Improving Access to Care among Underserved Populations: The Role of Health Workforce Data in Health Workforce Policy, Planning and Practice

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Abstract

Universal health coverage (UHC) is central to the post-2015 development agenda. In Namibia, optimal organization of HIV and high-priority health services requires robust, policy-relevant health workforce evidence. This paper examines Namibia's use of the Workload Indicators of Staffing Need (WISN) tool, which estimates staffing requirements based on health facility workload. Namibia's public health sector applied WISN regionally and nationally. We analyzed four health workforce decision-making scenarios (staff redeployment, scarce skill allocation, staffing norms and task sharing) and used spatial analytic techniques to consider facility under/overstaffing in association with regional HIV prevalence, finding significant staff shortages in densely populated regions with high HIV burdens. Innovative use of WISN results by health systems managers and policymakers can help rationalize staff deployment, provide concrete information on staffing needs and model the impact of potential policy changes. These examples illustrate WISN's value for policy and practice decisions that can further global commitments to achieve UHC.

Background

Globally, efforts are underway to define the post-2015 development agenda. For the health-related goals, the cornerstone is country movement toward universal health coverage (UHC), which aims to ensure that all people obtain the health services they need without suffering financial hardship. The global community has also reached a "defining moment" in its response to HIV, as ending the epidemic becomes an attainable goal (WHO 2014a). The relationship between UHC and HIV is closely interconnected, according to the WHO (2014a), which notes that the global response to HIV has been a trailblazer for UHC (WHO 2014a). In settings where UHC or conditions approximating universal coverage are lacking, the uneven distribution of health services and resources will typically result in inequities and underserved populations.

The UHC agenda requires attention to country-level human resources for health (HRH) needs (WHO 2014b). Nearly a decade ago, the WHO (2006a) suggested that 2.28 health workers (physicians, nurses and midwives) per 1,000 of the population represents the HRH threshold necessary to achieve 80% population coverage to provide attended childbirths and immunizations, which are core Millennium Development Goal health indicators. According to some, however, this "minimalist" threshold vastly underestimates meeting population health needs and required HRH stock, masks regional/national disparities and ignores shortages of other cadres (O'Brien and Gostin 2011).

Health worker shortages and imbalances represent a particular challenge in Africa, where three-fifths (63%) of the WHO-designated HRH crisis countries are located (Mdege et al. 2012; Moosa et al. 2014;

Naicker et al. 2009; O'Brien and Gostin 2011; WHO 2006a and 2006b). Namibia has a clear commitment to achieving universal access to care (Ministry of Health and Social Services [MoHSS] 2010). The public health sector has been planning for the redesign of the MoHSS's organizational structure and staffing to improve healthcare equity, access and quality. In this context, the global conversations about HRH and UHC are highly salient. Although Namibia meets the minimal WHO health worker density threshold for nurses and midwives (2.775/1,000) (WHO 2014c), professional nursing and other cadres of health workers are disproportionately distributed within the country, with some facilities and regions severely understaffed (McQuide et al. 2013). Namibia reports 0.374 physicians per 1,000 (WHO 2014c), considerably higher than many other African countries (Kinfu et al. 2009), but inadequate in number given population health needs and demands and the increasing availability of sophisticated interventions that require physician skills. The high attrition rates of health workers from practice in Namibia are also cause for concern (African Health Observatory [AHO] and WHO 2014; MoHSS 2009).

To optimize the organization of HIV and other high-priority health services in Namibia, decision-makers desperately need robust and policy-relevant health workforce evidence (Callaghan et al. 2010). This paper contributes to the evidence by examining Namibia's use of the Workload Indicators of Staffing Need (WISN) method (Shipp 1998; WHO 2010), a WHO human resources management tool that can be used to guide HRH decision-making, as well as promote UHC objectives. Using quantitative, qualitative and geo-spatial representations of Namibia's WISN results, we analyze five scenarios that illustrate how the WISN method can provide immediately useful information and data to health systems managers and policymakers seeking to promote UHC access, equity and quality (WHO 2014a).

The WISN Method

In Namibia, IntraHealth International (through funding by the U.S. Agency for International Development [USAID]) supported the MoHSS in carrying out first a regional pilot and then a national WISN application in all four tiers of the public health sector for physicians, nurses, pharmacists and pharmacist assistants (McQuide et al. 2013). Developed by the WHO, the WISN method estimates the number and types of staff a health facility needs based on actual workload. Key requirements to customize the WISN tool to the Namibian context included defining workload components; setting activity standards (the time it takes a trained, well-motivated member of a particular cadre to perform an action to acceptable professional standards in the context of the country); determining the available working time; and identifying available workload statistics, including outpatient, inpatient and human resources data (WHO 2010). The analysis calculates the required number of full-time equivalents (FTEs) of staff, which is then compared with the number of existing FTEs to produce the WISN ratio. The ideal WISN ratio is 1, indicating that the number of FTEs required is equal to the number available. These steps, and the process that followed, to implement the WISN method in Namibia are described in further detail elsewhere (McQuide et al. 2013). Overall, Namibia's national-scale WISN application highlighted the severe shortage of physicians (and pharmacists), maldistribution of nurses and inflexible staffing norms (McQuide et al. 2013). The policy and practice implications of the results have been widely discussed, raising policymakers' awareness about their utility for evidence-based decision-making.

Use of the WISN method in Namibia has taken place in the context of the tool's widespread use since the late 1990s elsewhere in Africa and Asia. Generally used to calculate health worker requirements and assess workload pressure, the WISN method can be particularly useful to understand "the gap between a policy commitment to an essential package of services and the resources available on the ground" (Hagopian et al. 2012). WISN findings typically highlight the inadequacies of traditional staffing norms, workload variation between comparable facilities, mixed patterns of staffing shortages and excesses and informal task shifting. Although careful applications of the WISN method can generate a rich array of policy- and practice-relevant evidence, few published reports describe whether, or how, WISN results have been used to shape subsequent policy and practice responses. Hospital-based studies in Uganda and Ghana report a small number of outcomes, such as the establishment of minimal staffing needs in Uganda hospitals (Namaganda 2004) and internal redistribution of staff and development of a WISN-informed human resources plan in a Ghanaian hospital (Asamani 2013).

By pinpointing staffing requirements per cadre and facility based on current workload, service statistics and practice norms, WISN results can have immediate and practical implications for staffing. More broadly, given the vast amount of data that a national WISN analysis can generate, it is possible to synthesize and present WISN data in various ways, including displaying data geo-spatially using a geographic information system. In Namibia, the WISN results have been presented in various fora to support management and policy decisions by the Ministry of Health and Social Services Restructuring Committee, as well as by other policymaking bodies. Below we present stakeholder feedback and five examples of tailored WISN analyses that illustrate the versatility of WISN results for a variety of practice and policy decisions. The scenarios highlight decision-making regarding redeployment of staff, scarce skill allocation, staffing norms, task sharing and utilizing geo-spatial analysis.

Redeployment of Staff

WISN analyses can be shaped to focus on individual health facilities as well as larger units of analysis such as districts or regions. In an exercise conducted in one region in Namibia with a perceived maldistribution of health workers, WISN calculations revealed that the district hospital in one of the region's major towns had an excess of 28 nurses, whereas the hospital in another large town 30 km away had a deficit of 20 nurses. Such results illustrate how, with relatively little effort, both hospitals could meet their staffing requirements, an essential step towards providing greater access to services.

In a series of informal conversations between IntraHealth and human resources (HR) managers at the MoHSS in Namibia, HR managers expressed the value of these types of WISN calculations for guiding decisions about staff redeployment. One HR manager confirmed that WISN "…helps you with distribution [of staff]." In southern Namibia, where grape farms attract influxes of seasonal workers during the six-month harvesting periods, one clinic was "overwhelmed," while the nearby health centre was "idling," according to another HR manager at the Ministry. On the basis of the WISN results, district managers recommended a staffing adjustment between the two facilities in their strategic plans.

Scarce Skill Allocation

Given the severe staffing shortages among several cadres of health professionals in Namibia, managers must ensure that staff with scarce skills are deployed to the facilities with greatest need. In one region, for example, the WISN analysis calculated that the required number of pharmacist assistants was 131, although only three pharmacist assistants were actually deployed (Table 1). While acknowledging that a staff shortage of this magnitude cannot be eliminated in a short period, decision-makers can nonetheless use WISN results to decide where to deploy the scarce staff. Where the distances between facilities are relatively small, for example, one pharmacist assistant might cover two or more facilities. Ranking clinics to identify those most in need of pharmacist assistants could enable regional decision-makers to redeploy the limited number of pharmacist assistants currently available to where the needs are greatest, while also informing planning for preservice education and continuing professional development, as well as helping prioritize future staffing decisions as more pharmacist assistants become available.

Table 1. Existing and required pharmacy assistant staff in clinics

Facility	WISN-required pharmacy assistants
Clinic1	**2.69**
Clinic 2	**1.48**
Clinic 3	**0.76**
Clinic 4	**0.58**
Clinic 5	**0.50**
Clinic 6	**0.46**
Clinic 7	**0.23**
Clinic 8	**0.14**

Staffing Norms

Many countries use fixed staffing norms to guide health worker recruitment, budgeting and staffing levels at public health facilities. Staffing norms are often determined by facility type and scope of services expected at a given facility level. However, staffing norms based only on institutional size or catchment population size cannot account for the many other factors that shape demand, need and use of health services (Ozcan and Hornby 1999). WISN results incorporate actual use of health services at a given facility. Additionally, static norms ignore distinctions between high-uptake and low-uptake facilities, whereas WISN results allow policymakers to consider staffing norms in light of actual levels of service use, or even to determine whether an individual facility should be reclassified as another type of facility based on use.

Table 2 shows WISN-calculated staffing requirements for nurses at clinics, health centres and district hospitals, sorted into subcategories within each facility type. For the staffing range represented by each subcategory, we used the median required FTE to express a staffing recommendation for that subgroup. For example, of the 278 clinics in Namibia, 63% require just one to three nurses, which is consistent with Namibia's existing 10-year-old staffing norms of two nurses per clinic. However, another 13% of clinics require five to nine nurses (median = 7) and 8% require nine or more (median = 12). Similarly, at health centres and district hospitals, there are no single staffing norms that would meet the needs of most facilities. What is evident from parsing the WISN data in this manner is that using one staffing norm for each facility type does not sufficiently address the variations in staffing requirements displayed by all facilities within that category of facility. When some clinics require only one nurse and others require up to 26, setting a norm of four nurses per clinic fails to address the staffing needs of a sizeable subset of clinics in the country.

This type of WISN analysis also raises the question of whether a clinic requiring over nine nurses should continue to be considered a clinic or should be reclassified as a health centre.

Namibia's MoHSS has not yet implemented the WISN-recommended staffing norms nationwide. However, in several specific cases, this information has supported requests for additional positions at specific facilities. For example, after the medical superintendent at an intermediate hospital used the WISN data to advocate for more physicians, the Ministry approved additional positions for physicians at the hospital.

Table 2. Nurse staffing requirements by type of facility and workload

Facility type	WISN-calculated staffing requirement (range)	Number of facilities (%)	Staffing recommendation (median)
Clinics (n = 278)	01–3.00	174 (63%)	2
	3.01–5.00	48 (17%)	4
	5.01–9.00	35 (13%)	7
	9.01–26.90	21 (8%)	12
Health centres (n = 34)	3.00–7.00	12 (35%)	5
	7.01–13.00	10 (29%)	9
	13.01–22.00	11 (32%)	11
	57.00	1 (3%)	57
District hospitals (n = 29)	18.00–38.00	9 (31%)	28
	38.01–53.00	11 (38%)	43
	53.01–63.00	4 (14%)	60
	68.00–101.00	5 (17%)	77

Making the Case for a Team-Based Approach to Care

The minimal WHO health worker density threshold was set before the widespread advent of antiretroviral therapy (ART). Countries with high prevalence rates of HIV must manage the high demand for professional health workers, given the goal to maintain hundreds of thousands of people on ART. In Namibia, a "high, generalized and mature HIV prevalence country" with an estimated 14% prevalence among adults aged 15-49 (MoHSS 2013; MoHSS and ICF International 2014; UNAIDS 2013), responding to HIV clinical needs as part of integrated care delivery is a top priority. Among other consequences, the HIV epidemic has had an enormous impact on maternal health in Namibia, where the maternal mortality rate in 2013 was estimated at 385 deaths per 100,000 live births (MoHSS and ICF International 2014). At 13.9%, Namibia has one of the highest rates of reported maternal deaths in Africa associated with HIV (WHO 2014d).

Within the country, the HIV burden varies across Namibia's 14 regions. According to the 2013 Demographic and Health Survey, the seven regions with the highest prevalence (range 16.4% to 30.9%) are all in the more densely populated north (MoHSS and ICF International 2014). Clearly, HIV will continue to place considerable demands on the healthcare system for some time to come. Thus, a significant element of achieving UHC in Namibia involves addressing equitable provision of HIV services.

In 2014, Namibia launched its three-year HIV/AIDS strategic plan (2014–2017). One of its goals is to reduce the rate of new HIV infections by 50% and ensure provision of free, quality integrated HIV services (MoHSS 2014). The plan seeks to accelerate achievement of the UNAIDS and U.S. President's Emergency Plan for AIDS Relief (PEPFAR)-endorsed 90-90-90 treatment targets by 2020 (PEPFAR 2015; UNAIDS 2014), which call for 90% of Namibians to know their HIV status, 90% of HIV-positive individuals to be accessing sustained ART and 90% of ART patients to have a suppressed viral load. Meeting the 90-90-90 targets will be challenging, given the country's chronic scarcity and maldistribution of health workers and the potential to exacerbate understaffing. Considering just ART services, the MoHSS (2013) estimates that 220,317 adults will need services in 2015, an 87% increase from the roughly 118,000 Namibians on ART as of March 2013.

Given the magnitude of HIV healthcare needs in Namibia, the evidence generated by the WISN application could be useful in supporting a rational team-based model of coordinated care that enables each cadre to work at the top of their professional license and skill set. Expanding the scope of practice of professional nurses specific to HIV treatment (McCarthy et al. 2013; Moosa et al. 2014) could substantially increase access to HIV services. Nurse-initiated management of ART (NIMART) has become increasingly pervasive in Africa. A 2014 systematic review of literature on NIMART found moderately strong evidence that quality of care is not compromised by NIMART and that its practice may decrease patient loss to follow-up (Kredo et al. 2014). Evaluation of a NIMART trial in South Africa noted that successful implementation of the approach involves reorganizing health services "to accommodate the…effects of shifts in practice" (Georgeu et al. 2012). This requires carefully rethinking nurse and physician roles and articulating professional scopes of practice so that each professional cadre practices "to the full extent of their skills" (Wilson et al. 2012), within the terms of their professional license. Health professional councils are generally the regulatory bodies responsible for setting scopes of practice and for maintaining licensure requirements for qualified health professionals to protect both the public and professionals.

Namibia's MoHSS (2013) admits that, to date, ART scale-up "has been compromised by lack of adequate competent human resources equipped with the right knowledge and skills to manage ART." The NIMART strategy can enable more efficient use of available HRH for HIV treatment and care (Callaghan et al. 2010). In the context of NIMART, the use of healthcare teams that allow nurses to practice at the top of their education and training provides access to HIV-specific care for otherwise underserved patients, and enables the health system to more efficiently use physicians.

In the absence of WISN or similar modelling tools to estimate clinical skill needs, task sharing policy decisions may fail to fully examine the impact of shifting practices across cadres. In considering the possible rollout of NIMART nationally in Namibia, the WISN results can support a more evidence-based policy decision by modelling the impact of transferring selected clinical practice functions from physicians to nurses prior to implementing the policy change. Specifically, the WISN modelling estimated that an additional 536 physicians would be required to supplement the current 282 physicians in Namibia's public sector if ART remained solely in physicians' purview. However, with changes to allow prescribing of ART by registered nurses through NIMART, and associated policy and practice changes, training and certification, WISN calculations indicate that only nine additional nurses would be required on top of the 4,251 nurses who currently practice in Namibia's public facilities. Given the shortage of physicians and the imbalance across the professional cadres, adoption of NIMART in Namibia makes eminent sense.

Official policy states that only physicians are allowed to enrol patients in ART, with nurses providing subsequent care and treatment for most patients. Under the NIMART strategy currently being considered, registered nurses would take on the practice function of enrolling patients into ART, while continuing to provide care and treatment post-enrolment for all but the most critically ill and complex patients. Using the WISN tool, we estimated the increased workload for nurses that would result if NIMART were implemented in one region with high HIV prevalence. Using data for the period from April 1, 2011 to March 30, 2012, a total of 1,715 new patients had been enrolled in ART in that region, and 213,358 patient care and treatment visits were provided. In the prevailing scenario where only physicians enrol patients in ART (30 minutes per patient) and provide care and treatment for 50% of patients (15 minutes per patient), the WISN standards require 17.38 physician FTEs to deliver the two services. Under that same scenario, nurses spend only 5 minutes per patient on support activities for ART enrolment such as taking blood pressure while also providing care and treatment services for 50% of patients (15 minutes per patient), resulting in a requirement of 16.93 nurse FTEs. The total staffing requirement for the two cadres for this scenario is 34.31 FTEs (Table 3).

Under the alternative NIMART scenario, the WISN standard would be modified to 30 minutes per patient for physicians to enrol 10% of patients in ART, and 15 minutes per patient to provide care and treatment for 20% of patients (Table 3). Registered nurses, on the other hand, would spend 30 minutes per patient to enrol 90% of patients in ART (a five-minute time efficiency), and 15 minutes per patient to provide care and treatment for 80% of patients. The assumption is that physicians would still see the most acute cases, while nurses would care for the majority of less complex patients. Although the total staffing requirement after NIMART would remain unchanged at approximately 34 FTEs, the number of physicians required would decrease from 17.38 to 6.87 FTEs, and the number of nurses would increase from 16.93 to 27.93 FTEs. This staffing requirement aligns more closely with the availability of physicians and nursing cadres in the country.

As this example illustrates, these types of data can assist managers in planning prior to introducing a new strategy. When this information was shared with a high-level Ministry official, he remarked, "I understand, more fully, why nurses have displayed reluctance to adopt the NIMART approach, which they view as adding to their workload without adding more staff." Policies of this type need to be implemented responsibly and in full recognition of the country context. They should be accompanied by appropriate inter-professional training, revision in scopes of

Table 3. Comparison of physician and nurse staffing requirements before and after implementation of NIMART in one region

Task	Pre-NIMART		Task	Post-NIMART	
Physicians	Standard	Staffing required (FTE)		Standard	Staffing required (FTE)
Enrol ART (100%)	30 minutes/patient	0.54	Enrol ART (10%)	30 minutes/ patient	0.05
Provide care and treatment (50%)	15 minutes/patient	16.84	Provide care and treatment (20%)	15 minutes/ patient	6.73
Total physicians		**17.38**			**6.87**
Nurses	Standard	Staffing required (FTE)		Standard	Staffing required (FTE)
Support ART enrolment (100%)	5 minutes/patient	0.09	Enrol ART (90%)	30 minutes/ patient	0.49
Provide care and treatment (50%)	15 minutes/patient	16.84	Provide care and treatment (80%)	15 minutes/ patient	26.94
Total nurses		**16.93**			**27.93**
Total staffing		**34.31**			**34.80**

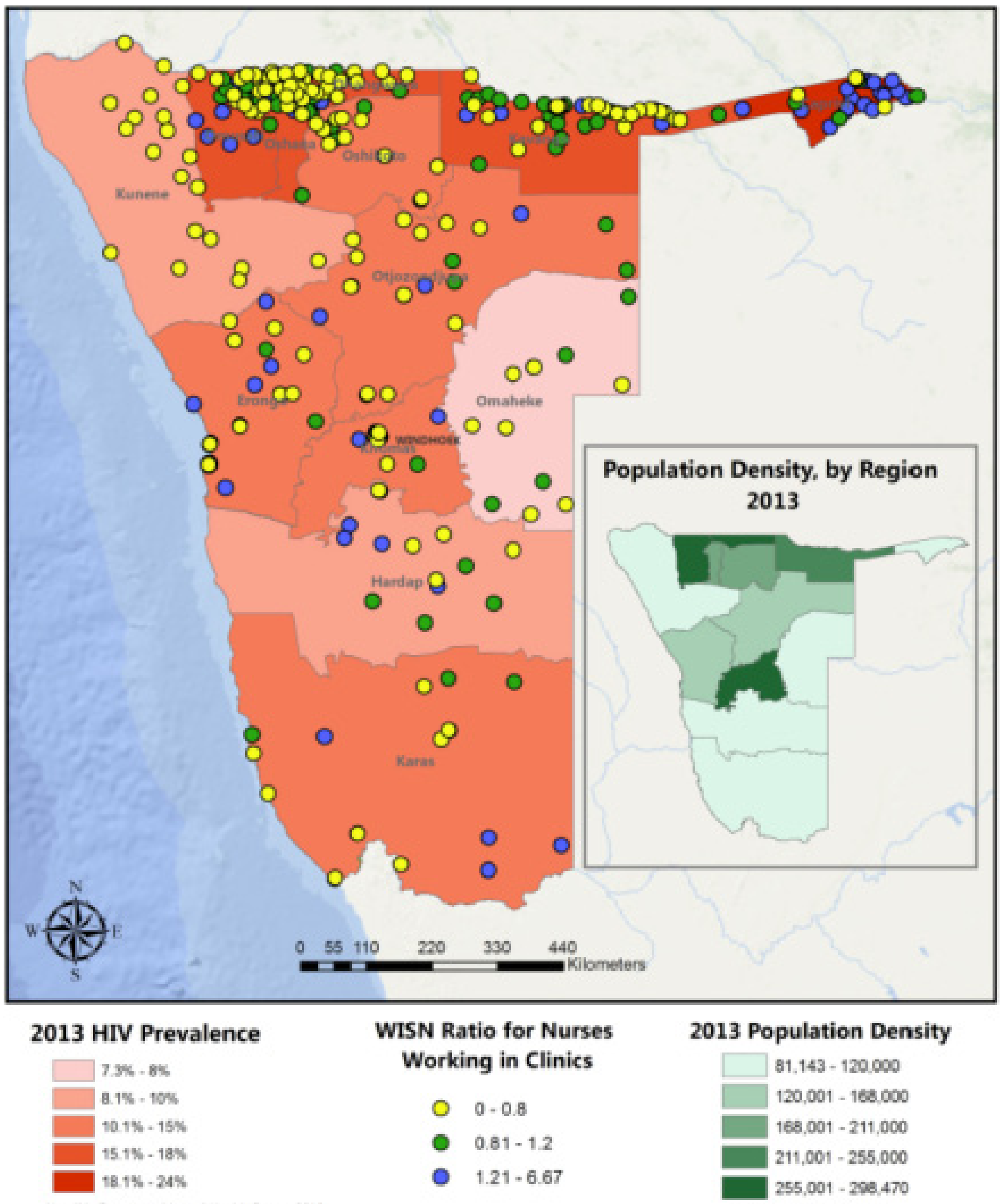
practice, diligent management of team-based healthcare, supportive working conditions and adequate regulatory oversight (Callaghan et al. 2010).

Geographic Representations

Representing health information spatially is a powerful tool that allows decision-makers to quickly examine how different layers of health information (data) are related in space and time. Figure 1 is a geographic representation of the distribution of nurses across Namibia. The map displays several layers of data representing the association between HIV prevalence by region (red choropleth base layer) and the calculated WISN ratio (2014) by facility for nurses (red, green and blue dots).

The red base layer map shows different intensity of colour to display region-to-region changes in HIV prevalence (MoHSS and ICF 2013). A more intense red represents higher HIV prevalence, whereas a lighter shade represents lower prevalence. It is easy to see that the highest prevalence areas are located in the northern part of the country. Similarly, the insert (right side) displays a map of population density by region. The highest population densities in Namibia are also found in the northern regions.

Figure 1. Average WISN ratio for nurses and HIV prevalence, by region



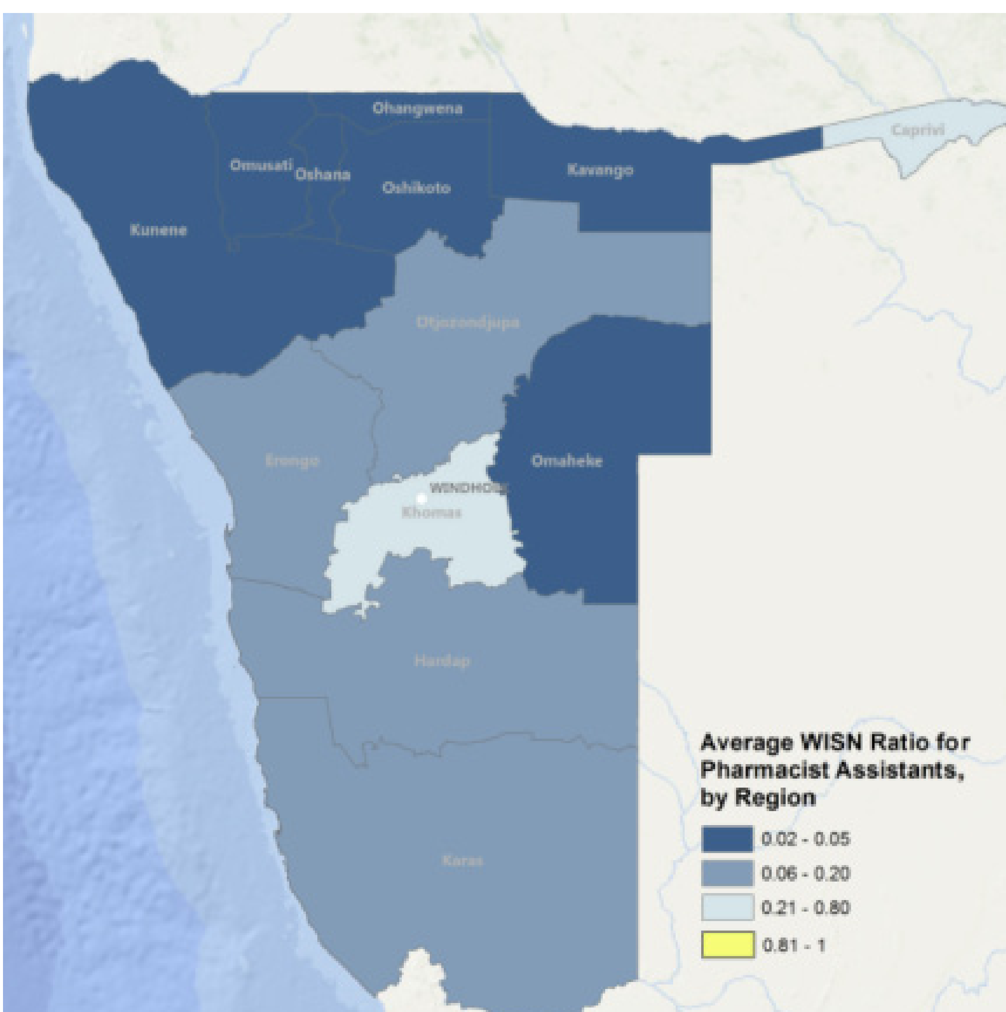
Each coloured circle represents the number and location of a clinic throughout the country. A WISN ratio of 1 represents the ideal balance of health workers to workload. Facilities with a ratio lower than 1 are understaffed and those with a ratio greater than 1 are overstaffed. The farther the variance from 1, the more unbalanced the staffing of the facility. In Figure 1, yellow circles represent understaffed clinics, green circles represent clinics that have a good balance between workload and staff and blue circles represent clinics that are overstaffed. Overall, Figure 1 reveals that the higher populated, northern regions of the country have a higher burden of HIV prevalence. At the same time, most of the clinics located in these regions are understaffed (as indicated by the WISN calculation) and require additional nurses.

Figure 2, a choropleth map of the average WISN ratio by region at all facilities for pharmacist assistants, is an alternative presentation of the data in Table 1. The more intense the colour blue, the more understaffed the region is in pharmacist assistants. The colour yellow is included in the legend to indicate those areas that are adequately staffed; there are none. The need for pharmacist assistants is ubiquitous, but the greatest disparities are in the same northern regions. Both Figure 1 and Figure 2 show that the workload for nurses and pharmacist assistants, particularly in northern regions, significantly exceeds available health workers, leaving clients and patients underserved. Maps showing WISN ratios for physicians and pharmacists would show similar trends.

Discussion

Post-2015, there is agreement that working towards universal health access and coverage is a necessary step to enable countries to decrease health disparities and reach previously underserved regions and subpopulations. In this paper, we provide five examples of how the WISN method can be used to examine and address pressing health workforce needs and ultimately contribute to more equitable access to healthcare. While

Figure 2: Average WISN ratio for pharmacist assistants, by region



examples of WISN calculations exist in the literature, this is one of the few papers that presents innovative ways to use WISN results to influence health policy, planning, management and practice. In Namibia, policymakers confirm the practical utility and policy relevance of WISN results in advocating for increased staffing and making decisions on where best to deploy existing health workers. The medical superintendent of a Namibia state hospital stated, "With the help of WISN, we realize the implication [of HRH needs]…. We started understanding our real needs [and] it helped us to 'get to the bottom' of the problem. Previously we were saying that we needed people. Now we are equipped with an approach, a method."

With the goal to broaden access for underserved populations and also closer to where they live, the WISN method can provide concrete and specific information on current health workforce staffing and distribution. WISN estimates complemented by data on why health workers migrate away from higher-need but remote areas and what would motivate them to stay would be powerful tools to inform putting mechanisms in place to address health worker distribution.

WISN can also model the impact of policy changes. WISN modelling of the NIMART approach demonstrated that if registered nurses are allowed to practice at the top of their education and training in ART prescription and HIV management, the size of the current nursing health workforce in Namibia has the capacity to increase access to lifesaving ART. The overall aim of expanding the scope of practice of select cadres within a healthcare team is to improve quality, increase access and strive for equity, providing "a streamlined, rationalized chain of care that relieves pressure on each worker involved while maintaining quality standards for patients and increasing access to interventions" (Callaghan et al. 2010). At the same time, it is crucial to recognize and respond to challenges such as workload constraints and altered working relationships between health team members (Georgeu et al. 2012). Changes to nurses' scopes of practice must be accompanied by training, appropriate preparation and support.

Under a task sharing scenario, each cadre's scope of practice should be evaluated to ensure that the new duties are included in the official scope before any policy is introduced. Professional councils play a critical leadership role in planning for such policy changes. In Namibia, where NIMART has been piloted on a small scale (MoHSS 2013), the Nursing Council revised nurses' scope of practice in October 2014 to encompass NIMART (Government of Namibia 2014). However, associated training and certification requirements must be set. Before the final NIMART decision is made, multiple actors must give their approval, including the MoHSS, medical and pharmacy councils, the Office of the Prime Minister and the Public Service Commission. Task sharing may also require creation of new cadres of specialized practitioners with clearly defined scopes of practice. The WISN method could also be used to model the impact of expanding practice for other functions that are gaining global attention and acceptance, such as broadening nurses' and midwives' scopes of practice for the provision of family planning (including long-acting reversible contraceptive methods), implementation of Option B+ and provider-initiated HIV testing and counselling.

Considering ways in which WISN results could be further refined and extended, analyses of scenarios such as NIMART could go a step further and demonstrate the cost savings associated with utilizing nurses to provide services. For example, maximizing the use of nurses, whose salaries are lower than those of doctors, will result in cost savings for the health system as a whole.

Another area where WISN data could be useful is to model the FTEs needed in response to changing uptake of services owing to increased demand. For example, countries are making efforts to increase the rates of facility-based births to decrease maternal and infant mortality. In the face of the success of these efforts, staffing needs will increase. WISN analyses should be repeated on a regular basis using updated service delivery rates. Indeed, Namibia's MoHSS has already requested an updated WISN analysis using 2014 figures.

WISN estimates could also be used to respond to emerging health needs, such as the increasing burden of non-communicable diseases or the needs of aging populations. Countries that are considering adding a cadre of health worker new to the setting (for example, nursing assistant, physician's assistant, physical therapist) can use WISN to model required numbers and distribution of the cadre. Finally, the WISN model could be used to forecast staffing needs based on trend analysis to inform future training requirements.

There are some limitations associated with the WISN method. First, while WISN results can be an important tool for planning, if additional resources are not likely to become available to add or redeploy staff, the short-term effect of conducting a WISN analysis may be limited. On the other hand, as the comments of Namibia policymakers illustrate, dissemination of WISN results can raise awareness and change the climate in which health workforce policy decisions are made.

Second, WISN results are only as good as the data they are based upon. WISN modelling depends on accurate and agreed-on standards of the amount of time it should take to provide each type of service (activity standards). If the activity standards are over- or underestimated, the WISN results will over- or underestimate staffing needs. Time-motion studies (Odendaal and Lewin 2014; Zheng et al. 2011) measuring the actual amount of time it takes a provider to deliver services can be compared with the standards set forth in WISN to improve estimates of activity standards. However, time-motion studies also capture "real world" inadequacies. For example, providers may not practice according to accepted standards if their health facility lacks sufficient staff, infrastructure or supplies. The WISN method assumes the time it takes for a trained, well-motivated health worker to perform an action to acceptable professional standards of practice. As more countries adopt the WISN method and expand their capacity to use this health service-based workforce planning tool, internationally accepted service activity standards may be set, helping to avoid over- and underestimates.

Conclusion

The objective of this paper is to demonstrate the myriad ways that WISN estimates can be used to inform health workforce planning and help human resource managers rationalize staff deployment to contribute to achievement of UHC. The WISN tool is readily available and can be used by governments and private, non-profit and faith-based sectors to meet current and future HRH challenges. In today's rapidly changing global health environment – where new treatments are becoming available, new health concerns are emerging and widespread staff shortages continue to prevail – the WISN method is a valuable tool to guide policy and ensure best distribution and availability of health workers who are essential to achieving health and well-being for all.

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