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Health Worker Unemployment in Low and Middle- Income Countries with Shortage

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Abstract

Health worker unemployment in countries with shortage is a paradox and a growing concern to global health stakeholders. We sought to document the evidence by reviewing the literature on unemployment among nurses and midwives, dentists, pharmacists, and physicians from low-income and middle-income countries (LMICs) with alleged critical shortage. We conducted a search of relevant keywords in CINAHL, Dissertation Abstracts, PubMed, and Google. Given the paucity of peer-reviewed studies on this topic, we relied largely on the grey literature to glean out the evidence. Our findings confirm the dearth of health worker unemployment data in many LMICs. Circumstantial evidence suggests that large numbers of unemployed health workers exist in India and Indonesia. In the WHO African Region, emerging empirical evidence reveals medical graduates from the Democratic Republic of the Congo are severely affected by unemployment. Delayed posting after community service is commonly reported in South Africa. Rising unemployment and precarity among nurses is evidenced in Malawi. Countries in Southern and Eastern Africa reportedly have large numbers of unemployed health workers clustered in their capital cities while rural health facilities are severely impacted by shortage. Political factors like strike and mass resignation of health workers also affect unemployment. Nurses are more likely to be unemployed than physicians, and generalists appear more vulnerable than specialists. Policy should incentivize unemployed health workers to practice in rural areas and should foster a culture of wellness where health promotion and disease prevention are valued as much as allopathic medicine.
1. Introduction and outline of methods

The World Health Organization (WHO) has consistently emphasized the need for more health workers globally in order to achieve universal health coverage (UHC) and to effectively tackle the global burden of diseases and injuries (1-4). In countries with greatest needs such as those identified in the 2006 World Health Report as suffering from critical shortage, more health workers are needed not merely to realize UHC desiderata, but largely to achieve “modest coverage for essential health interventions” (1). Mindful of the compounding effect of demographic and epidemiological transitions on population health in both developed and developing countries, the authoritative report predicted that “demand for service providers will escalate markedly in all countries—rich and poor” (1).

In poor countries with both critical shortage and limited capabilities to significantly scale up the production of human resources for health (HRH), an escalation of demand for health service providers may not necessarily translate into a surge in supply of new service providers. However, it is reasonable to expect that such escalated demand should lead to a better inventory of available resources, and a more judicious and optimal exploitation of the existing capacity (5). Hence, unemployment of health workers in countries with critical shortage should be inexistent or merely a transient phenomenon. Yet, the seminal WHO report also observed that numerical deficits of health personnel often exist in countries with large numbers of unemployed health workers (1). The paradox of health worker unemployment in countries with shortage is an aspect of HRH management research that has been overlooked. Published studies on this specific topic are rare, and unemployment among skilled health workers in
developing countries has been mainly inferred through health personnel out-migration studies (6-8).

We sought to document evidence of health worker unemployment in countries with critical shortage. WHO’s broad definition of “health workers” includes anyone “engaged in actions whose primary intent is to enhance health” (1). In the interest of clarity, we mainly restricted our exploration of health worker unemployment to the following cadres who expect a wage for their services: dentists, nurses and midwives, physicians, and pharmacists. Using as our initial sample frame the list of 57 countries identified in the World Health Report 2006 as facing HRH crisis, we expanded our search to all Sub-Saharan African countries, which except for the Seychelles, qualify all as low-income or middle-income countries (9). We conducted a search of keywords relevant to health worker unemployment and health workforce shortage in CINAHL, Dissertation Abstracts (via ProQuest), Google, and PubMed (see Annex 1). We imposed no time restriction on publication date, and we conducted our search in both English and French in order to capture the universe of evidence available for the most representative group of countries affected by the HRH crisis, the WHO African Region. Given the paucity of peer-reviewed studies on this topic, we relied primarily on the Google’s grey literature search to glean out the evidence.

A recommended practice when conducting reviews is to consult with content experts and stakeholders likely to suggest additional references or to provide important insights on the topic of interest beyond those in the literature (10-11). Although we did not formally include a consultation component to this review, the lead author reached out to the third and most
senior author of this brief for intellectual insight. She in turn, suggested input from the second author, an advisee of hers, whose recently completed Capstone project explores the employment status of recent medical graduates in the Democratic Republic of the Congo (12).

2. Findings

Health worker unemployment in LMICs with alleged shortage is understudied by scholars and mostly reported by the media. We know of the existence of unemployed health workers in HRH deficient countries largely from anecdotal reports, headlines news, and blog entries (Annex 2). Discussing the challenge of HRH underutilization in Africa, labor economists Andalon and Fields state that there is not enough credible evidence to establish that health worker unemployment in African countries exist (13). Yet, in the same edited volume, Soucat and Scheffler contend without providing any figures that “Kenya and Nigeria have large numbers of unemployed health workers” (14). This contradiction stems partly from the lack of universal agreement of who counts as a health worker and from the methodological differences in collecting health workforce data (15). In this section, we highlight the evidence found in the scientific and grey literature.

Prevalence of health worker unemployment

One of the most dramatic examples of health worker unemployment in the midst of a healthcare crisis was reported in South Africa in the early 2000’s where there were 32,000 unfilled posts in the public sector for nurses while reportedly 35,000 registered nurses were either unemployed or inactive (16). However, upon close examination, this early evidence
appears questionable. These figures were first reported by Dumont and Meyer in a popular chapter from the 2004 OECD’s Trends in International Migration entitled “The international mobility of health professionals: an evaluation and analysis based on the case of South Africa” (16). These figures were subsequently cited by the seminal 2006 World Health Report (1). However, no reference is provided in both publications as to the primary source of these disquieting data.

At the time, WHO did not consider South Africa as a country facing a health worker crisis despite its immense HIV/AIDS plight and the toll it has taken on its health workforce (1). Since then, headline-grabbing stories of jobless South African doctors, nurses, and pharmacists are frequent (Annex 2). A recent article by the Johannesburg-based Bhekisiza Center for Health Journalism suggested that there were more than 40,000 vacant posts in South Africa’s public health sector in 2017 attributable mostly to staffing moratoria by provincial governments (17). However, there are conflicting accounts on the extent of unemployment resulting from the freeze, and inadequate information on the categories of health-related positions involved (18). Circumstantial evidence from local media suggests that clinical associates (19), dietitians and nutritionists (20), nurses and midwives (21), pharmacists and physicians (22) are all affected at varying degree by unemployment in South Africa. As a partial remedy to unemployment, the South African national government decided in 2018 on an emergency hiring plan involving “2,200 critical medical posts” (23).

Although we use the terms HRH deficiency and HRH shortage interchangeably in this review, it is noteworthy that health economists define HRH shortage as the gap between the funding for
health personnel and the number of available health workers, and HRH deficiency as the gap between health worker needs and actual numbers of health workers (14). Going by these distinctions, all African countries are HRH deficient, but true shortage exists in only four African countries, namely Ethiopia, Malawi, Mozambique, and Zambia, according to Soucat and Scheffler (14). Yet, even in these four countries, reports of precarity and unemployment among health workers are not uncommon.

In April 2019, medical interns and final year medical students of Jimma University and Arsi University in Ethiopia took to the street to express their frustrations (24). Their demands included improved working conditions during medical rotations, paid internship, and clarity about their absorption into the workforce post-graduation. Addis Standard, a local newspaper, quoted a demonstrator as saying: “Currently, more than 500 medical students with various skills in medical field are looking for job opportunities. We are asking the government to assign us so we can serve our country” (24). It is not clear if these job seekers are final-year medical students who have yet to complete their internship but are already looking for posts.

Nonetheless, job-related anxiety and mere contemplation of potential unemployment among Ethiopian health workers is both troubling and instructive. During the last decade, Ethiopia embarked on a massive effort to recruit, train, and retain its health workers through its well-documented health extension program and the tripling of the production of medical officers and doctors (14, 25). A recent study predicted an upcoming HRH crisis in Ethiopia stemming not from shortage, but rather from surplus and unemployment of medical graduates in the near future (26).
In Malawi, a November 2018 headline from the *Nyasa Times*, a local online news, reads: “High rate of unemployed health workers worries stakeholders” (27). According to this source, Malawi’s paradox of acute health worker shortage and unemployment was magnified after the government scaled down mass recruitment in the civil service in 2015. Since then, the number of unemployed health workers has exploded, with more than 2,000 nurses and midwives without a post, up to two years post-graduation (27). Of a 2016 graduating class of roughly 250 nursing students, “less than two dozen of the graduates now have jobs in health care” in a country with vacancy estimates ranging from 55% among all public health sector positions to 67% among frontline clinical staff (28). The prolonged state of unemployment has led to an intensification of precarity, with unemployed and vulnerable nurses compelled to accept meager “locum and student allowance” and even to provide sexual favors in exchange for employment (28).

Malawi’s growing health worker unemployment reflects the limitation of interventions that rely primarily on foreign funding sources. To address its health workforce crisis, Malawi launched an “Emergency Human Resources Programme” supported by the United Kingdom’s Department for International Development in 2005 to expand health workforce training and scale up health worker recruitment into the Ministry of Health and faith-based institutions (29). The program is credited to have slowed down migration and incentivized the retention of health workers through salary increase. Between 2004 and 2009, the number of graduates from Malawi's four main health training institutions increased from 917 to 1,277 (30), and the number of professional health workers in the civil service from 5,453 to 8,369 (29). However, the
sustainability of this successful program was compromised after interruption of donor support (29-30).

Among the four African countries cited by Soucat and Scheffler as the only ones with true health workforce shortage, health worker unemployment was hardest to evidence in Mozambique. We could not find any grey data on health worker unemployment this Lusophone country. A 2012 observational study exploring the employment status and mobility patterns of Mozambican-trained physicians found no unemployment in a sample of 730 doctors who graduated between 1980-2006 (31). It is reasonable to believe that at this writing, health worker unemployment in Mozambique is not significant. However, in neighboring Zambia, evidence of unemployment among nurses is emerging. A May 2019 opinion piece in The Zambian Watchdog reads: “Nurses and teachers are languishing with their qualifications waiting to be posted unfortunately the government is blind and deaf to hear their cries” (32). In a 2010 interview with the International Nursing Review, Mireille Kingma, Former Director of the International Centre for Human Resources in Nursing suggested that unemployment was the main driver of international migration among new nursing graduates in Zambia (33).

Within the WHO African Region, the latest evidence of health worker unemployment comes from the Democratic Republic of the Congo (DRC) where N’Simbo and colleagues estimated a 45% (n=252) unemployment rate from a sample of 566 physician respondents who graduated from medical schools in the DRC between 2007 and 2018 (12). Of those with employment, 49 doctors were working part-time, a few of them not as physician. This suggests that the absolute majority (53%) of the sample was either unemployed or working part-time. Overall, 49% of the
entire sample was unemployed for at least one year. Generalists comprised 96% of the study sample, which suggests that lack of specialty training may be a main determinant of unemployment among Congolese medical graduates. In fact, 17% (n=42) of the unemployed doctors were pursuing specialization. Although the findings from this recent study have not yet been published to be fully interrogated, such a large proportion of unemployed among medical doctors in a country competing for skills and rife with unmet health need should give us pause.

Of the LMICs outside Africa experiencing both health worker unemployment and shortage, two countries from the WHO South-East Asia Region stood out: Indonesia and India (Annex 3). Unemployment in Indonesia appears to affect largely nurses. Data from the National Board for Placement and Protection of Indonesian Overseas Workers suggests that more than 31,000 nurses were unemployed in 2016 in Indonesia (34). In India, large numbers of Ayush graduates, dentists and pharmacists, along with nurses and physicians are affected by unemployment (Annex 3). More than 3,000 qualified dentists were reportedly jobless in 2017 in the state of Jammu and Kashmir (35). Meanwhile in Rajasthan, 38,000 pharmacists were competing for <1,500 recently created posts in the public sector in 2012 (36).

**Determinants of health unemployment**

HRH unemployment in many LMICs with deficiency is driven largely by budgetary constraints. Across most countries surveyed, wasteful management of available resources and limited absorptive capacity of the public health sector played a preponderant role in the long-term unemployment of qualified health workers. In South Africa, delayed posting of graduates after
mandatory community service, hiring freezes by provincial governments, and shunning of rural and remote locations by recent graduates are leading factors of unemployment (17-22).

Unemployment is also determined by overproduction of Ayush doctors in India (37) and nursing graduates in Indonesia (38), and by the sub-standard quality of medical graduates in the DRC—where large numbers of NGOs operate and prefer to recruit foreign-trained medical graduates at the expenses of locally trained Congolese doctors (12). In Kenya, physician unemployment appears to be essentially a consequence of political dynamics between organized labor and the government. Strike and mass resignation of physicians and the Kenyan government’s refusal to reinstate the protesting doctors after the strike has ended fuel unemployment (39). The Kenyan government chose instead to import foreign doctors from neighboring Tanzania and from Cuba (40-41). In most of the countries surveyed, generalists are more susceptible to unemployment than specialists, and nurses appear to be more vulnerable to unemployment than medical doctors.

3. Discussion

The goal of this review was to document evidence of health worker unemployment in LMICs with shortage. As we noted earlier, shortage suggests an availability of funding for health personnel amidst scarcity of health workers, potentially leading to inflationary pressures on wages, overcrowding of the public sector, and “brain raid” or poaching of health workers from other sectors or from abroad (14). This is hardly the case in most LMICs. By and large, LMICs are HRH deficient. Despite their deficit or need for more skilled health workers, many LMICs reportedly experience budgetary constraints which impacts on their ability to recruit more
health workers in the public sector and to incentivize their posting and retention in rural or remote areas where the need is often greatest. Effective HRH management and policy requires better data, and HRH shortage and deficiency require different policies tailored to each country’s specific situation and economy (14). Hence, the policy options suggested here are essentially intended to stimulate discussion and are by no means prescriptive.

- **Policy option 1**

  *Support research to assess the true magnitude and the determinants of health worker unemployment in LMICs with shortage or deficiency*

Data dearth limits the impact of any potential policy. Six year ago, labor economists Andalon and Fields (13) expressed skepticism about HRH unemployment in African countries and urged for better data to examine the evidence more rigorously. “Available evidence does not allow us to be certain about unemployment in African countries. To the extent that there is unemployment, it is necessary to diagnose its magnitude, types, and causes” they said. Six years later, the quality of evidence is still wanting. Figures on unemployment gleaned out mostly from the media cannot be trusted and should not be used to inform policy. What is needed is a body of proof which can only be obtained through empirically grounded research, using both quantitative and qualitative data from primary sources. As Ahmat and colleagues noted aptly, “major efforts should be put in every country to organize sound censuses of all health workers through workforce surveys. These could provide an evidence base to create more relevant benchmarks, adjustable to local needs and epidemiology, perhaps allowing for
assessments of the quality of the health worker stock” (15). Recent empirical evidence from the DRC reveals large scale (53%) unemployment and underemployment among graduates from local medical schools (12). Such research should be supported and expanded to include other categories of health workers and should be replicated across several LMICs with HRH shortage or deficiency.

- Policy option 2

_Incentivize health workers to practice in rural and remote areas_

Health workforce deficiency is evidenced mainly by rural-urban maldistributions. In most LMICs with deficiency, the geographic distribution of health workers is highly skewed toward urban areas. In Uganda, for example, the physician density in urban areas (4.5 doctors per 10,000 persons) is 20 times higher than in rural areas (0.2 doctor per 10,000 persons) (42). In India, nearly “three-fourth of the total number of dentists are clustered in urban areas, which house only one-fourth of the country’s population” (43). Reportedly, many of these urban dentists are unemployed and can be found eking out a living as call center employees in many of Bangalore’s business processing outsourcing (BPO) units. Unemployed but willing health workers who want to practice healthcare and are actively looking for opportunities should be hired and deployed in rural and remote communities where they are needed most. Policy that creates incentives for health workers to practice in rural areas should be promoted. Such policy should address wage disparity between urban and rural health workers. To be truly effective, however, such policy must be informed by social and behavioral theories of attachment, place
identity, and sense of community which provide insight into the processes that bond individuals with specific communities, places and spaces (44-45). Such informed policy would likely enable the production and retention of health cadres most likely to serve in impoverished rural communities.

- Policy option 3

  *Foster a culture of wellness where health promotion and disease prevention are valued as much as (or even more than) allopathic treatment*

  “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (46). If this classic definition of health by WHO is to have any relevance >70 years after its initial iteration in 1948, LMIC’s governments and stakeholders must begin to prioritize health promotion and disease prevention. Health promotion and disease prevention programs focus on keeping people healthy rather than intervening after an injury or the onset of an illness. Discussions about health worker shortage or deficiency in LMICs essentially arise from concerns about access to medical treatment. While no doubt skilled health workers are essential for a functioning health system, the need for an increasingly greater number of them will be lessened significantly if people adopt healthier lifestyles. With the rapid spread of chronic diseases in developing countries, the need for health policies that actually promote health and does not merely facilitate access to healthcare treatment is becoming more pressing. Governments and donor communities should increase their
commitments to activities that foster a culture of health and wellness (e.g., promotion of sport, nutrition education, hefty taxation on tobacco products and sugary drinks, etc.).

4. Conclusion

In this policy brief, we sought to document evidence of unemployment among health cadres in LMICs with shortage through a review of the literature. Notwithstanding the current limitation of the scientific literature, we documented enough circumstantial and few empirical evidences of health worker unemployment in several African and South-East Asian countries. More credible and primary data are needed to better estimate the prevalence and examine the determinants of health worker unemployment in the countries in question. Better data are critical for developing informed and effective policy tailored to the specific situation and political economy of each country. Urban-rural disparity of health workers is a universal theme of the review that should be addressed by every policy. As behavioral and public health scientists, we encourage governments and relevant stakeholders to proactively prioritize health enhancement and wellness promotion programs as a way to reduce the health worker crisis in LMICs.
5. References


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    sectional study of employment status of recent physician graduates in the Democratic
    Republic of Congo. Abstract submitted to the 2019 American Public Health Association
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force on 7 April 1948. Available from: https://www.who.int/about/who-we-are/constitution.
Annex 2. Search strategy and results

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<thead>
<tr>
<th>Subject heading 1</th>
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<td>Unemploy* OR jobless*</td>
<td>AND</td>
<td>Health work* OR Healthcare work* OR Health care work* OR Health labor* OR Health labour* OR Health personnel OR Health profession* OR Human resource* OR HRH OR Dentist* OR Doctor* OR Physician* OR Pharmac* OR Nurs* OR Midwi*</td>
<td>AND</td>
<td>LMIC* OR Low-income countr* OR Low-income nation* OR Middle-income countr* OR Middle-income nation* OR Resource-limited countr* OR Resource limited countr* OR Resource limited nation* OR Resource-limited setting* OR Resource limited setting* OR Developing countr* OR Developing nation*</td>
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PubMed Central (PMC) search builder sequence

Search ((((((( (((unemploy*) OR jobless*)) AND ((((((human resource*) OR HRH) OR "health personnel") OR "health profession**") OR "health work**") OR "healthcare work**") OR "health care work**") OR dentist*) OR doctor*) OR physician*) OR pharmac*) OR nurs*) OR midwi*)) OR "health labor**") OR "health labour**") AND ((((((LMIC*) OR "low-income countr**") OR "low-income nation**") OR "middle-income countr**") OR "middle-income nation**") OR "developing countr**") OR "resource-limited countr**") OR "resource-limited nation**") OR "resource-limited setting**") OR "resource limited setting**") OR "developing nation**") AND ((shortage*) OR defici*) Sorted by: Best Match

Search items found: 16

Annex 2. See PDF file
**Country** | **Health worker type** | **Quantitative and qualitative evidence** | **Contributing factors to unemployment** | **Action taken or proposed policy** | **Sources**
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**Uganda** | Nurses | A meeting just ended with the minister... and other stakeholders and our clearance has been released... | • Delayed posting of recent nursing graduates to public health facilities. | • Nursing graduates formed the Coalition of Unemployed Banned Diploma Nurses (CUBDN) to pressure government to accelerate their recruitment. | Unemployed banned diploma nurses to start work July 1, 2017 (Graphic Online, March 4, 2017)
| | | ...the Uganda Nurses Association (UNA) in Uganda said there was shortage of about 3,400 staff nurses in state hospitals. | • Insufficient absorptive capacity of public (and private) health sector(s). | • UDN members picketed at the Ministry of Health for two days and two nights. | UNA “banned sector campaign” over “urgency in the health sector” (Daily Nation, Apr. 5, 2017)
| | | • Low prioritization of nurse recruitment by Ugandan State Government (“Department of Health and Family Welfare” continues to set up new health centers and re-grades existing ones. But they could only create 17 posts of staff nurses in 35 years.”) | • Government cleared all 4432 nurses for posting in public health facilities across Uganda. | UNA reveals shortages of 3438 staff nurses, wonders on creation of 17 posts of staff nurses in 25 years.” (Daily Nation, Jul 3, 2015)
| **India** | Nurses | With “more than 6,000 unemployed trained nurses” under its ego, said the Indian Nurses Association (INA) of Nagaland... said there was shortage of about 3480 staff nurses plus 20% nurse reserve in hospitals in the state, and strangely the government could only create 17 posts of staff nurses in 35 years.” | • Insufficient absorptive capacity of public (and private) health sector(s). | • UDN “banned sector campaign” over “urgency in the health sector” (Daily Nation, Apr. 5, 2017) | UDN “banned sector campaign” over “urgency in the health sector” (Daily Nation, Apr. 5, 2017)
| | | “At least 1,963 medics are being recruited to work at one hospital alone in Libya.” (Health Minister). | • Lack of commitment of state government to dental care program and unemployed dentists’ welfare. | • Jobless dentists petitioned government to create dentist posts in primary health centers “to keep dental diseases among rural population under check and give jobs to the skilled work force.” | Health Minister (Feb 19, 2017)
| | | “One Indian eastern nation. But public hospitals are very short staffed.” | • Lack of funding. | • Planned protest by the Pharma Health Welfare Council (PHWC) to demand an increase in the number of vacancies. | Health Minister (Feb 19, 2017)
| | | “[We must resolve the problem of] more than 1,200 unemployed doctors among them fresh graduates.” | • Unofficial hiring freeze fueled by austerity measures. | • Proposed “increase in the intake capacity of Medical Colleges in both Jammu and Kashmir provinces” | Lack of doctors, admits Govt. (Kashmir Monitor, March 6, 2016)
| **Physicians** | **There are 28,000 pharmacists** registered with Rajasthan Pharmacy Council and majority of them are (competing) for 14,787 vacant posts created by the state government.” | • Unemployed pharmacists being forced to choose between unemployment and jobs other than their skill. | • Planned protest by the Pharma Health Welfare Council (PHWC) to demand an increase in the number of vacancies. | Lack of doctors, admits Govt. (Kashmir Monitor, March 6, 2016)
| | | “[We must resolve the problem of] more than 1,200 unemployed doctors among them fresh graduates.” | • Lack of commitment of state government to dental care program and unemployed dentists’ welfare. | • Jobless dentists petitioned government to create dentist posts in primary health centers “to keep dental diseases among rural population under check and give jobs to the skilled work force.” | Health Minister (Feb 19, 2017)
| **Malawi** | Nurses and midwives | At least 2,280 nurses and midwives in Malawi, some having graduated as far as two years ago, remain unemployed in public health facilities in the country are facing acute shortage of health workers.” | • Over-production of health graduates in Malawi Prisons | • Government stopped mass recruitment of staff into the civil service in 2015 due to lack of funds. | Sources
| | | • Insufficient absorptive capacity of public (and private) health sector(s). | • Government stopped mass recruitment of staff into the civil service in 2015 due to lack of funds. | • National Organization of Nurses and Midwives (NOMA) called on Malawian government and development partners to prioritize the hiring of unemployed nurses and midwives. | Sources
| **South Africa** | Nurses | “We need 40% more clinical assistants: the country’s worst class of health workers, are still looking for work” says the Professional Association of Clinical Assistants in South Africa (PACASA).” | • Unofficial hiring freeze fueled by austerity measures. | • Medecins Sans Frontieres: “Women and girls are at risk” (Mail and Guardian, Feb 23, 2017) | Sources
| | | “One Indian eastern nation. But public hospitals are very short staffed.” | • Lack of funding. | • Planned protest by the Pharma Health Welfare Council (PHWC) to demand an increase in the number of vacancies. | Lack of doctors, admits Govt. (Kashmir Monitor, March 6, 2016)
| | | “One Indian eastern nation. But public hospitals are very short staffed.” | • Lack of funding. | • Planned protest by the Pharma Health Welfare Council (PHWC) to demand an increase in the number of vacancies. | Lack of doctors, admits Govt. (Kashmir Monitor, March 6, 2016)
| **Physicians** | The Kenya Medical Practitioners and Dentists’ Union (KMPDU) maintains that 2080 Kenyan doctors are unemployed. The number is set to reach 4054 by May when the current cohort of medical graduates clear the programme, according to KMPDU.” | • Insufficient absorptive capacity of public (and private) health sector(s). | • Government stopped mass recruitment of staff into the civil service in 2015 due to lack of funds. | • National Organization of Nurses and Midwives (NOMA) called on Malawian government and development partners to prioritize the hiring of unemployed nurses and midwives. | Sources
| | | “One Indian eastern nation. But public hospitals are very short staffed.” | • Lack of funding. | • Planned protest by the Pharma Health Welfare Council (PHWC) to demand an increase in the number of vacancies. | Lack of doctors, admits Govt. (Kashmir Monitor, March 6, 2016)
| **Nurses** | The Centre for the Promotion of Reproductive Rights (CPRR) in South Africa has been urged to address the shortage. | • Insufficient absorptive capacity of public (and private) health sector(s). | • Government stopped mass recruitment of staff into the civil service in 2015 due to lack of funds. | • National Organization of Nurses and Midwives (NOMA) called on Malawian government and development partners to prioritize the hiring of unemployed nurses and midwives. | Sources
| **South Africa** | Nurses | “We need 40% more clinical assistants: the country’s worst class of health workers, are still looking for work” says the Professional Association of Clinical Assistants in South Africa (PACASA).” | • Unofficial hiring freeze fueled by austerity measures. | • Medecins Sans Frontieres: “Women and girls are at risk” (Mail and Guardian, Feb 23, 2017) | Sources
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| **Clinical associates** | | “More than 40 clinical associates: the country’s worst class of health workers, are still looking for work” says the Professional Association of Clinical Assistants in South Africa (PACASA).” | • Unofficial hiring freeze fueled by austerity measures. | • Medecins Sans Frontieres: “Women and girls are at risk” (Mail and Guardian, Feb 23, 2017) | Sources
| | | “One Indian eastern nation. But public hospitals are very short staffed.” | • Insufficient absorptive capacity of public (and private) health sector(s). | • Government stopped mass recruitment of staff into the civil service in 2015 due to lack of funds. | • National Organization of Nurses and Midwives (NOMA) called on Malawian government and development partners to prioritize the hiring of unemployed nurses and midwives. | Sources
| | | “More than 40 clinical associates: the country’s worst class of health workers, are still looking for work” says the Professional Association of Clinical Assistants in South Africa (PACASA).” | • Unofficial hiring freeze fueled by austerity measures. | • Medecins Sans Frontieres: “Women and girls are at risk” (Mail and Guardian, Feb 23, 2017) | Sources
| **Various health workers** | | In February 2017, national health department director general Mabedlo Precious Motsoaseng confirmed to Parliament that there were more than 40 000 vacancies outstanding” | • Harming nurses fueled by austerity measures. | • Planned protest by the Pharma Health Welfare Council (PHWC) to demand an increase in the number of vacancies. | Sources
| | | “One Indian eastern nation. But public hospitals are very short staffed.” | • Insufficient absorptive capacity of public (and private) health sector(s). | • Government stopped mass recruitment of staff into the civil service in 2015 due to lack of funds. | • National Organization of Nurses and Midwives (NOMA) called on Malawian government and development partners to prioritize the hiring of unemployed nurses and midwives. | Sources
| **Uganda** | Nurses, midwives, and physicians | “Every year, at least 230 medical students graduate from Ugandan universities, more than in any East African nation. But public hospitals are very short staffed.” | • Harming nurses fueled by austerity measures. | • Planned protest by the Pharma Health Welfare Council (PHWC) to demand an increase in the number of vacancies. | Sources
| | | “One Indian eastern nation. But public hospitals are very short staffed.” | • Insufficient absorptive capacity of public (and private) health sector(s). | • Government stopped mass recruitment of staff into the civil service in 2015 due to lack of funds. | • National Organization of Nurses and Midwives (NOMA) called on Malawian government and development partners to prioritize the hiring of unemployed nurses and midwives. | Sources

Annex 3. Assortment of circumstantial evidence of unemployment among health workers in various low-income and middle-income countries with alleged shortage