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## Outmigration of Health Workers: Case studies of Nigeria, Rwanda and Zambia

### Introduction:

Outmigration, the movement of health professionals away from their home countries, predominantly towards higher-income nations, presents a critical challenge to the sustainability and resilience of African health systems. This loss of skilled personnel exacerbates existing workforce shortages, undermines healthcare delivery capacity, and impedes progress towards achieving Universal Health Coverage (UHC) and the African Union's Agenda 2063.

The economic consequences of health worker emigration are substantial and far-reaching. Africa CDC's Modeling scenarios project that by 2063, under the status quo of inadequate health worker densities, the continent could face cumulative losses of approximately \$1.4 trillion. Even under more ambitious scenarios with improved health worker densities, the projected losses remain significant, estimated at \$431 billion. These figures, derived from analyses that consider avertable DALYs (Disability-Adjusted Life Years), deaths, and education spending attributable to emigrant health workers, likely represent conservative estimates, as reliable data on health worker migration rates are often scarce and the modeling uses a "steady state" migration rate value of 3% that may understate actual emigration.

This analysis quantifies the economic impact of healthcare worker outmigration, demonstrating the strong financial case for implementing retention strategies. This evidence underscores the urgent need for effective interventions to keep valuable health professionals within Africa.

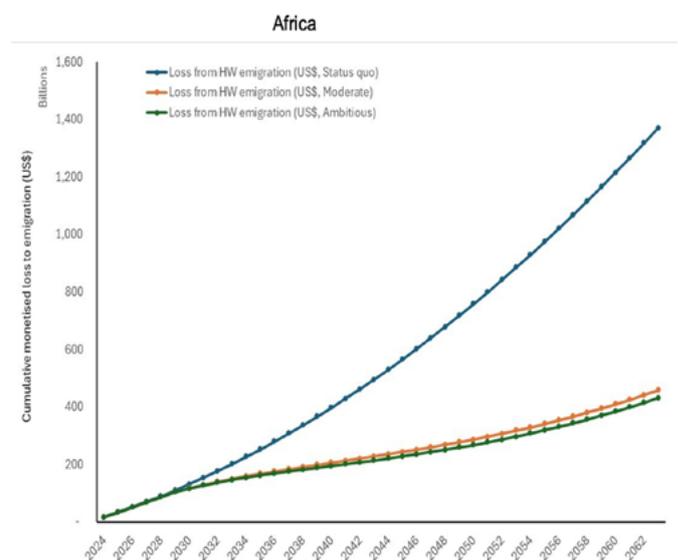


Figure 1: Health worker emigration costs across scenarios (Africa)

## Quick Facts:

- Only 8 (Ethiopia, the Gambia, Guinea, Guinea-Bissau, Nigeria, South Africa, Tanzania, and Zambia) out of 21 countries with dedicated stand-alone health workforce strategies mentioned outmigration, a critical factor affecting workforce availability. This indicates that many countries are not proactively addressing the loss of health workers to other countries.
- 22 out of every 1000 United Kingdom National Health Service staff are from Africa<sup>1</sup>
- Nigeria, Zimbabwe, and Ghana are the highest African contributors of foreign health workforce to the UK National Health Service.<sup>2</sup>
- At least 30% of Egyptian doctors work outside the country.<sup>3 4</sup>
- The German Medical Syndicate revealed that the number of Libyan doctors in Germany increased by 2.2% from last year, as their number reached 909, which means that Libya is the third largest exporter of doctors in Germany after America and Egypt<sup>5</sup>

## Context:

Nigeria is the continent's most populous country. At the same time, the country has one of the highest maternal mortality rates in the world (with 1,047 deaths per 100,000 live births) after South Sudan and Chad,<sup>6</sup> and one of the highest rates of outmigration of healthcare workers in the world. One 2022 report state that 13,609 healthcare workers have left Nigeria for the UK between 2021 to 2022,<sup>7</sup> and in a study of 913 physicians from

1 African Union, 'Mobility and Migration of African Health Workers Post COVID-19', Policy Brief III, November 2020, [https://au.int/sites/default/files/documents/42168-doc-Mobility\\_and\\_Migration\\_of\\_African\\_Health\\_Workers\\_Post\\_COVID-19.pdf](https://au.int/sites/default/files/documents/42168-doc-Mobility_and_Migration_of_African_Health_Workers_Post_COVID-19.pdf).

2 Gamuchirai Masiyiwa, 'Amid Zimbabwe's Mass Exodus, Meet the Doctors and Nurses Who Stayed Behind', Health Times (Zimbabwe), 31 May 2024, <https://healthtimes.co.zw/2024/05/31/amid-zimbabwes-mass-exodus-meet-the-doctors-and-nurses-who-stayed-behind/>.

3 'هي حصرها فمدخلها يلع رصم يف ابطلال ادع صرقن رشوي اذكه' (How Egypt's shortage of doctors is affecting health services), Al-Jazeera, 9 October 2021, <https://www.aljazeera.net/health/2021/10/9/%D9%83%D9%8A%D9%81-%D9%8A%D8%A4%D8%AB%D8%B1-%D9%86%D9%82%D8%B5-%D8%A7%D9%84%D8%A3%D8%B7%D8%A8%D8%A7%D8%A1-%D9%81%D9%8A-%D9%85%D8%B5%D8%B1-%D8%B9%D9%84%D9%89-%D8%A7%D9%84%D8%AE%D8%AF%D9%85%D8%A9>.

4 Interview with Dr Hatem Amer, Assistant Minister of Health and Population (interviewed in person, 5th November 2024)

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6 WHO (Integrated African Health Observatory), 'Maternal Mortality: The Urgency of a Systemic and Multisectoral Approach in Mitigating Maternal Deaths in Africa'.

7 Lukman Lawal et al., 'The COVID-19 Pandemic and Health Workforce Brain Drain in Nigeria', International Journal for Equity in Health 21, no. 1 (5 December 2022): 174, <https://doi.org/10.1186/s12939-022-01789-z>.

37 Nigerian states found that only 19.3% of those surveyed wanted to remain in Nigeria.<sup>8</sup> In 2023, 52% of nurses and midwives registered with the Nurses and Midwives Council of Nigeria (NMCN) requested a letter of good standing to migrate to the United Kingdom, and 36% for the United States of America.<sup>9</sup> Additionally, Nigerian physicians made up 45.02% of all international medical graduates (IMGs) practising in the United States of America.<sup>10</sup>

Health workforce targets are contained in the *National Human Resources for Health Strategic Plan 2021-2025*. While there has been no labour market analysis conducted, according to the Strategic Plan, Nigeria has a total of 74,543 medical doctors (36.3 medical doctors per 100,000 population) and 301,579 nurses and midwives, (translating into 88.1 nurses per 100,000 population and 58.9 midwives per 100,000 population). Additionally, there are 9,364 clinical medical specialists which is a 31% increase from 2012.

## Approach:

Nigeria stands out for its development of a standalone National Policy on Health Workforce Migration (2023).<sup>11</sup> This policy represents a proactive effort to address the complex drivers and consequences of outmigration.

The policy includes several key strategies:<sup>12</sup>

1. Collaborations between government agencies like the Nigerians in Diaspora Commission and the Ministry of Interior to profile health personnel who leave or return to the country.
2. Creation of a special program to facilitate skills transfer and integration of diaspora healthcare workers.
3. Incentivizing service in rural and underserved areas through career incentives to improve domestic retention.

8 Cosmas Kenan Onah et al., 'Physician Emigration from Nigeria and the Associated Factors: The Implications to Safeguarding the Nigeria Health System', Human Resources for Health 20, no. 1 (20 December 2022): 85, <https://doi.org/10.1186/s12960-022-00788-z>.

9 Ministry of Health, Nigeria, 'National Policy on Health Workforce Migration', 2023. p. 4

10 Onah et al.

11 Muhammad Ali Pate, Minister of Health of Nigeria, '@muhammad-pate'.

12 Ministry of Health, Nigeria, 'National Policy on Health Workforce Migration'.

4. Increasing chances of international migration upon successful completion of rural service as a potential incentive.
5. Engaging and signing agreements with key destination countries to manage migration flows and potentially establish mutually beneficial arrangements.

**Analysis:**

While the long-term impact of Nigeria’s migration policy is yet to be fully assessed, the policy demonstrates a comprehensive approach to managing health workforce migration, encompassing both retention strategies and efforts to engage with the diaspora and destination countries.<sup>3</sup> The emphasis on profiling and diaspora engagement is particularly noteworthy. However, the success of the policy will depend on its effective implementation and the ability to address the underlying factors that drive emigration, such as poor working conditions and limited career opportunities.

**Country Case study: Zambia**

**Context:**

Zambia, a landlocked nation in Southern Africa, has made notable strides in improving health outcomes but continues to grapple with significant workforce challenges. As one of 21 African Union Member States with a dedicated health workforce strategy, Zambia recognizes the critical role of health professionals in advancing national health goals. It is also among the 11 countries with workforce strategies linked to financing, underscoring a commitment to sustainable investment in the sector.

Despite these efforts, Zambia has long struggled with health worker outmigration, affecting its ability to retain skilled professionals. Concerns persist regarding the quality of training, limited career development opportunities, and inadequate incentives for health workers - factors that contribute to workforce attrition. Moreover, Zambia remains among the countries where the density of physicians, nurses, and midwives falls below the WHO’s Universal Health Coverage threshold of 44.5 per 10,000 population, signaling an urgent need for expansion.

Workforce distribution is another major challenge. Rural areas remain critically underserved due to persistent recruitment and retention difficulties. For decades, Zambia has been a key source of health worker migration, with professionals

seeking opportunities in neighboring countries, as well as in the UK, Australia, New Zealand, and South Africa. This continued exodus has placed additional strain on the country’s ability to deliver adequate healthcare services.

**Approach:**

To address these workforce challenges, Zambia has made significant progress in reversing the health worker “brain drain” over the past fifteen years. Through sustained efforts to improve conditions of service, the country has prioritized:<sup>13</sup>

1. Increasing salaries to make the health sector more competitive and attractive.
2. Improving working conditions to create a more supportive and conducive environment for health workers.

**Analysis:**

Zambia’s experience provides a compelling example of the effectiveness of investing in the health workforce to enhance retention. The emphasis on both financial and non-financial incentives has been crucial to its success. This case study demonstrates that it is possible to reverse the brain drain and attract health professionals by prioritizing their well-being and professional satisfaction.

According to some sources,<sup>14</sup> Zambia is now considered the highest-paying destination for health sector jobs in Africa, ahead of South Africa, Namibia, Mauritius, Tanzania, Ghana, Morocco, and Libya.

**Country Case study: Rwanda**

**Context:**

Over the past three decades, Rwanda has made remarkable progress in strengthening its health workforce and continues to set ambitious targets for further expansion. Between 2024 and 2028, the country aims to quadruple its health workforce, reinforcing its commitment to universal health coverage (UHC). These efforts are taking place against a backdrop of strong economic growth - Rwanda boasts the fourth

13 Ministry of Health, Zambia, ‘National Human Resources for Health Strategic Plan 2018-2024’, accessed 21 June 2024, <https://www.scribd.com/document/397117979/Ministry-of-Health-Republic-of-Zambia-2018-National-Human-Resources-for-Health-Strategic-Plan-2018-2024>.

14 Ministry of Health, Zambia, ‘National Human Resources for Health Strategic Plan 2018-2024’, accessed 21 June 2024, <https://www.scribd.com/document/397117979/Ministry-of-Health-Republic-of-Zambia-2018-National-Human-Resources-for-Health-Strategic-Plan-2018-2024>.

highest GDP growth rate in Africa at 8.2%.<sup>15</sup> However, health expenditure as a percentage of GDP remains at 7.32%,<sup>16</sup> only half of the 15% target set by the Abuja Declaration.<sup>17</sup> Despite this, Rwanda has achieved the sixth highest life expectancy on the continent, reflecting the effectiveness of its health interventions.

To bring healthcare closer to communities, Rwanda has undertaken several initiatives aimed at improving service delivery at the local level. The government has prioritized reducing travel time to health posts, aiming to ensure that no citizen is more than 25 minutes away from a facility by 2024.<sup>18</sup> Additionally, a large-scale task-shifting initiative during the early 2000s HIV program expansion led to the recruitment of over 45,000 community health workers (CHWs).<sup>19</sup>

Rwanda's health workforce includes:

1. 1,303 general practitioners and 694 specialists, addressing core medical needs.
2. 16,635 nurses and midwives, with the country offering the most specialized nursing courses in Africa.
3. 435 biomedical laboratory scientists working in the public sector as of January 2020, with a strategic target of increasing this number to 826 over the next decade.
4. Recognized shortages in biomedical engineering, with plans in place to expand training in this area.

Crucially, Rwanda is one of the 11 African Union (AU) member states that have health workforce strategies explicitly linked to financing, strengthening implementation capacity. It is also a key country included in the Baseline Report's analysis of health workforce strategies.

### Approach:

- 15 African Development Bank Group, 'African Economic Outlook 2024: Driving Africa's Transformation the Reform of the Global Financial Architecture'.
- 16 World Bank, 'Current Health Expenditure (% of GDP) - Rwanda', Database, World Bank Group Data (blog), 15 April 2024, <https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS?locations=RW>.
- 17 African Union, 'The Abuja Declaration on Roll Back Malaria in Africa', 25 April 2000, [https://au.int/sites/default/files/pages/32894-file-2000\\_abuja\\_declaration.pdf](https://au.int/sites/default/files/pages/32894-file-2000_abuja_declaration.pdf).
- 18 World Health Organization, 'Rwanda's Primary Health Care Strategy Improves Access to Essential and Life-Saving Health Services', WHO Feature Stories (blog), 17 February 2022, <https://www.who.int/news-room/feature-stories/detail/rwanda-s-primary-health-care-strategy-improves-access-to-essential-and-life-saving-health-services>.
- 19 Nsanjimana et al., 'Improving Health Outcomes through Concurrent HIV Program Scale-up and Health System Development in Rwanda'.

Unlike many countries in the region, Rwanda has largely avoided significant brain drain among health professionals. This success is attributed to a combination of factors:

1. Maintaining a fair system that prioritizes meritocracy in career advancement and professional development.
2. Providing relatively good working conditions compared to neighboring countries.
3. Fostering a strong sense of national duty among those who study overseas, encouraging them to return and contribute to the country's development.

These factors have contributed to Rwanda achieving a UHC service coverage index of 49% as of 2024, demonstrating the country's steady progress toward equitable healthcare.

Rwanda's health workforce strategy is underpinned by a data-driven approach. For instance, projections for midwife workforce expansion include specific calculations:<sup>20</sup>

- If public sector entry rates increase from 79% to 95% and attrition rates decrease from 3% to 1%, the number of A1 midwives would rise by 16% (from 1,314 to 1,521) over ten years.
- The total midwife workforce would increase by 45% (from 1,437 to 2,059).
- A root cause analysis is planned to address challenges faced by midwives, ensuring targeted interventions.

Furthermore, Rwanda has recognized the importance of health workforce data management. While an integrated Human Resources Information System (HRIS) was not in place at the baseline, its development is a priority during the current strategic period.

### Analysis:

Rwanda's experience underscores several critical lessons in health workforce development:

1. Effective retention strategies create lasting impact by fostering a professional environment that values merit, provides fair compensation, and instills a sense of national duty to mitigate workforce attrition.

20 The Republic of Rwanda, '10-Year Government Program: National Strategy for Health Professions Development 2020 – 2030'.

2. Financial backing ensures strategies move from plans to reality through dedicated funding mechanisms that improve execution and long-term sustainability of workforce initiatives.
3. Data-driven planning leads to smarter workforce decisions by incorporating detailed calculations and projections that enable targeted expansion and efficient resource allocation.
4. Strong information systems provide essential workforce visibility through HRIS implementation that improves real-time monitoring and helps address emerging gaps promptly.

As Rwanda continues to scale up its health workforce, its model provides valuable insights for other countries striving to achieve universal health coverage and improve healthcare delivery.

### **Comparative Analysis: Diverse Approaches to Health Workforce Retention**

The case studies of Nigeria, Zambia, and Rwanda highlight distinct yet effective strategies for addressing health worker outmigration. These varied approaches underscore the necessity of tailored interventions that align with each country's specific challenges and contexts. While strategies differ, a common theme is the importance of proactive and sustained efforts to retain skilled health professionals within the continent.

### **Emerging Solutions from Continental Discussions**

In July 2024, an inception meeting in Addis Ababa, Ethiopia, brought together representatives from five AU member states (Burundi, Ethiopia, Morocco, Nigeria, and South Africa) to discuss the lack of a cohesive approach to outmigration. Countries highlighted the need for innovative migration strategies, including:

1. Evidence suggests that well-structured return programs can help mitigate health worker shortages. The IOM's Migration for Development in Africa (MIDA) program in Somalia (2001–present) enabled short-term returns of African professionals, leading to the establishment of neonatal and dialysis units. Similarly, a proposed \$500M diaspora return initiative in Nigeria aims to attract health professionals by offering competitive salaries for public sector work. A 2022 Zimbabwean migration study recommended a combined approach of salary increments, diaspora

return programs, and compensation agreements to retain health workers. Meanwhile, Rwanda has largely avoided massive outmigration, with most overseas-trained professionals returning due to meritocratic career systems, relatively strong working conditions, and a strong sense of national duty.

2. Bilateral agreements between countries that train health workers and countries that absorb health workers, including on taxation regimes requiring migrating health workers to return a proportion of taxes to their country of training.
3. Compensation from high-income countries that absorb African health workers.
4. More active use of bonding initiatives, i.e., initiatives where individuals whose training is sponsored by the government are 'bonded' to the government for a certain time.

### **Recommendations and Best Practices:**

1. Develop Comprehensive National Policies on health workforce migration, integrating retention strategies, diaspora engagement, and collaboration with destination countries.
2. Enhance Working Conditions and Professional Growth through competitive compensation, career development opportunities, and a supportive work environment.
3. Leverage Diaspora Engagement & Return Programs to encourage skilled professionals to return, contribute, or support capacity-building efforts in their home countries.
4. Improve Data & Economic Modeling to track migration patterns, assess policy effectiveness, and quantify the economic impact of outmigration.
5. Utilize economic modeling and scenario analysis to quantify the economic impact of outmigration and strengthen the investment case for effective interventions.

Based on comprehensive baseline review conducted, Africa CDC has compiled a menu of options from best practices across the continent.

## Policy options and strategies for health workforce retention

Education	Policy and regulatory measures	Financial incentives	Professional and personal support
Continuing professional education (e.g. opportunities for specialisation to GPs, on-the-job training)	Operationalising and reviewing rural recruitment and retention strategies	Monetary bonuses (e.g., a financial bonus to specialists in rural areas)	Improving facility infrastructure (e.g. upgraded technologies/ laboratory machinery)
Education policies focused on student admission and retention from rural areas (such as the South African Nelson Mandela/Fidel Castro medical programme) <sup>21</sup>	Including KPIs for attrition/ retention in national strategies	Housing incentives (e.g. provision of land/ housing, facilitation of housing loans)	Investing in infrastructure in rural areas (including housing, transport services and quality schools), facilities that create opportunities for socialisation (playgrounds, parks, sports facilities) and other essential services such as restaurants and shopping
	Salary scales and annual salary reviews	In-kind incentives (e.g. provision of vehicle/fuel reimbursements)	Clear pathways for opportunities for career advancement
	Recruitment policies in rural areas/ contractual agreements for service in rural areas	Benefits packages (e.g. health insurance and pension schemes)	Performance reviews
	Bilateral/regional treaties and agreements on migration of health workers (e.g. taxation agreements – health workers trained in country A but works in country B pays tax to country A)		Employment opportunities for spouses
	Diaspora return programmes (e.g. paying higher rates for selected cadres to return)		Access to psychosocial support
	Bonding of health workers for a certain number of years post-training		Offer of permanent contracts
	Compensation from Global North countries for absorption of African health workforce		
	Root cause analysis for migration/ attrition		
	Reciprocal service arrangements		

21 University of Cape Town, 'UCT Hosts Vibrant Nelson Mandela/Fidel Castro Medical Programme Graduation', 12 July 2023, <https://www.news.uct.ac.za/article/-2023-07-12-uct-hosts-vibrant-nelson-mandelafidel-castro-medical-programme-graduation#:~:text=The%20NMFC%20Programme%20was%20established,peri%20Durban%20and%20informal%20settlements>.