

The contribution of specialist training programmes to the development of a public health workforce in South Africa

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A population perspective on health underpins the 17 newly adopted Sustainable Development Goals (SDGs) and South Africa's recently promulgated White Paper on National Health Insurance (NHI). Monitoring their progress, identifying health service priorities and implementing effective delivery strategies requires a skilled public health (PH) workforce. Yet several key policies intended to transform the country's health system radically make no mention of this workforce.

This chapter investigates the potential contribution of the Public Health Medicine (PHM) specialty to a public health workforce in South Africa. We describe the nature of PH, the competencies anticipated of a PH workforce and the training programmes for PHM specialists and the Master of Public Health (MPH). The discordance between the need for PH expertise generated by the current policy juncture in South Africa and the current invisibility of graduates of PH programmes is explored.

PH is an inter-disciplinary field that aims to understand health problems, and to develop and evaluate programmes to improve the health status of populations. The evolution of PH in South Africa reflects two trends: one focused on compliance with measures protecting human health, and the other focused on the development of innovative participatory models and policy emphasising comprehensive care.

Both trends were led by doctors and historically, PH training was reserved for doctors. After 1994, graduate PH programmes were opened to other health professionals and social scientists. Legislation no longer reserved senior PH functions for doctors. However, current South African health reform initiatives – the NHI, PHC re-engineering and health workforce policies – whilst flagging the importance of PH for the health service, give little detail on the role of PH professionals.

Understanding the history of PH in South Africa, the broadening of its inclusive professional identity and the multi-disciplinarity of the PH workforce should facilitate use of these skills to deliver on national and international development goals.

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Introduction

Health is central to many global and national development agendas. The recently adopted Sustainable Development Goals (SDGs) present one explicit health goal: to “ensure healthy lives and promote well-being”,¹ and population health concerns underlie 13 other SDGs.² The South African Constitution foregrounds access to health care as a right, and population approaches to health underpin the National Health Act of 2003³ and other policies. Despite this philosophical commitment to a public health (PH) approach in the health system, the role of personnel trained in PH is not formally recognised, nor are the institutions that train PH professionals accorded any special responsibilities in human resource planning for health.

Resource allocation in the South African health system primarily prioritises clinical services and focuses on individual ‘personal health’ services, which are largely facility- and hospital-based. Health services do not emphasise interventions addressing the social determinants of health. This is evident in the recently released National Health Insurance (NHI) White Paper,⁴ as well as other recent national policy directives.^{5,6} These address system and workforce barriers to achieve health outcomes appropriate to South Africa’s per capita spend on health. However, only with the 2015 Bill proposing a National Public Health Institute of South Africa (NAPHISA)⁷ has there been any attempt to institutionalise South Africa’s PH capacity.

In exploring the place of PH and reasons for its poor prominence in South Africa’s health services, this chapter firstly reviews the function of PH and competencies within health systems and the PH workforce, as well as the history and development of PH, its workforce and selected training programmes in South Africa. Current South African health reforms in the global context; the reasons for the effacement of PH in the health services are discussed as well as its possible future role.

Public health

The term ‘public health’ is used in the literature in a number of ways: an “activity, a discipline, a profession, an infrastructure, or even a movement”.⁸ Some narrowly view PH as government-funded or public sector health services as opposed to private sector health services,⁹ or as ‘community health’ in contrast to ‘personal health’ services rendered by clinical medicine.¹⁰

PH is most often defined as a field that focuses on the maintenance and promotion of health at a population level,¹¹ “assuring conditions in which people can be healthy”.¹² Winslow, an American PH practitioner in the early 20th century, argued that PH was “the science and art of preventing disease, prolonging life and promoting physical and mental health and efficiency through organized community efforts”.¹³ PH aims firstly to understand health problems and systems before developing and managing programmes in prevention and control to improve the health status of communities.

It is an inter-disciplinary field, encompassing a number of disciplines including environmental health, occupational health, epidemiology, biostatistics, demography, economics, and health care organisation and management.¹¹ Social science disciplines such as geography, psychology, sociology and anthropology have increasingly become integrated into PH practice.¹⁰ The perspectives

and methods of these disciplines together provide information that can inform health interventions. Information may come from lifestyle risk factor analysis (epidemiology), economic cost-benefit analysis of health policies (health economics), and organisational change (management sciences). PH provides a mind-set that considers different explanations for health phenomena which, in turn, inform complex and multiple approaches, thus avoiding piecemeal insights and interventions.¹⁴ PH practice is a multi-disciplinary enterprise.

‘Social determinants of health’ form a component of the PH paradigm, and describe underlying conditions that interact with and influence risks to health and well-being. These include the conditions of everyday life and systems that help keep people healthy and support them when they become sick.¹⁵ Most social factors lie outside the scope of health services,¹¹ and require engagement with stakeholders beyond the formal health sector. This intersectoral nature of PH practice requires PH professionals to work with others on factors determining human health and in systems to improve health status, using levers for change such as the development of social interventions, policy change and advocacy.¹⁶ The World Health Organization (WHO) has framed this mandate as the ‘health in all policies’ approach, which asserts that PH professionals need to ensure that a health agenda is part of all government initiatives and policies – in, for example, housing, education and energy,¹⁷ which is a recognised challenge in South Africa.¹⁸ Following this perspective, the SDGs prioritise the ‘fight against poverty’ and recognise that determinants of health include environmental, economic and social factors.¹⁹

Ideals of social justice are implicit to PH, which also holds the fair distribution of society’s benefits and responsibilities as a core value.^{16,20}

Public health in healthcare systems

Before the 20th century, coercive PH measures – such as health inspection, isolation of cases and quarantine – protected populations against infectious diseases. The decrease of epidemics due to effective control measures and the rise of effective diagnostics and therapeutics resulted in health care becoming synonymous with clinical medicine.⁹ ‘Personal’ health care, focusing on preventive and curative services at an individual level, became the domain of health services and health professionals.

Modern health systems comprise organisations and people who act to “promote, restore or maintain health”.²¹ Indicators measure the success of service delivery, and include inputs; processes – access, coverage, quality and safety; outputs; outcomes; and impact – equity, risk protection and efficiency and improved health.²² PH expertise is needed for the effective implementation of these approaches.

At a global level, health is seen to underpin social development. Health was central to the Millennium Development Goals (MDGs) and is key to the successive goals, the SDGs. The notion of ‘universal health coverage’ (UHC),²³ adopted by the UN General Assembly in 2012,²⁴ promotes equity and access to health care which underpins the NHI White Paper and the SDGs.^{19,25} As articulated in the NHI White Paper, UHC requires strengthened health systems as critical to the achievement of major health goals. PH skills and competencies

are core to the production of robust health research, evidence-based policy and services management to support health systems strengthening.²⁶

Globally there is agreement that PH functions centre on identifying the health status and needs of populations and their surveillance; developing policy; implementing and evaluating promotive, preventive and disease control programmes; ensuring the delivery and quality of services; and developing a competent workforce that is able to lead and develop partnerships.^{27–30}

In many countries, PH institutes³¹ lead and co-ordinate PH functions with capacity for surveillance, response to PH emergencies, and the development of national diagnostic and reference laboratory systems with transnational links. Key disease control programmes are required (including those for chronic disease addressing behavioural risk factors), as are solution- and action-orientated research to identify new and improve existing health interventions.²⁶

The US Centers for Disease Control and Prevention (CDC) proposed a set of core functions, competencies and organisations that require strengthening to maximise impact on health systems and population health.²⁶ As valid epidemiological data are the foundation for policy, decision-making and interventions, skilled personnel are needed who can work on surveillance, track vital statistics, estimate disease burden, and evaluate determinants of health and impacts of interventions. Personnel in health ministries who collect, interpret and translate data into policies, guidelines and recommendations also need competencies in leadership and management.

Investment in PH strategies to prevent and therefore reduce ill-health, decrease health inequalities, and increase life expectancy, is ethical and reflective of the right to health^{32,33} However, these goals are difficult to achieve due to the complexity of PH challenges such as social and economic inequalities, an underdeveloped evidence base for PH interventions, and the demands of curative care which overshadow longer-term investment in population health.³⁴

The public health workforce

PH professionals are people educated in PH and employed to improve health through a population focus.³⁵ They work in technical and line functions within health services, and in research and specialist institutions, as managers, leaders, planners, implementers or researchers. They work at all levels of health services – national, provincial/state, district or municipal levels – and in defined spheres

such as environmental health, health promotion or surveillance. Professionals come from a range of occupational backgrounds – doctors, nurses, health managers, health economists, environmental health specialists, health promotion specialists and community development workers.⁸ The range of PH workers in South Africa is depicted in Figure 1.

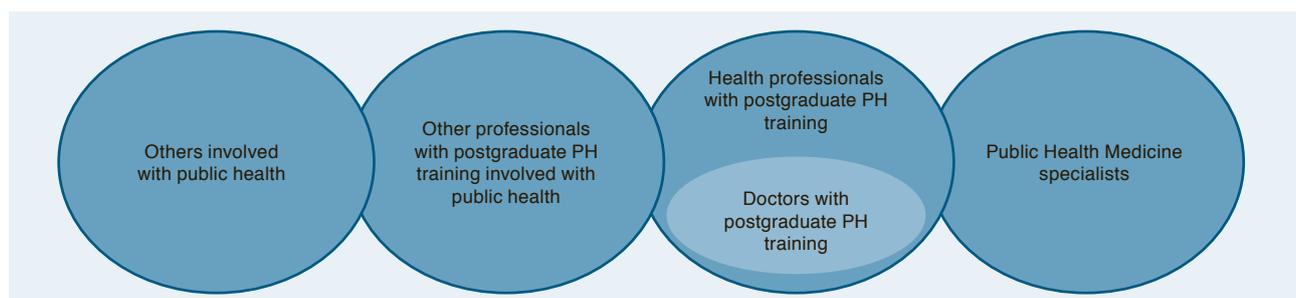
A barrier to improved health outcomes is widespread health service personnel shortages, which are the result of inadequate numbers of trainees, geographical maldistributions, and losses due to death, retirement, migration or career change.³⁶ Poor knowledge about the health workforce, its size, function, and optimal skill mix, compounds this crisis.³⁷ Globally, PH personnel are also both insufficient in numbers^{8,38} and maldistributed. They have been largely overlooked in national human resources health plans, and allocated a meagre budget. The reasons for this neglect may be due to resource allocation prioritising curative health care³⁹ in the face of imperatives to reduce health costs. These shortages are profound in resource-poor countries, as reported for the Democratic Republic of the Congo, Ethiopia, India, Nigeria, Sri-Lanka and the Sudan.⁴⁰

Competencies for PH professionals are in disciplinary domains such as PH sciences, management, policy-making and assessment, and skills are needed to manage complex work contexts such as cultural competence, leadership and communication. A review of competencies for low- and middle-income countries (LMICs) using a Delphi technique identified the following PH competencies: the ability to identify population health status, assemble evidence for decision-making and generate performance improvement strategies; management skills to implement decisions; report and research proposal-writing skills, and intersectoral skills.⁴¹ In a commentary on PH training and its relationship with health systems development in sub-Saharan Africa, Fonn identified leadership in health and the understanding of disease burden and the social determinants of health as key competencies.⁴²

Development of public health in South Africa

A brief historical analysis accounts for the place of PH in the South African health system. PH in South Africa developed along two, often conflicting paths. The first entrenched the 'status quo' and the other innovated models of health care responsive to social determinants of health and was a precursor to the primary health care (PHC) approach.

Figure 1: Public health practitioners in South Africa



Colonial and early post-colonial period: 1652–1920

Due to colonial influences, South Africa's early health system was doctor- and hospital-centric, and by the end of the 19th century there were hospitals in most major towns and in some rural areas built by missionaries and mining companies for their employees.⁴³ Most hospitals and clinics were taken over by national, provincial and local government departments of health under apartheid during the third quarter of the 20th century.

In 1807, the first PH legislation was introduced due to the epidemics of the 18th and 19th centuries that had decimated the population of the Cape Colony. It provided for the registration of medical practitioners, and for PH measures controlling infectious diseases through disease notification and inoculation against smallpox.⁴⁴

There are some examples of innovative health care in this era. One of the first hospitals for local indigenous people, Grey Hospital in King William's Town, used trained orderlies before nurses were appointed, and in 1858, the hospital started a three-year general practitioners' training programme.⁴⁵ In 1891, the Cape Colony introduced registration for nurses and midwives – the first legislature in the world to do so – due to the work of Henrietta Stockdale, an English nun and nurse who helped establish hospitals and maternity services in Kimberley.⁴⁶ She developed the first nursing training schools in South Africa, took nursing outside of hospitals into community and mining settings, and is credited with establishing nursing as a profession in South Africa.⁴⁷

As in Britain, South Africa's early 20th century PH services were a response to epidemics that accompanied the development of emerging urban centres. The 1919 Public Health Act, the first robust national initiative, modelled on the British system, and drafted and adopted in response to the high mortality of the 1918 influenza epidemic.⁴⁸ The Act provided for a separate Department of Public Health and Minister at national level, and created administrative functions at provincial and local government levels. It provided for 'basic measures' in PH, which remained intact for nearly 60 years.

The Act established a fragmented health service – a three-tiered national, provincial and municipal system – which, with some modifications, persisted into the apartheid era. Resources and authority for hospital services were given to provinces, a political concession to persuade the Boer republics to accept the Union.⁴⁹ Hospitals were segregated racially with separate facilities or wards for different racial designations. PH functions were focused at local-authority level and, as in the UK, powers were given to municipal Medical Officers of Health (MOHs) to control infectious diseases. MOH appointments were subject to ministerial approval, with preference given to doctors qualified in PH.

PH legislation in Europe enabled the provision of potable water, and the protection of air and food from pollutants and contaminants. Many commentators argue that these measures were introduced for utilitarian reasons – the creation of healthy workers for commercial purposes and fitter soldiers for military purposes.^{50–52} This social engineering function is echoed in South Africa's history, with PH measures often being invoked to clear urban settlements, enabling the development of segregated and apartheid cities.⁵³

The basis for a more authoritarian and state-supportive role for PH, which persisted through to the end of the apartheid era and promoted the interests of the dominant social classes (despite

notable progressive exceptions), was laid in this early period of PH development.

Pre-apartheid period

Health challenges in the 1920s and 1930s were due to the development of urban slums and the growing TB epidemic affecting mineworkers. Widespread migration of black people to cities resulted in diseases caused by "overcrowding, poor sanitation, diets and social disintegration".⁵⁴ During this period, the divide between 'personal' and 'public health' services in South Africa's emerging health system persisted, and 'personal' health services were mostly delivered in racially segregated hospitals which were curatively orientated. Services were inequitable along race, and urban and rural lines.

A key initiative to transform the fragmented and inequitable nature of South Africa's health services – the National Health Services Commission – led by Dr Henry Gluckman, was established by the South African Party in 1942. Its brief was to advise on the establishment of a National Health Service (NHS) for South Africa's population. The impetus for its establishment was government's recognition of the health problems of 'poor Whites', who had little access to health care, a phenomenon that had grown during the war.⁵⁵

Gluckman identified four major problems in the organisation of health care: poor co-ordination due to the three-tier health system; maldistribution and shortages of human resources and facilities; an inappropriate emphasis on curative and institutional care; and a profit-orientated private practice focused on curative care in urban White areas.⁵⁶ The Commission's proposals extended beyond the Health Department to sectors such as town planning, housing and education. It recommended the establishment of a Ministry of Health with a more "comprehensive scope", and a reorganised health service with policy-making and programming at all levels, within a NHS.⁵⁷ Community health centres were proposed as the basic unit for service delivery, providing integrated health education and preventative care with curative services.⁵⁸ A Department of Health was established in 1945, with Gluckman as its first Minister.⁵⁷

The proposed service model was based on the work of a group of health workers led by Drs Sydney and Emily Kark who pioneered an integrated model of clinical medicine and PH services – including education, agriculture and income generation – in rural Natal, the most notable example being the Pholela Clinic. Government did not share their vision, and in 1939 the Secretary of Health, Eustace Cluver, initiated centres to provide inexpensive services for African people who had a high burden of tuberculosis (TB), venereal diseases and malnutrition, who filled urban hospitals and were considered a burden on the economy.⁴⁹ The 'Kark' model, an example of social epidemiology,⁵⁹ was named Community-Orientated Primary Care (COPC), and over 40 clinics were established in Natal and elsewhere in South Africa during the 1940s and 50s. Teams of trained lay health workers and professionals assessed, monitored and delivered health care, focusing on individuals and communities in defined populations.⁶⁰ This model combined PH functions such as prevention, promotion, surveillance, intersectoral work and community participation with primary clinical care.

Resistance from district surgeons who saw the centres as a threat to their practices – the care of the indigent⁴⁹ – together with the hostile

policy environment following the 1948 National Party ascendance to power, resulted in the emigration of many professionals and the end of the social medicine/COPC movement in South Africa.⁴⁹ Health centres reverted to being “inexpensive clinics for the early treatment of disease amongst Natives”.⁴⁹

Nonetheless, the COPC legacy, together with China’s ‘barefoot doctor’⁶¹ movement (later called ‘village doctors’), contributed to the PHC approach, adopted by the WHO and reflected in the Alma Ata Declaration,⁵³ a 20th century milestone in PH. The PHC approach is based on health being a human right, requiring the action of social and economic sectors in addition to the health sector.⁶²

Apartheid period: 1948–1994

In 1948, the National Party came to political power on an election platform that promised intensified racial segregation, and consolidated a racially segregated social system. Fragmentation of a hospicentric health service into 14 health departments resulted in massive duplication of service delivery, waste and inequity. There were marked differences in disease prevalence and mortality between races, with Africans faring the worst and Whites the best.⁶³ These outcomes reflected differences in living conditions, work, nutrition and access to services.

Interestingly, even in this ideologically driven era, there was government recognition of a disorganised health service that was “bewildering in complexity and diversity ... and fragmentation”,⁶⁴ a comment made by the Secretary of Health in 1976. A new Health Act was introduced in 1977 to “provide measures for the promotion of the health of the inhabitants of the Republic... and define the duties, powers and responsibilities of authorities which render services”.⁶⁵ Local authorities were responsible for maintaining environmental health, preventing communicable diseases, and health promotion and rehabilitation, and the head of these – a Medical Officer of Health – was to be “a medical practitioner who possesses a degree or diploma in community health registerable with the Medical, Dental and Supplementary Health Professions Act of 1974”.⁶⁵

In contrast, PHC, human rights and PH approaches, fuelled by political opposition to apartheid, were central to civil society’s progressive health initiatives during the later apartheid era. In the 1980s, initiatives developed based on a commitment to socio-economic development, community accountability and comprehensive care. These included the establishment of community clinics by health workers, including doctors, humanitarian and political activists, e.g. Black Consciousness students;^{66,67} the formation of activist healthworker organisations such as the National Medical and Dental Association (NAMDA),⁶⁸ the Organisation of Appropriate Social Services in South Africa (OASSSA)⁶⁹ and the Health Workers Society (HWS).⁷⁰ Later, the policy frameworks for the new African National Congress (ANC)-led government were produced by progressive academics, activists and PH professionals.⁷¹ Lay healthworker involvement in health service delivery through community health worker (CHW) programmes re-emerged in the 1970s along the lines of the COPC initiative.⁷² Programmes focused on the training and deployment of lay health workers to understand communities’ health issues, enskilling them to undertake promotive, preventive, curative as well as rehabilitative and palliative health care. Initiatives were prominent in rural and poor peri-urban settlements and positively impacted on PH indicators and outcomes such as child and infant mortality and health knowledge.⁷³

In 1987, CHWs and community health projects coalesced into the National Progressive Primary Health Care Network (NPPHCN), a civil society advocacy group that included PH professionals, and called for the implementation of a PHC-oriented service based on four principles: “socio-economic development, community accountability, concerned health worker practice and comprehensive care”.⁷⁴ Member organisations had spearheaded earlier CHW projects. The network became a space wherein government policies could be challenged and a future national health system debated, but it did not advocate epidemiological approaches to evaluate the impact of health services.⁷⁵

Some health projects were forerunners of functioning district health systems. Services in ‘health wards’ were linked to rural district hospital services, with hospital outreach services supporting clinic and community health services. Community participation in health care and community health committees developed in some areas,^{76,77} pre-dating post-apartheid legislation mandating the establishment of formal structures to facilitate community participation.

The post-apartheid period

In 1994, South Africa transitioned to a non-racial democracy. The extraordinary processes of health transformation after apartheid are documented in detail elsewhere.^{25,66,78–80} This section focuses on the main features of post-apartheid transformation of the health system relevant to human resources in PH.

Major obstacles tackled were the unbundling of homeland and ‘own/general affairs’ health administrations, and building management capacity for the new district health system. Inadequate numbers and inequitably distributed health professionals particularly affected rural areas and provinces. Restructuring involved merging the myriad health authorities and resolving disparities in salaries and conditions of service. Incongruence of geographical boundaries with local government, as well protracted discussions about which level of government (provincial or local) would be responsible for “comprehensive service provision”, consumed energy and delayed implementation.⁷⁹

Efforts to develop accessible services again focused on ‘personal’ health services. New clinics were built, hospitals ‘revitalised’ and systems developed: management, human resources, pharmacy and information systems, and tracking service performance. Progress was made in redistributing resources geographically and between levels of care.⁵⁴

Two initiatives, the Reconstruction and Development Programme (RDP) and the White Paper on the Transformation of the Health Care System in South Africa (1997), provided the policy and strategic framework for the reform of the health system.⁷⁸ These built on the ferment of policy development for a new South Africa during the last five to 10 years of apartheid rule. Earlier initiatives included the ANC’s National Health Plan, which envisaged the restructuring of the health system based on the PHC approach, drawing inspiration from the country’s earlier COPC experience and the Alma Ata Declaration, and proposed decentralised services with health centres being the foundation of service delivery.⁸¹

The RDP emphasised the provision of housing, sanitation, water, nutrition and health services as central to people’s needs. It provided for free health care to children under six and to pregnant and breast-

feeding women, and a primary school nutrition scheme.⁸² These initiatives echoed the PH measures introduced in the UK in the 19th Century where environmental changes such as housing, sanitation and later, school meals, were prioritised by MOHs.⁸³

The 1997 White Paper proposed the establishment of a unified health system,⁸⁴ emphasising the delivery of decentralised health services closest to people, based on the principles of comprehensive PHC, and laying the basis for the concept of a district health system. The new National Health Act (61 of 2003) embodied this commitment to develop a unified, district-based health system and accessible health services,³ and made provision for community involvement in health care.

The Act, whilst valuing population health perspectives, did not create PH institutions or discuss explicit roles for a PH-trained workforce. With the abolition of the 1977 Health Act, MOH positions in local authorities fell away, signalling a final end to positions in the health system linked directly to PH training.

The South African health workforce

By the end of the 20th century, South Africa was facing a serious health workforce crisis.^{85,86} The 1997 White Paper⁸⁴ highlighted staff shortages and geographical inequities, and prioritised training for clinical professions and skills development in health management. It also proposed the establishment of a National School of Public Health. The 2001 Pick Report,⁸⁷ the first post-apartheid government-commissioned human resources report for a PHC-oriented health service, proposed a restructured clinical workforce. It argued for expanding numbers and broader scopes of practice for lower levels of nursing and pharmacy staff.⁸⁸ Its terms of reference did not include the PH workforce per se and, besides training programmes and employment for a range of mid-level workers, many recommendations were not implemented.

Important factors aggravating the workforce crisis were the decision to close many nursing colleges, resulting in decreasing nurse outputs,⁸⁹ voluntary severance packages offered to senior staff, freezing of posts resulting in declining number of public sector health personnel,⁸⁵ and the closure of many NGOs that were training and employing lay health workers.⁷⁹

Relatively few policies addressing the workforce crisis were implemented. Numbers of nurses registered, however, increased between 1997 and 2007.⁸⁵ Mid-level worker training was instituted after 2008, with slow integration into health services and minimal career-pathing.^{85,90,91} To improve the supply and retention of doctors, community service for graduates was made compulsory and is now recognised as a measure to redress health workforce maldistribution, although with many weaknesses.⁹¹ Cuban doctors were recruited as part of a binational programme and students were sent to Cuba for medical training. Scarce skills and rural allowances⁷⁸ and later, improved salaries for nurses and doctors – Occupation Specific Dispensations (OSD) – were introduced.⁸⁰

Notwithstanding these initiatives, government recognised that South Africa still had an inadequate and inequitable distribution of health professionals, with insufficient numbers of pharmacists, nurses, general and specialist doctors.⁵ Inadequate production was exacerbated by emigration of health personnel and an internal drain to a growing private health sector.⁹² A health workforce crisis persists and is in part due to ineffective structures for managing

human resources for health and 'vested interests'. Competing interests between the Departments of Health and Higher Education and Training, nursing bodies, and the Health Professions Council of South Africa (HPCSA), have resulted in ineffective implementation of health workforce strategies.⁸⁵

Despite the establishment of the district health system in South Africa and high levels of inputs, health outcomes in South Africa remain below expectation.^{80,85} In 2012, men had a life expectancy at birth of 56 years, and women, 62.⁹³ HIV denialism during the Mbeki presidency (1999–2008) undermined programmes for prevention and treatment of the HIV and TB epidemics, which were the main causes of premature death, and exacerbated the crisis in healthcare delivery.⁹⁴

Public health professionals in South Africa^a

Historically in South Africa, positions were earmarked for doctors with PH diplomas (DPH) in MOH posts. In the 1980s, PHM specialists replaced the diploma doctors. After the end of apartheid, health service posts requiring PHM specialists fell away until recently, when a few provinces created provincial or district posts for PHM specialists. In addition, academic PH specialist positions were created and remain. These are 'joint' posts – provincial service posts linked to academic institutions reserved for registered PHM specialists. There are also few posts in the public sector for which an MPH degree is mandated.

International experience is varied. The USA licenses medical specialists in 'preventive medicine', and in Australia, New Zealand and Ghana there is licensing for medical specialists in PH, but with few posts linked to specialist qualifications. In Canada, public health physicians are the 'gold standard' for MOHs, who play a critical role in national and local health systems.⁹⁶ On the other hand, in the UK, PH specialists are appointed to posts with titles such as 'public health consultant' or 'specialist'.⁹⁷ Over the past 15 years, PH specialty in the UK has opened up to all health professionals exiting specialist exams, not only medical doctors. However, in Europe, the title of 'public health specialist' is reserved for doctors.⁹⁸

Postgraduate public health training

Historically in South Africa, PH training was largely provided for doctors through university medical or health sciences faculties, training them to be managers in the health service. Although statutory responsibilities fell away, postgraduate training continued and postgraduate training programmes were established, some with a focus on specific PH disciplines such as epidemiology, demography and implementation science. Currently, there are two main routes for postgraduate PH training. One route, reserved for medical graduates, is through training offered by approved universities leading to a Master of Medicine (MMed) degree – a specialist qualification, enabling registration with the HPCSA as a PHM specialist. The other route is through Master of Public Health (MPH) programmes, which in addition to medical graduates, admits students from a range of undergraduate health and social sciences degrees.^b For the most part, these programmes were developed by

^a This section on the PH workforce draws heavily on the doctoral work of an author (VZ) who focused on PH-trained doctors, particularly PHM specialists.⁹⁵ There is less detail provided on other PH professionals (a limitation) which requires further research.

^b There are other PH qualifications, such as MScs and PhDs, but the main ones are MPH and MMed.

Community Health departments previously offering PH training for doctor managers.

There is confusion as to what exactly constitutes a 'public health specialist' in South Africa. In practice, the term is no longer reserved for doctors on the PHM specialist register. 'Specialist' designations in PH have become broad and include a range of health and non-health trained PH graduates. PH graduates are often referred to as PH 'professionals' or 'specialists',^{99–101} and 'specialist' positions in constituent disciplines of PH are advertised in the South African media.^c

Public Health Medicine training

Specialist training posts in PHM for doctors are funded by provincial health departments. Undergraduate university training qualifies doctors to register as medical practitioners with the HPCSA. While PH forms part of undergraduate medical training, postgraduate in-depth training facilitates expertise. Specialist training is through four-year full-time programmes in an apprenticeship model in service settings. Most programmes include theoretical training. This is a regulated process with HPCSA-designated training posts linked to approved training programmes at universities. Graduates are assessed by the College of Public Health Medicine (CPHM) examinations according to a defined curriculum,^d and are required to demonstrate competency in a range of skills,¹⁰² qualifying them to register as specialists with the HPCSA.

The PHM specialty was set up in 1975 to create a cadre of doctors who could hold senior management and leadership positions in the health sector in national, regional and metropolitan areas,¹⁰³ with broader competencies than were required by the MOHs. Modelled on the British specialty,¹⁰⁴ the service role was expanded to include academia, research, health policy and leadership that aimed to improve the health status of populations.

Registration as a PHM specialist was either through the route of either a Master in Medicine degree (MMed) conferred by universities, or through a CPHM fellowship qualification. The CPHM was set up in 1975 and initially called the Faculty of Community Health, but became the CPHM in 1998. The College started examining in 1982, but a few doctors with MMed degrees qualified and registered before this.^e Titles of the qualification included 'Community Medicine' and 'Community Health', but in 1998 the fellowship nomenclature changed to Public Health Medicine. Whilst CPHM or MMed qualifications enable specialist registration with statutory councils – the HPCSA from 1983^f or its predecessor the South African Medical and Dental Council (SAMDC) – not all those qualifying are registered as specialists.

As of 2010, 177 doctors had successfully completed training entitling them to register as specialists with the HPCSA. However, only 60% had registered. From the doctoral work of an author (VZ)

c For example, see <http://www.indeed.co.za/Public-Health-Specialist-jobs> [9 December 2014] for adverts for 1) specialists in Monitoring and Evaluation and 2) Prevention; [13 February 2016].

d Learning domains are: Health measurement and informatics; Behavioural and social sciences; Occupational health; Infectious diseases, their prevention and control; Environmental health; Non-infectious diseases and their prevention; Health services management; Health economics. This curriculum, developed over a decade ago, is currently being reviewed in the light of competencies required in South Africa.

e Correspondence with Prof John Matijila, past Head of the Department of Community Health, University of Pretoria, 4 June 2014.

f This is the first year that specialists with fellowships or MMeds were registered on the HPCSA register.

on PHM specialists' career paths, reasons given for not registering were that: it was not a requirement for a job; it incurred cost but no benefit; ignorance that registration was not effected automatically; difficulty encountered in the process of registration; or emigration.⁹⁵

Currently, registrar programmes are offered at all universities offering medical training except Walter Sisulu University, and there are an estimated 20 PHM specialists in training with an annual output of six to eight graduates.¹⁰⁵ Although the HPCSA register is notoriously inaccurate,⁹⁵ by the end of January 2016, there were 146 doctors registered as either Community Health or PHM specialists.¹⁰⁶

At the end of PHM training, some graduates are unable to find employment utilising their skills, and there are few public sector positions earmarked specifically for graduates with this training.⁹⁵

Master of Public Health training

Over the last 20 years, the scope and number of postgraduate PH training courses in South Africa have grown. Historically, non-medical postgraduate PH training focused on epidemiology through Honours and later, Masters degrees. Adding in management and social sciences⁵⁹ resulted in a range of MPH 'specialisms'. Courses are offered by universities through schools of public health within faculties of Health Sciences.⁹ These are one- to two-year course-work degrees with a minor dissertation component, and are open to health science, social science and science graduates.

The range of MPH 'specialisms' varies by university and includes epidemiology, health economics, health promotion, monitoring and evaluation, environmental and occupational health, social and behavioural health sciences, and health services management. Degrees can be undertaken on a full- or part-time basis and are residential or distance-based.

By 2007, eight universities had produced 603 MPH graduates, with 34% emanating from the Medical University of South Africa (MEDUNSA) and 13% from the University of Cape Town (UCT).¹⁰⁷ By the end of 2010, 301 had completed or were completing MPHs at UCT.⁹⁵ International students, particularly from Africa, form a high proportion of MPH graduates and by 2007, 32% of MEDUNSA graduates were international students.¹⁰⁷ No recent collated data on this demographic are available.

While it is a requirement for some government posts, this heterogeneous degree is not a professional qualification with core competencies that are standardised, nationally accredited and monitored. It is not linked to a career track in either the public or the private sector, and graduates' career trajectories are unknown.

In summary, there are a range of PH professionals in South Africa. These include personnel with defined skills such as environmental health officers (EHOs); clinically trained professionals with postgraduate PH training; social scientists with skills in health promotion; health economists; health systems researchers; managers who are able to identify and address systems failure; and doctors who have undergone specialist training in PH.¹⁰⁵ This is represented in Figure 1.

g Unlike the American model where courses are typically run by autonomous schools of public health, the standard model in South Africa is a School within a Health Science Faculty.

The Motsoaledi era reforms

Dr Aaron Motsoaledi recognised the poor performance of the health system and soon after his 2009 appointment as the Minister of Health, drew up a 10-Point Plan¹⁰⁸ to improve health system performance towards achieving the MDGs within a PHC approach.¹⁰⁹ The plan focused on a range of health services challenges that set the stage for the introduction of NHI services: leadership; facility and health workforce management; improving quality of care and health infrastructure; the prevention and management of infectious diseases, maternal and child health; and health promotion.¹⁰⁹ These challenges have been addressed by a range of National Department of Health policy papers and interventions discussed in this section.

Health system reforms

Specific interventions and policies have been articulated to address inadequacies and, through a PH lens, these are outlined in Table 1. The earliest was the 're-engineering of PHC' which consisted of three streams that have been piloted and implemented since 2010. These are the establishment of Ward-based PHC Outreach Teams (WBOTs), along the lines of the Brazilian Family Health Programme (PSF); the establishment of District Clinical Specialist Teams (DCSTs); and a focus on comprehensive school health services through the establishment of School Health Teams.^{80,110}

The WBOTs deliver services beyond the boundaries of professions and facilities. They comprise nurses and community health workers serving a geographic population.⁸⁰ Their broad scope of practice – household health assessments identifying risks, promoting health, screening, adherence support, and referrals⁸⁵ – encompasses both PH and individual care functions, and is reminiscent of the earlier COPC model.

The DCSTs, focusing on maternal and child health outcomes, consist of medical specialists and nurses who ensure that management protocols are followed, provide in-service training and improve health system functioning.¹¹¹ Notably, PH professionals are omitted from these teams, and are not mentioned in the PHC re-engineering strategy.

Other notable reforms are the establishment of the Office for Health Standards Compliance (OHSC), a statutory body mandated to ensure compliance of the physical and operational environment of PH facilities to provide quality care,¹¹² and the 'Ideal Clinic' initiative,¹¹³ set up to ensure administrative, information, clinical and oversight mechanisms for clinics in response to doctors' reluctance to work in PHC settings.¹¹⁴

Health workforce policies

Motsoaledi inherited a health system which in 2009, commentators argued, had insufficient political leadership and "weak management... [which] led to inadequate implementation of ... good policies... There [was] a substantial human resources crisis facing the health sector".⁵⁴ The extent of this crisis is detailed elsewhere,⁸⁵ and the implications for the PH workforce are discussed in this section.

In efforts to redress past race-based exclusion from employment opportunities, inexperienced managers had been appointed to manage service transformation and human resources. Poor leadership with little emphasis on implementation, monitoring and

assessment of policies led to differences in provincial expenditure and health outcomes.⁵⁴

A recognition of the need for health workforce planning, management, training and employment was articulated in the 2011 Human Resources for Health (HRH) policy document.⁵ This echoes calls from the international health educational community to train health professionals to be "systems-based, to improve the performance of health systems by adapting core professional competencies to specific contexts".¹¹⁵

The HRH document noted that PH personnel were not institutionalised and that personnel performing PH functions were "not appropriately trained in epidemiology, planning and statistical analysis".⁵ It recognised the importance of health system reform and acknowledged the skills-set needed to support this.

The HRH policy document also echoed the memorandum of the Heads of Public Health Medicine¹⁰⁵ to the National Department of Health that called for clarity about career paths for medical and other PH professionals, and the establishment of PH units at provincial and district levels. PH responsibilities outlined in the HRH document were to develop provincial and district health strategies, and monitoring and evaluation frameworks to evaluate the outcomes of the re-engineered PHC model. The document quantified the shortage of PHM specialists, citing 97 professionals employed in 2011, which was half the required 0.04/10 000 population, and estimated that it will take 14 years to achieve this target. It is striking that Schools of Public Health that graduate hundreds of MPH and other higher-degreed graduates annually have not lobbied government vigorously about appropriate positions for them.

Other policy initiatives include the re-opening of nursing colleges, incorporation of lay health workers through the PHC health teams, and health manager training.¹¹¹ Numerous management courses and programmes have been implemented and task teams have been appointed to address management and leadership training.⁹¹

The need for competent health managers, however, continues to be voiced,¹¹⁶ and is mentioned in the NHI White paper, discussed in this section.⁴ Research among stakeholders has explored the skills for hospital managers,¹¹⁷ as well as the importance of a range of both management and PH competencies for clinic managers and district team leaders.¹¹⁸ Managers require context-related skills for planning, controlling, organising and leading, and PH skills focused on identifying health problems facing communities, conducting community needs assessments, and managing and analysing data. Some commentators have called for district-level managers to have Masters-level training in PH skills, particularly in epidemiology.¹¹⁹

2015 health policy initiatives

As can be extrapolated from Table 1, the 2015 NHI White Paper,⁴ as the most recent initiative to overhaul the South African PH care system, is premised on the district health system and gains made from health system reforms such as PHC re-engineering.⁶ While the White Paper emphasises the financing options for a national health service, it also highlights the health system changes required for introduction of an equitable, cost-effective needs-based health service for South Africa. However, the White Paper is weak on identifying concrete strategies to make PHC the 'heartbeat' of the NHI with its concomitant emphasis on prevention.

The 2015 NAPHISA Bill proposes the establishment of an institution for surveillance and ‘public health services’.⁷ Based on the CDC model to institutionalise PH core functions and competencies,²⁶ it partially addresses the gap for PH leadership to reduce the underlying risks to health in South Africa, given the lack of capacity to collect, analyse and use population health data to identify appropriate interventions and to model possible gains including their cost-effectiveness.¹²⁰ The proposed national PH institute, NAPHISA, is to focus on surveillance, training and research on major threats to health – communicable and non-communicable diseases, cancers, and violence and injury. Its scope excludes key drivers of ill-health such as the social determinants of health, occupational health and environmental health. The Bill intends to assimilate staff from the National Institute of Virology (NIV) and the National Health Laboratory Service (NHLS). Apart from the mention of these institutions and outlining the management of NAPHISA, the Bill is silent about the PH human resources required for the range of PH functions listed. In addition, its PH research and training mandates overlap with those of existing universities and national research institutes.

Whilst skills to transform systems are emphasised in these documents and attention is given to the competencies of managers, insufficient notice is taken of the need for a cadre of skilled health professionals to develop and evaluate reforms. Policies are focused on clinical staff supporting or providing ‘personal’ health services, with scarcely any explanation of preventive health functions and the roles of the range of PH trained personnel given in Figure 1.

Public health units

Expertise to strengthen the health services is reflected in some provincial health plans. For example, the Western Cape Department of Health’s 2020 Health Plan¹²¹ aims to strengthen PH capacity. A Health Impact Assessment directorate was established and mandated to assess the impact of prevention initiatives and clinical services on the population’s health status. This unit monitors outputs against annual performance plans and implementation, and provides “PH intelligence, guidance based on national and international research to demonstrate which interventions are most cost-effective”.¹²¹

This initiative echoes health sector PH functions which had been highlighted in 1994 by UCT’s incoming professor of Public Health, Jonathan Myers. His inaugural speech highlighted PH skills shortages, particularly at senior levels in the health services.¹²² He argued that PH functions in health plans and provincial organograms were dispersed in clinical services or in planning and human resources departments, and called for the establishment of PH units to play a “critical intelligence function in a context of shifting health priorities and needs with appropriate health interventions”.¹²² In Myers’

Table 1: Comparison of public health competencies and specialist roles in key 2011 and 2015 health policy documents

Component	Re-engineering monograph ¹	NHI White Paper ⁴	Human Resources for Health policy ⁵	NAPHISA Bill ⁷
Focus (year)	Primary care reform (2010)	Health financing to achieve universal health coverage (2015)	National workforce policy (2011)	Establishment of PH institute (2015)
Notion of ‘public health’	Public sector health service; an approach, skills, prevention	Public sector health service; preventative health scheme	Public sector health service, technical skills – prevention, surveillance	Technical skills informing policy and implementation
Public Health presence				
Level in health system	National Provincial	(Silent)	National Provincial District	National work with provinces work with local authorities
Structure	Public Health Units	(Silent)	Senior managers Public Health Units	National PH institute
Adequate personnel?	Lack of capacity	(Silent)	Inadequate numbers and distribution	(Silent)
Posts for personnel	(Silent)	(Silent)	Limited numbers of posts	Yes
Public Health Medicine specialists?	(Silent)	(Silent)	Yes. For prevention, promotion, strategic planning, monitoring & evaluation	(Silent)
MPH graduates?	(Silent)	(Silent)	(Silent)	(Silent)
Gaps outlined and strategies	Capacity Use Universities/MRC	(Silent)	Make role of PHM and other PH graduates more explicit in management and strategy	Leadership, surveillance and co-ordination Provide training for public health; co-operate with other institutions
Public health professional training	(Silent)	(Silent)	Work with universities and College of Medicines of South Africa to develop job-frameworks and agreed competencies Increase output.	Training and workforce development for surveillance and in public health

view, such units could house permanent PH staff – PHM specialists or post-doctoral employees, together with registrars and Master’s graduates. Academic PH specialists would have service roles and co-supervise registrars who would rotate through district level units. He warned that PH should play a critical role through advocacy and research so that it did not merely prop up a failing health system.

Conclusion

Over 70 years later, in post-apartheid South Africa, the four health system challenges identified by the 1942 Gluckman Commission persist. Poor health service co-ordination also prevails – between national, provincial and local health departments, and between government departments with responsibilities relating to the social determinants of health. Policies, particularly those affecting the health workforce, are also often not congruent. Maldistribution and shortages of human resources and facilities remain, together with inappropriate emphases on curative and institutional care, as well as a profit-orientated private practice focused on curative care. The solution to these challenges in 1942 was a national health service – so too in 2016.

We have aimed to show that PH approaches, competencies and trained personnel are essential for the success of development and health systems agendas, and of universal health care globally and nationally. Human resources for health, including PH in South Africa, are inadequate. Whilst PH skills are identified in key health policies, the range of PH professionals and roles is largely overlooked. There are some positions for PHM specialists but few for other PH professionals. Dedicated PH units are rare and their establishment remains ill-defined in current health policy.

The reasons for their poor prominence may be a combination of factors. Firstly, historically, PH professionals in South Africa enforced the ‘status quo’. After apartheid, earmarked PH doctor posts were abolished, senior management was no longer the domain of doctors or health professionals, and generic management skills were seen as sufficient. Due to an insufficient evidence base and the long-term impact of PH strategies, ‘personal’ health services received priority. The post-apartheid public sector health system was faced with demands of managing clinical and curative services and resources were allocated to infrastructure, clinical personnel and managerial systems. In addition, there were few credible practitioners with a range of PH skills, other than in academia or in advocacy NGOs. Some contributed to post-apartheid health policy and senior management, but they were few in number and not recognised as public health professionals for the work they did. As a result, the discipline remained largely unknown and poorly understood.

However, the terrain of available and skilled PH professionals has shifted. PHM specialists are still being produced, and have a unique combination of clinical training and experience coupled with theoretical and experiential training. They form part of the ‘family’ of public health practitioners in Figure 1. In addition, postgraduate PH training, mainly through MPH degrees, has produced numerous graduates over the past 15 years.

Is there a critical mass able to contribute, are they ‘fit for purpose’ and, together, have they shown their worth? Uneven competencies among MPH graduates may be the consequence of burgeoning ‘specialisms’. These heterogeneous courses may need to be bench-

marked to confirm competency. The competencies and career-paths of these and other PH graduates, however, need further research.

Recent health service reform initiatives provide an opportunity to redefine the role of PH professionals in South Africa. Roles intimated in policy documents are chiefly technical – in surveillance, information gathering and are advisory. They provide demographic and epidemiological information to inform strategic planning and prioritisation of services, monitoring and evaluation of services, as well as health promotion and prevention. The policy, quality assurance, research, training and implementation mandates are mentioned without elaboration.

Minor attention is given to roles within health service structures at national, provincial and district levels. We have noted, however, that health managers require management and PH competencies to lead health system reform and structures. In time, the entry requirement for district managers could be a postgraduate PH qualification.

The advent of the NHI White Paper and the NAPHISA Bill at the close of 2015 provides an opportunity for PH-trained professionals to advocate for and demonstrate their value. Their wide and versatile skills-base allows them to work in district, provincial and national units, in technical and service roles. Their functions would include population health needs assessments, support for planning, implementation, service evaluation and the control of health threats. PH units at national, provincial and district levels should be established, and their design could build on the experience of existing units in the Western Cape and Gauteng. Their staff would include multi-disciplinary teams with PH professionals, including PHM specialists and other PH professionals, and where possible have strong relationships to academic institutions. They are a potential resource providing ‘intelligence’ to inform the process of health system development and restructuring as part of the creation of a NHI system for South Africa.

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