

Establishing and monitoring benchmarks for human resources for health: the workforce density approach

A critical component of monitoring and strengthening the performance of national health systems is the identification of a set of benchmarks and indicators – and the means to their measurement – for monitoring the health workforce. Different approaches have been developed and used to benchmark human resources for health (HRH) capacity to meet health systems objectives. Each approach has its own advantages and limitations. The choice of which is most appropriate in a given context will often depend on data availability, technical capacity, and prioritization of policy and programmatic interventions.

Benchmarking health workforce sufficiency may be described as an approach to comparing workforce performance indicators against those of others in an effort to identify areas of improvement.

The workforce-to-population ratio approach to HRH benchmarking

A commonly adopted approach to benchmarking HRH sufficiency is the *workforce-to-population ratio method*. A health worker-to-population ratio estimates the current workforce density or supply, for example physicians per 1000 population or health professionals per 1000 population. This ratio can then be compared against an identified threshold density that is assumed to correspond with a health system's ability to deliver essential health services.

An advantage to using a workforce-to-population ratio method for HRH benchmarking is that the approach is quick and simple to apply, may be used for comparative analyses across countries and over time, and is easy to understand among a wide range of audiences including those who might not be familiar with more advanced statistical modelling techniques. Health workforce-to-population ratios have been tallied and used, for example, for advocacy purposes among governments and development partners, in order to focus attention on HRH challenges which aim at improving coverage rates for essential health care interventions, such as those prioritized by the Millennium Development Goals. They have also been used in the formulation of monitoring and evaluation frameworks for national HRH plans and strategies.

Using a health workforce-to-population ratio assumes that the relative proportion of health workers in a given area at a given moment is the most

important determinant of a health system's ability to deliver health services. The approach often assumes that extrapolation of the observed ratio in a reference region or country can be reasonably selected as a comparator.

However, this approach does not take into account any other variables, aside from population size, which are known to play a part in determining the impact of health workforce performance on health outcomes in a given context. These other variables include population structure; epidemiology and burden of disease; patterns of service and provider utilization; organizational efficiency; health policies, regulations and standards; technological capacity; distribution of the health workforce by occupation, place of work and socio-demographic characteristics; individual provider performance; public demand and expectations; and availability and means of financing. Approaches to HRH benchmarking that take into any or all of these factors are much more demanding in terms of data requirements and model specification.

Measurement strategies

A number of data sources can be used to measure a health workforce-to-population ratio. They include: household censuses and surveys with questions on labour force activity and occupation; health facility assessments; and administrative registries such as payroll or health professional licensing. Depending on the data source, numbers of health workers may be estimated in terms of head-counts (physical persons) or job positions (with positions weighted for full-time equivalency on the basis of working hours).

Given the diversity of information sources and types of measurement, monitoring trends in HRH density across countries or over time requires standardization of definitions and classifications for precise statistical delineation. Many countries with low workforce density are also challenged with poor information systems, which can lead to under-reporting of resources. In such contexts, reliable data are often lacking on trained human resources who are unemployed or working outside government-operated health facilities. Alternatively, numbers of health workers may be overestimated if they do not account for double-counting of health personnel working in both the public and private sectors, or attrition from the national health labour market due to reasons such as emigration, retirement or change of profession.

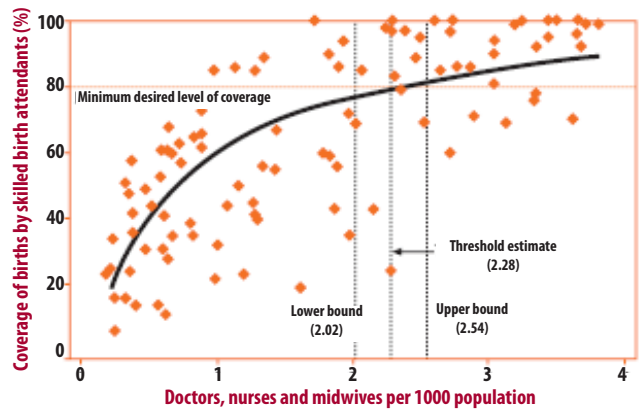
Selected statistics

There is no universal norm or standard for a minimum HRH density in any given country or region recommended by the World Health Organization. The agency works with Member States and partners to strengthen capacities in workforce assessment and planning so that relevant benchmarks are established based on sound evidence within the context of the goals and objectives of national health systems and development strategies.

It has been estimated however, in the *World health report 2006*, that countries with a density of fewer than 2.28 physicians, nurses and midwives per 1000 population generally fail to achieve a targeted 80% coverage rate for skilled birth attendance and child immunization. This critical threshold (plus or minus 0.26 workers per 1000 to allow for uncertainty) was calculated using the best data available at the time for all WHO Member States, and was based on an analysis of progress within and across regions towards achievement of targeted coverage rates for selected health care interventions which were set in accordance with the health-related Millennium Development Goals. The analysis also took into account other factors known to influence coverage levels and health outcomes, including income poverty and female literacy rates. It did not, however, capture the whole range of preventive, promotional, curative and rehabilitative health services – as well as systems management and support activities – that health workers provide.

Drawing on the calculated threshold density, and being mindful of its intrinsic limitations, it was estimated that an additional 2.4 million physicians, nurses and midwives are currently required to meet universal health intervention coverage targets, notably in 57 countries that fall below the threshold. (Based on the uncertainty interval of the threshold, the upper and lower limits of the estimated requirements are 3 million and 1.7 million, respectively.) Meeting this requirement for new health workers, which only refers to the three selected occupation groups for which data tend to be

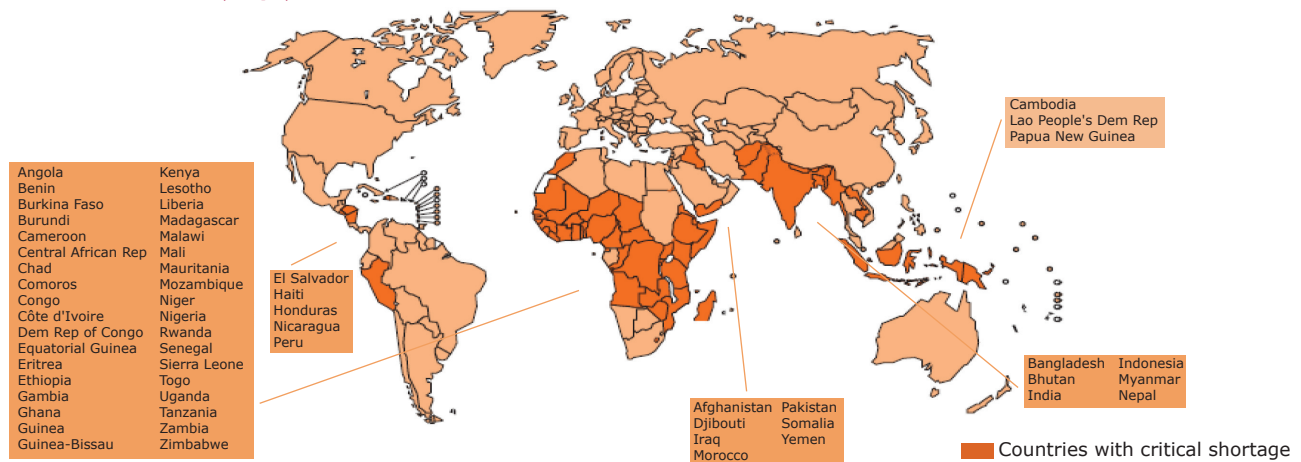
Population density of health care professionals required to ensure skilled attendance at births



most complete and comparable internationally, should be seen as just one part of an overall strategy for strengthening human resources in health systems. Extended to other cadres (dentists, pharmacists, medical assistants, laboratory technicians, etc.), the global requirement is estimated at some 4.3 million additional health workers. It is also important to note that some countries will find it extremely difficult to attain the desired intervention coverage levels without complementary strategies to reduce poverty and increase literacy.

Such analyses and estimates of health worker requirements may be useful for purposes of advocacy and resource mobilization for scaling up HRH development initiatives, but more complex approaches that better account for the spectrum of workforce supply-demand dynamics are generally needed for evidence-based strategic planning and investment in a given context. Simply assessing HRH density in relation to a given threshold does not necessarily take into account all of a health system's objectives, particularly with regard to accessibility, equity, quality and efficiency.

Countries with a density of physicians, nurses and midwives below critical threshold



References and related resources

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