

Training healthcare workers for epidemic response: Are front line healthcare professionals doing drills during the fire?¹

Summary

In this brief we identify training gaps existing among healthcare professionals and recommend interventions to address these gaps, specifically among nurses. The HSRC/UKZN study on healthcare professionals (HCPs) conducted in April–May 2020 revealed that nurses felt most ill-prepared compared to medical doctors, specifically in declaring patients as recovered, diagnostic tests, case definitions and treatment guidelines.² Our data show that nurses were the least confident in the training received for these specific areas. The 2019 Global Health Security Index,³ published before COVID-19 emerged, highlights coordination and training gaps among HCPs for epidemics. In the wake of the unexpected outbreak of COVID-19 in China and its dramatic spread across the globe, HCPs are ever more recognised as a vital resource in the frontline battle against the virus. In South Africa, national and provincial response teams mobilised during lockdown, and part of this

involved training frontline HCPs. Nurses were a key human resource as they are the largest cadre of HCPs in the country. The availability of enough appropriately skilled and motivated HCPs is central to the performance of any health system. Now that the COVID-19 epidemic has illustrated where the fault lines are, training of nurses remains a critical area for preparedness for any epidemic.

Introduction

In South Africa, the COVID 19 epidemic emerged in early March 2020, the country quickly becoming the epicentre in sub-Saharan Africa with over 1 000 confirmed cases reported in that first month. On 8 March 2020, the National Institute for Communicable Diseases⁴ reported that COVID-19 was a Category 1 notifiable medical condition in South Africa. Hence, every confirmed case presenting for healthcare is documented within the health system. A total of 27 360 of our HCPs were reported to be infected as at

4 August 2020, with more than half of these infections being in nurses (52%), and the overall mortality rate among HCPs was 0.9%.⁵ In the same month, the International Council of Nurses⁶ reported that 572 478 HCPs were infected in 32 countries and 1 097 nurses had died in 44 countries, as at 14 August 2020. By the beginning of Wave 2 in South Africa, 38 000 public sector HCPs had been infected.⁷

In South Africa's Wave 1, there were 363 HCP deaths out of 4 012 hospital care worker (HCW) hospital admissions. In Wave 2, there were 620 HCP deaths out of 4 058 HCW admissions and in Wave 3, a total of 223 HCP deaths out of 1 347 admissions.⁸ While global systematic records for HCP infections and mortality are limited, these case data suggest that the burden of COVID-19 among South African HCPs is comparatively higher than the global average among HCPs.

While the National State of Disaster asserted lockdown levels for the general population, our HCPs, being at the 'frontline' of the country's public health response, had to mobilise quickly for the health crisis. Part of this mobilisation involved formation of national and provincial response teams to enable outreach to HCPs and to prepare them to care for their patients while mitigating their own personal risk of infection within the challenges and limitations of the health system. The level of distress was described by nurses in the United Kingdom as trying to keep running on a treadmill at a high speed, and they expressed that they felt anxiety and exhaustion.⁹ Notably, no country in the world was fully prepared for the full might of the rapid emergence of the COVID-19 pandemic. With the onset of the second COVID wave in South Africa in early December 2020, mainstream media reported that frontline nurses had expressed the need for psychological support.

The 2019 Global Health Security Index³ highlighted overarching health system challenges globally and within South Africa to treat the ill while protecting HCPs. For instance, South Africa had a zero score for communications with HCPs within the health system during a public health emergency, compared to the global average score of 15/100 for this indicator. This report also flagged coordination and training gaps among health professionals for epidemic preparedness and response. As an example, only 18 of 32 national nursing association members (nurses) indicated they had received formal infection prevention and control (IPC) training or personal protective equipment (PPE) refresher courses for airborne transmitted infections in the previous six months.⁶ This report was concluded prior to the emergence and spread of SARS-CoV-2, which amplified these pre-existing health system issues.

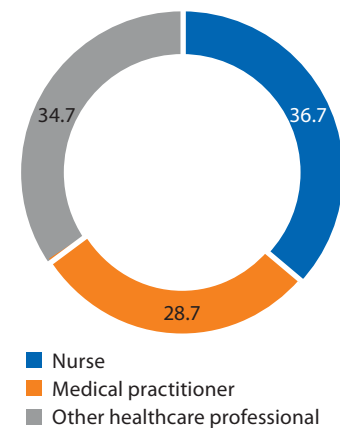
There is a need, therefore, to understand the nature of such gaps generally among HCPs and among different professional categories. The presentation of the findings of our first healthcare professional survey to the South African Nursing Council during our stakeholder engagement¹⁰ revealed great concerns around training nurses adequately for epidemic response, not just for COVID-19. In this brief, we identify where the training gaps are and recommend interventions to address these gaps among nurses.

The study findings

Sample characteristics

Data were available for 7 607 HCPs, with nurses comprising the majority at 36.7%, followed by other HCPs (34.7%) and medical doctors (28.7%) (Figure 1). Our analyses are stratified by these HCP categories. Just below 50% of HCPs worked in the public sector, and approximately one third worked in the private sector.

Figure 1: Healthcare professional survey sample composition by occupational category



Source: HSRC and UKZN (2020)

Confidence in overall knowledge about COVID-19

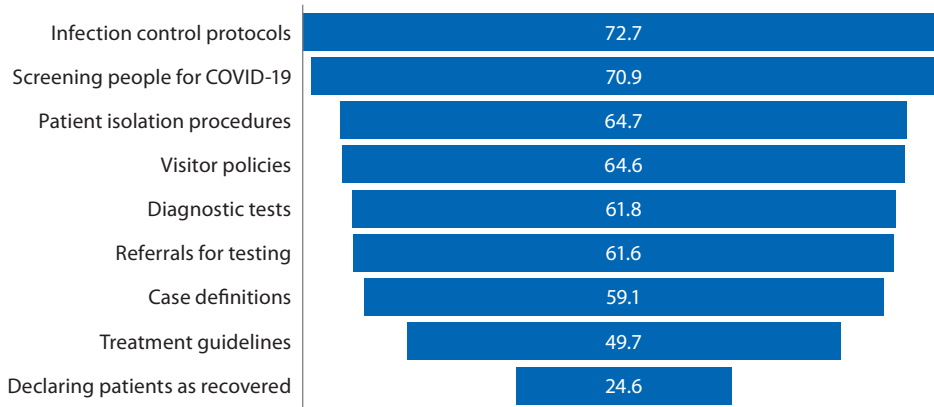
When asked whether they felt confident in their overall knowledge about COVID-19, nurse practitioners were the least confident. In total, 44.5% of nurse practitioners said they lacked confidence in their knowledge, compared to 25.3% of medical doctors and 30.2% of other HCPs. Our findings were consistent with observations elsewhere which indicate that nurse practitioners had a lower confidence in overall knowledge about the COVID-19 pandemic compared to medical doctors.¹¹ A total of 34.2% of nurses felt unsure about their COVID-19 knowledge. To gain a better understanding of the possible reasons for these apparent gaps in their confidence, we looked at the self-reported training received by HCPs.

Training areas covered by early May 2020

Healthcare professionals were asked if they had received formal training in any of nine key thematic areas, as listed in Figure 2.

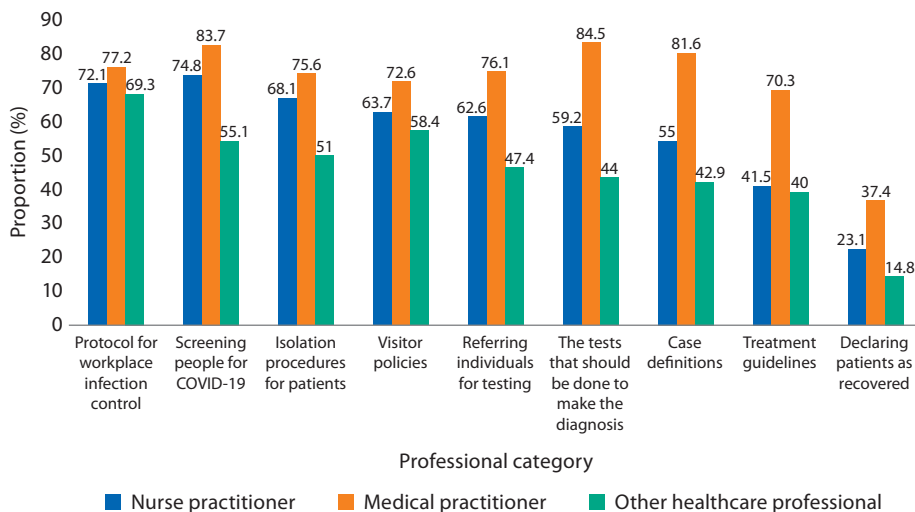
Most said they had received training in workplace infection control (72.7%) followed by patient screening for COVID-19 (70.9%). Fewer than one quarter reported they received training in declaring patients as recovered.

Figure 2: Formal training received by healthcare professionals as at April–May 2020



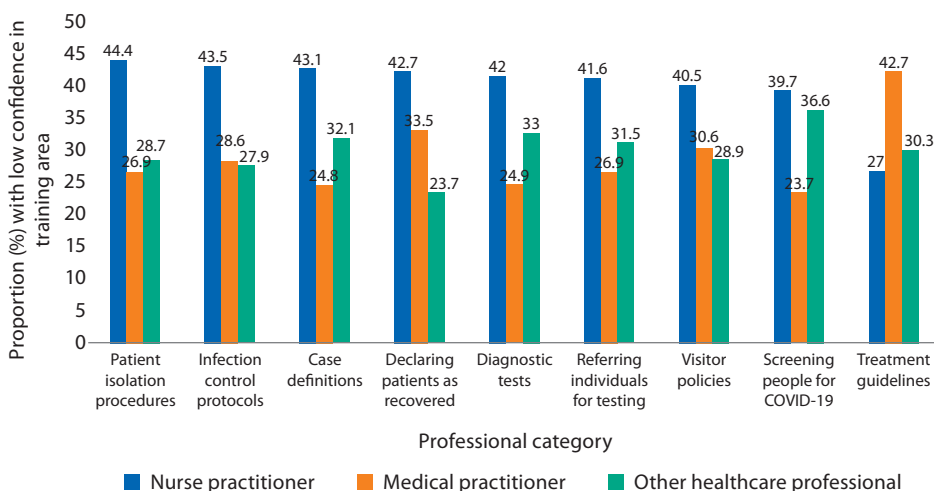
Data source: HSRC and UKZN Front line talk survey

Figure 3: Formal training received by healthcare professionals as at April–May 2020



Data source: HSRC and UKZN Front line talk survey

Figure 4: Training areas where confidence was low by healthcare professional as at April–May 2020



Data source: HSRC and UKZN Front line talk survey

Comparison of training received by nurses versus other HCPs

Figure 3 shows the breakdown of formal training received by HCPs surveyed. Medical practitioners self-reported being the most well-trained of the HCPs, with more than 70% of them receiving training in eight out of nine training areas.

Among nurse practitioners, fewer than half reported they received training in treatment guidelines and declaring patients as recovered. Fewer than two-thirds of nurses were trained in visitor policies, referrals for COVID-19 testing, diagnostic tests, and case definitions.

Confidence in training received by all health professionals

Among all those HCPs who said they received training in the nine training areas, over 80% of all HCPs had moderate or high confidence, except for training on visitor policies, where just over half (52.6%) felt highly confident. Training areas where confidence was lowest were treatment guidelines and declaring patients as recovered, which is consistent with the finding above showing these areas as being the gaps in training.

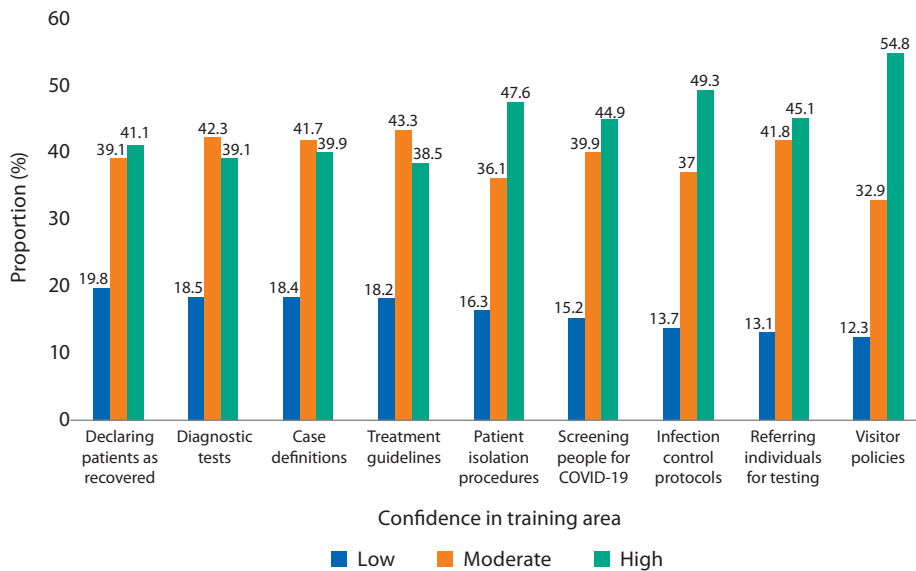
Training areas where confidence was low by professional category

We then looked at the training areas where confidence was low stratified by HCP category (Figure 4). Nurse practitioners had the lowest confidence in all training areas, except for treatment guidelines.

Confidence in training received among nurses

An in-depth analysis of the confidence levels in the nine training areas among nurses who said they received training in these areas showed that they were least confident in their training received for declaring patients as recovered, diagnostic tests, case definitions and treatment guidelines (Figure 5). Although it is medical doctors who

Figure 5: Training areas by confidence level among nurses as at April–May 2020



Data source: HSRC and UKZN Front line talk survey

declare COVID-19 patients as being recovered in hospitals, nurses are involved in administering the prescribed treatment regimen and, in triage, they have direct contact with the patients and would be able to report on patients' recovery for in-hospital patients. Nurses also make daily calls to monitor patients' recovery at home and would need to relay that information to the medical doctors. Nurses are the first point of call to monitor and report on the health status or recovery of these patients. Nurses therefore require training and confidence in these areas, as part of a multidisciplinary team.

These findings show training gaps among HCPs in the early phase of the local epidemic. Overall, there is a difference in training received by medical doctors versus nurse practitioners for treatment guidelines, diagnostic tests, and case definitions. The training deficit in treatment guidelines was consistent with low confidence in this area for all HCPs. However, nurses particularly lacked confidence in most training areas, despite having been exposed to some level of training in these areas.

Recommendations

Our recommendations for training HCPs to prepare for epidemics and outbreaks are as follows:

1. We show here that early in the COVID-19 epidemic trajectory, there was a need for provision of comprehensive training and developing HCPs' competencies in declaring patients as recovered, diagnostic tests, case definitions and treatment guidelines. It is important to ensure that all nurses receive training in these areas, which should be tailored for the primary, secondary and tertiary levels of care in their specific settings.
2. There is a need for a multidisciplinary approach to providing guidance on effective case management to nurses. We extend this to a need for interdisciplinary guidance on the diagnosis and management of long COVID in patients, as well as to HCPs who have long COVID.
3. Build on the knowledge and skills gained by HCPs, particularly by experienced nurses, in epidemic response. As the epidemic unfolded in what would become Wave 1,

many frontline HCPs had to mobilise themselves quickly by seeking out information needed, if not readily accessible, filtering that information for their setting, and adapting it to practice. At the time, the focus was on having access to appropriate PPE for particular stations in their workplace, such as in-patient and intensive care units, as well as correct donning and doffing of PPE, and patient management. Where possible, training should be reinforced regularly through refresher materials and talks delivered frequently in the workplace. For example, the periods in between COVID-19 case surges when patient admissions are lowest can be used to refresh and update knowledge.

4. Consider ways in which the training material and how it is understood by trainees can be improved upon, such as mode of delivery, content and frequency. We suggest regular monitoring and evaluation of training received by the HCP categories together with initiatives that flag gaps in their training. Post Waves 2 and 3 in South Africa, there is need to assess the training needs and competencies of HCPs in these areas in preparation for subsequent waves. Refresher training can then be targeted and specific to these needs.
5. The vaccine rollout is another area in which targeted training is needed for HCPs as new information is emerging rapidly. There is a need to identify and address vaccine hesitancy among HCPs themselves, as well as for provision of timely information on vaccines and the associated patient care.
6. A holistic approach to training of HCPs as teams should be considered, reaching all HCP categories in both public and private sectors and in different localities. The full scope of patient care and

disease management should be covered. The HCP community should identify ways to optimise the role of each HCP within a team as well as the functionality of the team itself in different healthcare settings. Package information into general and specific portions for HCP categories and review the dissemination and accessibility of such information. All HCP categories and facility settings need educational resources in multiple forms that are readily accessible and fit for purpose.

7. Acknowledge the link between confidence in service delivery from HCPs and training received by them. There is a need to look for ways to build confidence intentionally among nurses in the training material received. It is unknown how HCPs' lack of confidence translates into the patient experience.
8. Leverage collaborative networks and HCP bodies to deliver formal, informal, practical and theoretical training through continuous and intentional professional development. Peer networks can be a useful resource to share information and experience.

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