

HEALTH SYSTEMS PERFORMANCE AND HEALTH WORKFORCE IN THE AFRICAN REGION

Demchenko N.V., Layache Abderrahmane

National University of Pharmacy, Kharkiv, Ukraine

demchenata@ukr.net

Резюме. Здорове суспільство має важливе значення для стабільності та економічного покращення. Дійсно, покращення здоров'я веде до підвищення продуктивності та кращої успішності в освіті, і, звичайно, більшої очікуваної тривалості життя, тому африканські уряди повинні сприяти розробці та прийняттю відповідних руйнівних і інвестицій, які необхідні для подолання таких викликів, як дефіцит медичних кадрів, дефіцит медичного постачання та закладів, слабка інфраструктура та логістика, поганий досвід пацієнтів, ефективність медичної допомоги, та організаційна ефективність. В дослідженні показана кореляція між показниками здоров'я населення африканських країн та кількість медичного персоналу на 1000 жителів кожної країни, також обґрунтовано необхідність державних програм щодо створення медичних кадрів та підвищення їх кваліфікації та мотивації.

Ключові слова: *медичні працівники, охорона здоров'я, зайнятість, інфраструктура медичної галузі, здоров'я населення*

Introduction. Sub-Saharan Africa confronts a health crisis of overwhelming proportions is widely understood. The spread of HIV/AIDS, the insidious scourge of malaria, and the persistence of debilitating parasitic diseases are all well documented. Increasingly, so-called lifestyle ailments - cancer, diabetes, and heart disease - are also afflicting Africans. Sub-Saharan Africa has far more than its share of the world's health problems. These disparities have been a stimulus for the launch of several important global financial support initiatives. Governments, multilateral agencies, and development finance institutions throughout the region have begun to accept that

engaging and developing the private sector should be an important part of any overall strategy to improve health care.

Aim of the study is to analyze the peculiarities of the Health care system development in African countries, to identify the problems of staffing of the industry and to show the dependence between the indicators of the population's health and the provision of medical personnel in the field of health care.

Methods and materials. The analysis estimated two regression models for each health care services and health outcomes. The dependent variable in each model was the proportion of a country's respondents that received the health care service or achieved the health outcome. The first model included the logarithm of the number of health workers (doctors, nurses, and midwives) per 1,000 population.

Research results. The region accounts for 11 % of the world's population and 24 % of the global disease burden, yet commands less than one percent of global health expenditure. Health systems – investments primarily made to facilitate the organization of the people, institutions and resources needed to deliver health and health-related services – have traditionally been defined using the WHO's concept of six building blocks. However, this approach has led in practice to the verticalization of the efforts at improving health systems, with a focus on intervention within specific blocks, as opposed to the interactions across building blocks. Examples of this verticalization abound:

- Disease programmes have primarily invested in selected elements of the building blocks (mainly health products/vaccines supply or training) to attain health and health-related service outcomes, without comprehensively investing in all elements of the system needed to provide the respective service;

- Systems-focus on investing in specific building blocks to make them functional, without investing in related building block interventions needed to deliver required services the assessment of health system performance therefore needs to move from assessment of individual building blocks to measures that look holistically at the results arising from investments across different building blocks. By improving in

these four areas, the delivery of essential health and health-related services is assured (table).

Table

Attributes of health system performance

Attribute	Description	Measures of achievement
<i>Access to health and health related essential services</i>	Removal of physical barriers faced by the population that hinder their use of services. This is primarily through making available hardware needed to deliver services – health workforce, infrastructure and equipment, plus medicines and products – as close to the population as is feasible.	Health and health-related services are close to households and communities, allowing their utilization as and when needed
<i>Quality of care during provision of essential health and health-related services</i>	How well the services being provided are aligned to the legitimate needs of the clients. This includes the experiences during use of essential services, safety elements and effectiveness of provided interventions.	Health and health related services provision is designed in a manner to maximize possible benefits for the household and community
<i>Effective demand for health and health-related essential services</i>	Knowledge, attitudes and practices of households and communities that lead to their use of available essential health and health-related services.	Households and communities are utilizing available health and health-related services in a manner that maximises their health and well-being
<i>Resilience in provision of essential health and health-related services</i>	The inbuilt capacity of the system to sustain provision of essential health and health-related services even when challenged by outbreaks, disasters, or other shocks	Households and communities continue to access health and health-related services even when the system is responding to shocks

As there is no cross-country data in the African Region to monitor and analyse the performance of health systems using these attributes, proxy variables are used instead.

- An access index is derived, based on availability of key inputs needed to provide services. Indicators used to derive the score are for availability of the tangible health system investments:

- Health workforce, focusing on physicians, nursing and midwifery, dentistry, pharmaceutical, laboratory, environmental, community, support and other health workers per 1000 population;

- Health infrastructure, focusing on hospital beds, hospitals, health posts, health centres, district hospitals, provincial hospitals and specialized hospitals per 100 000 population;

- Health products, focusing on mean availability and median consumer price ratios for selected generic medicines in public and non-public sectors;

- A quality of care index is derived, based on selected outcomes reflective of quality of care received, plus specific readiness and person-centredness indicators: tuberculosis (TB) treatment success, suicide rates and diabetes mellitus deaths are indicators used as a measure of outcomes. these should improve if the quality of care provided is improved, service readiness score is based on the Service Availability and Readiness Assessment (SARA) surveys data, person-centredness indicators from key informants' perspectives relating to dignity, confidentiality and prompt attention, a demand index is derived from the analysis of drop-out rates for services requiring repeat interventions.

Demand is effective if clients come back for the repeat services. the services with most consistent data and which are used as a measure of demand are:

- DPT 1–3 drop-out rates;
- BCG–measles drop-out rates;
- ANC 1 to ANC 4 drop-out rates;
- TB initiation to completion rate (TB completion rate);

A resilience index is derived from the analysis of responses from key informants in relation to the different resilience attributes in their systems. these include: awareness, diversity, versatility and self-regulation, adaption and integration. Based on these indices, the consolidated health system performance score for the African Region is 0,49, which means that health systems are only functioning at a possible 49% of their achievable level of performance. There is wide variation in system performance across the Region, with the consolidated score ranging from 0,26 to 0,7; this implies that the best performing system in the African Region is only performing at 70% of what is feasible. However, most of the countries (41 out of 47) performance ranges from 0,4 to 0,6, a rather narrow performance range. The level of access that populations have to health is a major determinant of whether essential health and health-related services can be provided to support the attainment of their health and well-being. Health investments in the workforce, infrastructure/equipment and supplies remain low in the Region, as shown by the low access index of 0,32. On average, the systems in the

region are only able to assure 32% of the potentially possible access to essential services. This will continue to be a major hindrance to Member States efforts towards attaining UHC and other health related targets needed for health and well-being of their populations.

The health workforce remains a critical input area for health systems. Inappropriate numbers, quality and/ or management constitute a major challenge to reach the level of performance required to attain UHC and the SDGs. Several actions require investments, ranging from production, recruitment, deployment, management and motivation of the staff needed to contribute to service provision. The output from all these investments is aimed at ensuring an adequate, qualified and motivated workforce in each country, able to provide the essential health and health-related services needed to attaining health and well-being. The status of the workforce in the Region is measured by a health workforce score which, ideally, would incorporate elements of adequacy, skills base and productivity. However, the only information available across countries relates to the numbers of staff. As such, the score is derived from the availability of a wide range of health workforce staff expected to be present in all countries. These are: Physicians density (per 1000 population), Nursing and midwifery personnel density (per 1000 population), Dentistry personnel density (per 1000 population), Pharmaceutical personnel density (per 1000 population), Laboratory health workers density (per 1000 population), Environmental and public health workers density (per 1000 population), Community and traditional health workers density (per 1000 population), Health management and support workers density (per 1000 population). When scores across the different countries of the African Region are compared, there is a significantly wide range from a high of 0,74 to a low of 0,02 of the health workforce score, highlighting the major gaps across the Region (fig.1).

Looking across the different categories of health workers, the nursing staff are the most frequently available staff, followed by community and health management staff. the

variations in the number of these categories is very high between countries. For instance, the nursing sta range from 0,14 to 5,1 per 1000 persons.

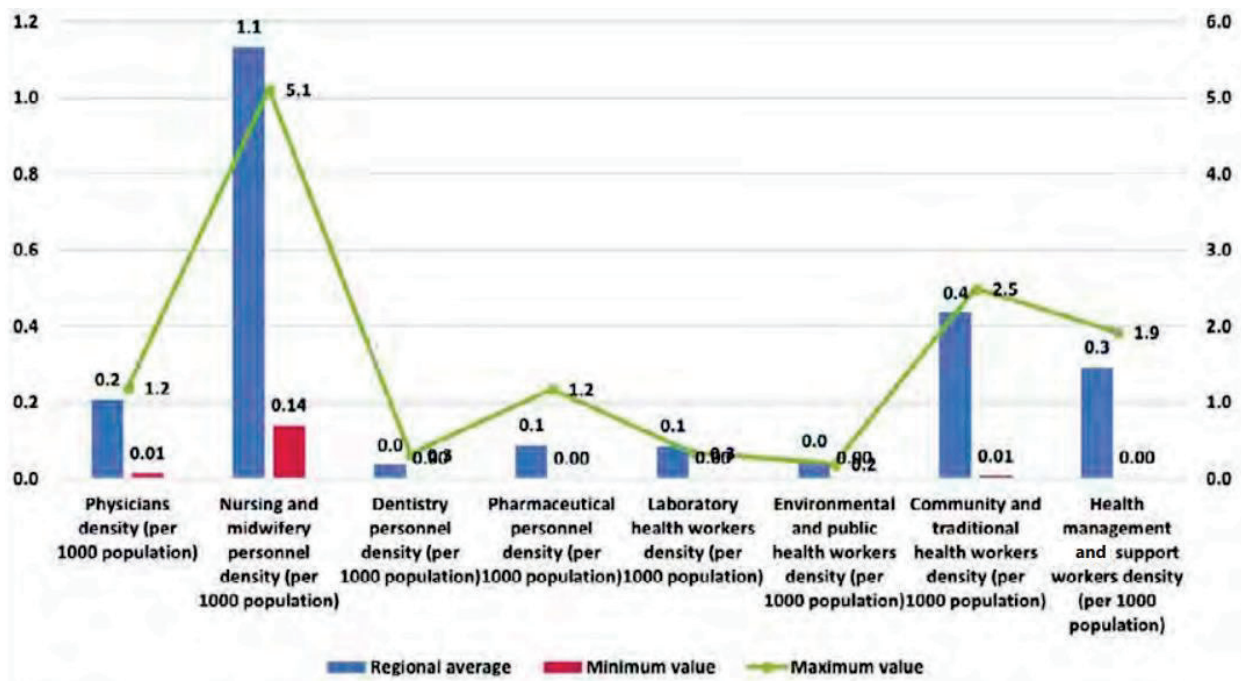


Fig. 1. Availability of dfferent health workers per 1000 population

To illustrate one specific relationship, figure 2.1 shows the percentage of births attended by a health worker as a function of the number of health workers per 1,000 population, for all 53 countries. Each dot represents a country, and the curved line shows the predicted percentage of births attended by a health worker. Similar to WHO, this analysis found that coverage varied significantly among countries with similar numbers of health workers per 1,000 population, emphasizing the need to incorporate additional variables into the model. Countries where about 90 % or more of births were attended by a health worker had a wide range of such workers per 1,000 population, largely because the additional health workers are providing nonbirth-related care (fig. 2).

Of the 23 countries that fall below the WHO threshold of 2,28 health workers per 1,000 population, 14 (or 61 percent) did not achieve 80 percent coverage for births, which was less than the 85 percent found by WHO (fig. 2).

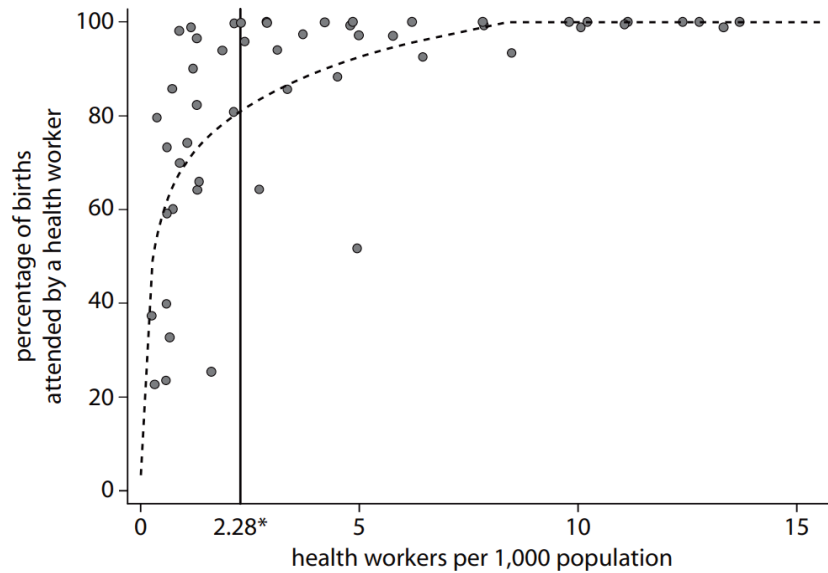


Fig. 2. Percentage of Births attended by a Health worker versus number of Health workers per 1000 population, by country

Figure 2. shows the predicted percentage of people in the 18 Sub-Saharan countries that would receive health care on the basis of different numbers of health workers per 1,000 population. The health care services have a statistically significant relationship with the number of health workers, after accounting for each country's population distributions (that is, urbanization and land area per capita). The predictions were based on Sub-Saharan countries' average population distributions: the proportion of the population living in urban areas (38%) and land area per capita (0,08 square kilometers). These results suggest that a country would require various numbers of health workers to achieve particular levels of use of specific health care services. For example, to achieve 80 % coverage of births by a health worker, a country would require 1.7 health workers per 1,000 population (fig. 3, line A).

This level would, however, achieve much lower percentages on the other measures, such as Pap smear tests (line C), HIV testing offered during pregnancy (line D), pelvic examinations (line E), and mammographies (line F). If health worker productivity increased, each line would shift upward.

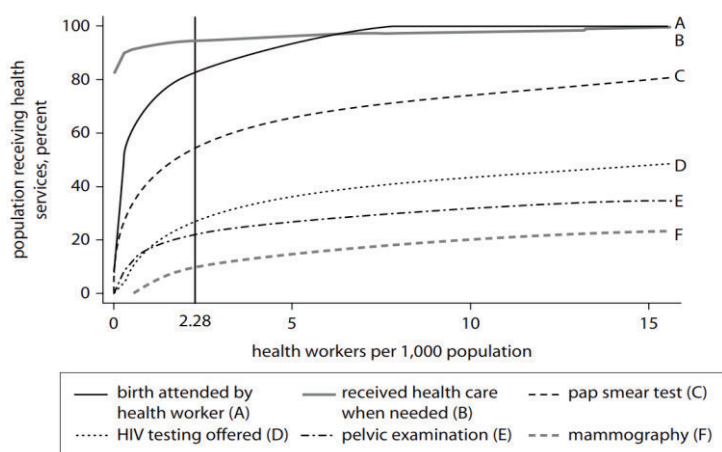


Fig. 3. Predicted percentage of Population Receiving Health Services based of the number of Health workers per 1000 population in African region

Conclusion

The required number of health workers per 1,000 population is sensitive to the chosen health measure and varies across countries, based on their population distribution. Each country or region within a country needs to select a combination of relevant health measures and contextual factors to include in their models to estimate the health workforce requirement. The needs-based approach has four limitations (some can be overcome with additional data).

For the health outcome variables, neither health rating nor health satisfaction was statistically associated with the number of health workers per 1,000 population, which is partly attributable to other factors that affect health, such as individual behaviors and the environment. This can be extended to each country's health care system, financing mechanisms, and worker training, as well as other health care factors, such as medical facilities, equipment, supplies, and pharmaceuticals. Theory should determine the variables, along with their specifications, to include in the predictive model. When theory is not conclusive, different models can be tested empirically.

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Summary. A healthy society is essential for stability and economic improvement. Indeed, improved health leads to higher productivity and better educational performance, and of course longer life expectancy, so African governments should promote the development and adoption of appropriate disruptive and investments that are needed to overcome challenges such as health workforce shortages, shortage of medical supplies and facilities, weak infrastructure and logistics, poor patient experience, health care efficiency, and organizational effectiveness. In this study, the relationship between the health indicators of the population of African countries and the number of medical personnel per 1000 inhabitants of each country was established, as well as the need for state programs to create medical personnel and improve their qualifications and motivation.

Key words: *medical workers, health care, employment, infrastructure of the medical industry, public health*