The labour market
for human resources
for health in low-
and middle-income
countries

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World Health Organization

Acknowledgements

Contents

Introduction

All low- and middle-income countries (LMIC) have health worker labour markets. Some of these countries' markets function better than others and all can be improved. What does it mean when experts say there is a "shortage" of health workers? Is there more than one definition of a shortage and if so, how do we measure it? What is the difference between the need and demand for a health worker? What factors influence wages paid in the public and private health sectors, and how do we know if the wages are adequate to employ workers in rural areas? Why do some LMIC have "ghost workers" in health labour markets? We will explore these and other questions using the basic tools of labour market analysis.

This paper provides an introduction to the terms and tools of labour market analysis for those with little or no formal training in economics. We also connect these labour market principles to real-world case studies from LMIC. The data needed to examine labour markets is also noted to allow human resource practitioners to begin their own empirical examination of health worker labour markets in LMIC. Given the global shortage of people who understand labour markets in health, we hope this report can help increase the global supply.

It begins with vignettes from three LMIC: Thailand, Rwanda and Kenya. Then we describe the basics of labour markets and illustrate why understanding these concepts can help us to address such workforce challenges as described in the vignettes.

Vignette 1

Workforce shortage in Thailand
Thailand has experienced a twofold increase in gross national income per capita over the past 10 years, making it one of the fastest-growing economies in Asia *(1)*. Recent estimates indicate Thailand requires more than 12 000 new health workers to adequately treat the mental, neurological and substance-use disorders of their population *(2)*. This gap between need and supply of workers probably underestimates Thailand's total shortage of workers needed to treat mental and physical disorders. The prevalence of untreated disorders imposes high costs on the health system, lost worker productivity, impaired functioning and caregiver burden on family members. If the epidemiologic need for health care remains high, why does Thailand have a health workforce shortage?
(see page 6)

Vignette 2

Unfilled posts in Kenya
Kenya is projected to have 1.44 health-care professionals per 1 000 population by 2015, much lower than the World Health Organization's minimum threshold level of 2.28 per 1 000 population *(3)*. In 2006, Enock Kibunguchy, Kenya's assistant minister for health, said the country should hire 10 000 additional professionals as a matter of urgency to meet the health needs of the population *(4)*. Despite the Ministry of Health's efforts to hire these workers, many postings in rural areas remained unfilled *(5)*. When posts were filled, the recruited health workers often did not arrive to start the job until much later, sometimes up to 18 months after the position had been advertised *(6)*. Why do available jobs remain unfilled and why does it take so long to place health workers after they are recruited?
(see page 7)

Vignette 3

Ghost workers in Rwanda
Before 2004 in Rwanda, most doctors in the public sector received a salary for their services. The doctor typically was assigned to a particular clinic. In many of these clinics, patients waited in long lines, sometimes all day, without seeing a doctor; often the doctor did not even attend the clinic. This type of doctor is known as a "ghost worker," drawing a salary from a clinic but mostly being absent. When they do attend the clinic, patients and staff benefit from the doctor's time and expertise but the unreliable nature of the doctor's work schedule leads to inadequate health care and resentment from other clinic employees. How did the Rwanda government address its ghost worker problem?
(see page 9)

1
Introduction to the health worker labour market

The health worker labour market in a country is made up of two independent economic forces: the supply of health-care workers and the demand for health-care workers *(7)*. The interplay between the supply of and demand for health workers determines the wages and other forms of compensation paid, such as housing allowance and fringe benefits; the number of health workers employed; and the number of hours they work *(8)*. These labour market forces also determine the geographic location of health workers and their employment setting (e.g. hospitals, clinics).

A complete picture of the health worker labour market includes the productivity and performance of health workers. Productivity measures the units of care or service that workers provide, and the rate of health worker productivity is often measured as services or visits per hour. The performance of health workers is primarily determined by two components: the quality of service produced; and the appropriateness of the service for treating the patient. Performance is often measured by examining what the health worker is trained to do. Performance might be linked also to the health outcomes of the population served but this will be discussed later. The health-care worker's potential is then compared with what he/she does. The closer the performance to potential, the better the health-care worker's performance.

In this paper, each of these labour market concepts is discussed in turn to show how they operate in the health-care sector. We then assemble the components of the health worker labour market to show how they relate to each other. This synthesis is followed by a more technical discussion of the key concepts of health worker labour markets, illustrating how the labour market determines wages, employment, geographic distribution, task shifting, productivity and performance.

A preliminary list of key labour market indicators and data with which to conduct these studies is presented. The data needed will depend on the labour market studied.

2
What is the labour market for health workers?

The labour market for health professionals is derived from and directly connected to the market for health and medical services *(9)*. The process for delivering health-care services requires the input of health workers, along with other inputs, such as medicines, equipment and other health-care supplies. Clinics and hospitals have a demand for health workers in order to produce health services, which are demanded by purchasers of health care. This point is often overlooked. The demand for health services is linked to the willingness of the government, patients, health insurers and other purchasers of health care, such as donors, to fund health services.

The demand for health workers can be defined as the willingness and ability of the government, private sector and/or donors to pay to have health workers placed in clinics, hospitals or other parts of the health system. The demand for health workers is the sum of the demand from all of these purchasers or funders.

The supply side of the market shows how many health workers are available at any given moment and how many hours they are willing to work. In general, the higher the wage offered, the greater the number of available health workers. We define wage as a formal payment from the public or private sector to the health worker, via salary, capitation or fee for service. We note, however, that informal payments, housing allowances and other benefits are also frequently offered to the worker for their services. The positive relationship between wage and the number of workers available exists for several reasons. Those with training as a health worker will offer more of their services as the wage increases (i.e. work more hours). Those working in other sectors of the economy will consider jobs in health care as health-care wages become more attractive. Some may have training as a health worker but do not work as one because wages are too low. Others will consider being trained as a health worker so that the future supply of health workers will be increased.

The demand for health-care training is, therefore, derived from the market for health workers. This demand creates the market for health-worker education. The supply side of this market is the number of training slots available (seats in the class). The supply of training slots (seats) depends on the cost of providing training and the funds available to pay for it. The cost of training includes physical infrastructure and its amortization, faculty salaries, classroom maintenance and other education costs. A substantial portion of the costs of training are often offset by government or private organizations, on the premise that health-worker education is a "public good" that benefits society broadly and, therefore, the cost should not be borne solely by the student. Some portion of the cost is typically paid by the

student through tuition and educational fees. As the total cost of training a health worker declines, or the revenue to fund training increases, the number of training slots (seats) increases. Tuition charges also affect the demand for health-worker training. If the total cost of education is zero or near zero, there will probably be excess demand for health-worker education. This is rarely the case in practice because many health education programmes have entry requirements that are another cost to students. If tuition is too high relative to the wages of health-care workers, then there will not be enough individuals applying for the health-care worker training seats available. As the wages for health workers increase, the demand for health-worker training will also increase. The link between the market for health care and the market for health workforce training is a crucial part of the health worker labour market dynamic *(10)*.

A key dimension of the supply of health workers is their geographic distribution, often observed through migration into and out of the country or between rural and urban areas *(11)*. Migration is influenced by wage levels and other non-wage aspects of the health-worker position *(12)*. These include, but are not limited to: safety; status; access to housing and child education; cultural activities; and the attractiveness of the hospital or clinic given its working conditions and the status of its logistics, diagnostic facilities and pharmaceutical supplies *(13)*.

In summary, the key components of the health labour market are:
• the demand side, which is linked to the demand for health care
• the supply side, which is linked to the market for health-worker training.

In order to offer a fuller understanding of the labour market for health workers, these components will now be described in an integrated framework.

3
Health worker labour market – an integrated framework

Diagram 1 shows each of the components of the health worker labour market. Box A contains the number of seats available to train health workers in, for example, medical schools, nursing schools or training programmes for community health workers. The supply of the seats generally is determined by the cost of training the health worker relative to the funds available to pay those costs, although social priorities or political decisions may also have an influence. The demand for health worker training (Box B) – the number of people who apply for available seats – is determined by the cost of the tuition and the wages and rewards of being a health worker. The net outcome of the supply and demand for training is the number of graduates from the training programme, who feed into the overall health worker supply (Box C) *(14)*. Health worker supply is affected also by retirement, death, the competitiveness of the health market, temporary movements out of the labour market to engage in child care or other employment, and movements of workers out of the country. The attractiveness of employment in non-health sectors will affect the number of people who pursue health-worker training, as well as the share of those trained who choose to work in the field. The demand for health workers is shown in Box D. The demand is derived from the demand for health services. State regulations play a key role in determining the overall wage bill and the number of civil servants wanted in the health field. The higher the demand for health services, the higher the wages that will be offered.

Demand and supply (Boxes D and E) are the primary components of the health worker labour market (Box F). The dynamics of this labour market will determine the wages and other compensation, the number of health workers employed and the geographic and sectoral (public or private) location of their employment (Box F). Shortages and surpluses overall, by institution (hospital or clinics), by geographical location (urban versus rural), and by sector (public versus private) are determined by these dynamics. These are discussed in the following section.

Box G represents the productivity of health workers. Their productivity is determined by the setting in which they work, their level of motivation, work organization, management capacity, the division of labour and other resources available. Such resources include equipment, drugs, examination rooms and other characteristics of the setting. Finally, Box H represents the performance of the health workers. Their performance includes the quality of their work, the technical skills they use, the care they deliver and the impact of their work on health outcomes. Interactions between productivity and performance often occur, so that when performance improves, so too does productivity. It is possible, however, that an increase in productivity, such as a rise in the number of patients seen, could reduce performance (more mistakes made, for example).

Diagram 1: Health worker labour market

(A)
Supply of training slots
• Cost of training
• Number of Slots
• Types of Training

(B)
Demand for training slots
• Number of applicants
• Cost of Tuition
• Expected Wages

(C)
Supply of health workers
• Number of graduates
• Net migration
• Deaths and retirements

(D)
Demand for health workers
• Demand for health care
• Wages offered
• Regulation

(E)
Supply of health workers
• Wages
• Personal Preferences

(F)
Health worker labour market
• Wages
• Number of health workers
• Specialty
• Geographic area

(G)
Productivity

(H)
Performance

4

Technical structure and dynamics of the health worker market

Let us first consider a labour market framework with only one health worker type and one employer, such as nurses being demanded by one hospital that is government funded in a LMIC as defined by the World Bank.

Figure 1: Demand and supply of nurses
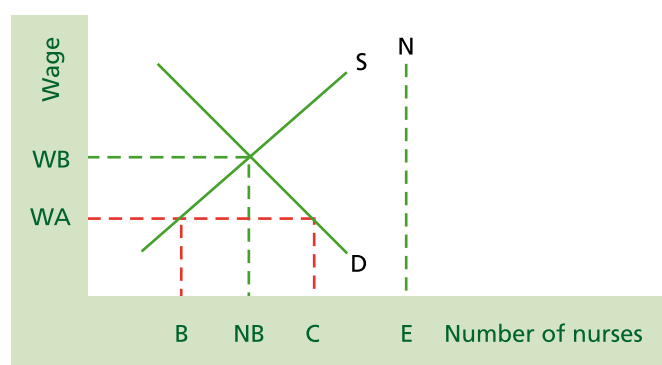
Figure 1 shows the demand (D) and supply (S) of nurses discussed in the previous section. The demand and supply of nurses will be matched when wage level WB is offered.

Then, the market wage equals WB and NB nurses are employed. If the wage is lower than WB, say WA, there will be a shortage of BC nurses in the labour market. The supply of nurses willing to work is B while the demand for nurses is C. If wages are not permitted to rise to WB, the shortage will persist.

The level of employment that arises from this market-based model is different from the perceived need for nurses. How is the market-based model different from the need for nurses? Figure 1 shows the need for nurses as line NE. It is a vertical line and does not change with the wage in the market. The number of nurses employed will still be NB but the need is E, so the needs-based shortage is E minus NB. It is possible to have need equal demand (not shown here). In this scenario, the market-demand calculation and the needs-based calculation for the optimum number of nurses employed at the optimum wage would converge to produce the same result.

It is also important to note that a labour market may be dominated by a small number of employers, perhaps only one employer, causing the market to behave differently from a competitive market. In this scenario, a monopsony, the

employer has a great deal of control over the wages offered and will find that increasing wages to attract more workers has a big effect on overall wage costs. Therefore, the monopsonistic employer will be reluctant to increase wages to remedy a shortage but might nonetheless report a shortage of workers. This is more likely to be the case in rural regions or other areas where there is one dominant employer.

Vignette 1

Workforce shortage in Thailand – the response
Figure 1 reflects the situation for the health workforce in Thailand. The perceived need for health-care workers, determined by the assessed morbidity of the population, represents line NE. The minimal number of "needed" workers, however, remains much greater than the number of health workers employed (NB). Why is this so? Despite Thailand's high prevalence of HIV and the recent re-emergence of tuberculosis, neither the public nor private sector provides sufficient compensation for health professionals to enter the labour market *(15)*. In addition, given other employment options in Thailand's rapidly expanding economy, citizens may choose other careers with higher wages and greater prestige. Since 2001, Thailand's Ministry of Health has acted to provide universal healthcare coverage and destigmatize various health conditions, such as HIV and mental disorders *(16)*. Such initiatives, in conjunction with reallocating federal funds towards training and retaining health workers, have led to an increase in the health workforce over the past decade. Such policies, if sustained into the future, may close the workforce gap between lines NB and NE (Figure 1).

In Figure 2a we introduce dynamics into this model of the health worker labour market and consider the public and private demand for nurses.

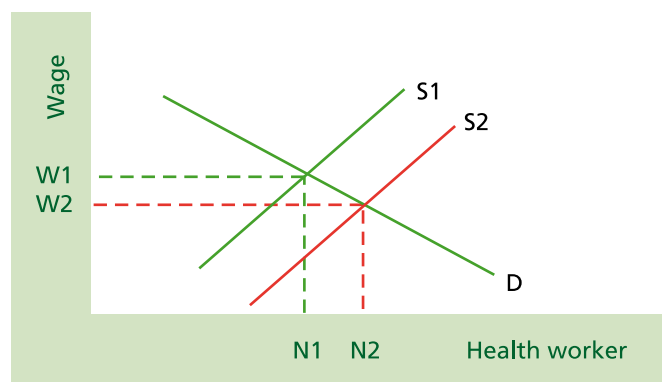Figure 2a: Private market for health workers

Figure 2b: Public market for health workers
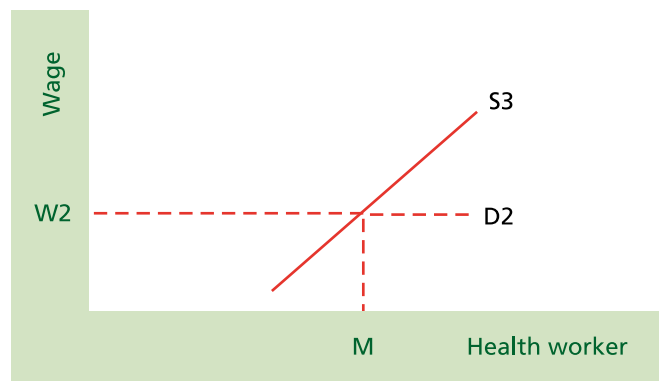
Figure 2a shows the private market for health workers. The market labour wage is W1 and the number of health workers hired is N1. Let us consider the possibility that health workers can also supply their labour to the public market, creating a "dual labour market". The wage W2 in Figure 2b is set in a public market by the government and is fixed, so it produces a horizontal demand line, D2. In the situation represented in Figure 2b, the public wage W2 is lower than the private wage W1 in Figure 2a. So workers would offer their time first to the private sector until the W1 is equal to the wage in the public sector, W2. At that point they often work their remaining hours in the public sector. In summary, N1 workers would be in the private sector and N2-N1 workers in the public sector. If workers worked in both sectors, they would give the minimum hours possible to the public sector at wage W2 and the remaining hours to the private sector at a wage W1, given that W1 exceeds W2. In the geographic health worker labour market represented in Figure 3, health worker markets also allocate and distribute work by geographic area.

In Figure 3a, we observe that the supply and demand for health workers in an urban area produces a wage of W1 and employment of U1 workers. In rural areas (Figure 3b), the wage is W2. Since W1 exceeds W2, workers move from rural to urban areas, shifting the supply line from S1 to S2.

Figure 3a: Urban health worker labour market
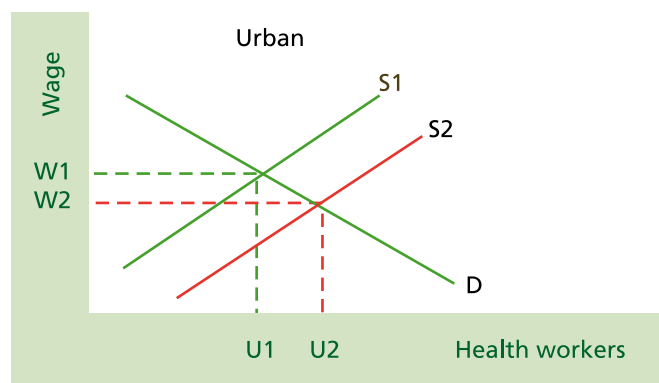
The supply of health workers employed in urban areas rises to S2 and the wage decreases to W2. We now have U2 workers employed in the urban market. At the same time, the supply of workers in the rural area decreases from S1 to S2.
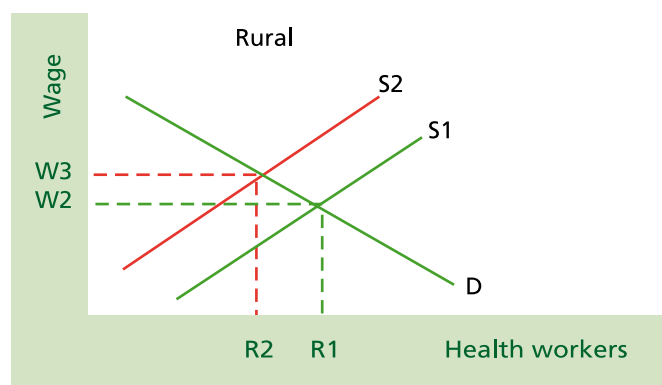
Figure 3b: Rural health worker labour market

This raises their wage from W2 to W3 and the number of employed workers decreases from R2 to R1. In theory, this will continue until the urban wage equals the rural wage. Why might this not happen? Wage is not the only factor that influences worker migration (17). Living conditions, safety and the quality of life in each area matter. Health workers typically prefer to live and work in larger cities that offer better job opportunities and infrastructure (18). The intrinsic preference of the worker for an area also matters, as does proximity to family and friends, but the pressure on wages does exist as workers migrate from rural to urban areas or choose these locations after graduation. Also, the relatively low wages of preventive medicine positions in LMIC means there is less incentive for workers to choose this field (19). Rather, workers tend to "move" to training in clinical specialties that promise higher wages (12).

Vignette 2

Unfilled posts in Kenya – the response
Kenya's experience of unfilled rural posts is mirrored in many LMIC (20). Despite the political will to hire more health workers, Kenya had insufficient funds to augment the workforce in understaffed rural areas. To address this problem, Kenya in 2006 adopted a multifaceted approach. First, the Ministry of Health used external donor resources (separate from the federal wage budget) to initiate the Emergency Hiring Programme (5). This separate funding stream provides three-year contracts to health workers, stipulating that they focus on under-served geographic regions (21). The Ministry of Health administers these funds and hires the workers. Second, unlike with the previous hiring procedure, applicants from rural regions can be interviewed in their home region rather than be required to travel to the capital Nairobi (6). This local management process in rural areas appears to reduce time-to-hire and increase retention rates. Third, for workers in rural areas,

the Ministry of Health has implemented hardship allowances, housing grants and two sessions of paid leave. The goal of these incentives is to offset the wage deficit (that is, the difference between W1 in Figure 3a and W2 in Figure 3b) of those not working in urban centres.

Consistent with WHO guidelines to increase the rural workforce, Kenya also decentralized and computerized several clinical education programmes so that workers could train in rural areas without having to move (13). For example, the African Medical and Research Foundation offers computer-based distance education to 4500 nurses (22). Kenya also developed a national electronic nursing workforce database so that it could better match nurses to under-served regions (23,24). This multifaceted approach resulted in fewer unfilled rural posts and a faster time-to-hire.

5
Task shifting in the health worker labour market

Task shifting is another important dynamic of the labour market for health workers (25–27). Let us look at an example where tasks normally performed by a surgeon are shifted to a surgery technician. Since surgery technicians are paid less than surgeons, this task shifting increases the demand for surgery technicians and increases their wage and the number of technicians employed (see Figure 4).

Figure 4: Task shifting of surgery technicians
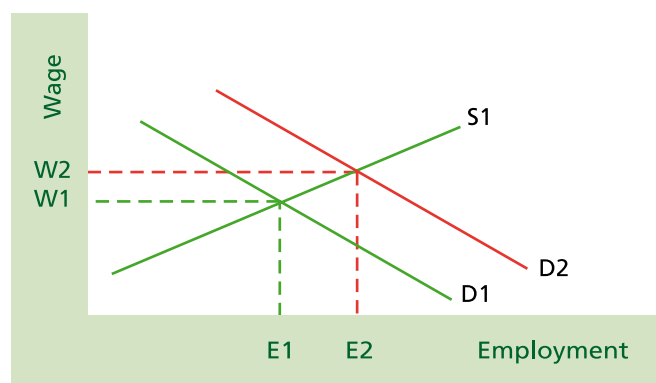
Task shifting increases the demand for surgery technicians from D1 to D2 and increases wages from W1 to W2. At the same time, the number of surgery technicians employed increases from E1 to E2. The wages of surgeons would fall unless there is an excess demand for their labour, which is often the case in LMIC.

These market dynamics assume the market is allowed to function and to adjust to movements in supply and demand. As we know, health labour markets are often regulated by government or might lack transparency, so wages do not adjust or take a long time to adjust. For example, the market

for doctors often does not allow market adjustment (task shifting) to follow labour market forces. This circumstance is often described as a market failure because the labour market does not produce the optimal number of employed health workers.

Another market failure is the mismatch between worker wages and their marginal productivity. If, for example, workers can provide services to the private sector on a fee-for-service basis, then they have a financial incentive to induce patient demand for services, even when the additional cost of services does not yield a health benefit. This clinical behaviour is called supplier-induced demand. In LMIC, large worker profits from fee-for-service private care often go unreported to the government and, therefore, remain difficult to analyse and/or regulate. Another market failure related to the mismatch between wages and productivity is the problem of the "ghost worker," on which we elaborate in the following section (see Rwanda vignette). These and other market failures remain an important topic in workforce research.

6
Health worker productivity

Health worker productivity can be described as the relationship between the input of health workers, such as the number of hours they work, and the health service output. These outputs can be measured by the number of patient visits, days spent in hospital, medical procedures and other encounters. A typical measure of productivity would be the visits per hour per health worker over a period of a week or a month. Productivity is also influenced by other factors, such as the assignment of work, management practices, modes of remuneration, the motivation of workers, organization of work, the regulation of the division of labour, and other labour and non-labour resources available.

Figure 5: Productivity function of a health worker
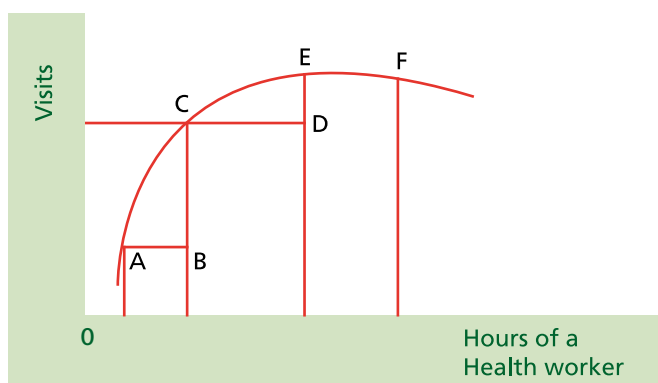
The productivity function (Figure 5) shows that as health workers increase their hours from A to B, the output

increases by BC. When hours increase further to CD the increase in productivity measured by visits is ED. This shows a productivity increase but at a decreasing rate. This pattern of "diminishing returns" to hours of work is viewed by economists as widespread throughout all occupations, with workers functioning somewhat less efficiently as they spend more time at work. Point E shows the near-maximum level of productivity; point F shows that productivity can decrease at some point because of inefficiencies.

7
Health worker performance

The performance of health workers can be assessed by comparing what they are trained to do with what they actually do. When workers perform at their "best" they are producing health services at a level and rate that matches their training and ability (see Figure 6). The quality of training can vary substantially between institutions and LMIC. In general, as the quality of training improves, so does the potential quality of health-service delivery.
Another way to measure performance is to compare a health worker's services with standardized operating procedures (SOPs). Adherence to SOPs might help workers meet minimum job expectations in accordance with their training. SOPs often do not exist, however, and the quality of services provided may vary between workers even if SOPs are strictly followed.

Figure 6: Health worker performance
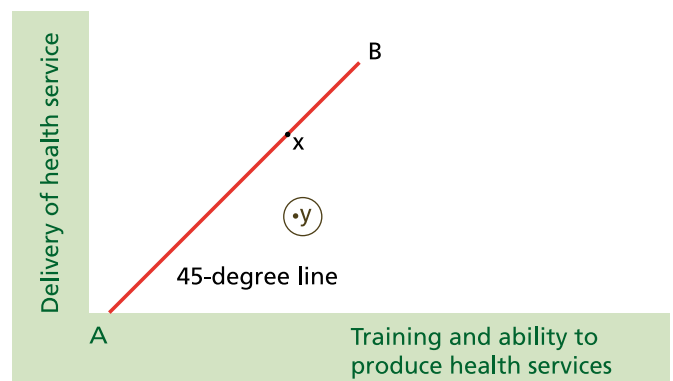
When workers deliver services at a level that matches their training and ability, their work would fall on the 45-degree line, AB. Point y represents the service the worker produces. It is below the 45-degree line, which means they are not performing at their potential, represented by point x on the 45-degree line.

This shortfall in performance, perhaps due to a lack of facilities or equipment, can be substantial. Low salaries can also affect performance, resulting in workers being less motivated to deliver services. Policies need to be devised,

therefore, to increase health worker performance and effectiveness.

Vignette 3

Ghost workers in Rwanda – the response
The chronic absence of assigned physicians from clinics in Rwanda is illustrated in Figures 5 and 6. The "ghost worker" physician lies at point A of Figure 5 because he/she works relatively few hours and sees few patients in the clinic. Additional hours worked in the clinic could improve the physician's productivity to point C. The ghost worker represents point y in Figure 6 because the delivery of health services at the clinic falls far below their potential, based on their level of training and ability to provide care.

Ghost workers choose low productivity because they draw a salary from the federal government *regardless of their attendance at the clinic* and are rarely fired for absenteeism. They have little financial motivation, therefore, to see patients at the clinic. The ghost worker, instead, may decide to provide private care outside the clinic while also drawing a clinic-based salary. To redress the problem of absenteeism, the Rwanda government in 2005 restructured health-worker compensation by linking wages to clinic attendance. This pay-for-performance strategy allows administrative districts to reward clinicians for hours worked and quickly terminate the contracts of ghost workers *(28)*. Rigorous evaluation of pay for performance in Rwanda indicates a dramatic reduction in ghost workers and improvements in the quantity and quality of care provided at public clinics *(29)*. Noting this success, other sub-Saharan countries in Africa have recently implemented pay-for-performance strategies.

8
Health worker labour market indicators

Should the market determine the level of employment for health workers and would such a level meet the health needs of the population? To determine whether this is feasible, we would suggest a needs-based analysis using different measures of health needs *(30)*. Then, using a labour market approach as described in the previous section, we might observe how many workers are employed and at what wage level. If the need for health workers exceeds the number employed, we can calculate how much of a wage increase is required to generate the necessary movement of health workers into the market – from other countries, from urban to rural areas, or from the private to the public sector – in order to satisfy requirements. The key indicator in this context is the wage elasticity of health-worker employment. It shows how much of a wage increase in percentage terms is needed to increase worker employment by a certain percentage.

FORMULA: Wage elasticity of health-worker employment (E)

$$E = \frac{\text{Percentage change in employment}}{\text{Percentage change in wages}}$$

For example, when wages increase by 10% and employment increases by 10%, E=1. If a 10% wage increase increases employment by less than 10%, the elasticity is less than 1. This elasticity is an overall measure of the responsiveness of the labour market to changes in wages.
Another indicator of a shortage is the vacancy rate in the health-worker labour market (31). A large number of vacancies often indicates a shortage. However, if wages are not permitted to increase to remove shortages, then the vacancies may be the result of low wages rather than a shortage of labour in the health sector.

Wage changes are a key indicator in health labour markets. In general, when they increase, this indicates a shortage: the greater the increase, the larger the shortage in the short term. A wage increase by the government to attract health workers is not a market indicator but may result in wages increasing in the private sector that competes for health workers.

9
Developing the health workforce for the future

Nearly all LMIC face shortages of health workers, either in general or in specific professions or geographical regions. To achieve Millennium Development Goals in child and maternal health, and in HIV prevention, a sufficient supply of health workers is necessary to ensure access to reproductive health services, attendance by a skilled health worker during birth, and the delivery of vaccinations and medications. It is recommended that strategies to increase the supply of health workers align with health-worker labour markets. Health-care decision-makers must assess whether shortages arise from insufficient educational capacity, inadequate wages to attract people into health work, low funding in health facilities resulting in demand that is too low, or other market imbalances. By understanding the dynamics of labour markets and how they apply to global health workforce challenges, policy-makers and administrators can develop successful and sustainable strategies to achieve population health goals.

Annex

Preliminary list of data requirements to analyse the health worker labour market

To perform a health worker labour market analysis, we suggest the data components listed below. The World Health Organization recently published WHO-AIMS (Assessment Instrument for Mental Health Systems), which provides estimates of health workforce data in more than 60 LMIC *(33)*. We encourage the use of WHO-AIMS, as well as the collection and analysis of other data at the national and regional level *(34,35)*.

I. Number of health workers prepared to work (potential supply)
   a. by health occupation
   b. by gender
   c. by location (urban versus rural)
   d. graduates of training programme
   e. immigration and emigration of workers.

II. Hours worked by qualified health workers
   a. by health occupation
   b. by facility
   c. working in the public and private sector
   d. by gender
   e. by location (urban versus rural).

III. Wages
   a. paid by government, private sector
   b. paid in full- and part-time work
   c. paid in urban/rural areas
   d. paid by facility.

IV. Other non-wage compensation
   a. health benefits
   b. housing
   c. moving expenses
   d. pension
   e. job security.

V. Vacancy data by the categories in II above
   a. unfilled positions
   b. turnover
   c. time-to-hire.

VI. Unemployment data by the categories in I above

VII. Productivity of health workers in all categories in I
   a. visits per hour
   b. hours worked per week
   c. number of health workers per hospital patient day, or per patient day in other types of facilities.

VIII. Performance of health worker
   a. training level of each health worker
   b. quality of service they deliver, as measured by medical guidelines
   c. ability of worker to perform as measured by the equipment and drugs they need.

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Understanding and developing policies to address health worker shortages and maldistribution requires an understanding of the economics of labour markets. This report provides an introduction to the terms and tools of labour market analysis, and connects these labour market principles to real-world case studies from three low and middle-income countries: Thailand, Rwanda, and Kenya. Recommendations for data collection are also made to allow human resource practitioners to begin their own empirical examination of health worker labour markets. The application of labour economics principles and thoughtful data analysis can guide effective labour policy to address population health needs.