

THE FUTURE OF MEDICAL WORK IN SOUTHERN AFRICA: *LESOTHO CASE STUDY*

DISCUSSION PAPER

March 2022

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WORLD BANK GROUP
Health, Nutrition & Population

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**Courtney Price Ivins, Annie Liang, Pia Schneider, and Omer
Ramses Zang Sidjou**

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Health, Nutrition, and Population Discussion Paper

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Health, Nutrition, and Population (HNP) Discussion Paper

The Future of Medical Work in Southern Africa: *Lesotho Case Study*

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Abstract: Global trends such as climate change, economic integration, urbanization, demographic shifts, far-reaching digital and technological advances, and rising consumerism are all affecting population health, including in Lesotho. They will lead to the growth of a middle class in urban areas with more demanding health needs and to depopulation in rural areas, leaving mostly elderly people and the rural poor. Emigration will continue, driven by better work prospects abroad as well as by climate change. Demographic change will continue in Lesotho as fertility rates decline, population growth slows, and the average age of the population increases. Technological advances in medicine are creating opportunities to facilitate medical work, learning, and communication. Anticipating the health impact of these trends will be crucial for Lesotho to be able to prepare its health workforce for the medical work of the future, particularly as the country's health system is still battling persistently high maternal mortality, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), and tuberculosis (TB) rates, while facing a looming burden of noncommunicable diseases. This case study finds that Lesotho's health sector will need a major reform to ensure that it is well prepared for the future. It will require a strategic mindset and substantial investments in health education, a modernization of health workforce management, and better data to conduct analysis and planning. We make a series of recommendations on how best to prepare for the coming changes that cover the need to align education policy and financing with future health workforce needs, how to transform workforce management and planning for the future, the need for solid data and analysis to inform evidence-based policy and planning, and how to work with the private sector and other countries to ensure that the population has access to high-quality care.

Keywords: Health workforce, future medical work, human resources for health, Lesotho, Southern Africa

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ACRONYMS

AIDS	Acquired immunodeficiency syndrome
ART	Antiretroviral therapy
CEO	Chief education officer
CHAL	Christian Health Association of Lesotho
CHE	Council of Higher Education
CIN	Computers, Informatics, Nursing
CONSAMS	Consortium of New Southern African Medical Schools
COVID	Coronavirus disease
EHR	Electronic health records
EKG	Electrocardiogram
FMSTP	Family Medicine Specialty Training Program
GDP	Gross domestic product
HIV	Human immunodeficiency virus
ICD	International Statistical Classification of Diseases and Related Health Problems
ICL	Income contingent loans
ILO	International Labour Organization
IMF	International Monetary Fund
IOM	International Organization for Migration
LeBoHA	Lesotho-Boston Health Alliance
LQF	Lesotho Qualifications Framework
LRI	Lower Respiratory Infections
MCHIP	Maternal Child Health Integrated Program
MOH	Ministry of Health
MOPS	Ministry of Public Service
NCDs	Noncommunicable diseases
NEPI	Nursing Education Partnership Initiative
NHTC	National Health Training College
NHWA	National Health Workforce Accounts
NMDS	National Manpower Development Secretariat
PEPFAR	President's Emergency Plan for AIDS Relief
PHC	Primary health care
PPE	Personal protective equipment
PPP	Public-private partnership
QMMH	Queen Mamohato Memorial Hospital
SADC	Southern African Development Community
SOAP	Subjective, Objective, Assessment, and Plan
TB	Tuberculosis
UK	United Kingdom
UNICEF	United Nations Children's Fund
US	United States

USAID
VHW
WDI
WHO

United States Agency for International Development
Village health worker
World Development Indicator
World Health Organization

INTRODUCTION

Several major global trends are expected to profoundly change the nature of work, including in the health sector. These trends include climate change, economic integration, urbanization, demographic shifts, far-reaching digital and technological advances, and rising consumerism, to name a few.¹ These global trends are affecting population health around the world. They are having an impact in Lesotho too, particularly as the country's health system is still battling with persistently high maternal mortality, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), and tuberculosis (TB) rates, while at the same time facing a looming burden of noncommunicable diseases (NCDs). Combined with factors that are specific to Lesotho's health context, such global trends will no doubt change the future of medical work. The consequences for population health will depend on how well policy makers can transform these trends into opportunities to modernize the sector and its workforce.

Few studies so far have examined how global trends will impact the future of medical work. Most existing studies have focused on high-income countries and conclude that adapting health systems to the future will require enhancing service delivery models, improving health labor market policies, updating education and training, and harnessing valuable technological developments.² Despite its importance, this topic has yet to be analyzed in the context of African countries.

This is the first analysis of how global trends will affect medical work in Lesotho. The three-part series uses a case study approach and includes Lesotho, Eswatini, and South Africa (Box 1). Based on its findings, we present a series of recommendations to the government of Lesotho. This study was conceived before COVID-19 disrupted economies and health systems across the world and in the three countries being studied. We conclude that these health systems will recover, but the impact of global changes may be accelerated by the experience of COVID-19. This is specifically addressed in the South Africa study, which assesses how the COVID-19 pandemic affected the health workforce.

¹ Winston 2019.

² ILO 2019.

Box 1: Methodology: A Country Case Study Approach

The three countries covered by this study—Lesotho, Eswatini, and South Africa—were selected because they illustrate different aspects of future trends in the health sector. Taking a three-country approach has made it possible to carry out in-depth analysis of how future trends are likely to affect (i) medical and nursing education, (ii) health workforce management, (iii) government stewardship, and (iv) collaboration with the private sector and with other countries. The three case studies focus on these four areas instead of the health system as a whole, as this has already been analyzed elsewhere (World Bank 2021a; World Bank and UNICEF 2017). Each case study assesses the extent to which the health workforce is prepared for future trends. For each country case study, key informants were interviewed, including health and education experts (listed in Annex 1), and data were collected from the government, universities, nursing schools, and hospitals, supplemented by data from international sources (WHO and the World Bank) and from the literature (World Bank 2020a). Interviews for the Lesotho case study were conducted both in person and by phone between May and June 2020. The case studies followed a standardized protocol that covered how prepared the health workforce is for future trends. These case studies are not meant to be representative of the Africa region as a whole. Data limitations were the main constraint in this study; we compensated by consulting data from the government and the existing literature, including by triangulating the data collected from our qualitative interviews with the secondary data collected in countries.

Source: Authors

This country case study found that because so much of the government’s attention has been focused on addressing current health challenges, it has had little time to develop strategic directives for the future. Future trends including economic growth, poverty reduction, and urbanization will lead to the growth of an urban-based middle class with ever more complex health needs. At the same time, the poor will continue to face higher exposure to health risks, including those resulting from climate change, unhealthy living conditions, and risky behaviors. The rising prevalence of NCDs, the persistence of communicable diseases including high HIV/AIDS rates, and high child mortality will likely keep life expectancy below 65 years until 2040. Therefore, Lesotho’s health sector will need major reform to prepare it for the future. The future health workforce will need new skills and capacities to address these health challenges and to work effectively with modern technologies. Planning for the future will require a strategic mindset and substantial investments in health education, a modernization of health workforce management, and better data to conduct analysis and planning. In formulating and implementing these strategies, policy makers will need to harness the benefits of a growing private sector and the existence of an international health workforce.

GLOBAL TRENDS WILL INFLUENCE THE FUTURE HEALTH CONSUMER AND HEALTH SECTOR

Several global trends are expected to affect the health sector and will need to be taken into account in planning for the future. They include economic growth, poverty reduction, urbanization, and advances in medical technology.

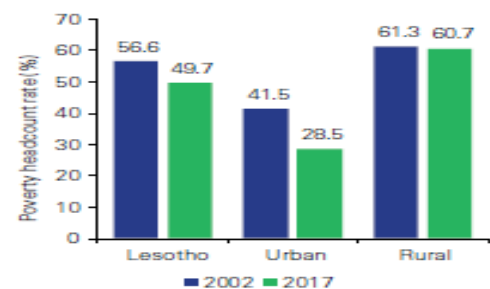
ECONOMIC GROWTH WILL FOSTER THE GROWTH OF THE URBAN MIDDLE CLASS, BUT POVERTY WILL REMAIN HIGH

Future economic growth will help to build a middle-income class. Lesotho is currently a lower-middle-income country. Real gross domestic product (GDP) growth rate is projected to average only 0.6 percent between 2019 and 2021, largely due to the COVID-19 pandemic, structural bottlenecks, and a weak regional environment. Other factors that can be expected to negatively affect growth going forward include regional shocks, declines in revenues combined with climate variability in the agricultural sector, stagnation of the textiles industry, high unemployment rates, falling remittances, and political instability.³ Substantial inclusive economic growth will be needed to increase income for all households, build a future middle class, and enable Lesotho to become an upper-middle-income country.

If current poverty trends continue, health consumers will have increasingly diverging needs in rural and urban areas.

National poverty declined by only 7 percentage points to 50 percent over the 15 years from 2002 to 2017. The reason for this slow reduction is that most people still work in subsistence agriculture and in low-paying textile industries and mining jobs. Higher incomes from wage jobs in the service sector led to faster poverty reduction in urban areas than in rural areas between 2002 to 2017 from 41.5 to 28.5 percent (Figure 1).⁴ However, more recently, the COVID-19 pandemic has reversed these trends, and as a result, nationwide poverty increased by about 3 percentage points in 2020. Urban households that lost their labor income were hardest hit.⁵ If these trends continue, not only will the majority of the rural population remain poor, but urban poverty will persist as well. However, the urban middle class is growing and has more complex health needs.

Figure 1: National Poverty Rate (2002–2017) (Percent)



Source: World Bank 2019b.

³ IMF 2020.

⁴ World Bank 2019b.

⁵ World Bank 2021b.

URBANIZATION AND CIRCULAR MIGRATION WILL LEAD TO DIVERGING HEALTH NEEDS

Urbanization will lead to a divergence between the health needs of the middle class and those of the poor.

In low- and middle-income countries, internal migrants from rural areas account for 40 percent of the urban population, and this share is projected to reach as high as 56 percent by 2040. In Lesotho, the urban population increased from 23 to 34 percent of the country's total population between 2006 and 2016, whereas the rural population is declining.⁶ People will continue to move to urban areas in search of better-paying jobs and more access to education, which are both needed to grow a middle class. The urban poor, however, will be more exposed to environmental risks; congestion; a lack of access to clean water, housing, and food; and road traffic accidents. This growing divergence in the medical needs of the middle class and the poor means that future health professionals will need to be trained to respond to the health needs of both groups.

Urbanization will contribute to the depopulation of rural areas and the aging of the rural population.

As most out-migration from rural areas is by young adults, rural populations will be increasingly characterized by low fertility and aging, and many will be both poor and elderly. The rural poor will continue to have similar health needs as today, with limited means to travel to health facilities in urban areas. Therefore, a strong rural health network will be needed that incorporates community care and chronic disease management to take care of the aging population in rural areas. Investments in improved transportation will also be needed to enable rural residents to travel to urban areas to access specialized care.

People will continue to migrate abroad, and some may return in poor health.

Approximately 15 percent of Lesotho's population currently works in South Africa. Migrant workers send home remittances, which are important revenue sources for their families, constituting about 24 percent of Lesotho's GDP. People will migrate abroad not only to find work but also to escape the impacts of climate change.⁷ Lesotho already experienced a State of Drought Disaster in 2019, and drought risks are expected to increase in the future across Africa, causing people to migrate. Some migrants may return home in poor health, for example, infected with transmissible diseases (such as HIV/AIDS or COVID-19) and will need to receive specialized medical care.

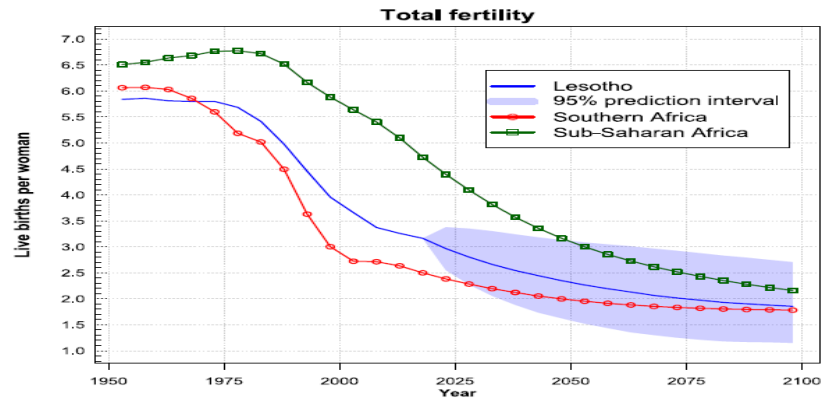
⁶ Lesotho Bureau of Statistics 2016.

⁷ IOM 2021

THE POPULATION WILL GROW SLOWLY, AND THE AVERAGE AGE WILL INCREASE

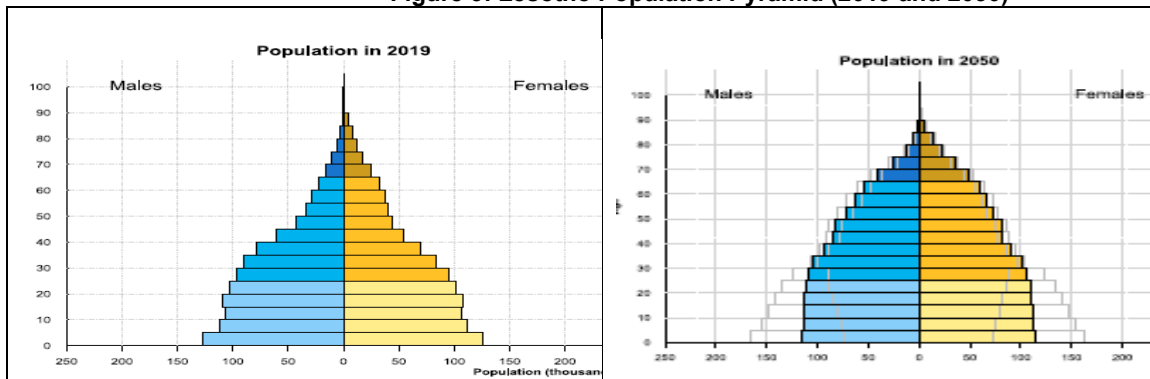
Demographic shifts will lead to more age-related health needs. Lesotho's population of 2.13 million is expected to grow at an annual rate of 0.8 percent. By 2050, total fertility rates will have declined from the current 3.2 children per woman to 2.3 (Figure 2). High adolescent fertility rates—which stood at 93 births per 1,000 women as of 2018—are expected to drop too due to increased access to reproductive health care, secondary schooling, and jobs for young women. As a result, the median age of the population will increase from 24 to 30 years by 2050 (Figure 3). With Lesotho's adult population growing ever larger, age-related NCDs will become more frequent and will require specialized care.

Figure 2: Projected Total Fertility Rate in Lesotho (1950–2100)



Source: UN 2019.

Figure 3: Lesotho Population Pyramid (2019 and 2050)



Source: UN 2019.

TECHNOLOGICAL ADVANCES WILL INCREASE INFORMATION-SHARING, THUS FUELING CONSUMER EXPECTATIONS, AS WELL AS IMPROVING TREATMENTS AND FACILITATING FUTURE MEDICAL EDUCATION AND WORK

Future consumers will have more access to media and digital technology, especially in urban areas, which will increase their health-related knowledge and raise expectations for their medical care. Consumers will want to be informed about healthy lifestyles, prevention, and treatment. Young urban consumers in particular will use modern technology such as e-health to access health information and care. E-health will facilitate the collection and transfer of medical data, referrals, disease surveillance, health education, patient monitoring, and communication with consumers. A growing middle class in urban areas will demand better quality care and will seek it not only in the country's public health system but also in the private sector and abroad (most likely in South Africa).

Returning migrants will have higher expectations of health care based on their experiences abroad. Medical universities and health schools will need to use modern learning technologies to enhance the quality of their education. These changes will increase people's expectations of health care.

Medical technology and innovations will influence health care provision and medical education. Advances in medical technology will affect how care is provided and will lead to changes in the equipment and procedures used in health facilities (such as laparoscopy instead of open surgery). More procedures will be conducted in day care and outpatient settings. Mobile money has penetrated many parts of Africa and makes it possible for financial services to reach remote health facilities. Blockchain technology creates accountability and transparency in payment and supply chain management processes. Machine learning algorithms are being used to automate data analyses. Smart contracts can be used to pay staff and facilities upon fulfillment of certain terms. Rapid advances in identity management and the low-cost availability of fingerprint technology are being used in staff management. Future innovations could lead to striking breakthroughs similar to the COVID-19 vaccine (such as an HIV vaccine or a cure for cancer), which would improve health outcomes. The COVID-19 pandemic has already accelerated the use of telemedicine in medical work in many countries. These breakthroughs will facilitate the work done by staff in health facilities. They will also require that health schools familiarize their students with new technologies and innovations to ensure that they can successfully apply them in their daily practice.

LESOTHO WILL CONTINUE TO HAVE ONE OF THE WORLD'S LOWEST LIFE EXPECTANCIES AND A COMPLEX DISEASE BURDEN

HIV and tuberculosis (TB) will continue to pose a major threat to the health, life expectancy, and human capital of Lesotho's population. Lesotho's low life expectancy of 53 years is caused by its very high HIV prevalence, TB incidence, and maternal mortality rates. In 2020, 22.7 percent of adults aged 15 years and older were living with HIV. About 97 percent of them use the highly effective antiretroviral therapy (ART),⁸ which has averted many HIV-related deaths. As of 2020, HIV/AIDs, TB, cardiovascular diseases, diarrhea, and lower respiratory infections (LRI) were the main causes of mortality in Lesotho (Figure 4). Malnutrition is widespread too and will increase as a result of climate change and urban poverty. Because of poor health and a lack of education, a child born today in Lesotho will be only 40 percent as productive in the future as he or she would be with full health and a complete education (14 years of high-quality schooling).⁹ It is also unlikely that Lesotho will attain the Sustainable Development Goal 2030 child mortality target of less than 25 deaths per 1,000 live births. If current health trends continue, life expectancy at birth is expected to increase from the current 53 years to just under 60 years by 2040. However, if HIV/AIDs cannot be contained and related mortality remains high, life expectancy will increase by only two years to 55 years by 2040.¹⁰

In the future, Lesotho's disease burden will include more complex diseases, which will present new challenges for medical work. In 2040, the same diseases will still drive

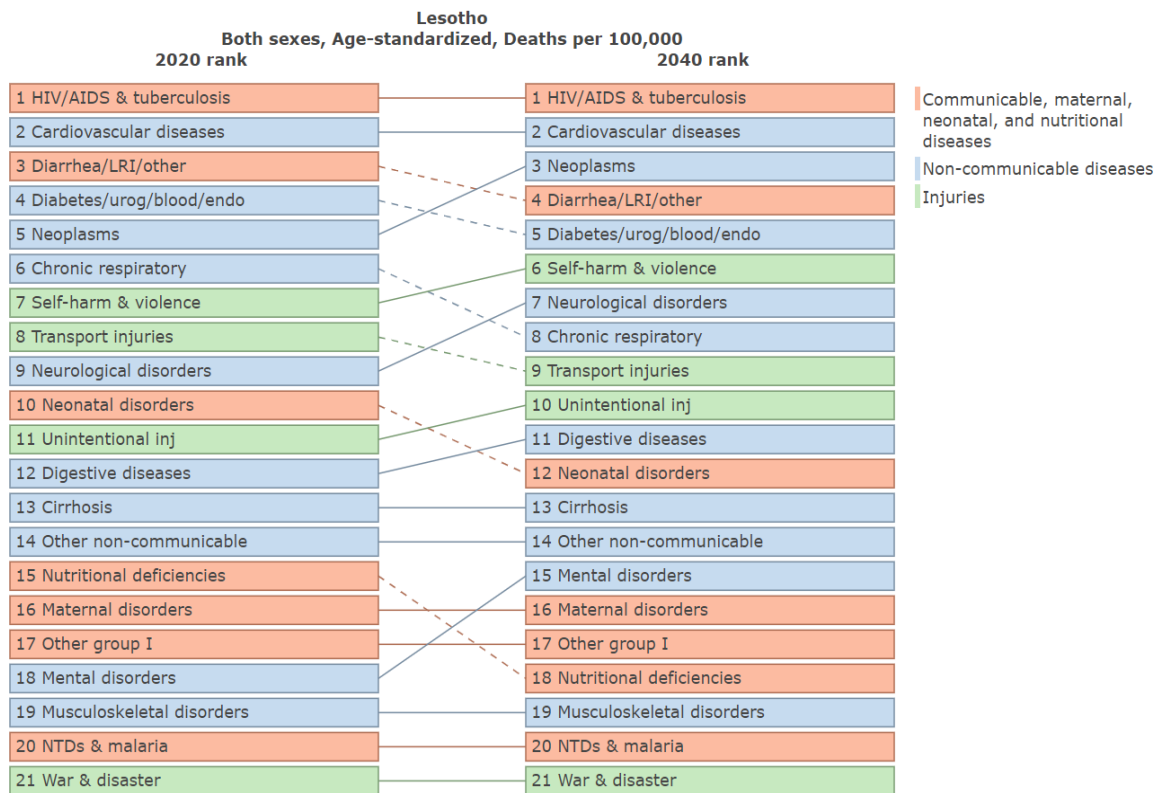
⁸ LePHIA 2020.

⁹ World Bank 2020c.

¹⁰ Foreman et al. 2018.

mortality, but changing demographics and a growing urban population will lead to more NCD cases, including cancer and diabetes; more traffic accidents; and more mental health disorders (Figure 4). Taken together, this future disease burden will pose a significant health challenge and will likely cause life expectancy to remain low.¹¹ Addressing these challenges will require medical facilities to provide both prevention and treatment for HIV/AIDS, care for communicable diseases, education for healthy lifestyles, mental health care, and the prevention and specialized treatment of costly NCDs and trauma. This will require a larger number of more skilled medical staff at all levels of care.

Figure 4: Top Twenty-One Causes of Age-Standardized Deaths in 2020 and 2040



Source: IHME 2018

Notes: HIV/AIDS = Human immunodeficiency virus/Acquired immunodeficiency syndrome; LRI = Lower respiratory infection; NTDs = Neglected tropical diseases; Unintentional Inj = Unintentional Injuries

These economic, urbanization, demographic, technological, and epidemiological trends will influence the type of medical workforce that will be needed in the future.

A strong nationwide primary care system will be vital for addressing the continuously high burden of communicable and HIV-related diseases and to build up the effective provision of prevention and follow-up care for NCDs in rural and urban areas. Complex NCD cases will require more personnel-intensive specialized care provided by hospitals in urban areas. The elderly and poor in rural areas will require a strong rural health network that incorporates community care and chronic disease management. Mental health care will need to become less stigmatized to ensure that more urban youths will use it. Modern

¹¹ Foreman et al. 2018.

technologies will create opportunities to increase access to care and knowledge-sharing. These trends will require policy makers in Lesotho to carefully plan their investments in the health sector as a whole and in the health workforce in particular.

HOW PREPARED IS LESOTHO'S MEDICAL WORKFORCE FOR THE FUTURE?

The health workforce of the future will need new skills to be ready to treat the health effects of these future trends. While physicians and nurses trained in maternal and child health care and communicable diseases will still be required, other personnel will also be needed to focus on the prevention, early detection, and treatment of NCDs and on elder care, particularly in rural areas, as will be medical specialists capable of treating complex NCDs and trauma cases. New diseases such as COVID-19 will increase the demand for some kinds of staff, especially those trained in intensive care. Advances in medical technology will require health care workers to learn new technical skills. To work in this changing environment, the health education system will have to teach these new skills to future health professionals, while these skills will have to be updated regularly through the provision of continuous medical education.

This section examines how prepared the Lesotho health workforce currently is for the medical work of the future, focusing on health education, health workforce management, government stewardship, and collaboration with the private sector and with other countries. The findings are based on information collected from key informants (see Box 1 and Annex 1) and supplemented by the available literature.

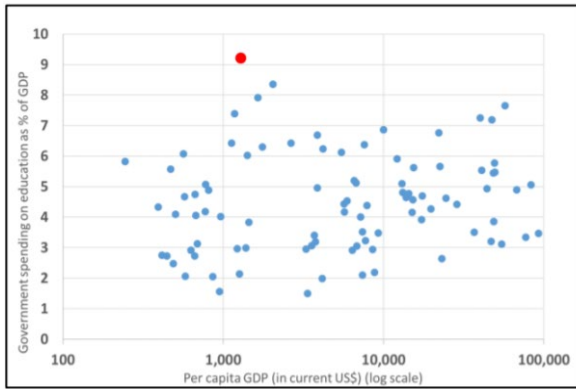
GENERAL EDUCATION DOES NOT PROVIDE STUDENTS WITH THE SKILLS NEEDED FOR HEALTH EDUCATION

Despite high government spending on education, the quality of Lesotho's education system is inadequate for preparing medical and nursing students of the future. Government spending on education in Lesotho is considerably higher than in comparator countries, accounting for 19.0 percent of general government spending or 8.9 percent of GDP in 2018/19 (Figure 5 and Figure 6). Despite this high spending, learning outcomes are poor. Only 30.0 percent of students complete secondary education, only 45.4 percent of children between the ages of 7 and 14 have foundational reading skills, only 15.0 percent of them have basic numeracy competencies,¹² and most have poor digital skills. Only about 22,000 students enroll in nonmedical tertiary institutions annually (in 2014, their graduation rate was 82.1 percent).¹³ Therefore, the general education provided in Lesotho will need to produce substantially better learning outcomes in reading, science, and math to ensure that future medical and nursing students have the relevant foundational skills to succeed in their medical studies.

¹² World Bank 2019a.

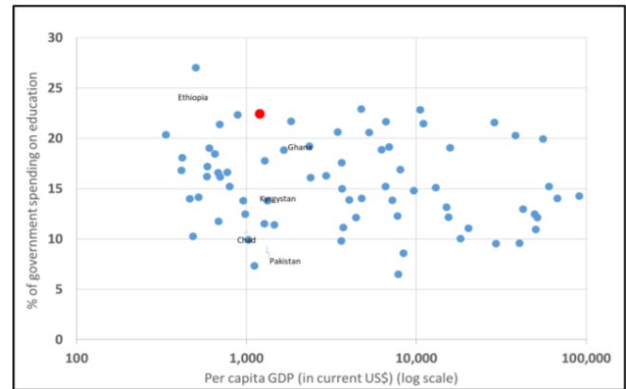
¹³ Lesotho Council of Higher Education 2015.

**Figure 5: Government Spending on Education, 2012
(as a percentage of GDP)**



Note: Lesotho's ratio is shown by the larger, red-colored dot.

**Figure 6: Government Spending on Education, 2013
(as a percentage of total government expenditures)**



*Figure 6 does not account for government spending for the provision of higher education, which is accounted for under the Ministry of Finance and Development Planning budget.

Source: World Bank 2019a.

THE FINANCING OF MEDICAL STUDIES IS UNSUSTAINABLE AND GENERATES A LOW RETURN ON INVESTMENT

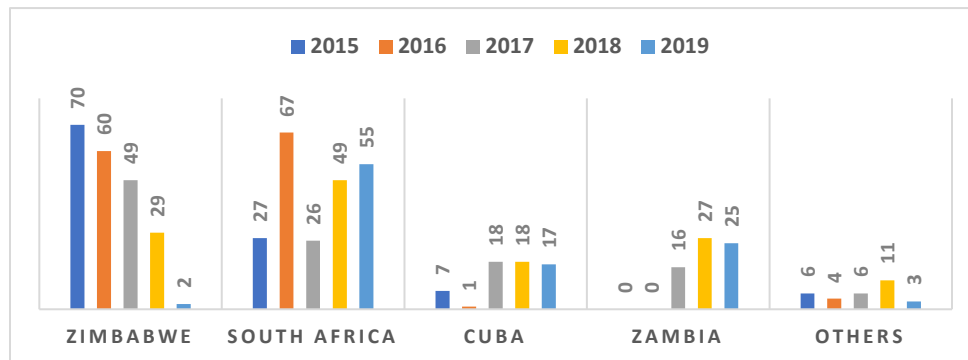
Lesotho sends its few medical students to study abroad, which has yielded only limited benefits for the country. Lesotho does not have a medical faculty. The Lesotho School of Medicine pilot was not accredited by the Council of Higher Education (CHE) and ceased to operate in 2014. The government considers sending medical students to study abroad and hiring doctors internationally as less expensive than creating a new medical faculty in Lesotho. Between 2015 and 2019, an average of 118 Basotho medical students enrolled annually in medical schools in the Sub-Saharan Africa region and in Cuba (Figure 7). No data have been collected on how many of them graduate or on their subsequent career paths, but it is estimated that about 90 percent of these Basotho medical students did not return to Lesotho to work in their country's health sector, which was a substantial loss for the government, which cofinances their education. In the past, no internships were available in Lesotho's health facilities for Basotho medical students, as is the case in South Africa. However, in 2019 the government and the Lesotho-Boston Health Alliance (LeBoHA) jointly developed an internship program based on a newly created database of Basotho medical students. Upon graduation, all of these students are eligible to enroll in a 24-month internship program in which they rotate around eight different health facilities in Lesotho. Between 2019 and 2021, 135 medical interns were enrolled in the program, and 47 completed the internships, of whom 42 were subsequently hired to fill permanent positions in Lesotho.

Hardly any tertiary students in any field repay their study loans to the government. In 2018/19, the Lesotho government allocated about 11.5 percent of its general education budget to all tertiary education. The National Manpower Development Secretariat (NMDS) in the Ministry of Finance provides loan bursaries and grants to students in all fields, which amounted to M¹⁴661.6 million in 2015/16. The bursaries are provided based on merit and on acceptance to tertiary education. There is a requirement for students to repay the loans upon completing their studies or entering employment, but this is not enforced, resulting in an extremely low repayment rate of 4 percent. This reduces the amount available for

¹⁴ M=Maloti

tertiary education funding for future students and the return on the government's investment.

Figure 7: Annual Number of Basotho Medical Students Studying Abroad by Country, 2015–2019



Source: Lesotho Ministry of Finance 2020.

Medical education is one of the most expensive fields of study and tends to be almost fully financed by the government. It is unknown how much the Lesotho government pays to finance medical education for Basotho students studying abroad. In South Africa, training a medical doctor costs a total of about R¹⁵ 900,000 (US\$63,500). Foreign medical students in South Africa pay annual tuition fees ranging from R 70,000 (US\$5,000) to R 120,000 (US\$8,000), excluding costs of accommodation. The government of South Africa pays R 331,000 (US\$23,500) annually for its students to receive medical training in Cuba, which is considerably more than it would cost at a medical school in South Africa or in Serbia or Croatia (which also receive a high number of foreign medical students). Presumably the Basotho government has to pay similar amounts to send its students to study medicine in Cuba or South Africa. A cost-effectiveness analysis of medical studies abroad is needed to help Lesotho's government and potential medical students to identify accredited universities at the lowest cost.

THE SIX NURSING SCHOOLS IN LESOTHO TRAIN FEW NURSES, AND THEIR FINANCING IS INDEPENDENT OF THEIR PERFORMANCE

Only a small number of nurses graduate annually from Lesotho's six nursing schools. The Nursing Education Partnership Initiative (NEPI) was established in 2011 and helped to increase the number and improve the quality of graduates from the six nursing schools, which are managed by the Christian Health Association of Lesotho (CHAL)¹⁶ and by the government's National Health Training College (NHTC). The National University of Lesotho offers a five-year joint degree program for nursing and midwifery. It also offers three-year nursing diploma and two-year certificate programs for nursing assistants (Table 1). On average, only about 134 nursing students graduate annually from the six schools. Among them are a few foreign students from neighboring countries who receive training in ophthalmic nursing at the NHTC. The Ministries of Education and Health

¹⁵ R=(South African) Rand

¹⁶ CHAL 2019

have hosted job fairs to attract more high school students into health careers. None of Lesotho’s nursing schools publishes information on their students’ pass rates.

Table 1: Nursing Schools and Training Programs in Lesotho, 2019

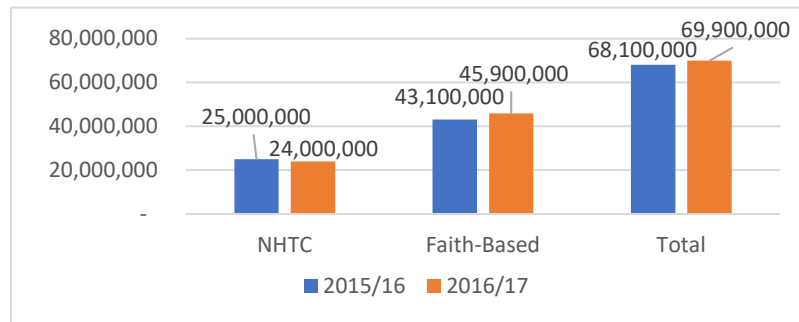
Training institutes	National University of Lesotho	NHTC	Maluti School of Nursing	Paray School of Nursing	Roma School of Nursing	Scott School of Nursing
Ownership	Public	Public	CHAL	CHAL	CHAL	CHAL
Nursing programs	5-year BSc in General Nursing and Midwifery	Diploma General Nursing	Diploma in General Nursing	Diploma in General Nursing	Diploma General Nursing	in Diploma General Nursing
Midwifery Programs		Ophthalmic Nursing			Diploma Midwifery	in
	Bachelor of Science in Nursing	Diploma Psychiatry & Mental Health	Diploma in Midwifery			
Nursing assistance		Diploma PHC Nursing				
		Certificate		Certificate		Certificate

Source: Mtshali et al. 2019.

Notes: CHAL = Christian Health Association of Lesotho; NHTC = National Health Training College; PHC = Primary Health Care; BSc = Bachelor of science.

The government finances nursing schools regardless of their academic performance. During the 2015/16 and 2016/17 budget years, the government allocated approximately M 69 million (US\$4.8 million) per year to the NHTC and to the four faith-based CHAL schools (Figure 8). The nursing school at the National University of Lesotho does not publish any financial data. The number of study places offered by the nursing schools is based on the student numbers in previous years. However, nursing schools have autonomy over their financial decision making, so they can enroll more students if additional funding is available from development partners and from student fees. Nursing students can also apply to the NMDS for student loans. As the academic performance of nursing schools is not assessed, the funding that they receive is not contingent on the achievement of certain learning outcomes.

Figure 8: Lesotho Government Annual Funding for Nursing Colleges (in Maloti), 2015–2017



Source: Data from Lesotho Nursing Council 2020.

Notes: NHTC = National Health Training College; Faith-based = CHAL (Christian Health Association of Lesotho).

MODERN LEARNING TECHNIQUES ARE NOT USED OFTEN ENOUGH TO PREPARE STUDENTS FOR FUTURE WORK

Several initiatives have been taken in Lesotho to improve the quality of nursing education. The Council of Higher Education (CHE) has accredited the curricula in all six nursing schools and regularly audits the schools to assess their institutional capacity. The Lesotho Nursing Council reviews the nursing curriculum and programs offered by the schools to ensure their compliance with standards set by the Southern African Development Community (SADC). Since 2019, the Lesotho Qualifications Framework (LQF) has provided guidelines on competencies for nursing schools based on the SADC's accreditation criteria, and nursing schools must develop their curricula according to these standards. The CHE reviews programs and curriculum changes to ensure consistency with SADC standards and has promoted a competency-based approach for nursing students, including mentorships and clinical practice.¹⁷ Some of Lesotho's nursing schools also collaborate with schools abroad to strengthen nursing education. For example, the Maluti School of Nursing has partnered with a college in Canada, and since 2019, the Paray School has collaborated with the University of the Free State (South Africa). The NHTC and the Scott School of Nursing are now developing similar courses. Initiatives such as the NEPI and the Midwifery Service Framework are working to improve the quality of training. NEPI has integrated clinical simulations into the curriculum to equip students with relevant competencies¹⁸ and provides courses in the fields of oncology and radiology.

Despite these initiatives, Lesotho's nursing schools still offer only limited clinical practice and insufficient training in medical technologies and management. They can provide their students with only limited clinical experience in tertiary care as few clinical rotations are available at that level. Budget constraints also hamper them from providing students with clinical experience in remote and underserved areas. Students do learn about the use of information technologies, but the lack of reliable electricity,

¹⁷ Nyoni and Botma 2019.

¹⁸ Middleton et al. 2014.

computers, internet access, and other equipment hinder the development of their computer skills. Some schools are considering introducing courses in entrepreneurship and leadership to better prepare graduates for management positions and to train future leaders in nursing.

Some countries in the region are turning to international collaboration as a way to strengthen medical education. Some medical faculties in the region still use outdated curricula, while e-learning is hindered by low connectivity and limited computer literacy among students. To counter these problems, the Consortium of New Southern African Medical Schools (CONSAMS) in Botswana, Lesotho, Mozambique, Namibia, and Zambia partners with schools in the United States and Finland (i) to develop medical curricula suited for the African context, (ii) to foster faculty development, (iii) to create postgraduate training programs, (iv) to solicit government funding and strategic planning for the development of medical schools, and (v) to develop equitable policies on student admissions to ensure that affluent urban applicants are not favored over less advantaged candidates.¹⁹ Since 2007, the Lesotho-Boston Health Alliance (LeBoHA) in Leribe District, which is a partnership between the Ministry of Health (MOH) and Boston University, has supported a four-year Family Medicine Specialty Training Program (FMSTP) through which students can obtain a master's degree in family medicine.²⁰ Between 2011 and 2020, nine students completed their studies.²¹ Programs like these can help to ensure that the future health workforce in the region will have the relevant skills to practice medicine.

Continuous medical education aims to reduce the gap between the skills that health professionals have already learned and those that they still need to learn. In Lesotho, nurses perform poorly in clinical practice. Only 32 percent of them know how to use clinical guidelines, take patient histories, conduct examinations and special investigations, or document clinical notes using the Subjective, Objective, Assessment, and Plan (SOAP) format.²² Many nurses serve in primary health care (PHC) settings with only limited supervision by physicians. The Ministry of Health offers training aimed at updating staff skills—this is funded by development partners and the government. Long-term training is often paid for directly by the health staff themselves or is funded by NMDS, or by development partners through civil servant scholarships.

DESPITE HIGH HEALTH SPENDING, HOSPITALS ARE NOT PREPARED TO TACKLE A MORE COMPLEX DISEASE BURDEN

Government spending on education and health is high, but outcomes are poor. About one-third of general government spending is on health and education combined (Figure 9), but these sectors have thus far yielded poor outcomes in return for this investment. This is evidenced by poor learning outcomes; the country's low life expectancy (53 years); and the highest HIV prevalence, TB incidence, and maternal mortality ratios in the world. Reliable data and analyses are needed to enable policy makers to use resources more efficiently in ways that yield better health outcomes.

¹⁹ Eichbaum et al. 2014.

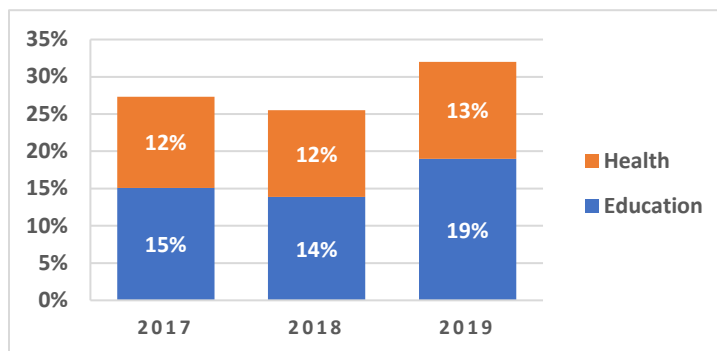
²⁰ LeBoHA 2020.

²¹ Bryden et al. 2021.

²² Christensen et al. 2015.

Figure 9: Lesotho Education and Health Spending, 2017–2019

(as a percentage of general government spending)



Source: World Bank 2021c

Despite relatively high government health spending, many health facilities lack equipment and staff. Lesotho has one tertiary hospital, 17 secondary hospitals, and two private hospitals (Table 2). Lesotho’s tertiary hospital, the Queen Mamohato Memorial Hospital (QMMH) network in Maseru, includes four primary care clinics used to triage patients and was managed under a public-private partnership (PPP) contract until 2021. The Maseru District secondary hospital is currently under construction with support from the Chinese government and is expected to have 200 beds available in 2023.²³ Compared to other countries in the region, Lesotho has considerably fewer hospital beds, doctors, and nurses. Lesotho has only 14 physicians per 100,000 people, compared with 90 in South Africa (Table 2). Furthermore, Lesotho’s hospitals are not adequately equipped with medical equipment. In 2014, only six secondary hospitals provided comprehensive emergency obstetric and newborn care. In 2020, the Ministry of Health received a large shipment of medical equipment from India to be distributed to public health facilities, but the government procurement process is extremely lengthy, resulting in long delays before facilities received needed equipment and supplies.²⁴

Between 2011 and 2021, the QMMH network became the largest and strongest performing hospital in Lesotho, despite consuming less than one-third of government health expenditures. Repeated disputes between the government and the PPP contractors led to the premature termination of the PPP on August 31, 2021, when the QMMH was handed over to the government of Lesotho.^{25,26} The PPP contract had defined a single payment per case of care for the QMMH to treat a maximum of 310,000 outpatients and 20,000 inpatients per year. If the QMMH treated more patients, a higher single payment would apply. Over the past decade, the QMMH consistently treated more cases than originally expected and more than had been treated by the previous public Queen Elizabeth II Hospital, which had been replaced by the QMMH. Between 2012 and 2018, the capacity of the QMMH increased by 5 percent in the case of beds, by 4 percent in the case of nurses, and by 21 percent in the case of physicians. Bed occupancy was

²³ Government of Lesotho 2021b

²⁴ World Bank 2021a.

²⁵ Government of Lesotho 2021a

²⁶ Netcare 2021.

99 percent in 2018, and the patient satisfaction rate had reached 97 percent according to patient surveys.²⁷ Despite the QMMH’s heavy workload and strong performance, in 2016/17, the government spent only 29 percent of its recurrent health expenditures on care provided by the QMMH network.²⁸

Table 2: Number of Health Facilities, Staff, and Bed Capacity in Lesotho’s Health Sector, 2015–2020

Health facilities and staff	Public (2020)	CHAL (2017)	Private and QMMH (2020)	Total Lesotho	Lesotho	South Africa (2017)	Middle-income country average
	Number				Per 100,000 population		
Hospitals	9	8	2 private	20	0.9		
• Secondary • Tertiary			1 QMMH				
Primary health care centers	90	74	3 QMMH 78 private	245	11.5		
Hospitals beds	1,106	727	425	2,258	106.2	230	230 (2010)
Medical doctors	179	36	85	300	14.1	90	140 (2017)
Nurses, midwives	899	826	295	2,020	95.0	130	270 (2018)
Other health staff	373	349	137	859	40.4		

Sources: Data from MOH 2020, CHAL 2017, Boston University 2020, World Development Indicators (2020).

Notes: Other health staff include nurse assistants, HIV counselors, and pharmacy technicians.

CHAL = Christian Health Association of Lesotho; QMMH = Queen Mamohato Memorial Hospital; Lesotho total population (according to the World Development Indicators) was 2,125,268 in 2019.

Public hospitals receive a similar share of the government health expenditures for treating fewer cases. In 2016/17, the government also spent 30 percent of its recurrent health expenditures on the eight CHAL and nine public hospitals, but these hospitals treated considerably fewer patients than the QMMH as evidenced by their extremely low bed occupancy rate of 32 percent.²⁹ The government will need to make substantial investments in improving the provision of care in these hospitals and health centers before they will be ready to take on more patients with more complex diseases.

Unlike the QMMH, public hospitals do not use a performance management system for staff development.³⁰ The QMMH assesses the performance of staff against their job descriptions using a “balanced scorecard.” Such measures can help to identify gaps in the skills and performance of health personnel and to provide them with training that they need to fill those gaps. The QMMH also uses a biometric time clock for logging staff attendance and time worked. Good staff performance at the QMMH has been facilitated by requiring staff to adhere to treatment protocols, through the use of management systems and accountability strategies, and by improving infrastructure and cleanliness.³¹ As Lesotho’s disease burden changes, public hospitals will need to significantly improve their performance to ensure that they can meet the needs of patients in the future.

Because of the better care at the QMMH and the poor service quality in public health facilities in rural areas, some rural patients with relatively simple health conditions seek care at the QMMH. As the urbanization trend continues and travel infrastructure improves, more rural patients will continue to do this if the new QMMH management

²⁷ Boston University 2020.

²⁸ World Bank and UNICEF 2017.

²⁹ World Bank and UNICEF 2017.

³⁰ Mugomeri et al. 2016.

³¹ Boston University 2020.

structure can continue to provide a standard of service and productivity that is at least as high as under the PPP. As hospital care is more expensive than PHC, it will be vital to strengthen PHC and develop a national referral system to restrict the influx of patients into the QMMH to those with conditions that cannot be treated in local health facilities to prevent cost escalations and overcrowding at the QMMH.

HIGH STAFF VACANCY RATES AND UNEMPLOYMENT POINT TO HEALTH WORKFORCE MANAGEMENT ISSUES

Several factors have resulted in very high vacancy rates in health facilities, particularly in rural areas. These include the following: (i) the government's inadequate planning and budgeting for the health workforce, (ii) the long and cumbersome process for hiring staff in the health sector; and (iii) in the case of doctors, a shortage of Basotho medical graduates to fill all vacant physicians' positions. With regard to the first factor, more than 20 years ago, the government defined the number of health positions to be funded within the public health system, and this number has not been revised upward in accordance with current and future needs. However, the government regularly introduces a hiring freeze to manage the public sector wage bill and reallocates funding from the human resource budget to more pressing needs, such as (most recently) the COVID-19 response. As a result, there are many vacant positions and very high vacancy rates for these unfunded positions. In 2016, the public health sector reported a 22 percent vacancy rate for all health positions, which by 2020 had increased to 32 percent of the 2,264 approved positions or 724 vacancies. Vacancy rates are highest among medical specialists and are as high as 34 percent for nurses. Health facilities in rural areas are generally understaffed, especially those in Thaba-Tseka District. As a result, medical staff report high patient-to-staff ratios, meaning that they have to work long hours.

The second factor behind these high vacancy rates is the system's lengthy bureaucratic recruitment process. To report vacant positions, district human resource officers must send a declaration form to the Nursing Directorate at the MOH, which advertises the positions and shortlists candidates. The Ministry of Public Service (MOPS) interviews and selects the shortlisted candidates and awards the job to the selected candidate once the Ministry of Finance and Development Planning gives authorization to finance the position. As all government employees are hired through the same Public Service Commission, this constitutes a bottleneck so it can take from one to two years to fill a vacant health position. To expedite the hiring process, the MOH can send the Public Service Commission a letter to justify its need to hire personnel directly, but this is only applicable for senior nurses at grade levels F and G, for which vacancy rates are very high. Over the past 15 years, there have been several attempts within the government to decentralize the hiring of staff to the MOH. A cabinet paper was issued by the Principal Secretary of the MOH and development partners that recommended the creation of a Public Health Services Commission to speed up the recruitment of health workers, but this effort was unsuccessful.

The third factor affecting the high vacancy rate for medical doctors is a lack of qualified applicants. There are simply not enough Basotho medical graduates to fill all vacant medical positions since most graduates prefer to work abroad, mainly in South Africa, which means the government must recruit doctors from other countries. In contrast with its numbers in nursing, Lesotho suffers from a shortage of doctors. To fill the many vacant positions for medical doctors, Lesotho has to recruit foreign physicians from, for example, the Democratic Republic of Congo and Malawi. In 2020, almost the entire

physician workforce at the QMMH hospital were foreign.³² In 2021, 65 percent of all medical professionals practicing in Lesotho's health sector were foreign-born. Lesotho's dependence on foreign health professionals means that the sector is vulnerable to any significant drop in health workforce immigration, so this kind of future scenario needs to be considered in the health workforce planning process. In an attempt to reduce the heavy workload carried by physicians, donors sponsored a task-shifting pilot program in which some responsibilities for HIV- and TB-related care were delegated from doctors to nurses and lay counselors, which increased service uptake. However, after this pilot ended, HIV testing and the coverage of antiretroviral therapy (ART) dropped by 15 percent and 10 percent, respectively, within a year.³³

In the case of nurses and midwives, these factors have meant that they cannot access jobs in the Lesotho health system, which has led to high unemployment among these cadres. In 2020, even though there were more than 500 vacant nursing positions around the country, 1,349 nurses and midwives were unemployed, which constituted a 28 percent unemployment rate. This included two recent cohorts of graduates from Lesotho's nursing schools. In addition, 192 associate nurse professionals, 46 pharmacy technicians, and 68 laboratory technicians were unable to find work in the public health system.³⁴ Some of these health workers may have tried to find jobs in the private health sector or outside the health sector, while others may have moved abroad to maintain their level of clinical experience, but there are no data on this. The government would have to substantially increase its human resources budget for the health sector to fill these vacant nurse positions, which then could be achieved by hiring from among the large pool of the unemployed.

Filling these vacancies will be crucial in ensuring the efficient treatment of the future disease burden in Lesotho. Several solutions have been tried, but none has yet succeeded in solving the problem. Development partners and the QMMH have been contracting directly with local and foreign health professionals to fill vacancies, but this is only a short-term solution. Development partners have been taking on staff to work mainly on TB and HIV/AIDS care in health facilities in coordination with the district health management teams. However, there is a risk that these jobs will not be sustainable because they are based on short-term contracts, and the priorities of the development partners might change. It is unlikely that a donor-funded medical specialist would be able to become a permanent public health sector employee if the government does not provide the necessary funding to fill a specialist position. The QMMH PPP had autonomy over its human resource process within the agreed parameters, but it could not compete with the higher salaries paid by the government. The QMMH is now managed directly by the government, so that its employees are public sector staff and are paid accordingly.

Another effort to facilitate access to health services at the PHC level has been the Village Health Worker (VHW) Program. The program was introduced by the MOH in Lesotho in 1979 as part of the Primary Health Care Initiative. While development partners including the Global Fund, Partners in Health, and the United Nations Children's Fund (UNICEF) have long supported the training and remuneration of VHWs, most of whom work in rural areas, the government only formally endorsed the program in 2019 when it

³² Boston University 2020.

³³ Bemelmans et al. 2016.

³⁴ WHO and the Ministry of Health Lesotho 2021.

issued its VHW Policy, which provides the framework for training, financing, and managing of VHWs. Over the past decades, about 9,000 VHWs, mainly women who live in villages, have been trained in health promotion with the support of development partners. With 72.2 VHWs per 10,000 population, Lesotho now has considerably more VHWs than the African average of 5.0 per 10,000.³⁵ VHWs receive financial support from the government (at a rate of M 300 per month or US\$35) or from development partners, who all pay different rates. Development partners also manage the recruitment and supervision of VHWs. Only a few studies have so far been done to assess the effectiveness of VHWs in Lesotho. Some found that VHWs had inadequate knowledge about what health care services were available to treat tuberculosis, which negatively affected patients' service use.³⁶ Another study found that VHWs who worked with village chiefs were able to persuade families to bring their children to health facilities for consultations.³⁷ The government is now conducting additional analysis to streamline the scope of work, training, supervision, mentorship, and remuneration of VHWs. The VHW program does not recruit unemployed nurses and midwives to deliver services in local communities because it was not designed to hire health professionals.

In reality, the only effective way to increase the health workforce will be to reorganize the government's already high health wages budget. The World Health Organization (WHO) estimates that the aggregate health workforce in Lesotho (excluding VHWs) will increase from the current 6,700 to roughly 10,000 in 2030, with the highest increases being among nurses and midwives. When adjusting these numbers according to needs-based estimates, WHO estimated that about 11,400 health workers would be needed by 2020, and 15,500 by 2030, which is considerably more than the actual numbers. Currently, the government only finances 1,846 or 68 percent of the existing health positions or about 16 percent of the WHO-recommended 11,400 needs-based positions for 2020. Closing this gap would require the government to fund more health positions to reach the needs-based level and to facilitate the national and international recruitment process for health facilities. However, this would substantially increase the health wage bill. WHO estimates that, to meet the estimated need for health care personnel, government expenditures on health wages would have to increase by about 12 percent annually up to 2030.³⁸ To ensure efficiency and a high return of investment, these increases would have to be implemented along with a review of public sector wages, a strong performance management system for public facilities similar to the system used at the QMMH, and an efficient recruitment process using modern technology.

There is a lack of data and analysis that could inform the process of planning the future health workforce. The government's workforce planning is based on past trends and does not take into account the current high vacancy rates or the unemployment of nurses and other health professionals. The government has drafted a National Human Resources for Health Strategy for 2005–2025, but this has not yet been finalized.³⁹ Because of a lack of data on the health workforce disaggregated by demographics and professional experience, it has not been possible to analyze the age structure of the workforce or the type of staff that will be needed in the future. This kind of information is

³⁵ WHO and the Ministry of Health Lesotho 2021.

³⁶ Malangu and Adebajo 2015; Ramathebane et al. 2019.

³⁷ Hirsch-Moverman et al. 2020.

³⁸ WHO and Ministry of Health Lesotho 2021.

³⁹ World Bank 2021a.

vital for health workforce planning, to anticipate future changes in population demographics and disease burden; the composition and mobility of the workforce; regional differences in vacancies, staffing, and unemployment; reforms in the work process; and potential new care structures and medical technology. The MOH is planning to implement a comprehensive human resource information system and to collect detailed data on the health workforce to be used to conduct analysis and to plan for the health workforce in the future.

STAFF MORALE IS LOW DUE TO UNSATISFACTORY WORKING CONDITIONS, WHICH AFFECTS STAFF PERFORMANCE

The morale of Lesotho's health workforce is low, which contributes to high absenteeism and strikes. Staff morale is low because of poor working conditions, unsatisfactory remuneration, inadequate medical equipment, high infection risk due to a lack of protective equipment, and insufficient supervision and career development. In rural areas, these factors are compounded by a lack of transport, electricity, water, and resources. The COVID-19 pandemic amplified these concerns and caused health workers to strike. For example, in July 2020, health professionals at designated COVID-19 isolation centers went on strike in response to shortages of personal protective equipment (PPE) and demanded that the government provide them with PPE to protect them from COVID-19 and also pay them a risk allowance. The government then provided the required PPE and allowances.

Recent investments in infrastructure and training are expected to help improve working conditions. The United States Agency for International Development (USAID) Maternal Child Health Integrated Program (MCHIP) in Lesotho has supported the placement of more than 700 nurses and midwives in 40 rural health centers since 2015. Working independently in rural clinics enhanced their clinical skills and confidence, and the program is now being scaled up by the government.⁴⁰ Also, as mentioned above, the government has provided the health workforce with risk allowances and PPE to protect them from COVID-19.⁴¹

Health professionals are concerned that the salary structure does not compensate them adequately. The public sector salary grading system is standardized across the government, but health professionals are paid allowances on top of their salaries, including risk allowances, night duty allowances, child education allowances, and "mountain allowances" for staff in hardship posts. Nevertheless, health professionals have complaints about the salary structure, including the following: (i) it does not sufficiently compensate staff working in hard-to-reach areas; (ii) salaries do not reflect specialist expertise; (iii) some nurses are only paid 50 percent of their salary during their training; and (iv) hardship allowances do not account for different levels of hardship. Over the past few years, although the government raised the salaries of public sector staff, this was not coordinated across all service levels. Nurses' monthly salaries increased to R 13,000, so that nurses working in lower-level hospitals were receiving higher wages than those working at the QMMH tertiary hospital (R 9,000 per month).⁴² This led to strikes at the

⁴⁰ USAID and PEPFAR 2019.

⁴¹ U.S. Department of State 2021.

⁴² Lesotho Nursing Council 2020.

QMMH, which negatively affected the provision of care and resulted in the firing of 345 striking nurses and assistants in March 2021.⁴³

The government is not under any pressure to increase health wages for nurses. Compared to lawyers and engineers working in Lesotho's public sector, health wages are very competitive. The average health worker earns about 29 percent more than a lawyer or engineer, and this rises to 176 percent more for medical specialists, 130 percent more for general practitioners, and 22 percent for psychologists.⁴⁴ Furthermore, given that the pool of unemployed nurses and midwives is large, the government is not under any pressure to increase wages for these health cadres, but it is keen to retain health professionals in the sector. Hence, action is needed to address staff concerns to reassure them that their work is valued and to improve staff morale.

HEALTH DIGITALIZATION AND DATA ARE INADEQUATE FOR ANALYSIS, PLANNING, AND INVESTMENTS

Digitalization of government services has been slow. About 66 percent of Lesotho's population does not regularly use the internet, even though 97 percent is covered by a 3G network signal.⁴⁵ A national ID system was launched in 2013 and covers about 85 percent of the population. The system includes the National Identity Register, which is underpinned by a digital database and an identity management system that uses biometric technology to confirm the uniqueness of identities. The government is committed to enhancing the role played by information technology in the health system. Lesotho's 2017–2021 e-Health National Strategic Plan set out the aims of expanding health information systems, telemedicine, e-Learning, and the use of social media to communicate health messages, and of increasing the interoperability of the various kinds of software being used to provide e-Health services. However, the implementation of these aims has so far been slow.

Not enough data are being collected to enable analysis or to inform policy decisions. The lack of data on health service use and on the characteristics of health workers means that very few analyses exist to serve as a basis for the government's plans for the development of the health workforce or of health infrastructure and medical technology. One exception is that the QMMH regularly reports to the MOH on its performance, including admission numbers, but the MOH has not been using these quarterly reports to manage patient flows or health expenditures. The government will have to make substantial investments in the collection and analysis of health data and analysis and use those results to develop health policies, going forward. Digital technology could be used to facilitate the collection of health data.

THE GOVERNMENT IS NOT REAPING THE BENEFITS OF COLLABORATING WITH THE PRIVATE SECTOR AND WITH OTHER COUNTRIES

The government has attempted to collaborate with the private sector to improve the quality of care. Both CHAL and the Baylor Foundation⁴⁶ receive funding from the

⁴³ *The Guardian* 2021.

⁴⁴ WHO and the Ministry of Health Lesotho 2021.

⁴⁵ World Bank 2020b.

⁴⁶ Baylor College of Medicine Lesotho 2020.

government to provide care in remote areas. The two private hospitals and clinics located in Lesotho's urban areas offer general and specialized care. The government signs memoranda of understanding with and issues licenses to practice to private providers, while the medical and nursing councils oversee the quality of care in the private sector. Several physicians work in dual practice in both the public and private sectors—which is also not regulated. No data are collected on private sector health care.

The PPP that ran the QMMP was another instance of attempted collaboration between the public and private sectors, but this collaboration has been challenging.

After a decade of successful health service delivery at the QMMH, the contracted partners in the PPP pulled out in 2021 because of (i) the low salaries QMMH was paying health workers compared to the higher salaries paid by the government, and the resulting high turnover rates; (ii) a lack of government support for the PPP, which negatively affected communications between the PPP and the government; and (iii) the government's failure to reimburse the QMMH for care provided to patients, as agreed in the PPP contract between the government and the QMMH.⁴⁷ The failure of the QMMH's PPP is creating new challenges in hospital and staff management, financing, and quality of care that the government will have to address, together with the hospital's new management, to ensure the QMMH can continue its impressive performance into the future.

Patients travel to South Africa and other countries for care that cannot be provided in Lesotho.

High-cost treatments, such as cancer care is not available in Lesotho. The government currently spends about US\$7 million annually on patients who travel abroad for treatment. However, the government does not have a treatment abroad policy that defines the financing of this program or the criteria for which patients will be sent to hospitals abroad and for which types of treatment. As a result, most expenses for treatment abroad are paid by patients who mainly travel to seek care in nearby Bloemfontein, South Africa. The government plans to build a cancer facility that will open by 2024.⁴⁸ Expanding access to high-cost treatment in the most cost-effective way will need to be carefully planned to minimize recurrent cost implications for the government. In Lesotho there will still be a need for treatment abroad, which should be facilitated by government policy and bilateral contracts with relevant foreign hospitals.

Lesotho recruits many of its health professionals from other countries.

The SADC regional agreement (of which Lesotho is a signatory) requires SADC nationals pursuing medical studies in the region to return to their home country upon completion of their studies to undertake internships or to seek the approval of their own Ministry of Health to conduct internships elsewhere within the SADC region. However, this policy is not being enforced by governments. Nor does Lesotho collect any data on the migration of health staff into the country or on the number and type of Basotho physicians and nurses working abroad. Given the small number of Basotho medical graduates, the need for Lesotho to recruit doctors from abroad will continue into the future.

⁴⁷ Boston University 2020.

⁴⁸ IAEA 2019.

CONCLUSION: LESOTHO WILL NEED TO MAKE SUBSTANTIAL INVESTMENTS TO PREPARE ITS MEDICAL WORKFORCE FOR THE HEALTH TRENDS OF THE FUTURE

This case study has examined how global trends will affect the future of medical work in Lesotho and how ready the country's health sector and health education system are for these trends. Several key global trends will affect population health and consumer demand for care in Lesotho. Economic growth will help to build a middle class in urban areas with more complex health needs. Urbanization will contribute to depopulation in rural areas, which will be characterized by low fertility and more elderly people needing care. Poverty will remain high, particularly in rural areas. Emigration will continue, driven by better work prospects abroad and by climate change. This will lead to changing demographics as fertility rates decline, the population grows more slowly, and the average age of the population increases. Communicable diseases will continue to drive mortality among the poor, particularly in rural areas, while urbanization will lead to more NCD cases, more traffic accidents, and more mental health disorders. If these current health trends in Lesotho continue, life expectancy at birth will increase from the current 53 years to just under 60 years by 2040.

Ensuring that the health system is prepared for this future will require more skilled medical staff and more personnel-intensive health care. A strengthened nationwide primary care system will be needed to provide general care throughout the country. An effective referral system will be needed to refer patients from lower levels of care to receive costlier specialist treatment and medical technology in health hubs in urban areas. Technology advances in medicine will facilitate medical work, learning, and communication. However, this case study has also found that addressing current health challenges, many of which have already been brought under control in other countries, has left the government with little time for strategizing and preparing for the future.

Lesotho will need a major reform to ensure that it is well-prepared for the future of medical work. To ensure that its future health workforce can be maintained at full strength, the government could train more nurses and physicians, but this would be difficult to achieve given the high cost of medical education. Therefore, Lesotho will still need to hire foreign-trained physicians and send its students to study abroad. In addition, the government will have to modernize health workforce planning and management, finance an increase in the number of positions for physicians and nurses, and explore innovative ways to finance high-quality medical education. It might also expand its partnerships with foreign universities to develop and fund medical research programs in Lesotho's hospitals and to attract international funding and knowledge. In general, more detailed data and analysis on health education and the health workforce will be needed to inform the government as it makes these decisions.

As Lesotho becomes an upper-middle-income country, more domestic revenue will be generated as the economy grows and revenue collection becomes more efficient. This additional domestic revenue can be spent on a combination of reforms to optimize future medical work, while attracting more external financing aimed at promoting reforms in health education in line with international best practice, building resilient infrastructure, and supporting data collection and management for evidence-based policy making.

Based on the findings of this case study, we offer the following medium-term and longer-term recommendations to help the government prepare for future medical work. These

recommendations go beyond just solving the current problems and will thus require a strategic mindset that takes the future into account.

POLICY RECOMMENDATIONS FOR THE GOVERNMENT OF LESOTHO

1. ALIGN EDUCATION POLICY WITH THE NEEDS OF THE FUTURE HEALTH WORKFORCE

Invest in the quality of general education.⁴⁹ Improve the quality of the science curriculum (including biology, chemistry, and physics) and the math curriculum in secondary education to increase the number of qualified candidates for nursing and medical schools. Invest in students' digital skills to prepare them for technological advances,⁵⁰ particularly girls who will eventually constitute the predominantly female health workforce of the future. Set high academic standards for students to qualify for government financial assistance to study medicine abroad and make the process transparent.

Invest in nursing education in line with international best practice. Increase the number and quality of nursing graduates in Lesotho's schools. On the basis of analysis and health workforce planning, adjust the number of government-funded nursing students and faculty positions. Ensure that the curriculum reflects future trends⁵¹ such as complex disease profiles, changing health needs (including climate-sensitive health risks),⁵² expanded clinical practice in tertiary care and in underserved areas, computer literacy, the use of e-learning platforms, data analytics, telemedicine, and new medical technologies. Continue collaborations with nursing schools from other countries to strengthen the quality of nursing education in Lesotho. Provide mentoring and career counseling to nursing and medical students and graduates to facilitate their swift entry into the health workforce.

Promote continuous medical education and medical research in hospitals. Strengthen continuous professional education for health professionals and make the completion of professional education a condition for the credentialing and privileging of physicians, as is currently done in Rwanda. Support a nurse practitioner training program for experienced cadres and expand the family medicine program in the Leribe District to include more medical students and revisit the financing of health professionals during training to ensure staff development. Promote research in nursing schools and hospitals in Lesotho with a focus on technology and innovations in health fields that might be eligible for international funding. Encourage Basotho researchers in the diaspora to return from abroad to help advance health research in local hospitals and the private sector and strengthen quality of care.

As in South Africa and the National Health Corps in the United States, introduce community service requirements (internships and residencies) for Basotho medical and nursing students to provide them with relevant clinical experience, including in rural areas. These community service programs could provide invaluable training not only for nursing and medical students but also for unemployed health professionals.

⁴⁹ World Bank 2019a.

⁵⁰ World Bank 2020b.

⁵¹ Nyoni and Botma 2019.

⁵² Watts et al. 2020.

2. REFORM EDUCATION FINANCING FOR MEDICAL AND NURSING STUDIES TO ENSURE SUSTAINABLE FUNDING

Revise health education financing. Allocate funding to nursing schools based on their academic performance. Conduct a cost analysis of nursing education and charge nursing students from other countries full-cost tuition fees.

Conduct a cost-analysis of medical studies abroad and of learning outcomes. Analyze the cost-effectiveness of Lesotho's contractual agreements with accredited medical universities in South Africa, Namibia, and Zambia and negotiate the fees charged for Basotho medical students based on university performance. Adjust the number of government-funded medical students based on the results of workforce planning.

Enforce the repayment of medical student loans in line with the UK's and New Zealand's systems. This would involve legally obliging medical graduates to make monthly direct transfer repayments or to pay an annual minimum amount of their NMDS bursary to the government. A memorandum of understanding between the NMDS and the MOH is needed to keep track of medical graduates. In the case of noncompliance, government services such as passport renewals should be denied to debtors until they pay their debt in full. The government will need to track graduates working abroad to ensure that their student loan repayments are collected.

Consider introducing income contingent loans (ICLs) for students, with efficient repayment arrangements. An ICL system could be designed for Lesotho's medical students who receive bursaries that would include an efficient repayment mechanism based on the experience of other countries. ICLs have successfully been used in the Hungary, Netherlands, and the United Kingdom to finance higher education tuition fees. Students only have to start repaying their loans once they are earning an income above a certain threshold.⁵³ For example, Hungary has no income threshold and a 6 percent repayment rate on full earnings. In the United Kingdom, graduates earning over £25,000 per year contribute 9 percent of their gross earnings toward the repayment of their loans. New Zealand has a lower threshold than the United Kingdom of £10,000 and a higher repayment rate of 12 percent of earnings. The United States requires graduates to repay 10 percent of their income above a threshold set at 150 percent of the poverty guideline or US\$24,360 for a two-person household as of 2017.⁵⁴ These ICL repayments are withheld from workers' wages by their employers as is done with social insurance taxes. If Basotho graduates were to migrate to another country after completing their education, their ICL repayments would have to be collected from their monthly wages by the government of the host country, which would then transfer the revenue back to the Lesotho government.

In the future, a repayment system based on the ICL experience could be designed to finance the costly tertiary education of Lesotho's medical students financed by the government of Lesotho. None of the three countries in this study has an ICL in place. While it will take time to fully introduce an ICL system in Lesotho, the government could start by entering into a bilateral agreement with South Africa to collect ICL repayments from the wages earned by Basotho physicians who received ICLs from the government of

⁵³ Barr 2001.

⁵⁴ Britton, van der Erve, and Higgins 2019.

Lesotho and to transfer the money to the Lesotho government. Eventually, governments in the destination countries might also agree to match these repayments (as is done with social insurance contributions) and include that matching amount in the total revenue transferred to Lesotho's Ministry of Finance and Development Planning for the government's investment in the education of the Basotho physicians working in those countries.

3. TRANSFORM HEALTH WORKFORCE MANAGEMENT AND PLANNING FOR THE FUTURE

Introduce modern personnel management practices in health facilities to improve staff morale. This would involve the following: (i) developing effective employee promotion policies and a process for managers to follow, (ii) improving working conditions, (iii) offering continuing medical training to all staff and opportunities to conduct medical research to physicians, and (iv) providing health professionals with appropriate infrastructure and medical equipment so they can fully apply their expertise. The introduction of a “balanced scorecard” against which health facilities could evaluate their health staff performance would identify issues or gaps that could be remedied by providing training and incentives. This is already being done at the QMMH. It would also be useful to introduce a biometric time clock system in all public health facilities to log the attendance of and time worked by their staff.⁵⁵

Modernize the hiring process for the health sector. Introduce public sector reforms to facilitate and accelerate the recruitment and staff hiring process. This would include providing all hospitals with full autonomy to hire their own health staff within the parameters defined in the National Human Resources for Health Strategy for 2005–2025, as is already done by the QMMH. The introduction of online jobs portals would facilitate labor market matching and information dissemination and would lower recruitment costs significantly, while also better responding to the needs of young health professionals.

Increase staffing within the current health budget and review the work process in health facilities. Within the current health budget and based on the results of the five-year cohort health workforce analysis, the government should be able to finance more positions for nurses, nurse practitioners, and paramedics, starting in rural areas with high vacancy rates.⁵⁶ Redundant positions should be eliminated. The recruitment of unemployed nurses and midwives should be prioritized. Clinical practice internships and residency programs could attract Basotho medical students and graduates to work in health facilities in areas with shortages. Opportunities should be explored for shifting some primary care tasks, such as HIV care, currently carried out by physicians to experienced nurses.⁵⁷

Conduct health workforce planning based on future trends. In Lesotho, a regular systematic analysis of current and future workforce needs will be critical for planning investments in health education. Modern forecasting methods should be used to ensure that due account is taken of future trends such as urbanization, the growth of the middle class, mobility across borders, changing disease burdens, changes in medical technology, and the aging of the population. The workforce planning methods that are used in Australia

⁵⁵ Boston University 2020.

⁵⁶ WHO and the Ministry of Health Lesotho 2021.

⁵⁷ Bemelmans et al. 2016.

can provide helpful insights for Lesotho.⁵⁸ The main stages in the Australian health workforce planning process consist of the following: (i) defining specific planning objectives congruent with the national health strategy; (ii) carrying out a situational analysis of existing staffing in relation to the structure and capacity of health services, (iii) projecting future staff requirements by specialty and staff group, (iv) assessing the numbers and skills of graduates from health training institutions, and (v) developing a plan and an implementation strategy for the future (Figure 10). The results of this exercise would help policy makers to set budgets for the health workforce and for medical and health education to ensure that there is enough future staffing in both rural and urban areas. An analysis of the VHW program might be useful in identifying ways in which unemployed health professionals might be able to work with VHWs.

Figure 10: Health Workforce Planning Process in Australia



Source: Queensland Government 2020.

Revisit pay scales in health. Pay scales for each staff position should be defined by the government using measurable factors such as seniority, patient load, patient complexity, task complexity, shift length and timing, and service in an underserved rural location. Performance-based bonuses could be offered to staff for achieving an agreed set of targets. Any wage increases for health workers will need to be carefully planned to correct for any potential negative effects across the sector and to prevent strikes and service disruption.

Collect data to conduct analysis. To inform Lesotho’s health workforce planning process, detailed data on the population; the number of health graduates and their employment; a breakdown of the health workforce by skill; and the existing structure, capacity, and use of services by type of facility and medical condition will be needed.

⁵⁸ Queensland Government 2020.

4. USE DATA AND ANALYSIS TO INFORM HEALTH POLICY MAKING AND PLANNING

Invest in reliable data collection and analysis. Follow WHO's directives governing the collection and reporting of data in the health sector, such as WHO's National Health Workforce Accounts (NHWA). This includes data on population dynamics, changing disease burdens, and the health workforce.⁵⁹ A centrally managed database will be needed that contains detailed information on health sector performance and the health workforce (with data on health facility staff disaggregated by professional category, such as ancillary health care workers, laboratory technicians, and pharmacists), as well as data on the unemployed and the duration of their unemployment, and on medical and health graduates. All these data will be essential for current and future health workforce planning and recruitment and for determining medical and nursing education budgets. Having higher-quality data will make it possible to conduct regular monitoring and analysis of the sector, which will yield insights that will be invaluable for future policy making for the health workforce.

Establish a dynamic health workforce data platform and facilitate links with new digital initiatives. This platform could be expanded in the future to include the following: (i) online job portals for recruitment into the health workforce; (ii) a biometric time clock for logging the attendance and time worked of staff in health facilities (as is already done in the QMMH); (iii) online applications for professional registration and credentialing by nursing and medical doctor councils; (iv) mobile apps to make payments to providers and suppliers to reduce the administrative burden on staff; and (v) early detection tools that identify changing disease incidence (such as climate-related impacts to human health), risk by geographic and seasonal parameters, and early warning systems for climate-related environmental risks to alert health staff and ensure a prompt community response.⁶⁰ Also, using electronic health records (EHR) can facilitate the collection of data on patients throughout the system, while using the tenth revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) coding systems makes it easier to track patients' diagnoses and ultimately enable policy makers to adjust medical education to provide training in the skills needed to treat these patients.

Carefully plan future infrastructure and technology investments within a health masterplan and use it to inform future medical work. Ideally, this should be built on a geospatial analysis to identify the optimal distribution of infrastructure, medical equipment, and technology across the country, based on projections of future population dynamics and disease burdens in the public and private sectors. The results would be used to inform health workforce planning for Lesotho's health facilities. Rural health facilities might need to be repurposed to respond to the changing health needs of a more elderly population. Urban health facilities would be equipped to take care of both a growing middle class and the urban poor as well as rural patients who will travel to access their care as transportation improves. Extreme weather events (such as wildfires, floods, and droughts) and the rise of climate-sensitive diseases (such as malaria, dengue fever, giardiasis, meningitis, and influenza) will require strengthening preventative and curative health care.⁶¹ Policy makers must also plan to contract with the private sector to provide high-

⁵⁹ WHO and the Ministry of Health Lesotho 2021.

⁶⁰ Meiro-Lorenzo 2017.

⁶¹ Watts et al. 2020.

cost medical technology and treatment and with foreign hospitals (e.g., in Bloemfontein) to provide treatments that are not available in Lesotho.

5. INVEST IN THE USE OF MODERN TECHNOLOGIES

Adopt innovative approaches to ensure the continuity of health services in rural areas and during pandemics. As was done in the Metropolitan Health Services in the Western Cape, South Africa, during the COVID-19 pandemic, Lesotho could set up an innovative home delivery program in remote areas to distribute medications to patients with chronic illnesses. The system would rely on a combination of volunteers, Uber, scooters, and village health workers to deliver monthly medicine parcels to patients. Mobile money, smart contracts, and the low-cost use of fingerprint technology would ensure that patients receive the products and that their money is collected. Additional automatic distribution points can be set up in rural areas to provide local residents with access to preventive care, medication, and contraceptives. Phone helplines could also be established for at-risk patients who need medication supplies.

Broaden the use of modern technology and telehealth in clinical teaching and practice. The use of telehealth has grown significantly during the COVID-19 pandemic in many countries as a way to increase access to care for patients who cannot travel or who live in poorly resourced remote locations. In Lesotho, telehealth could be used for communication and counseling, for monitoring patients with chronic conditions, and for identifying patients who need specialist care. It could also be used by specialists at hospitals, including those based abroad, to provide “telementoring” to primary care providers in rural and other underserved areas to treat patients with complex conditions such as “long COVID” or other health disorders, and to expand their capabilities. Other digital advances that could be used in Lesotho’s health system include standard electronic medical record systems that offer fully integrated telemedical capability, and cost-effective broadband platforms like Zoom and Skype to enable doctors to perform remote medical evaluations. Computer applications can now provide “instant-on” telehealth software infrastructure with standard computing hardware. In the future, nurses will be able to conduct telehealth visits from home or from [virtual care centers](#) without sacrificing their personal bonds with patients.

Create an enabling environment for adopting advances in modern technology through investment and regulation. Having a better understanding of how technology can help with the provision of health care will broaden acceptance of e-health initiatives among providers and patients. Regulations will be needed to govern requirements for visits, provider licensing, and clinical applications for telemedicine. This will also require adequate internet access and bandwidth not only in health facilities but in patients’ homes, training for doctors and nurses in how to conduct telehealth appointments, and teaching patients how to take advantage of virtual appointments when they cannot see a provider in person.

Prepare for new diagnostic and treatment technologies in the future. Investments are needed in the technologies that will enable remote medical work in the future and that will ensure access to care for people living in rural areas. Such technologies include smartphone applications for performing electrocardiogram (EKG) tests such as the Telemedicine Stethoscope, which facilitates stethoscope audio and EKG livestreaming between patients and providers, and the Kardiamobile 6L, which captures a six-lead EKG using a small handheld device connected to a cell phone. Blood tests can now be done

remotely using devices such as the Abbott i-STAT portable blood analyzer. Lumify is an integrated tele-ultrasound that connects clinicians around the globe in real time.⁶² Government regulations will be needed to ensure that patients can fully benefit from these new technologies, and health professionals will need to be trained in their use.

Invest in energy-efficient medical equipment and waste management. Low-carbon, renewable energy technology such as hydro, solar, and wind power hold significant potential for reducing carbon emissions and for ensuring a sustainable energy supply for health workers in hospitals in Lesotho, where only 20 percent of households have electricity. This could be done by investing in the following: (i) energy-efficient equipment (such as refrigerators) to reduce demand on the electricity grid; (ii) climate-resilient infrastructure (e.g., retrofitting existing health facilities to minimize loss or damage from climate risks); (iii) more efficient energy supply and distribution; and (iv) renewable energy sources (such as solar photovoltaics) that would ensure that vital devices remain powered, for example, during surgeries.⁶³

6. WORK WITH THE PRIVATE SECTOR AND OTHER COUNTRIES TO EXPAND ACCESS TO HIGH-QUALITY CARE

Collaborate with private sector providers to benefit from their expertise. To respond to mounting consumer expectations and a growing middle class, the public health sector will need to increase its collaboration with private sector providers in urban areas. This will require an extension of government oversight over the quality of care provided by the growing private sector. Appropriate regulation of private sector involvement, including the right for physicians to set up dual practices, will help foster private sector development. Given its strong performance, the QMMH network will remain an integral provider of health services in the future.

Harness the benefits of an international health workforce. Collect data on international health workers working in Lesotho and use these results in planning and international recruitment. Facilitate the international movement of health professionals by using online recruitment and registration and actively recruit among Basotho health professionals working abroad. The return of highly qualified health professionals to work in Lesotho's health care system and in health research would help to improve the quality of care in the country.

Support the integration of foreign health staff in Lesotho. The government can help health facilities to foster the integration of foreign health staff by providing induction and language courses and information on administrative formalities inside and outside of the workplace (e.g., on obtaining residence permits). Providing foreign applicants with more realistic information about the health sector during recruitment can also facilitate their entry into Lesotho's health workforce and reduce turnover rates.

⁶² Rosser 2020.

⁶³ Meiro-Lorenzo 2017.

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ANNEX 1: PEOPLE INTERVIEWED FOR THE LESOTHO CASE STUDY

Ministry of Health

- Dr. Thabelo Ramatlapeng – Director, Primary Health Care
- Ms. Nkaiseng Monaheng – Director, Health Planning and Statistics
- Ms. Mpoetsi Makau – Director, Nursing
- Ms. Mathapelo Mothebe Mathapelo – Director, Human Resources (acting)
- Ms. Nthabiseng Moalosi – Human Resources Manager
- Mr. Thabo Malieane – Human Resources Officer
- Ms. Palesa Pitso – Human Resources Adviser

Ministry of Education

- Ms. Maselloane Sehlabi – Chief Education Officer (CEO), Tertiary

Lesotho Nursing Council

- Ms. Flavia Poka – Registrar

National Health Training College

- Ms. Veronica Lehana – Registrar

Council of Higher Education

- Dr. Lits'abako Ntoi – Executive Director
- Mr. Motlalepula Khobotlo – Director, Policy, Strategy, and Information

Ministry of Development Planning

- Mr. Molehe Mokone – Senior Economist
- Mr. Motebang Mokitimi – Economist

Medical Council

- Dr. Norbert Chale Moji – Private Practitioner (appointed as QMMH Manager on August 3, 2021 <https://www.gov.ls/qmmh-management-start-duties/>)

Global trends such as climate change, economic integration, urbanization, demographic shifts, far-reaching digital and technological advances, and rising consumerism are all affecting population health, including in Lesotho. They will lead to the growth of a middle class in urban areas with more demanding health needs and to depopulation in rural areas, leaving mostly elderly people and the rural poor. Emigration will continue, driven by better work prospects abroad as well as by climate change. Demographic change will continue in Lesotho as fertility rates decline, population growth slows, and the average age of the population increases. Technological advances in medicine are creating opportunities to facilitate medical work, learning, and communication. Anticipating the health impact of these trends will be crucial for Lesotho to be able to prepare its health workforce for the medical work of the future, particularly as the country's health system is still battling persistently high maternal mortality, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), and tuberculosis (TB) rates, while facing a looming burden of noncommunicable diseases. This case study finds that Lesotho's health sector will need a major reform to ensure that it is well prepared for the future. It will require a strategic mindset and substantial investments in health education, a modernization of health workforce management, and better data to conduct analysis and planning. We make a series of recommendations on how best to prepare for the coming changes that cover the need to align education policy and financing with future health workforce needs, how to transform workforce management and planning for the future, the need for solid data and analysis to inform evidence-based policy and planning, and how to work with the private sector and other countries to ensure that the population has access to high-quality care.

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