Human Resources for Health in Africa

Introduction:
Human Resources for Health (HRH) is a critical pillar for strengthening health systems and achieving Universal Health Coverage (UHC) in Africa. A well-functioning health workforce is essential for delivering quality healthcare services, responding to health emergencies, and improving population health outcomes. However, the African health workforce faces numerous challenges, including shortages, uneven distribution, inadequate financing, and migration of skilled professionals. These challenges hinder the continent's progress towards achieving its health goals and require urgent attention.

Many African countries face significant health workforce shortages, hindering their ability to deliver essential health services. This shortage manifests in low densities of key health workforce cadres almost uniformly across the continent's regions. The implication is the need for significant investment in health workforce training across the continent if the continent is to achieve full (or significantly high) universal health coverage by 2063.

The Investment Case Analysis revealed important insights into required investments, potential health workforce training and deployment benefits in Africa. That said, this report demonstrated that such investments would spur the realization of significant health and economic benefits, leading to high returns on investment. As shown in Figure 1, cumulated ROI in the health workforce is invariably positive and greater than one across the scenarios. For the status quo, by 2063, cumulative ROI amounts to 7.9 for the continent. Cumulative ROI nearly doubles (to 14.4) with attaining health workforce levels consistent with the moderate target of 70% UHC, while achieving the ambitious scenario would result in a cumulative ROI of 16.4 by 2063.

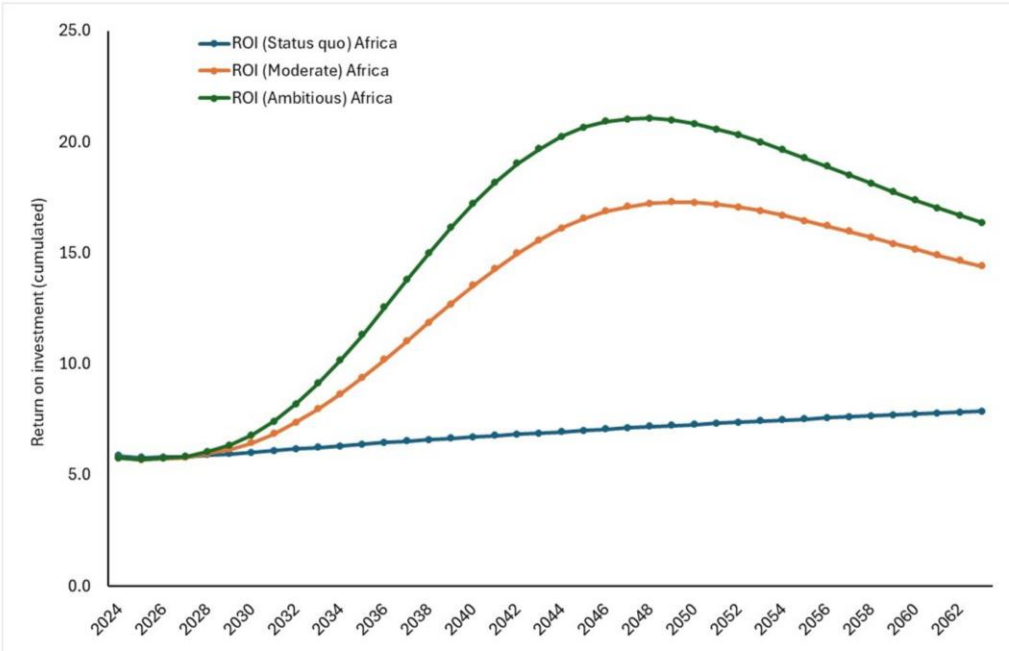


Figure 1: Cumulated continental return on investment estimates across scenarios

This analysis will delve into key subsets of HRH, including workforce availability and distribution, planning and management, financing and investment, retention and migration, and training and development. We will examine the importance of each subset, present relevant data, provide case studies, offer comparative analyses, and explore emerging solutions and best practices.

Quick Facts:

- Many African countries face significant health workforce shortages, hindering their ability to deliver essential health services.
- Significant disparities exist in health workforce density and distribution across different African regions.
- Of all the 55 African Union Member States, 45% have established an HRIS with plans to improve their systems.
- The Investment Case Analysis projects substantial economic losses due to health worker emigration, reaching up to $1.4 trillion by 2063 under the status quo.
- The Investment Case Analysis models the return on investment (ROI) in the health workforce, demonstrating that strategic investments yield significant economic and health benefits.
- Training enough medical doctors (and retaining them) must be a priority for Africa and its regions if the continent is to achieve UHC.

Subsets of Human Resources for Health

Workforce Availability and Distribution:
Workforce availability refers to the number of health workers in a given area, while distribution refers to their allocation across different geographic areas (e.g., urban vs. rural) and health facilities. An adequate and equitably distributed health workforce is essential for ensuring that all populations have access to healthcare services.

Figure 2: Summary of estimated proportionate increases needed to achieve UHC in moderate and ambitious scenario, AU member states (all cadres)

The Baseline Report notes that the inverse care law applies to the availability and distribution of health workers within countries. Within countries, rural and hard-to-reach areas often have lower health worker-to-population ratios compared to their wealthier counterparts, further exacerbating the widening disease burden between parts of countries.

The health worker-to-population ratios follow countries' income gradients between countries as richer countries have elevated health worker densities compared to their less resourced affluent counterparts. The health worker-

to-population ratios follow countries' income gradients between countries as richer health worker densities compared to their less resourced affluent counterparts.

Health Workforce Planning and Management:
Health workforce planning involves the strategic development of policies and programs to ensure an adequate and skilled health workforce that meets the needs of the population. Effective management ensures the efficient and effective deployment and utilization of health workers.

Figure 3: Status of health workforce policies

- The Baseline Report found that only 21 (increasing from 17 in 2015) out of 55 African Union Member States have dedicated health workforce strategies indicating that a significant number of countries lack specific plans to address their health workforce needs. Out of this, only 11 of the 21 countries with dedicated strategies have explicit links to financing
- The quality of strategic planning and implementation varies significantly across countries.
    - 18 countries had broader health sector strategies that mentioned the health workforce, but not as a primary focus.
    - 4 countries do not have a current health workforce strategy
    - 5 countries are in the process of developing/launching health workforce strategies
- The status of HWIS varies significantly across countries, with many facing challenges in data collection, quality, analysis, and utilization.

Health Workforce Financing and Investment:
Adequate and sustainable financing is crucial for training, recruiting, deploying, and retaining health workers. Investment in the health workforce yields significant economic and health benefits. A WHO study projected that US$44.86 billion would be needed in 2030 for health workforce prioritization.

The Advance Domestic Health Financing project, in a 2023 analysis of ten African countries[1] found that the proportion of donor financing of health budgets ranged from 18% (Kenya) to 56% (Zimbabwe), with a mean donor financing of 34.8% as a proportion of health budgets.[2]

Challenges in Financing
In Guinea, financing challenges are associated with fragmentation of objectives between the Ministry of Health and the Ministry of Civil Service, which allocates MOH jobs. This is further complicated by recruitment programs that are not annually scheduled, unlike retirements, which happen every year.

Malawi employed a two-step approach to managing limited resources, balancing service delivery needs with fiscal constraints. The first involved multiple rounds of target-setting, gradually adjusting service delivery goals to align with available resources. The second focused on prioritizing interventions based on value for money, ensuring that the most cost-effective initiatives received funding in the next fiscal year.

Outmigration and Brain Drain
Outmigration of African health workers, particularly to high-income countries, represents a significant loss of skilled professionals and undermines health system capacity.
Emigration patterns vary across African regions, influenced by factors such as economic conditions, political stability, training standards, and recruitment practices of destination countries.

Economic Impact of Outmigration
Without strategic interventions, workforce shortages could cost Africa **$1.4 trillion by 2063** in economic losses due to constrained healthcare delivery and migration. Modeling scenarios project that, under the status quo of inadequate health worker densities, the continent could face cumulative losses of approximately **$1.4 trillion by 2063**. Even under more ambitious scenarios with improved health worker densities, the projected losses remain significant, estimated at **$431 billion**.

These losses encompass the cost of lost education and training investments, as well as the economic impact of reduced healthcare service provision and increased morbidity and mortality.

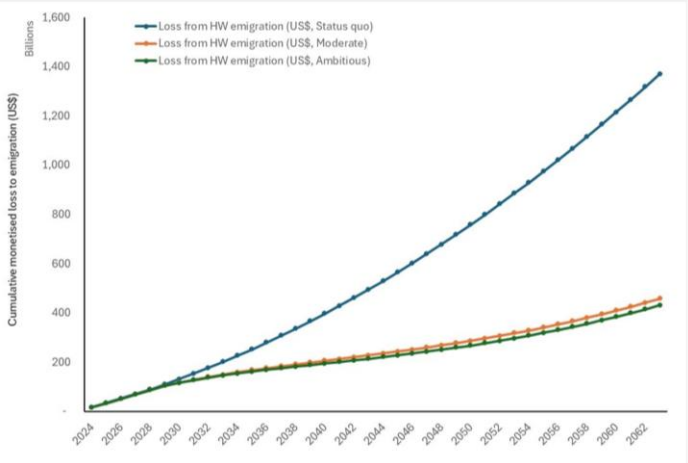


Figure 4: Health worker emigration costs across scenarios (Africa)

- **Case Studies of Retention Approaches:**

[1] Burundi, Eswatini, Kenya, Lesotho, Malawi, Rwanda, Uganda, United Republic of Tanzania, Zambia, Zimbabwe

[2] Advance Domestic Health Financing, 'Status of Healthcare Financing in Africa: Despite Many Commitments, African Countries' Domestic Investments in Health Remain Suboptimal', February 2023, https://afidep.org/wp-content/uploads/2024/01/Status-of-health-finaning-in-Africa.pdf.

- **Nigeria's Policy Approach:** Nigeria has developed a National Policy on Health Workforce Migration (2023) with proposed approaches including diaspora engagement, incentivizing rural service, and international agreements.
- **Zambia's Salary-Focused Strategy:** Zambia has successfully reversed brain drain by significantly increasing salaries and improving working conditions, becoming a higher-paying destination in the region.
- **Rwanda's Meritocracy and Patriotism Approach:** Rwanda has largely avoided massive outmigration by fostering a fair system based on merit, providing relatively good working conditions, and cultivating a sense of national duty.

Return on Investment in Health Workforce

Investing in the health workforce in Africa yields substantial economic benefits, demonstrating a high return on investment (ROI). An analysis of health workforce training across cadres and regions reveals that the cumulated ROI is invariably positive and greater than one across different scenarios.

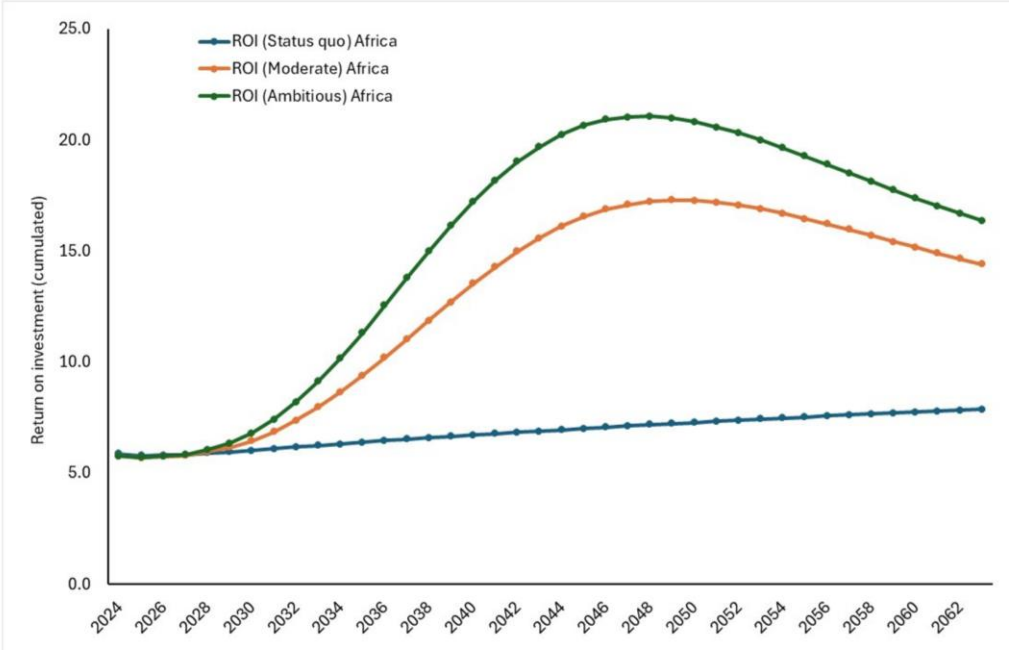


Figure 5: Cumulated continental return on investment estimates across scenarios

ROI by Scenario:

- ***Status Quo:*** By 2063, the cumulative ROI for the continent is estimated at 7.9.
- ***Moderate Target:*** Attaining health workforce levels consistent with the moderate target of 70% Universal Health Coverage (UHC) nearly doubles the cumulative ROI to 14.4 by 2063.
- ***Ambitious Scenario:*** Achieving the ambitious scenario would result in a cumulative ROI of 16.4 by 2063.

The ROI estimates in this analysis significantly exceed some estimates found in country-based literature. For example, an investment case analysis for Community Health Workers (CHWs) in Kenya estimates an ROI of up to 9.4:1, which is similar to the status quo estimate in this analysis. In Ethiopia, the ROI for CHWs is estimated to be between 1.54 and 3.26. Outside the continent, a study in Bangladesh reported an ROI of 16-fold for midwives, which aligns with the ambitious scenario ROI in this analysis.

Health Workforce Training and Development:

Health workforce training and development are essential for ensuring that health workers possess the necessary skills and knowledge to deliver quality care. This encompasses initial training programs as well as ongoing

professional development and specialization. A core function of a well-trained health workforce is to improve population health by preventing mortality and reducing morbidity.

To analyze the impact of health workforce training, a continental analysis was conducted to quantify and assign monetary value to deaths and disability-adjusted life years (DALYs) averted across various cadres under different scenarios

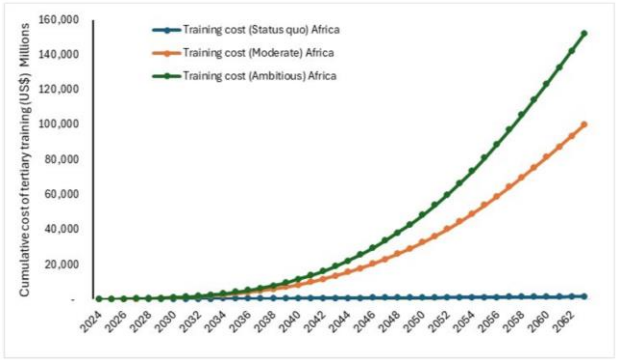
This section analyzes the training costs, avertable mortality (deaths prevented), and avertable morbidity (illness prevented, measured in DALYs) associated with different health worker cadres under various scenarios.

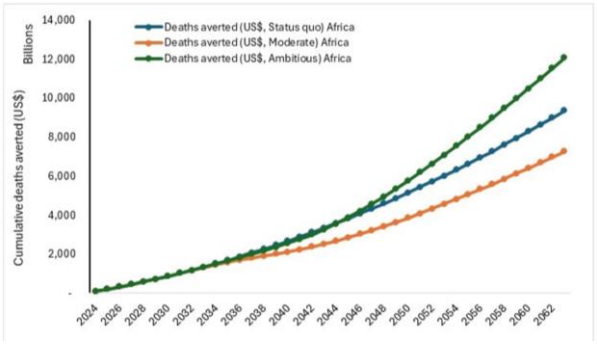
General Practitioners (GPs)

Achieving the status quo for GP densities by 2063 would require a cumulative investment of $1.6 billion. To reach the moderate and ambitious targets, cumulative investments would need to increase to $100 billion and $152 billion, respectively.

Under the status quo, 3,289,212 avertable deaths (valued at $9.4 trillion) are attributed to GPs by 2063. In the ambitious scenario, this increases to 7,517,553 avertable deaths, valued at $12.1 trillion.

In the status quo, 125,678,137 DALYs are averted, with a monetary value of $1.4 trillion. In the ambitious scenario, 287,239,460 DALYs are averted, also valued at $1.4 trillion.





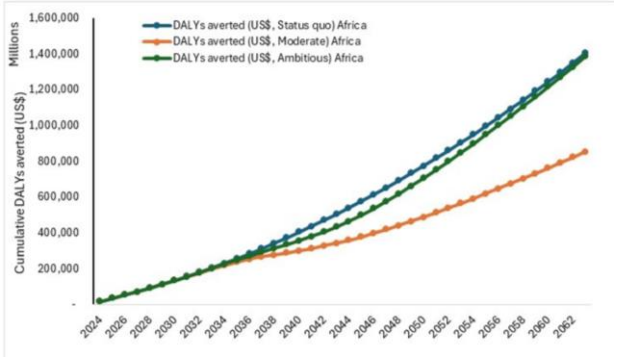


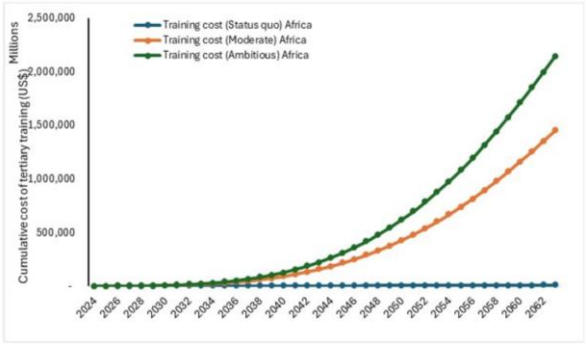
Figure 6a: Tertiary training costs for general practitioners (Africa)
Figure 6b: Cumulative deaths averted (US$) for general practitioners (Africa)
Figure 6c: Cumulative DALYs averted (US$) for general practitioners (Africa)

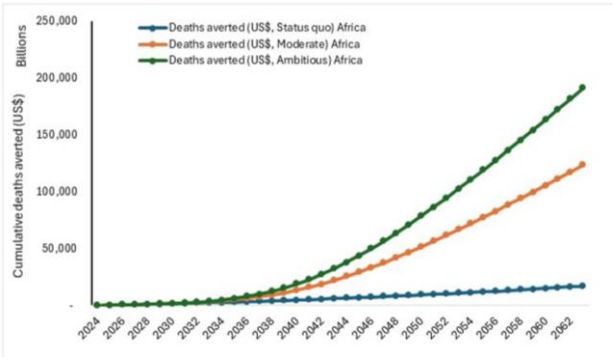
Nurses and Midwives

Given the larger number of nurses and midwives needed in health systems, training costs are substantial. The cumulative resource requirements for achieving the status quo, moderate, and ambitious targets by 2063 are $8.9 billion, $1.5 trillion, and $2 trillion, respectively.

The value of avertable deaths due to nurse/midwife training by 2063 is $17 trillion in the status quo and $191 trillion in the ambitious scenario.

Cumulative DALYs averted by 2063 in the status quo are valued at $2.3 trillion. In the ambitious scenario, this increases to $25 trillion.





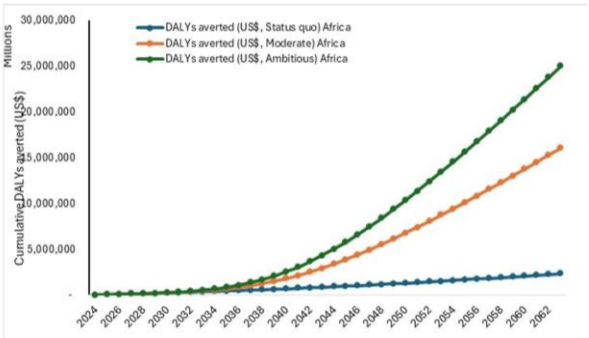


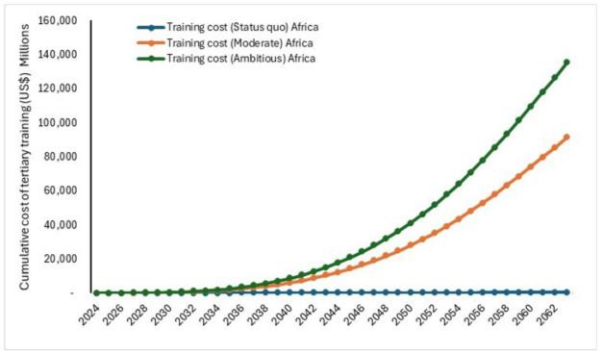
Figure 7a: Tertiary training costs for nurses and midwives (Africa)
Figure 7b: Cumulative deaths averted (US$) for nurses and midwives (Africa)
Figure 7c: Cumulative DALYs averted (US$) for nurses and midwives (Africa)

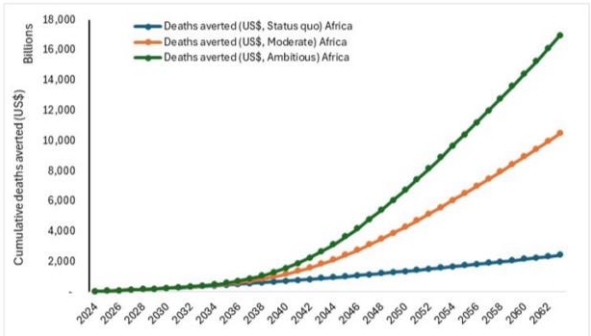
Medical Specialists

Cumulative tertiary training investments to achieve the status quo, moderate, and ambitious targets by 2063 are $467 million, $91.5 billion, and $135.5 billion, respectively.

The value of avertable mortality by 2063 in the ambitious scenario is $16.9 trillion, a six-fold increase over the status quo.

Cumulative DALYs averted by medical specialists are valued at $349 billion in the status quo and $2.2 trillion in the ambitious scenario.





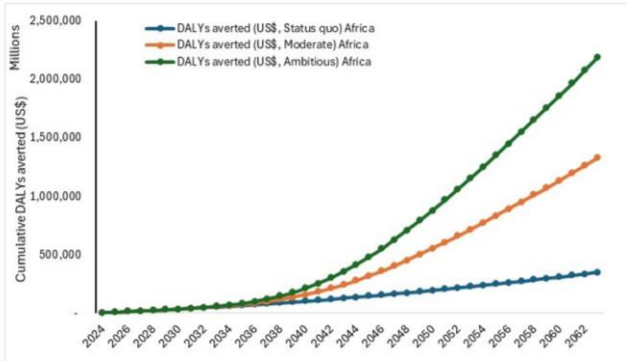


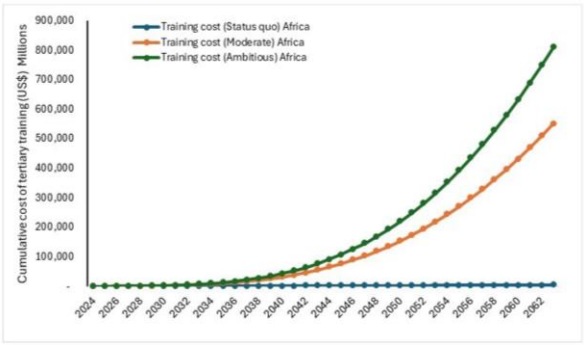
Figure 8a: Tertiary training costs for medical specialists (Africa)
Figure 8b: Cumulative deaths averted (US$) for medical specialists (Africa)
Figure 8c: Cumulative DALYs averted (US$) for medical specialists (Africa)

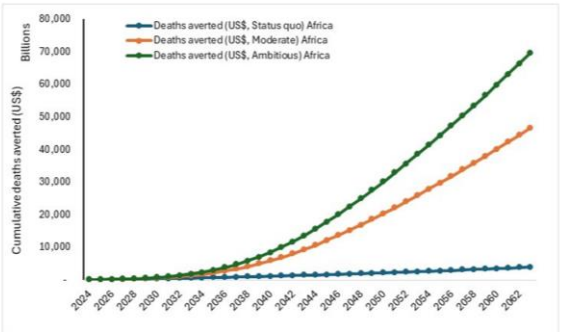
Community Health Workers

While the average cost of training a community health worker is relatively low, the large numbers required imply significant resources. The cumulative continental costs for achieving the status quo, moderate, and ambitious scenarios by 2063 are $4.5 billion, $551 billion, and $810 billion, respectively.

The continental cumulative dollar values of avertable deaths attributable to community health workers are $5.6 trillion (status quo), $46.1 trillion (moderate), and $70 trillion (ambitious).

Nontrivial avertable disease burden is attributable to community health workers across all scenarios.





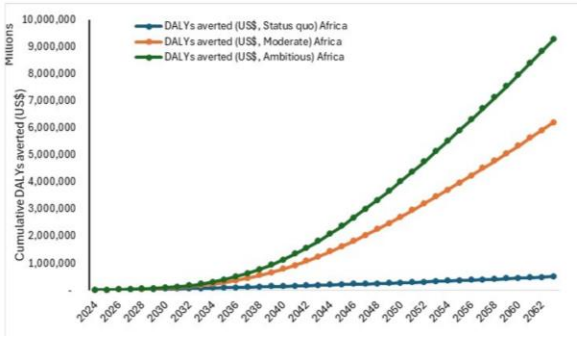


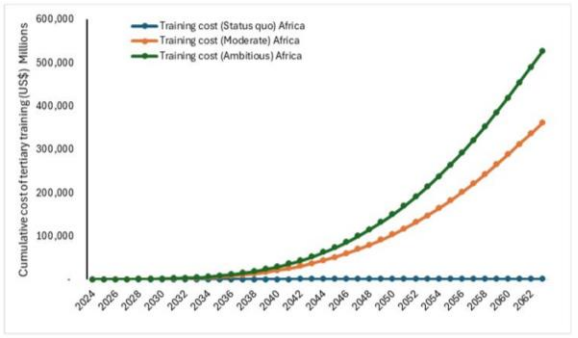
Figure 9a: Tertiary training costs for community health workers (Africa)
Figure 9b: Cumulative deaths averted (US$) for community health workers (Africa)
Figure 9c: Cumulative DALYs averted (US$) for community health workers (Africa)

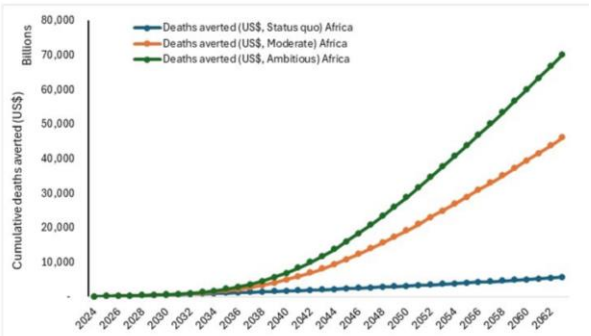
Laboratory Workers

To achieve the status quo, moderate, and ambitious targets for laboratory scientists and technicians, the continent would require $1.4 billion, $361.5 billion, and $526.3 billion, respectively, by 2063.

The value of avertable deaths attributable to laboratory technicians by 2063 is $5.6 trillion for the status quo and $70 trillion for the ambitious scenario.

The continent's cumulative value of DALYs averted due to laboratory technician training is $836 billion for the status quo and $9.1 trillion for the ambitious scenario.





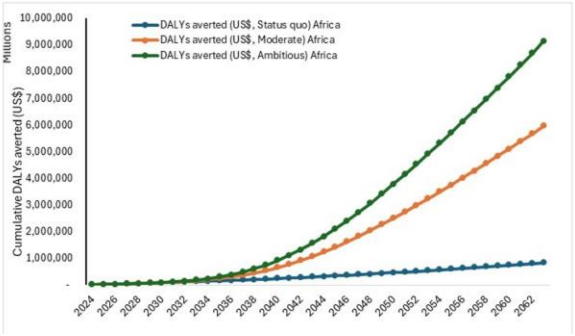


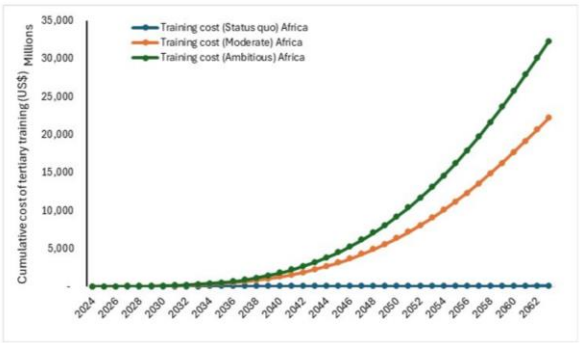
Figure 10a: Tertiary training costs for laboratory workers (Africa)
Figure 10b: Cumulative deaths averted (US$) for laboratory technicians (Africa)
Figure 10c: Cumulative DALYs averted (US$) for laboratory technicians (Africa)

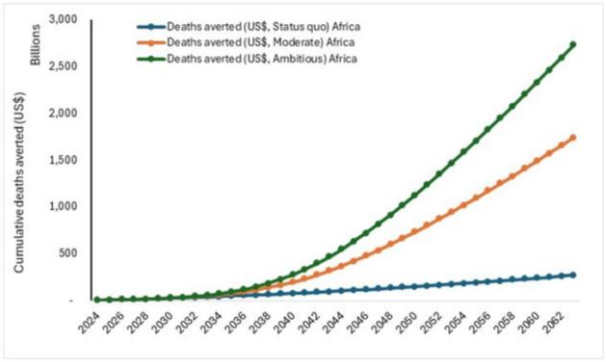
Biomedical Technologists and Engineers

Due to a substantial shortage of this cadre, achieving the status quo, moderate, and ambitious targets by 2063 would require $69 million, $22 billion, and $32 billion, respectively.

The cumulative continental value of avertable deaths attributable to this cadre ranges from $272 billion (status quo) to $2.7 trillion (ambitious).

The value of avertable DALYs attributed to this cadre by 2063 varies across scenarios.





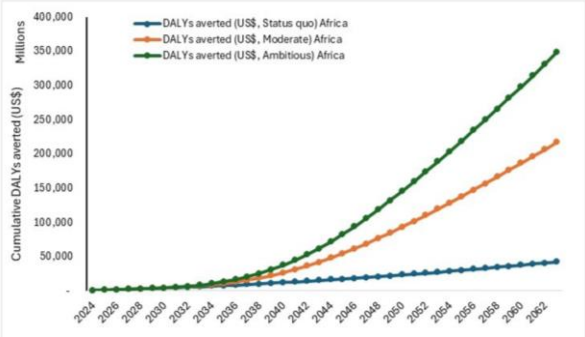


Figure 11a: Tertiary training costs for biomedical technologists and engineers (Africa)
Figure 11b: Cumulative deaths averted (US$) for biomedical engineers and technicians (Africa)
Figure 11c: Cumulative DALYs averted (US$) for biomedical engineers and technicians (Africa)

Comparative Analysis of the Issues

A comparative analysis of the challenges and successes in Human Resources for Health (HRH) across different African countries and regions reveals significant disparities and common trends.

- **Disparities in Workforce Availability and Distribution**
    - The "inverse care law" is evident within countries, where rural and hard-to-reach areas consistently have lower health worker-to-population ratios compared to wealthier, urban areas.
    - Health worker-to-population ratios also vary significantly between countries, often correlating with income gradients, with wealthier countries having higher health worker densities.
- **Variations in Strategic Planning and HRIS**
    - While some African Union Member States have dedicated health workforce strategies, the quality and implementation of these strategies vary considerably.
    - Many countries face challenges in establishing and effectively utilizing Health Resource Information Systems (HRIS) for data collection, quality, analysis, and utilization.
- **Differences in Health Workforce Financing**
    - There are substantial differences in the financial capacity and commitment of countries and regions to invest in health workforce training, deployment, and retention.
    - The Investment Case Analysis highlights the varying levels of investment needed to achieve UHC targets across different regions.
- **Impact of Health Worker Emigration**
    - The loss of health workforce through emigration is a concern across the continent, but the extent and impact of this "brain drain" vary between countries and regions.
    - Emigration exacerbates existing health worker shortages and threatens the sustainability of health systems, with significant economic losses projected.
- **Heterogeneity in Health Workforce Stock**
    - Even within regions, there is heterogeneity between countries in terms of health workforce stock.
    - For example, while North Africa has made progress in achieving GP stock levels, disparities remain between countries within the region, indicating the need for continued investment.

Innovative Solutions

Some potential areas for emerging/innovative solutions include:

- Optimizing the roles of different cadres of health workers and exploring task-shifting strategies to maximize the efficiency and effectiveness of the existing workforce.
- Leveraging technology to improve health workforce management, training, and service delivery. This could include the use of digital platforms for HRIS, telemedicine, and mobile health solutions.

- Strengthening and expanding community health worker programs to enhance healthcare access in rural and underserved areas. The documents highlight the crucial role of CHWs in achieving UHC.
- Implementing innovative strategies to address the maldistribution of health workers within countries, particularly to incentivize and support health workers in rural and hard-to-reach areas.

Recommendations and Best Practices

- The analysis demonstrates that investing in the health workforce yields significant returns, making it crucial for achieving UHC, strengthening health systems, and promoting economic advancement. Increased investments are needed to train, deploy, and retain health workers across the continent.
- There is a need for regional and continental initiatives to improve the quality and availability of data on the health workforce, particularly regarding emigration. Investing in robust Health Resource Information Systems (HRIS) is essential for effective monitoring, tracking, and management of the health workforce.
- Implementing strategies to reduce health worker emigration is crucial for retaining valuable human resources and maximizing the return on investment in training. This may involve improving job conditions, offering better opportunities, and creating supportive work environments for health workers. African countries should prioritize domestic resource mobilization for health workforce investments, reducing reliance on external funding.
- Countries should implement innovative approaches to address the maldistribution of health workers, ensuring equitable access to healthcare services, especially in underserved areas. This includes making hard-to-reach areas more attractive for health workers to live and work.
- Countries are encouraged to regularly re-estimate returns on investment to reflect changing needs and priorities. This requires building capacity for data analytics and modeling within local governments.