and preventing disease".¹⁴ Development of clinical associate training and scope of practice in South Africa were modelled after similar health professionals in Africa, the USA and the Netherlands.¹⁵

Clinical associates in South Africa

The first clinical associate training programme in South Africa began in 2008, and graduates began providing

medical care in the country from 2011. Each year between 70 and 140 clinical associates graduate with a Bachelor of Clinical Medical Practice (BCMP)^a degree and register with the Health Professions Council of South Africa (HPCSA) under the Medical and Dental Professions Board to practice medical care supervised by medical practitioners. Medical practitioners serve in both an advisory and supervisory role and are responsible for the acts of their clinical associates.

Clinical associate undergraduate programmes are offered by Walter Sisulu University, the University of Pretoria and the University of the Witwatersrand (Wits), which has also recently started a BCMP Honours programme in Emergency Medicine. Clinical associates are currently supported by the Professional Association of Clinical Associates in South Africa (PACASA), which was established in 2012. The Association serves as the profession's representative body, advocating for its recognition and development. However, the organisation is in its infancy and requires support from relevant stakeholders to be effective and functional.

Clinical associates deliver PHC and manage common illnesses and diseases prevalent in South Africa. Their tasks include patient consultations, counselling, skilled clinical procedures, pharmacotherapy and surgical assistance.¹⁶ Patients are treated according to standard protocols, enabling doctors to focus on caring for patients with complex conditions. As of December 2018, there were 1 071 clinical associate graduates in South Africa, with more than 80% providing health care spread across all nine provinces in the country.¹⁷

Training of clinical associates

In partnership with universities, the Medical and Dental Professions Board of the HPCSA developed core competencies for undergraduate training in 2014.¹⁸ These competencies provide a framework for clinical associate, dentistry and medical curricula, to measure the academic and clinical performance of students. In addition, regulations regarding the scope of practice for clinical associates were gazetted and signed by the Health Minister in 2016,¹⁹ stipulating that the clinical associate may: "perform any act delegated to him or her by the supervising medical practitioner in accordance with the education, training and experience of the clinical associate".¹⁹

In addition to the HPCSA competencies, clinical associate undergraduate curricula incorporate six Entrustable Professional Activities (EPAs) that describe the work of a health professional who is trusted to carry out tasks safely and efficiently.²⁰ These EPAs are used as learning objectives to measure student competence (Table 1).

a Bachelor of Medicine in Clinical Practice (BMCP) at Walter Sisulu University.

Clinical associates are educated in work-based clinical practice, underpinned by a sound understanding of family medicine principles. The BCMP degree is a three-year programme, with an emphasis on diagnosing and managing common medical conditions. The students become competent in over 180 different diagnostic and therapeutic procedures. Most of the clinical associate training occurs in the public healthcare service, often in underserved and rural areas. The training prepares clinical associates for universal provision of promotive, preventive and curative health services at all levels of district and primary care. Clinical associates are trained to deliver 12 of the 16 community health centre services proposed in NHI.¹¹ This cadre is 'fit for purpose' to deliver primary care immediately upon graduation.

Clinical associate students spend at least 50% of their training in practice settings (mostly district hospitals) from their first year of training. Curricula place a strong emphasis on problem-based learning to integrate and reinforce the

application of basic health sciences knowledge in the clinical context, as well as emphasising the importance of inter-professional practice.

From 2011, the three universities training clinical associates have administered a joint national examination for graduating third-year students. This ensures that all graduates demonstrate the same minimum standard of competency, and it promotes a platform of common understanding for the role of the clinical associate by all other stakeholders. This common exam is unique in South African undergraduate health science training.

Using the evidence-based principles underpinning the Workforce Indicators of Staffing Need (WISN),²² the Clinical Associate National Task Team estimated that 11 500 clinical associates would be needed by 2030.¹¹ When calculating these estimates, the Task Team considered the importance of clinical associates in the skills and cadre mix of healthcare teams in relation to NHI roll out and UHC. There is a need to increase

Table 1: Entrustable Professional Activities (EPAs) for clinical associate training, South Africa, 2019

1. Perform patient assessment	1.1 Perform triage for all patient encounters
	1.2 Obtain a complete and/or focused patient history
	1.3 Perform a complete and/or focused physical examination
2. Manage patients comprehensively	2.1 Formulate a comprehensive patient management plan
	2.2 Prescribe appropriate medications
	2.3 Perform investigative and therapeutic procedures and interpret results
	2.4 Execute continuous patient care, including care of complications; referrals; follow up; and rehabilitative and palliative care
3. Promote health	3.1 Foster individual health
	3.2 Foster community health
4. Facilitate communication and collaboration	4.1 Foster rapport, trust and ethical relationships with patients, families and communities
	4.2 Provide appropriate counselling
	4.3 Collaborate within a multidisciplinary healthcare team
5. Improve healthcare services	5.1 Produce and maintain clinical records to improve the quality of healthcare services
	5.2 Collect and analyse data to improve the quality of healthcare services
	5.3 Understand healthcare systems
6. Develop professionally	6.1 Engage in continuous learning
	6.2 Practice professionalism
	6.3 Practice ethically

Source: Smalley S, BCMP Course Guide 2019.²¹

the number of graduates from 150 to 1 500 per year in order to reach the 11 500¹¹ clinical associates needed to contribute significantly to improvements in the healthcare system. For example, if 10 universities each train 150 clinical associates annually from 2022, approximately 11 500 clinical associates will be trained by 2030. This number compares favourably with the estimate of approximately 11 470 who could be employed in the different facilities in South Africa¹¹ (Table 2).

Contributions and challenges

In 2018, the Clinical Associate National Task Team, supported by the National Department of Health (NDoH), produced a comprehensive report detailing the contributions clinical associate graduates have made to the South African healthcare system.¹¹ The report also described current challenges faced by the profession, including reduced government posts, limited prescription rights, and uncertain career path, which reduce morale for the clinical associate profession.¹¹ The Task Team report noted that this cadre of staff is well placed to contribute to the efficiency, effectiveness and equity goals of UHC through the intended NHI, and this chapter provides a comprehensive strategy to increase awareness and understanding of the added value provided by clinical associates.¹¹

Efficiency

An efficient health system demonstrates high value in relation to its use of resources.²³ Two ways to achieve this

are by increasing outputs and reducing costs, and clinical associates are well placed to contribute to both.²⁴⁻²⁶

Increasing outputs

Clinical associates perform less complicated tasks that would otherwise consume medical practitioners' time, allowing doctors to work with their multidisciplinary teams to address more tasks of varying complexity and duration. This frees up time for doctors to assume other tasks while also supervising clinical associates.^{13,27,28} Studies done on the transfer of tasks from doctors to similar cadres suggest a 50 - 76% reduction in the time doctors spent on less complex tasks²⁴ (Figure 1).

A strength of clinical associates is their generalist undergraduate training to meet the healthcare needs of South Africa. For example, HIV-specific tasks are among the many medical components absorbed by clinical associates, including testing, initiation of antiretroviral therapy (ART), adherence counselling, regimen change, opportunistic infection management and circumcisions.^{25,29}

A 2013 survey in the Eastern Cape found that each clinical associate provided care to approximately 17 people living with HIV per day.³⁰ In one NGO programme, clinical associates performed 1 500 voluntary male medical circumcisions (VMMCs) per month at 16 sites in four provinces.³⁰ Findings from a 2018 study of clinical associates in three clinics and two hospitals in the Tshwane Metropolitan area found that they had performed 88.7% of 4 850 circumcisions from January 2014 to April 2015.²⁹

Table 2: Estimated number of clinical associates needed in the South African healthcare service to achieve UHC by 2030

Facility	Facilities / entities (no.)	Clinical associates (average per facility)	Total no. of clinical associates (nationwide)
VMMC units	250	3	750
NHI-contracted general practitioners	2 000	1	2 000
WBPHCOTs	4 200	1	4 200
CHCs	250	6	1 500
District hospitals (very small: <50 beds)	24	6	144
District hospitals (small: 50 - 150 beds)	101	10	1 010
District hospitals (medium: 150 - 300 beds)	78	15	1 170
District hospitals (large: 300 - 600 beds)	20	20	400
Training hospitals (not district hospitals)	10	20	200
Academia	8	12	96
Total			11 470

Source: Capati, et al.; 2017.¹¹

CHCs = community health centres; NHI = National Health Insurance; VMMC = voluntary male medical circumcision; WBPHCOTs = ward-based primary health care outreach teams.

Through task shifting, and with a good referral system and access to medical practitioners, these cadres can perform the majority of clinical tasks efficiently.³¹ A recent study of physician assistants/associates similar to clinical associates in several African countries documented increased access to services, cost benefits, and physician-equivalent quality of patient care.³² This was also documented by the World Health Organization: “The existing evidence suggests that where mid-level cadres received appropriate support and adequate training, their performance is close to or even better than that of their professional counterparts”.¹³

Reducing costs

The cost of training a clinical associate is less than half that of training a doctor.^{24,26} Their education is complete in three years compared with the seven or eight years for doctors, including internship. Therefore, clinical associate training can

scale up more easily, and in less time, than training of doctors. In addition to reduced training costs, clinical associate employment provides cost savings for human resource budgets. At current salaries, the NDoH can employ 2.4 clinical associates for the cost of one medical practitioner,²⁴ and the health service can employ a team of 18 clinicians (six doctors and 12 clinical associates) on the same budget required to employ 11 doctors (Figure 2).

In practice, filling vacancies is more practical than changing the cadres employed. Where an organogram allows for five doctors, two vacancies can be converted to four clinical associate posts to create a more efficient team of seven clinicians at no cost increase. A 2016 study found that including clinical associates in clinical teams can result in human resource cost savings of between 7% and 21%.²⁴

Figure 1: Work profile of doctors before and after addition of clinical associates

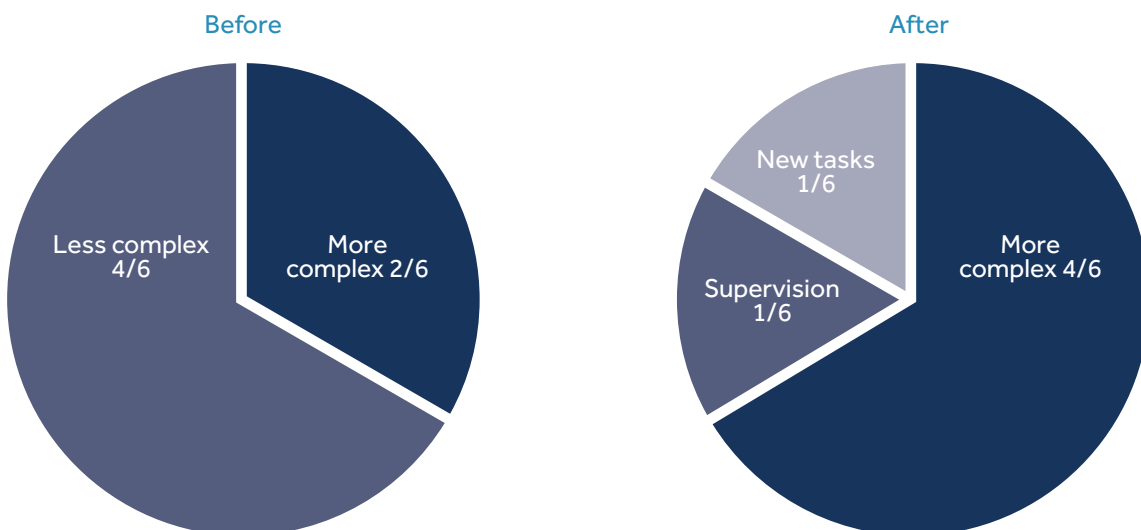
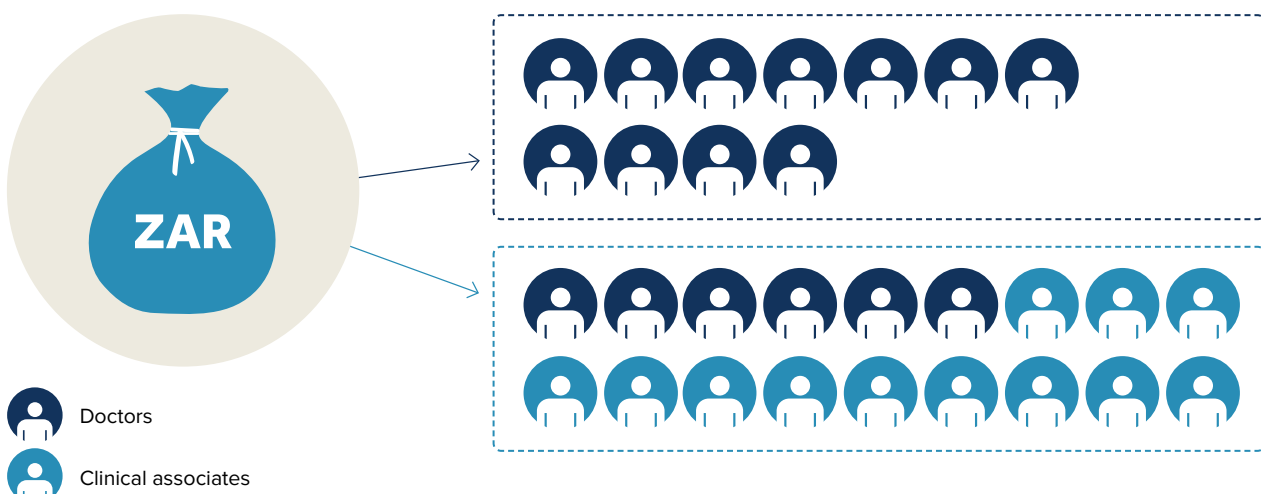


Figure 2: Comparison of the composition of two healthcare teams employed with the same HR budget



Effectiveness and quality of care

An effective health system is one that meets the targets set for different measures of performance. Delivering high-quality care is a cross-cutting objective for any health system but coupling this with effectiveness allows for qualitative and quantitative outcomes to be improved together as a combined target.²³

Clinical associates are not meant to replace doctors or nurses, but to enhance the ability of healthcare teams to provide quality care.²⁷ A 2013 literature review found that mid-level workers can provide the same quality of care as higher-level workers provided that they receive adequate training, support and supervision within the team.³³

Effective teams allow for sharing of tasks with clinical associates and/or shifting of tasks towards them, which lightens the workload of medical practitioners and nurses, thereby increasing productivity, quality and quantity of care. Several facilities have reported shorter queues at outpatient departments and other areas since the introduction of clinical associates.²⁶ These results are similar to findings in the USA of increased patient access with the addition of physician assistants.³⁴ In the Tshwane study on VMMC, the incidence of complications did not differ between the 88.7% of circumcisions performed by clinical associates and the 11.3% done by medical practitioners.²⁹

Scope of practice

The clinical associate scope of practice promotes effective teams, with guidelines for supervision of the clinical associate by a medical practitioner, relative to the years of consecutive clinical practice.¹⁹ However, the specific wording in the scope of practice does not enable the appropriate supervision

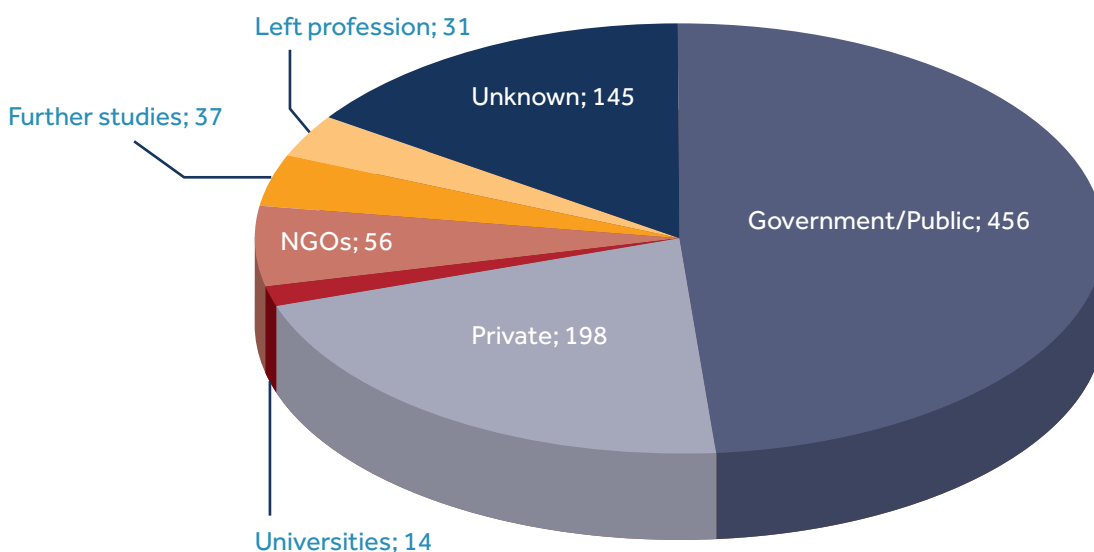
needed for team members to be effective. For example, the distinction between the level of supervision required at 0 - 2 years ("continuous and hands-on") versus at 2 - 4 years ("report in person after each task") is open to interpretation. Additionally, this can lead to micro-management of clinical associates, which reduces their effectiveness. While intending to limit medico-legal risks, this lessens the potential of the team-based approach. Creating a team-based, collaborative working environment should allow for an optimal balance between direct and indirect supervision, in which the risks are managed dependent on the complexity of the task(s) and the competence of the clinical associate.

An example of an effective role that clinical associates play within a multi-disciplinary team can be found in the Community Oriented Substance Use Programme (COSUP), implemented in Tshwane from 2016. Together, social workers, community health workers, and clinical associates form teams at 15 sites in four sub-districts. Under the supervision of medical doctors, the clinical associates within the teams provide comprehensive interventions to more than 4 000 people. They are responsible for clinical care, including care of 800 people on opioid substitution therapy.^{35,36}

Prescribing

The ability of clinical associates to prescribe medication at the PHC level of the Essential Medicines List (EML) up to Schedule IV, with prescriptions of a higher Schedule permitted in management of emergencies,¹⁹ has enhanced team effectiveness. The prescription only requires the name of the supervising medical practitioner, not a countersignature. In the case of exceptions to this rule, namely drugs outside the EML, a countersignature is required.¹⁹ This guideline increases team effectiveness and

Figure 3: Employment distribution of 937 clinical associates, South Africa, 2010 - 2017



Source: PACASA, AIHA, 2018.¹⁷

allows workloads to be shared appropriately. However, clinical associates are not yet regulated as authorised prescribers under the Medicines and Related Substances Act (Act No. 101 of 1965),³⁷ which severely hampers the productivity of healthcare teams.

Equity and access

Addressing shortage of staff

Most clinical associates work in the public sector in underserved and rural areas. A 2015 survey of employed clinical associates found that 64% of 92 respondents worked in rural areas.¹⁷ Students are mainly recruited from rural areas, with 60% of clinical associate students at one university reporting in 2014 that they preferred working in rural areas.³⁸ This preference was associated with having lived in rural areas for most of their lives. Adjusting for bursary or family obligations, this figure was 53.4%.³⁸ These findings contrast significantly with findings for final-year medical students, of whom only 4.8% were interested in working in rural areas beyond training and bursary obligations.³⁹

The private sector

There has been significant growth in clinical associate employment in the private healthcare sector, increasing from 2% of graduates in 2015 to 21% in 2018 (Figure 3).¹⁷ In this context, clinical associates are involved in fields like addiction care, clinical training, emergency medicine, surgical assistance and health systems consulting, among others. This has sparked some controversy as the clinical

associate training programme is intended to prepare students for public service and not the private sector. The increase in number of clinical associates in the private sector can be attributed to the failure of provinces to continue student bursaries and failure to create enough public health sector posts for clinical associates.¹¹

Conclusions

The intention of NHI is to catalyse South Africa's move towards UHC by ensuring equitable access to quality health services. An HRH strategy using clinical associates efficiently to meet targets of quality and performance can assist in achieving this objective. Evidence on the role and performance of clinical associates supports their increased employment in team-based contexts,^{10,15,24-27} particularly where inter-professional practices are properly implemented.

With appropriate supervision and management, and enough posts and career opportunities, the clinical associate profession could contribute significantly to quality healthcare delivery while providing employment for young South Africans. Utilising clinical associates will help to ensure that NHI implementation is consistent with the global vision that health care should be a social investment, and reflect a society based on justice, fairness and social solidarity.

Table 3: Proposed career path for clinical associates in South Africa

Name of post/rank	Requirements	Function
Clinical associate (first level)	1. BCMP or equivalent degree (BMCP at Walter Sisulu University) and 2. Registration as clinical associate with the HPCSA	Perform duties according to education and training. Have a high level of supervision and mentorship by a registered medical practitioner. (Regulations require direct supervision for 0 - 2 years' experience)
Senior clinical associate (second level)	1 and 2 and 3. Relevant postgraduate diploma or Honours degree with at least three or more years' appropriate experience as clinical associate at first level or 4. At least five years' continuous and appropriate experience as clinical associate at first level	Less supervision and can perform his/her duties efficiently without consuming the time of supervising medical practitioners, unless necessary. (Regulations require indirect supervision for 2- 4 years' experience, with collaborative supervision for 5+ years' experience)
Principal clinical associate (third level)	1, 2 and 3 or 4 and 5. Relevant master's degree with a minimum of five years' appropriate and continuous experience as senior clinical associate or 6. At least 10 years' continuous and appropriate experience as a senior clinical associate	Requires minimal supervision, working in collaboration with a supervising doctor; can perform duties independently according to extended experience, further training and/or education. (Regulations require collaborative supervision for 5+ years' experience)

Source: Capati, et al.; 2017.¹¹

Recommendations

- Strengthen the role of the Professional Association of Clinical Associates in South Africa (PACASA): While the nascent organisation is composed of energetic young clinical associate graduates, it will also benefit from increased skills capacity and guidance from professional partners to increase the advocacy, professional standing and visibility of the profession. Strengthened professional identity will increase morale along with the value-add of the profession.
- Review the Clinical Associate Scope of Practice and Prescription regulations:¹⁹ With 10 years of practical experience to draw on, it is imperative that the Scope articulates clear guidelines on role, supervision and effective task sharing. Prescribing rights, defined in the Scope, need to be ratified legally.
- Increase employment numbers/posts for clinical associates: Implement the guidelines as recommended by the Task Team for estimated number of clinical associates needed in the South African healthcare service to achieve UHC by 2030.
- Develop a human resources strategy for efficient and effective functioning of healthcare teams incorporating clinical associates: Competencies such as teamwork and role clarification are gaining traction in curriculum development and clinical practice, often within domains such as collaborative leadership and patient/family-centred care.^{40,41} As an example, clinical associates could be placed in teams with doctors during the latter's internship and/or community service, thus providing mutual support. Supervision of both can therefore be done efficiently, especially considering that interns rotate frequently, and the more constant presence of clinical associates would provide more team stability.
- Conduct job re-evaluation and re-grading for clinical associates in the public sector: The post of clinical associates in the public service was set at salary grade seven in 2010. However, the finalised scope and practical implementation of their role necessitates a review. The demands, complexity and responsibility of the job are now better articulated and understood, thereby supporting a review as per Section 39(1) of the Public Service Regulation of 2016.⁴² A review of responsibilities and salary will acknowledge the contribution of clinical associates while still maintaining cost efficiencies.¹¹
- Implement an attractive professional career path: In line with regulations defining scope of practice, it is recommended that clinical associates be recognised within three different career levels, each with its appropriate remuneration. They would be able to advance on a proposed career path from entry level to principal clinical associate. Job descriptions will change with additional responsibility for tasks and skills as they proceed up the ranks, according to further education, training and experience¹¹ (Table 3).
- Increase training of clinical associates: Universities with health science training platforms are encouraged to develop clinical associate programmes along with Honours courses/postgraduate diplomas in priority areas of medicine. This follows the BCMP Honours degree in emergency medicine offered by Wits since 2017.

Acknowledgements

The authors would like to thank the following individuals and institutions for their crucial input and data: Daniela Goeieman (Professional Association of Clinical Associates in South Africa (PACASA)), Professor Jannie Hugo (University of Pretoria), Dr Mukund Khattry-Chhetry (Walter Sisulu University), and Ms Karesa Govender (Rural Health Advocacy Project (RHAP)). The Health Resources and Services Administration (HRSA), the US President's Emergency Plan for AIDS Relief (PEPFAR), and the US Centers for Disease Control (CDC) have supported the HIV/AIDS Twinning Center programme, implemented by the American International Health Alliance (AIHA). The Twinning Center has provided critical support to the clinical associate training programmes and profession in South Africa since 2010.

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