

COVID-19 exposes health worker shortages in the USA and UK, but nationalism and self-interest must not exploit medical workforces from low- and middle-income countries

To the Editor: To address the healthcare crisis created by coronavirus disease 2019 (COVID-19), the US Department of State's Bureau of Consular Affairs is actively seeking to recruit foreign medical professionals by expediting visa processes.^[1] Likewise, one of Boris Johnson's main manifesto promises was to recruit 50 000 more nurses for the National Health Service (NHS), which is also short of 11 500 doctors. In the Queen's speech to the British Parliament on 20 December 2019, it was stated that 'Steps will be taken to grow and support the National Health Service's workforce, and a new visa will ensure qualified doctors, nurses and health professionals have fast-track entry to the United Kingdom.' According to the government's 'NHS People Plan', qualified doctors, nurses and allied health professionals with a job offer from the NHS, and who have been trained to a recognised standard, will be offered fast-track entry, reduced visa fees and dedicated support to relocate.^[2]

It therefore appears that the USA and UK intend to address the shortages of medical personnel, now exposed by the COVID-19 pandemic, by recruiting doctors, nurses, rehabilitation specialists and pharmacists from low- and middle-income countries (LMICs).

Already in 2005, 25% of doctors in the USA and 28% of doctors in the UK were foreign trained, with 60% and 75%, respectively, originating from the poorest countries.^[3] Migration of foreign medical graduates to the UK peaked in 2019, with more than 50% of newly registered doctors in the UK being foreign trained.^[4] Only 5% of patients in sub-Saharan Africa, and 3% of patients in South Asia, have ready access to timely, safe, affordable surgery.^[5] Yet the USA, with 10 times the physician density of low-income countries and double the physician density of middle-income ones, and the UK, a prosperous country in part as a result of its colonial history, are poised to exploit poorer countries by recruiting their doctors and nurses, and in so doing undermine efforts to grow medical services in these countries.

The University of Cape Town Global Surgery Division wishes to express its deep concern that Africa and its people will be paying the price for the USA and UK's lack of investment in their own health workforces. We call on governments and professional medical associations in both high-income countries and LMICs to ensure that as they address the current global need for health workers, their strategies should promote equity and specifically not undermine the already understaffed and fragile health systems of many LMICs. Our global approach should be to support and strengthen these fragile health systems, particularly in the time of a pandemic that is teaching us that both individuals and individual countries can only be safe and healthy if we ensure the safety and health of all.

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Benefit v. risk when using chloroquine in patients with severe COVID-19 disease

To the Editor: Chloroquine (CQ) is widely advocated as treatment for coronavirus disease 2019 (COVID-19), including the president of the USA publicly supporting the use of hydroxychloroquine (HCQ) as a 'game-changer' on the social media platform Twitter. CQ and HCQ are structurally similar, with HCQ having an *N*-hydroxyl-ethyl side-chain in place of the *N*-diethyl group.^[1] Currently only CQ is being marketed in South Africa. We encourage the development of curative directed therapy against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) using appropriate designed trials and regulatory oversight, and caution against the indiscriminate use of CQ or HCQ. Careful patient selection is essential, including assessing prognosis, anticipated benefit and potential harms prior to initiating CQ/HCQ therapy.

The benefit of CQ/HCQ is not yet clearly defined. CQ/HCQ demonstrated *in vitro* antiviral activity against SARS-CoV-2.^[2,3] Although the antiviral mechanisms of CQ/HCQ are still being investigated, a number of mechanisms have been proposed. CQ/HCQ inhibits autophagy by impairing membrane fusion of SARS-CoV-2 with intracellular endosomes or lysosomes, perhaps by increasing the pH of these organelles;^[4] interferes with glycosylation intracellular receptors (angiotensin-converting enzyme 2);^[5,6] or inhibits T-cell-mediated proinflammatory cytokines implicated in acute respiratory distress syndrome.^[7] *In vivo* evidence is currently limited but increasing with multiple ongoing studies. A small French open-label non-randomised controlled trial of 26 patients diagnosed with COVID-19 receiving HCQ is widely cited.^[8] Of the 26 patients, only 20 were included in the analysis; 6 were receiving concomitant azithromycin for bacterial infections. Sixteen control patients were included. Viral clearance on nasopharyngeal swabs was greater at day 6 in HCQ and greatest in the 6 HCQ plus azithromycin-treated patients. Although promising, the study suffered from many limitations, as outlined by Dahly *et al.*^[9]

Others have argued that our understanding of the SARS-CoV-2 pathophysiology is incomplete and that the immune effects of CQ/HCQ are unknown.^[10] CQ had a paradoxical effect, where the decrease in cytokines delayed the adaptive immune response with

worsened disease in a primate study with Chikungunya virus.^[11] Although CQ and HCQ have been used safely for decades to treat outpatients with rheumatic diseases and malaria, critically ill patients with severe SARS-CoV-2 disease and immune dysregulation may be at higher risk of CQ/HCQ toxicity. The toxic dose of CQ and HCQ is close to the therapeutic range.^[12,13] CQ/HCQ cardiotoxicity includes dysrhythmias, depressed cardiac contractility and conduction associated with hypokalaemia due to potassium shifting. Renal and hepatic impairment may increase CQ/HCQ concentrations, as CQ and HCQ are renally eliminated and hepatically metabolised.^[14] Underlying cardiac disease or cardiac risk factors, concomitant QT-prolonging medicines and enzyme inhibitors may therefore increase the risk of CQ/HCQ toxicity. Investigational therapy, treatment or prophylaxis, with unknown benefit v. harm, is best studied as part of a clinical trial with appropriate ethical and regulatory oversight. Lastly, CQ stock is limited worldwide, and CQ is an essential medicine to treat systemic lupus erythematosus (SLE). Stock prioritisation away from these patients may lead to acute disease flare-ups, which could add additional pressure to the health system and unnecessarily expose SLE patients to the hospital environment.

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Lockdown and our national supply of blood products

To the Editor: Our generation finds itself in an unprecedented situation, as coronavirus disease 2019 (COVID-19) causes widespread changes to everyone's lives. Our healthcare system has faced adversity in various forms, but this current crisis brings new and more difficult challenges.

An important aspect of medical treatment is the use of blood products. The availability of these products is reliant on voluntary donations and appropriate use by clinicians. A large proportion of donations are made from the elderly, perhaps at greatest risk from COVID-19, and educational institutions, now closed through isolation polices. Data from other countries highlight social distancing and self-isolation as important steps in slowing down transmission of coronavirus.^[1] However, these measures will drastically reduce the number of blood donations, unless different collection strategies are employed.

South Africa already has limited blood products, with the South African National Blood Service (SANBS) and Western Cape Blood Service (WCBS) needing to collect more than 3 500 units of blood every day to maintain adequate stocks. Less than 1% of the population regularly donate blood, and more than 30% of donors are under 25 years of age, demonstrating the burden on blood collection when schools and universities are closed. The high incidence of HIV, trauma and chronic illness places tremendous demand on an already limited supply, with several areas still having limited access to blood products – all these problems will persist during the COVID-19 pandemic.

There are ongoing efforts to improve appropriate and responsible use of these limited and life-saving blood products through patient blood management (PBM) systems. There is now an even greater need to implement and support these efforts.^[2] In the light of current events, we can expect a dramatic decrease in the number of donations, and subsequently a mismatch in supply and demand. The blood products available for our hospitals and clinics will therefore rapidly decrease. This will continue for months, and we consider that the following are important:

- Healthcare professionals should be aware of this pending problem and implement PBM programmes, ensuring that blood products are only used when necessary, through diagnosis and management of anaemia, of which the most common and treatable pre-operative cause remains iron deficiency.^[2]

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- Patients should generally only be transfused if alternative measures have failed and they are symptomatic from anaemia, or in cases of emergency. Single-unit transfusions should be used as far as possible. Healthcare workers should be made aware of transfusion threshold data showing that very few patients require blood transfusions if their haemoglobin concentration is >7 g/dL.^[3-5] Hospital managers and transfusion committees must take proactive roles in directing PBM activities in their hospitals.
- The public should be made aware of this problem and make concerted efforts to donate blood out of their normal routine.
- The blood transfusion services should be supported by the Department of Health and public forums to ensure continued supply of products.

Addressing these issues will ensure that lives are saved and appropriate care delivered in these difficult times. Failure to address these issues timeously will result in a blood product supply crisis in which patients will suffer with increased mortality.

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Compensation for occupationally acquired COVID-19

To the Editor: A letter to the Editor of the *SAMJ*^[1] published online on 17 March 2020 asked whether coronavirus disease 2019 (COVID-19) can be considered as an occupational disease, and if a case for

occupationally acquired COVID-19 could be made, who would be responsible for medical and funeral (burial) expenses.

The Compensation Commissioner issued a notice dated 20 March 2020, entitled 'Compensation for Occupationally-Acquired Novel Corona Virus Disease (COVID-19)',^[2] in terms of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 (COIDA).^[3] The Commissioner issued a directive that the notice came into effect on the date of publication and will be implemented with immediate effect.

In the notice, occupationally acquired COVID-19 is defined as 'a disease contracted by an employee as defined in the COIDA Act arising out of and in the course of his or her employment'.^[2] An employee who was previously not infected with COVID-19 may acquire COVID-19 as a result of single or multiple exposures in a workplace or after work-related travel to high-risk areas.

For a case to be accepted as occupationally acquired, the following criteria must be met:

- Exposure to COVID-19, in the workplace out of and in the course of employment.
- A clinical diagnosis in accordance with World Health Organization (WHO) guidelines. The notice does not provide a reference to a particular document, but a variety of guidelines are available on the WHO website.^[4]
- Proof of approved work-related travel to high-risk countries or areas.
- Performing work in an environment with an inherently high risk.
- The development of illness can be chronologically linked to exposure in the workplace.

Physical impairment will be determined 3 months after diagnosis, and when maximal medical improvement is attained. The Commissioner reserves the right to decide whether any permanent disablement is a result of COVID-19.

In all cases accepted by the Commissioner as occupationally acquired, payment for reasonable medical expenses shall be covered by the Compensation Fund for a period not exceeding 30 days from the date of diagnosis. Compensation for additional medical expenses shall be considered if, in the opinion of the Director-General, treatment may reduce the extent of disablement.

The fund will cover burial expenses and widows and dependants' pensions in cases where employees succumb to COVID-19.

In addition to medical expenses, the fund will pay total temporary disability (TTD) benefits where disablement is attributed to a confirmed case of COVID-19. TTD benefits will be applicable for a period not exceeding 30 days from the date of diagnosis.

In suspected or unconfirmed cases, where a medical practitioner recommends self-quarantine in accordance with accepted guidelines, the employer shall be liable for remuneration for sick absenteeism.

Reporting of cases to the Compensation Commissioner must be done in line with the requirements set out in the notice, using the prescribed documentation.

Claims may be submitted online or manually. All claims should reflect the correct 10th revision of the *International Statistical Classification of Diseases and Related Health Problems* (ICD-10) code, U07.1.

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Decisive and strong leadership and intersectoral action from South Africa in response to the COVID-19 virus

To the Editor: South Africa (SA) reported its first case of coronavirus disease 2019 (COVID-19) on 5 March 2020. For the 14 days from then until the time of writing (5 - 19 March), we have seen decisive, strong leadership from the President, and significant, important and necessary co-ordination between different ministries including Education, Justice, Health, Trade and Industry, Transport, Public Works and Infrastructure, Finance, Cooperative Governance and Traditional Affairs, and International Relations and Cooperation. In these 14 days, SA has rapidly produced and implemented a number of action items (Table 1). This intersectoral action and co-ordination is something that has been needed for a long time to address development in SA.

On 19 March 2020, the Competition Commission published a COVID-19 block exemption for the healthcare sector.^[1] The exemption is aimed at promoting co-ordination, sharing of information and standardisation of practice across the entire healthcare sector. It also seeks to facilitate cost reduction measures, in particular costs of diagnostic tests, treatment and other preventive measures. Finally,

the exemption seeks to promote agreements between the National Department of Health and the private sector, with the sole purpose of making additional capacity at healthcare facilities available to the public sector and ensuring adequate medical supplies. COVID-19 has dramatically highlighted the need for a significantly more integrated healthcare system.

The Health Market Inquiry (HMI) made recommendations that will promote standardisation and knowledge sharing as well as a method to deal with pricing within the functions of the proposed supply-side regulator. Perhaps this exemption can build trust between players and will ease us into a more rational and integrated healthcare system.

Evidence from the HMI showed an excess capacity of high-care and intensive care unit (ICU) beds in the private healthcare sector, and the HMI concluded that there was inappropriate use of these beds.^[2] To free up private sector ICU beds will require the private sector to change its criteria of how they are used. Hospitals will also have to improve general ward care if this is one of the reasons doctors prefer to admit to an ICU, as was reported to the HMI. Improving general ward care will improve efficiency to the benefit of all.

Another area that requires coherence between the public and private sectors is COVID-19 testing. Public sector testing at the moment is in our opinion correctly restricted to individuals who meet the case definition. A live broadcast of a question and answer session organised by the South African Medical Association and the Minister of Health revealed that general practitioners were inundated with requests for testing that the GPs thought was not indicated. There were also reports that some employers demanded that employees arrive at work with a confirmed negative test result. This is irrational – a negative test today does not mean a negative test tomorrow – and furthermore it is not constitutional. SA's experience with HIV testing has confirmed the unconstitutionality of demanding people's confidential medical results through the

Table 1. List of key actions*

Ministry	List of actions taken
President	Declaration of a State of Disaster in terms of section 27 of the Disaster Management Act No. 57 of 2002
Health	Establishment of a national hotline and WhatsApp number for the general population
Home Affairs, International Relations and Cooperation	Travel ban on foreign nationals from high-risk countries such as Italy, Iran, South Korea, Spain, Germany, the USA, the UK and China as from 18 March 2020
Health	Dedicated website with daily updates from the National Institute for Communicable Diseases, tests conducted, positive and negative results, information on symptoms and prevention (in local languages), list of amended regulations
Defence and Military Veterans	'Release of resources' by the Department of Defence, national organs of state, and institutions in national, provincial and local government
Police	'Prevention and prohibition of gatherings.' In this case, a gathering of 100 people is prohibited. The assembly of more than 50 persons at premises where liquor is sold and consumed is also prohibited. The Regulation also makes provision for powers of an enforcement officer to disperse a gathering, or in some cases to arrest and detain the organiser of a gathering.
Trade and Industry	COVID-19 Block Exemption for the Healthcare Sector
Health, Justice and Correctional Services	'Refusal of medical examination, prophylaxis, treatment, isolation and quarantine.' This regulation makes provision for the unlikely scenario where a person refuses to (self) quarantine or (self) isolate. The person may then be placed in isolation or quarantine for a period of 48 hours, as the case may be, pending a warrant being issued by a magistrate, on application by an enforcement officer, to perform the medical examination of a suspected or confirmed case.

Continued ...

Table 1. (continued) List of key actions*

Ministry	List of actions taken
Public Works and Infrastructure	'Places of quarantine and isolation' by the Minister of Public Works and Infrastructure, the Members of the Executive Council in the provinces and the accounting officers of municipalities
Basic Education and Higher Education, Science and Technology	'Closure of schools and partial care facilities' from 18 March 2020 until 15 April 2020, which period may be extended for the duration of the national State of Disaster by the cabinet member responsible.
Justice and Correctional Services	Suspension of visits for 30 days to correctional centres, remand detention facilities, holding cells, military detention facilities and Department of Social Development facilities, including child and youth care centres, shelters, one-stop centres and treatment centres, which period may be extended for any period, but not beyond the duration of the national State of Disaster, by the cabinet member responsible.
Health, Police, Justice and Correctional Services	'Limitation on the sale, dispensing or transportation of liquor.' In this case all on-consumption premises selling liquor, including taverns, restaurants and clubs, must be closed with immediate effect, or must accommodate no more than 50 persons at any time, provided that adequate space is available and that all directions in respect of hygienic conditions and limitation of exposure to persons with COVID-19, are adhered to. It is also notable that no special or events liquor licences will be considered for approval during the duration of the national State of Disaster. Establishments will also close earlier, between 18h00 and 09h00 the next morning on weekdays and Saturdays, and from 13h00 on Sundays and public holidays.
Finance/Treasury	'Emergency procurement procedures' in line with financial management legislation, regulations and instructions.
President	'Authority to issue directions.' In this regard, the Ministers of Health, Justice and Correctional Services, Basic and Higher Education, Police, Social Development, Trade and Industry, and Transport have been authorised to issue directions where needed to address, prevent and combat the spread of COVID-19 in matters falling within their respective mandates.
Justice and Correctional Services	'Offences and penalties' for a person when found liable on conviction, to a fine or imprisonment for a period not exceeding 6 months, or both such fine and imprisonment.

*Source: <https://www.gov.za/Coronavirus>

courts. Education of some employers is clearly required. Over and above this, testing the worried well for COVID-19 is a waste of resources.

We should not be naive, and must consider that profiteers both from the public and private sectors, in equal measure, may try to take advantage of this situation. Oversight of the resources that are being invested in protecting SA from the COVID-19 virus must be exercised.

The threat that COVID-19 presents has resulted in leadership from government and apparent willingness of all South Africans to play their part. However, SA faces just as real a threat to its health, its economy and its development: the crises of poverty, inequality and unemployment are the social determinants that threaten our wellbeing as individuals and as a society at large. We would have a healthier country if we could demonstrate the same degree of intersectoral action and social mobilisation across the public/private divide in the form of meaningful social compacts. There are excellent lessons to be learnt here, and this opportunity should not be wasted.

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COVID-19 and tuberculosis in South Africa: A dangerous combination

To the Editor: There has been much speculation during the past week about the catastrophe that awaits once coronavirus disease 2019 (COVID-19) establishes itself in the poorest communities of South Africa (SA) and, importantly, in informal settlements. Evidence to date suggests that COVID-19 is efficiently passed from infected individuals via large droplets and hard-surface fomites.^[1] Given the housing density and shared toilet and tap facilities in informal settlements, interventions such as frequent hand washing, social distancing and self-isolation will be particularly difficult to achieve. In addition, the

disproportionate burden of HIV has left many making dire predictions for the consequences to the people and the health system if, or more appropriately when, COVID-19 reaches these communities.^[2] In the wake of World TB Day, we would like to remind readers why tuberculosis (TB) is also an important and complex consideration for vulnerable populations in relation to COVID-19.

At the time of writing (24 March 2020), 554 cases of COVID-19 have been detected and reported in SA, largely among people aged 21 - 60 years.^[3] No deaths have yet been reported, and the majority of cases are still imported by people who have recently travelled.^[4] In the language of the day, the SA epidemic curve has just begun. Early data from China indicate that individuals most at risk for severe responses to COVID-19 are those aged >60 years and those with comorbidities such as chronic respiratory disease, hypertension, diabetes and cardiovascular disease.^[5,6] To date, COVID-19 has not been studied in low- and middle-income countries with endemic HIV. With an estimated 7.7 million people living with HIV in SA,^[7] concerns about the effect of COVID-19 on people with suppressed immune systems have largely dominated the conversation. Yet HIV is only one piece of the equation.

In SA, an estimated 301 000 people developed TB in 2019, nearly 60% of whom were also HIV-infected.^[8] It is unclear how COVID-19 may manifest itself in this population. Regardless of HIV status, people with undiagnosed pulmonary TB (PTB), those with drug-resistant TB or complex presentations such as disseminated forms, and those who have only just begun PTB treatment may be at increased risk for severe responses if they become infected with COVID-19. As seen with PTB and silicosis, combined pulmonary diseases can multiply the gravity of the situation.^[9,10] Moreover, common COVID-19 symptoms (cough, fever, and to a lesser degree, shortness of breath) overlap with PTB, which may make distinguishing between the two problematic for healthcare workers in high-burden communities. Although sputum production, a common feature of PTB, is less common among individuals with COVID-19,^[5] those with TB-HIV co-infection may not present with sputum production.^[11] It will be important for clinicians to stay vigilant and consider PTB in their differential diagnosis of COVID-19 alongside the possibility of dual infection with COVID-19 and PTB, especially among people living with HIV. It is equally important that patients with confirmed or presumptive PTB symptoms be prioritised for COVID-19 testing.

TB and COVID-19 could result in poorer treatment outcomes, especially if TB treatment is interrupted.^[12] Another danger is the inadvertent de-prioritisation of TB care if the health system becomes inundated with people experiencing severe acute respiratory syndrome from infection with SARS-CoV-2.^[12,13] We run the risk of amplifying the effect when people with PTB return to communities without adequate treatment, with potential consequences well beyond the COVID-19 pandemic. It therefore behoves us as epidemiologists, clinicians and citizens to act now to stem the tide of COVID-19 transmission through our practice and communication. The World Health Organization recommends that TB patients follow all recommended precautions against COVID-19 and continue taking TB treatment throughout the pandemic.^[12] Ensuring continuity of TB care will require adequate stock of medication for patients to take home and the ramping up of digital technologies and other community support systems to provide outpatient and community care when it is safe to do so.^[12] Given that self-isolation may be a challenge to those at heightened risk, appropriate testing and the strict enforcement of infection control protocols, cough etiquette, and segregation of people who may have either TB or SARS-CoV-2 infection among in- and

outpatients will be of paramount importance to limit further spread. TB-focused clinicians and health workers can also be vital points of reference for people infected with SARS-CoV-2 and for health staff undertaking active case finding and contact tracing.^[12]

The spread of COVID-19 among people living with HIV is a well-founded concern in SA. The implications of TB with and without HIV must equally be considered. Factors related to PTB and TB-HIV co-infection may complicate clinical suspicion for either COVID-19 or PTB, and require clinical vigilance. Given the unknowns regarding COVID-19 in the context of SA's unique health burden, the resounding call to flatten the curve remains of critical importance.

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Capacity building during COVID-19: Utilising South Africa's underutilised international medical graduates

To the Editor: The coronavirus disease 2019 (COVID-19) pandemic has wreaked havoc on global healthcare systems, with even well-resourced healthcare systems in Western Europe, the UK and the USA being significantly affected.^[1]

Although official data are difficult to obtain, a UK media statement^[2] suggests that 25% of the UK's doctors are absent due to COVID-19, with European figures^[3] just as alarming. The concern is such that the UK recently provided temporary registration to 11 800 doctors,^[4] while Harvard^[5] is contemplating the early graduation of medical students to improve capacity in the USA. Numerous South African (SA) healthcare workers have already been quarantined.^[6] Trying to expand SA's

healthcare capacity while simultaneously contending with a loss of healthcare staff due to COVID-19 could pose a significant challenge to a system already under strain.

SA international medical graduates (IMGs) could potentially assist. The integration of these doctors has long been problematic for the Health Professions Council of South Africa (HPCSA)^[7] and the National Department of Health (NDoH), with the matter previously ending up in parliament.^[8,9] A 2018 NDoH policy,^[10] aimed at bridging their integration, has yet to be implemented. Regardless, SA has a significant pool of underutilised IMGs. A recent petition and survey in the UK^[11,12] called for IMGs awaiting UK registration to be allowed to assist, while amended legislation^[13] already allows specific unlicensed IMGs to serve during the COVID-19 crisis in New York. Analysis of IMG availability in SA was lacking, so we conducted an online survey.^[14]

The survey generated 644 responses within 48 hours (Fig. 1). Of these IMGs, 458 are currently in SA, and are either unemployed or working in non-medical roles. Almost all are willing to serve during the COVID-19 outbreak, but conditions such as brief orientation training or working near to home would ideally need to be considered. Although the demographics and registration statuses vary, many are registered with international councils or are awaiting HPCSA board examination results or registration. Currently, HPCSA IMG administration is on hold during the lockdown.^[15] In contrast, other medical regulators, such as the Medical Board of Australia,^[16] are streamlining their processes to expedite IMG registrations.

Utilising unregistered doctors is not without risk. Limited quality control could potentially compromise patient care. However, this could be mitigated by deciding on minimum standards during recruitment, as done in New York,^[13] and limiting their scope of practice to very specific, in-hospital roles.

Should the COVID-19 situation in SA deteriorate, intensive care unit (ICU) capacity will need to be expanded, as already seen in many countries.^[17,18] Staffing of such facilities could become the biggest challenge. Incorporating IMGs into specific roles would free up experienced doctors to staff more specialised departments, like ICUs. Perhaps the NDoH could consider incorporating final-year medical students, recently retired doctors and IMGs in a tiered call-up strategy, should the situation necessitate. As previously discussed, similar approaches are being trialled globally.^[4,5,13] We suggest that the NDoH acts proactively by identifying all available medical human resources for future call-ups, including underutilised IMGs, a potentially vital asset.

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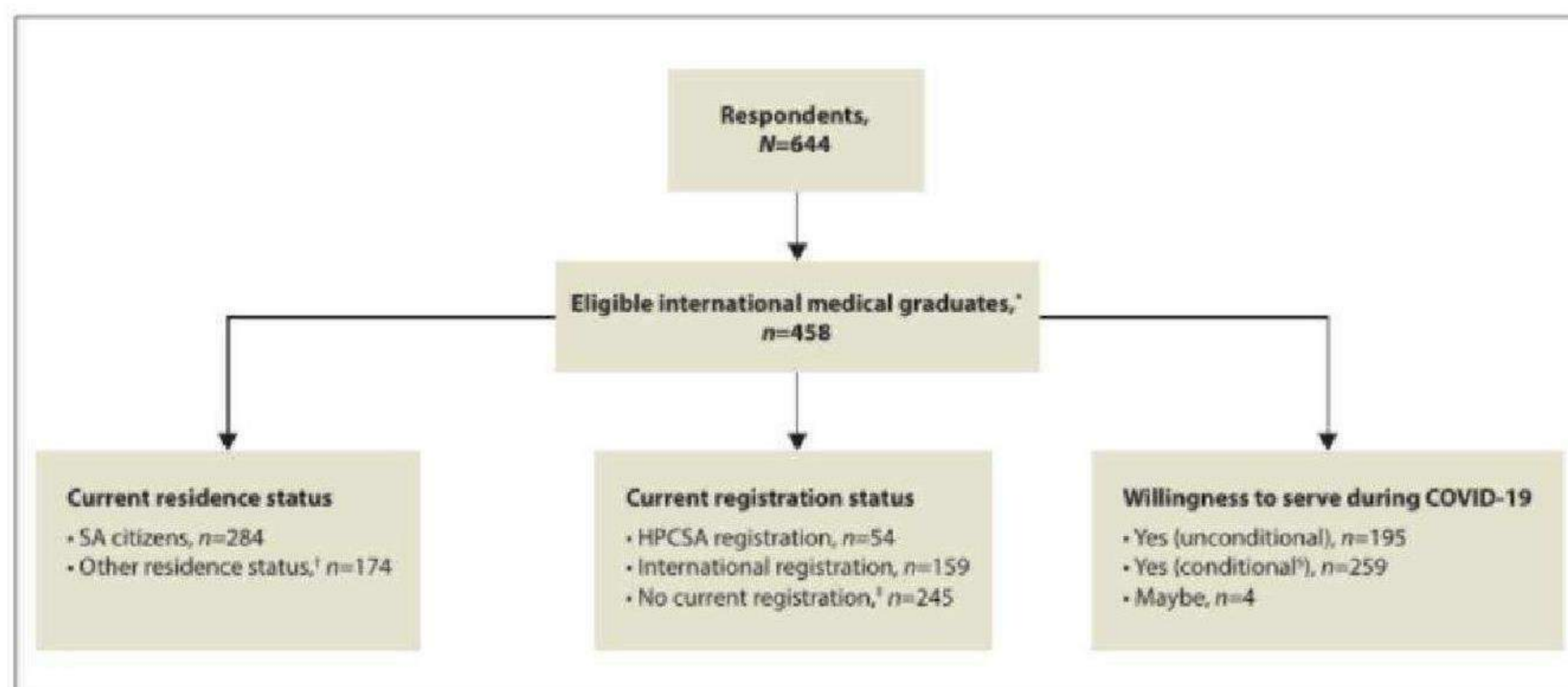


Fig. 1. Results of a brief survey on international medical graduates in SA. (SA = South Africa/n; HPCSA = Health Professions Council of South Africa; *Eligibility was determined by currently being in SA and not already serving as a doctor; †Includes refugees, asylum seekers and respondents on spousal visas or temporary residence permits; ‡Includes respondents who have completed HPCSA board examinations awaiting registration; §Conditions included receiving orientation training, being placed near their homes, remuneration, etc.)

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Where are we in the battle of ending tuberculosis in children and adolescents in South Africa?

To the Editor: Ambitious targets to end tuberculosis (TB) were set at the United Nations General Assembly High-Level Meeting (UNHLM) on TB in September 2018, with children and adolescents specifically noted as key populations deserving of more attention.^[1] In addition, the World Health Organization (WHO) launched a revised 'Roadmap towards ending TB in children and adolescents',^[2] outlining key actions that should be taken at country level to engage relevant stakeholders to optimally prevent and treat TB in these age groups.

In South Africa (SA), paediatric TB notifications (<15 years) declined steeply between 2015 and 2017 (29 137 in 2015, 20 546 in 2016 and 15 628 in 2017).^[3] This fall could be due either to a true decline in cases or to a smaller proportion of cases being found. In 2018, SA reported 17 561 cases to the WHO,^[3] a 12% increase from 2017 and probably due to the national 'finding the missing TB cases campaign' that was implemented in SA in 2018.

The WHO uses mathematical modelling to estimate the TB burden at both global and national level. In 2018, the WHO estimated that 27 000 children (<15 years; 95% confidence interval 18 000 - 36 000) developed TB in SA.^[3] Despite the 2018 increase in notifications, these estimates suggest that the SA childhood TB detection rate is still only 65%, leaving a third of children with TB in SA undiagnosed or unreported.

At the UNHLM, SA committed to diagnose and treat 95 500 children between 2018 and 2022 (Fig. 1).^[4] Although SA achieved 96% of its target for 2018, services will need to be strengthened if it is to keep up with these commitments and improve case detection. To achieve this, the country will need better diagnostics for young children, non-invasive and point-of-care microbiological sampling and testing for all children, and more training to empower healthcare workers to make clinical diagnoses. Following diagnosis, it is also essential to ensure accurate and complete reporting of all cases. Sub-national analyses

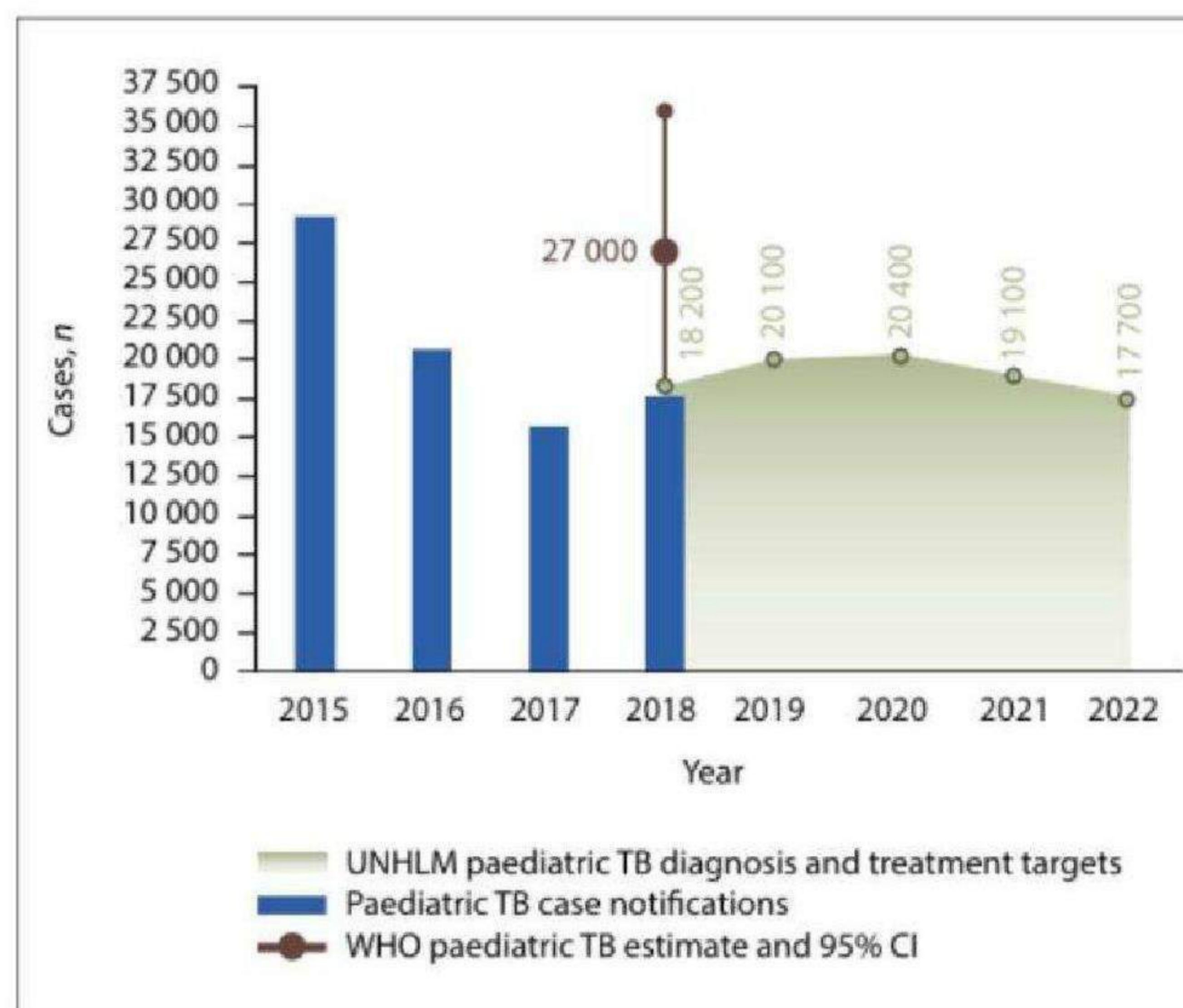


Fig. 1. National paediatric (<15 years) TB case notifications, WHO burden of disease estimates and committed UNHLM paediatric TB diagnosis and treatment targets for South Africa. (TB = tuberculosis; WHO = World Health Organization; UNHLM = United Nations General Assembly High-Level Meeting; CI = confidence interval.)

of routine TB data can additionally provide information on where interventions are most needed.

TB preventive therapy (TPT) is a safe and effective strategy to prevent TB disease in children following exposure.^[5] At the UNHLM, SA committed to provide TPT to 206 510 child contacts aged <5 years.^[4] SA is shortly to roll out shorter TPT regimens, and if this approach is coupled with strengthened TB contact management and PT implementation,^[6] it could drastically reduce the burden of TB disease among children and adolescents.

The lack of surveillance data on adolescents (10 - 19 years) with TB remains a concern. Despite being recognised as a vulnerable group, they are 'missing' in the age bands currently reported, being included either with children in the 5 - 14-year age band or with adults in the 15 - 24-year age band.^[7] SA has a strong TB surveillance system, allowing age-disaggregated reporting at a much more granular level. The country should either revise the current age bands or report adolescents separately if service provision to this age group is to be evaluated properly.

On 24 March, we commemorated World TB Day. Each year, this represents an opportunity to reflect on the promises made for children and adolescents, to evaluate progress, and to identify future priorities.

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Lamenting the changes in clinical bedside paediatric teaching at Chris Hani Baragwanath Academic Hospital: More resources are needed to train effective doctors

To the Editor: Government imperatives to produce more doctors^[1] in a manner promoting equitable access across population groups,^[2] and curriculum changes to further this initiative, are impacting on the standard of undergraduate clinical teaching. Acknowledging that medical teaching must continually adapt to account for changes in disease patterns and diverse educational backgrounds of students, we raise a concern that the resources available for undergraduate medical training are insufficient, thus compromising the quality of undergraduate medical training.

As part of a broader study conducted in 2017 at Chris Hani Baragwanath Academic Hospital (CHBAH), Johannesburg, South Africa (SA),^[3] 5 paediatricians with an average of 30 years of teaching experience were asked about the impact of these recent changes on their clinical teaching. These paediatricians, 2 of whom have been awarded the University of the Witwatersrand's highest teaching accolades,

unanimously expressed concerns about their ability to teach effectively given the increased student numbers around the bedside, reduced teaching time due to shorter teaching blocks, additional content being included in the curriculum, and greater patient loads at the hospital. They felt that the confluence of these factors was compromising what they regard as the essential features of good clinical teaching: the hands-on examination of children under watchful, expert and individualised supervision. They also stated that the changes in clinical teaching impact most negatively on weaker students.

The paediatricians suggested several solutions^[3] to avoid compromising the quality of the doctors being trained, including reducing the size of the groups of students being taught at the bedside; using different methods of teaching, for example, videos and simulations; and expanding the number of teaching platforms to include more district hospitals and secondary-level hospitals. However, given the improbability of these changes being implemented in the short-to-medium term, the clinicians expressed a sense of resignation and frustration at the futility of the situation.

The challenges facing paediatric teaching at CHBAH are very likely to extend to other clinical disciplines and other SA medical schools. In our opinion, the current problems in undergraduate medical education are due to the collective failure of engagement between clinicians, educators, medical schools and the national departments of health and higher education. The training of larger numbers of competent doctors requires, in the first instance, urgent financial support from the relevant government agencies and departments. This funding will enable medical schools to improve the quality of undergraduate training, especially for students from disadvantaged educational backgrounds who require additional support. Furthermore, medical schools need to be held accountable for ensuring that cost-effective, evidence-based teaching methods (with ongoing evaluation and adaptation of teaching methods to meet changing student needs) are implemented to produce fit-for-purpose health professions graduates.

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