



**Human Resources for Health Challenges in Fragile States:  
Evidence from Sierra Leone, South Sudan and Zimbabwe**

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## Context

Health indicators in fragile and conflict-affected states (FCAS) paint a dire picture for their residents, with no quick-fix solution easily identified. Greater financial and human resources are needed to fill gaps, but training new nurses, doctors, midwives and allied health professionals takes time that many fragile states simply cannot afford. Emigration of health professionals from FCAS can create a negative feedback loop for health outcomes and highlights the important challenges surrounding sustainable human resources for health (HRH) in fragile states.

To shed light on one aspect of the dynamics of creating robust health systems in FCAS, this report looks at the severity of the health workforce crisis in three FCAS: Sierra Leone, South Sudan and Zimbabwe.

The objectives of this report are to:

- Identify key health and human resource indicators in the three countries and situate them in the regional context;
- Identify key training issues with regard to human resources for health; and
- Identify policies in human resources for health and determine their implementation status.

This research will inform a scoping study on diaspora engagement in fragile states being developed in collaboration with the International Organization for Migration (IOM). The study will examine the impact of African diaspora health professionals in short and medium-term placements and test the skills circulation theory in fragile states. This project will build on past North-South Institute work on the implications of the brain drain on the status of health in Southern Africa, as well as numerous policy briefs on gender equity, migration and trade.

## Methods and Limitations

This report is based on desk research and a review of the secondary literature on human resources for health in Africa. The authors drew heavily from the World Health Organization's statistical databases (such as the Global Health Observatory Data Repository), donor-funded health assessments and surveys by the health ministries in the three focus countries.

Constructing a reliable picture of the HRH situation in Sierra Leone, South Sudan and Zimbabwe presents challenges due to the lack of comprehensive and up-to-date data and statistics. Health ministries in these countries suffer from weak health information systems where patient and community health statistics are not regularly collected, analysed and documented. In South Sudan, for example, no systematic survey of the country's human resources for health (HRH) has been conducted since it gained independence in July 2011. In Sierra Leone, the most recent official data on pre-service and in-service training of HRH is from 2003. As a result, available statistics sometimes differ and the secondary literature may not represent the current situation on the ground. This report should be interpreted within these limitations.

## Global Standards on Human Resources for Health

Human resources for health play a pivotal role in the accessibility of health services and the overall population health of any country. Specific benchmarks exist for governments and development partners to ascertain whether or not a country faces a health workforce crisis.

Health worker density is the most widely used indicator. The World Health Organization (WHO) has set a density indicator of 2.28 health care professionals per 1000 population as a minimum threshold for public health access. Countries with densities lower than this are defined as having a critical shortage of health workers. The vast majority of these countries also have less than an 80 percent service coverage rate.<sup>1</sup>

Within that benchmark, significant variance exists between regions regarding the particular skills-mix of doctors, nurses and midwives. For example, average doctor to nurse/midwife ratios in North America and Europe are fairly balanced, (1:1.2 and 1:2.5, respectively), while in Africa there are on average 5 nurses/midwives per doctor (Dal Poz *et al.* 2007). This places a much higher burden on nurses and midwives in already demanding environments and limits the availability of specialized medical services in Africa. Although no global standard exists for an appropriate professional skill-mixing, the aggregate 2.28 density benchmark helps shed light on the capacity of governments to meet very basic health needs.

Investment in HRH development and training is another indicator governments use to gauge progress toward better health outcomes. African governments contribute far less to HRH development as a percentage of total government expenditure compared to more developed regions. African governments spend on average, 29.5 percent of health budgets on HRH, compared to 49.8 percent in the Americas and 42.2 percent globally (Hernandez *et al.* 2006). As discussed in the following micro case studies, Sierra Leone, South Sudan, and Zimbabwe fall near the bottom of the ladder globally in terms of these indicators.

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<sup>1</sup>Speybroecks et al. (2006) refer to deliveries attended by trained health professionals and measles immunizations – two common indicators which reflect levels of maternal, infant and child health – in this definition of “service coverage”.

## Sierra Leone

The civil war in Sierra Leone (1991-2002) killed tens of thousands of people, displaced nearly a third of the population<sup>2</sup> and had a sustained negative impact on population health (Gberie 1998). Sierra Leone's key health indicators vary among reports; however, they are in agreement that the country's population health is among the poorest in the world. In 2010, Sierra Leone had a maternal mortality rate (MMR) of 890 deaths per 100,000 live births, according to the World Health Statistics Report (see Table 1). Other key indicators are equally troubling: infant mortality lies at 114 deaths per 100,000 live births and the under-5 mortality rate is 174 deaths per 100,000 live births. Only 31 percent of births are attended by a trained health professional and women in urban areas are twice as likely to have a health professional present during delivery as their rural counterparts.

Table 1: Overview of key health indicators in Sierra Leone compared to regional and global averages.

Indicator	Sierra Leone			African Average			Global Average		
	Male	Female	Both	Male	Female	Both	Male	Female	Both
Maternal Mortality Ratio <sup>3</sup>	890			620			260		
Life Expectancy (years)	48	50	49	52	56	54	66	71	68
Under five mortality rate <sup>4</sup>	-	-	174	133	121	119	60	59	60
Infant mortality rate <sup>5</sup>	-	-	114	85	74	75	44	41	42
HIV/AIDS Prevalence Per 100 000 population	860			2740			502		
Measles Immunization Coverage for Infants (%)	82			76			85		
Births Attended by a Trained Health Professional (%)	31			48			69		

Source: WHO World Health Statistics 2012. [http://www.who.int/healthinfo/EN\\_WHS2012\\_Full.pdf](http://www.who.int/healthinfo/EN_WHS2012_Full.pdf)

Today, key challenges to accessible health services and better health in Sierra Leone include: an acute shortage of trained health professionals; a significant dichotomy of staff between rural and urban facilities and among professional cadres; and poor access to high quality care, medical technology and equipment. Additionally, as a country with a relatively young population (42 percent of Sierra Leone's population is under the age of 15), the country's burden on health services will only increase in coming years (USAID 2010).

### Human Resources for Primary Health Care

In 2008, the WHO reported that Sierra Leone had a primary health care worker density of 0.39 trained health workers per 1000 population.<sup>6</sup> Sierra Leone's total health workforce is estimated at over 6,000 and in 2008 there were approximately 95 physicians practicing in the country (AHWO 2012). The scarcity of physicians and registered nurses is especially pronounced in rural areas, where 63 percent of

<sup>2</sup> The population of Sierra Leone was estimated at approximately 4.5 million people at the end of the conflict. Estimates in 2009 were approximately 5.5 million.

<sup>3</sup> Number of maternal deaths per 100 000 live births.

<sup>4</sup> Probability of dying by age 5 per 1000 births.

<sup>5</sup> Probability of dying by age 1 per 1000 births.

<sup>6</sup> 'Primary health care workers' is used here to refer to total numbers of physicians, nurses, and midwives (Kinfu et al 2009).

the population reside (SSL 2008). Moreover, the national per capita density for physicians, nurses and midwives has fallen since 2004 and is below one-sixth of that recommended by the WHO (see Table 2).

Table 2: Healthcare personnel (density and absolute numbers in Sierra Leone) compared to the regional averages.

Profession	Number of personnel		Personnel/1000 Population		Primary Health Workers/1000 Population - African Average
	2004	2008	2004	2008	2008
Physician	162	95	0.031	0.02	0.22
Nurse/Midwife	2510	991	0.49	0.18	1.17
Total	2672	1086	0.52	0.2	1.39

Source: Africa Health Workforce Observatory. <http://apps.who.int/globalatlas/dataQuery/reportData.asp?rptType=1>

Vacancies remain high among all primary care cadres with staffing shortages ranging from 40 to 100 percent in hospitals at every service level in rural and urban areas (MoHS 2006). In fact, most rural primary care units are staffed by a combination of maternal and child health aides and state-enrolled community health nurses. A health aide is defined by the government as a semi-literate or illiterate individual trained to assist public health officers at the community level with maternal and child health aides specifically trained to provide midwifery services (MoHS 2006). While training standards and professional certification for maternal and child health aides remain unclear they nevertheless outnumber state-enrolled community health nurses by approximately 6.5 to 1 and provide the majority of services at community health posts (MoHS 2006).

The health system also relies heavily on the services of unregistered traditional birth attendants<sup>7</sup> who provide approximately 85 percent of birth support services in rural areas. According to Sierra Leone's Ministry of Health and Sanitation (MoHS), roughly half (5,100) of all traditional birth attendants are untrained (MoHS 2006) and work on a voluntary basis. Their impact has been controversial with arguments suggesting that they do not positively influence key population health indicators such as infant and maternal mortality rates (MoHS 2006).

The lack of qualified primary care workers, particularly nurses and physicians is further exacerbated by an uneven regional distribution of staff, where 46 percent of personnel are located in the western region alone (MoHS 2009).

#### *Human Resources for Health Development and Training*

In 2010, the total HRH budget of the MoHS was predicted to be between USD \$46 to nearly \$59 million (MoHS 2009), of which only USD \$1.85 million was allocated for HRH training.<sup>8</sup> Although total health expenditure is planned to increase by nearly 40% over the next five years, expenditure on HRH training is set to increase by only 10% to USD \$2.05 million (MoHS 2009). Government investment in training programs for practising health workers is thus particularly limited. In fact, most in-service training is delivered by development partners with no coordination with the Ministry of Health and Sanitation (MoHS 2006).

<sup>7</sup> It is unclear whether or not traditional birth attendants and maternal and child health aides are defined as 'trained health professionals' or are included in the cumulative statistics of the Sierra Leonean health workforce.

<sup>8</sup> HRH training, under the MOHS budget, refers to in-service training of existing HRH staff. Training of new professionals is budgeted by the Ministry of Education, Science and Technology.

Data regarding current production rates for physicians and nurses is unavailable; however, using statistics from 2005, Kinfu et al. (2009) demonstrated that the primary healthcare workforce in Sierra Leone would need to experience a net annual growth rate of 16.1 percent to successfully match demand. At the time, the annual growth rates of the physician and nursing workforces were 0.1 percent and 1.7 percent, respectively. Developing the capacity to substantially grow the workforce remains difficult as training facilities are frequently poorly staffed, under-resourced and have been criticised for being unresponsive to the needs of the MoHS (MoHS 2006, MoHS 2009). Low salaries, poor career opportunities and bureaucratic recruitment processes have also been identified as barriers to retaining staff and increasing workforce production (MoHS 2009).

Although these estimates are based on outdated statistics, they help to contextualize the foundation that the MoHS is operating with today. The introduction of the National Health Strategic Plan is encouraging. It shows that regulated reform of the health system is in progress and many of the challenges facing the development of Sierra Leone's HRH capacity are being identified within a national policy framework.

### *Policy Context*

In 2009, the MoHS released the National Health Sector Strategic Plan 2010 – 2014, designed to: provide a policy and strategic framework to guide HRH development and management; strengthen institutional capacity for HRH policy, planning and management; enhance capacity and relevance of HRH training; upgrade health workers' competencies and performance; and, promote HRH research development (MoHS 2009). It highlighted a number of expected outcomes, including:

- adequately-staffed health facilities with trained personnel;
- improved conditions for service for all staffing cadres;
- effective systems for personnel management;
- effective staff retention measures;
- effective collaboration and cooperation between training facilities and the MoHS; and,
- strengthened local training institutions.

No specific implementation targets were associated with this action plan. In fact, between 2004 and 2008 the primary healthcare workforce density fell to less than one sixth of that recommended by the WHO (see Table 2). Although the government's objective is to achieve equitable access to health services for all Sierra Leoneans and free coverage for new mothers and their infants, government expenditure on health actually fell between 2004 and 2007 (Ensor *et al.* 2008). To address these challenges, public expenditure on HRH<sup>9</sup> is expected to increase by 27 percent between 2010 and 2015 (WHO 2009).

At the same time, the need to diversify health financing has increased dependency on donors, which can be considered a risky business if country-owned sustainable development strategies are to be followed (WHO 2010). Continued reliance on donors and development partners also creates new challenges regarding coordination of services, training needs, and overall strategic priorities.

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<sup>9</sup> Largely staff remuneration costs (90-92 % of total HRH expenditures) (MoHS 2009).

## South Sudan

South Sudan is slowly emerging from over twenty years of civil war and decades of political and social instability. One of the most disheartening results of the conflict can be found in the country's extremely poor health indicators. The conflict left one third of the country's 8 to 12 million people without access to adequate health services, completing the transition from an already weak health system to one in complete ruins (CIA 2012, Rajkotia et al. 2006, RSSNBS 2010).

The country has an average life expectancy of 42 and more than 45 percent of the population is under the age of 15 (CIA 2012). South Sudan's MMR, estimated between 1700 and more than 2000 deaths per 100,000 live births (MoH 2007, Rajkotia et al. 2007), is the highest in the world and nearly three times higher than neighbouring Sudan (see Table 3, NSCSE 2004). Only 5 to 6 percent of births are attended by a trained health professional—thirteen times less than comparable statistics from Sudan (NSCSE 2004, MoH 2006a, MoH 2007)—and a clear contributor to the nation's MMR (see Table 3).

Table 3: Overview of key health indicators in South Sudan compared to regional and global averages.

Indicator	South Sudan (Year)	African Average (Year)			Global Average (Year)		
		Male	Female	Both	Male	Female	Both
Maternal Mortality Rate	1700 <sup>†</sup> - 2054 <sup>*</sup> (2008)	620 (2009)			260 (2009)		
	Both <sup>10</sup>						
Life Expectancy (years)	42 <sup>**</sup>	52 (2009)	56 (2009)	54 (2009)	66 (2009)	71 (2009)	68 (2009)
Under Five Mortality Rate	135 <sup>*</sup> - 250 <sup>**</sup> (2006)	133 (2009)	121 (2009)	127 (2009)	60 (2009)	59 (2009)	60 (2009)
Infant Mortality Rate	102 <sup>*</sup> - 150 <sup>**</sup> (2006)	85 (2009)	74 (2009)	80 (2009)	44 (2009)	41 (2009)	42 (2009)
HIV/AIDS Prevalence (% of Population)	2.3 – 7.4 <sup>‡</sup>	2.74			0.5		
Measles Immunization Coverage for Infants (%)	25 <sup>‡</sup>	76 (2010)			85 (2010)		
Birth Attended by a Trained Health Professional (%)	6 <sup>*</sup> (2006)	48 (2005 – 2011)			69 (2000 – 2010)		
Sources:	<sup>*</sup> Rajkotia et al. 2007, <sup>**</sup> MoH 2006a, <sup>†</sup> MOH 2007, <sup>‡</sup> WHO 2012.	WHO 2012			WHO 2012		

### Human Resources for Primary Health Care

An acute lack of human resources for health is consistently raised as the most critical issue facing South Sudan (MoH 2006a), health worker density is substantially less than one per 1000 population. In 2006, statistics from the Ministry of Health (MoH) estimated a total workforce of around 11,800 (MoH 2006a, MoH 2008, Rajkotia et al. 2006).<sup>11</sup> Although the country has since witnessed the return of many health professionals, there is concern that these workers are in jeopardy of burning out if the human resource base is not expanded quickly (Rajkotia et al. 2006). Additionally, the MoH has concerns regarding the

<sup>10</sup> No sex-disaggregated data are currently available for South Sudan.

<sup>11</sup> More recent data on the total number of health professionals are unavailable.

relatively young composition of the current workforce (only 7 percent of healthcare providers are over 50) and its limited leadership and managerial experience.

At the end of the conflict in 2005, the territory that is now South Sudan faced a severe shortage of midwives: official statistics indicated there were only 20 midwives in the country at the time. Although midwifery training programs have since been introduced in select areas, graduation rates remain relatively low and midwife numbers insufficient. UNFPA (2012) currently estimates that South Sudan has 150 community midwives and less than 10 'diploma midwives'<sup>12</sup> practicing in the country.

This staffing shortfall contributes to numerous other human resource challenges, including:

- minimal coordination between facilities;
- no standardization of quality assurance, service delivery or staff accreditation;
- lack of performance evaluations and continuous professional education; and
- poor quality of existing medical training institutions (MoH 2006a, MoH 2011).

South Sudan's HRH crisis is exacerbated by a severe rural-urban dichotomy in staffing distribution. Although 83 percent of the population lives in rural areas, less than half of all primary health units (about 40 percent) are located in remote areas and many are non-functional (MoH 2011, RSSNBS 2010). Rural areas often have poorly-trained health workers, many of whom have no certification.

Professionals with higher education are more likely to migrate towards urban tertiary facilities (MoH 2006a). Urban areas possess approximately 24 times the number of physicians and 20 times the number of nurses as rural areas (Lemiere et al. 2009). Within South Sudan's urban areas, unequal staffing distribution also exists: half of all urban health workers work at the three tertiary facilities in Juba, Wau and Malakal (MoH 2006a). Tertiary—or specialist—care at these facilities is "virtually non-existent," equipment and infrastructure are poorly maintained, and there are inadequate diagnostic facilities (MoH 2010: 4). Nevertheless, urban health facilities suffer from congestion and poor service delivery due to poor HRH management and coordination by the MoH (MoH 2010).

#### *Human Resources for Health Development and Training*

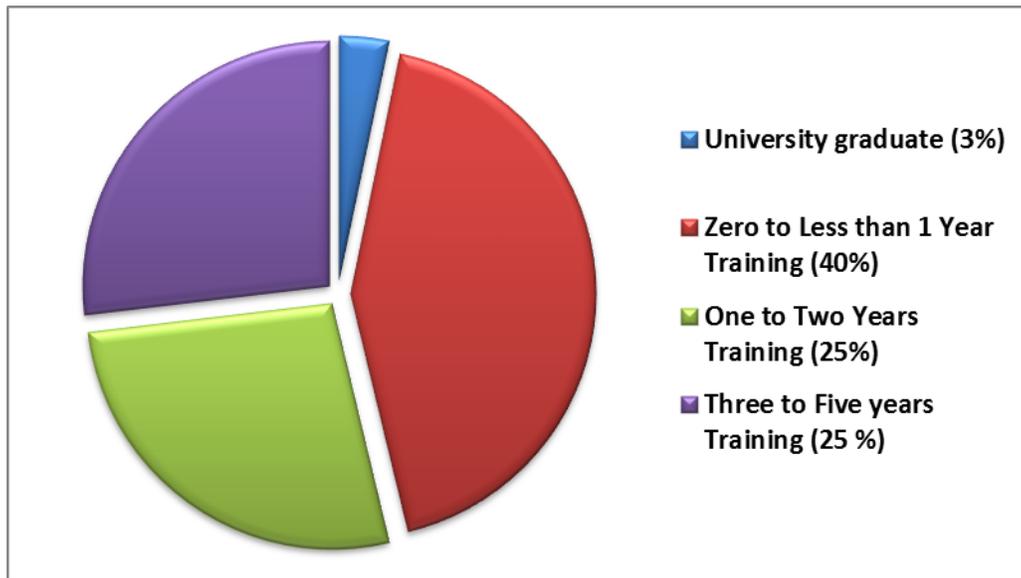
Pre-service and in-service professional development opportunities are negligible in South Sudan. Of the healthcare workers in the country, only 3 percent have a university degree and only 10 percent are reported to have appropriate professional training (See Figure 1, MoH 2006a). In 2010, the MoH (2010) estimated that approximately 500 doctors were practicing in South Sudan. Of these, none had appropriate postgraduate training and most of them practiced privately or worked in an administrative role with an NGO.

While the country has a wealth of untrained staff, it lacks adequate training facilities to turn them into resources which could address its shortage of trained health professionals (MoH 2011). Of the 36 health care training facilities in South Sudan—one third of which are in Central Equatoria state (Beesley 2010)—none offers structured postgraduate training (MoH 2010). Only twenty-three are currently operational. Moreover, South Sudan lacks a unified accreditation mechanism to standardize health credentials (MoH 2006a) and nearly 10 percent of graduates are considered unsafe practitioners (Beesley 2010). In-service training per staff has been estimated at less than one day for every 10 years of service (MoH 2006a).

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<sup>12</sup> Midwives with 3 years more training than a community midwife.

Figure 1: Distribution of HRH by training level in South Sudan



Source: MoH 2006a

#### *Policy Context*

In 2011, the Government of South Sudan released a four-year Health Sector Development Plan to address some of these issues. The plan identifies the following challenges in human resources for health:

- low levels of trained medical staff;
- poor quality and output of existing medical training schools and institutions;
- poor HRH planning and personnel management; and,
- a lack of continuous professional education.

The plan estimates total health expenditure at only US \$10 per capita, well below regional averages and WHO recommendations. It also notes that public health expenditures in South Sudan have been steadily declining since 2006 and there is often inefficient use of what resources are available (MoH 2011: 14).

Although South Sudan's plan mentions a number of recommendations, including revisiting payment policies and establishing an accreditation process for midwives, the framework falls short of proposing time-limited targets to address these HRH issues. Our research also did not find financing allocations for health sector human resource development (MoH 2006a).

## Zimbabwe

Due to the severe economic depression that plagued Zimbabwe from 1999 to 2008, the country has witnessed a significant exodus of primary health care professionals. During the mid-2000's, at the height of the depression, the Ministry of Health and Child Welfare (MoHCW) reported the loss of over 3,500 health staff, which at the time left more than 60 percent of physician positions vacant across the country (ZHWO 2009).

Zimbabwe's life expectancy is only 49 years and many of its health indicators are weak. The country's maternal mortality rate is 790 deaths per 100 000 live births, up from 390 in 1990 and currently one of the highest rates in the world. Zimbabwe's HIV/AIDS prevalence rate of 14.3 percent is well above the Sub-Saharan Africa average of 4.7 percent. Furthermore, only 60-69 percent of births are attended by trained health professionals depending on geographical location (see Table 4, WHO 2011).

Table 4: Overview of key health indicators in Zimbabwe compared to regional and global averages.

Indicator	Zimbabwe			African Average			Global Average		
Maternal Mortality Rate	790			620			260		
	Male	Female	Both	Male	Female	Both	Male	Female	Both
Life Expectancy	47	48	49	52	56	54	66	71	68
Under five mortality rate	93	86	89	133	121	127	60	59	60
Infant mortality rate	59	54	56	85	74	80	44	41	42
HIV/AIDS Prevalence (per 100 000 Population)	9518			2740			502		
Measles Immunization Coverage for Infants (%)	84			76			85		
Percentage of Births Attended by a Trained Health Professional (2005 – 2011)	66			48			69		

Source: World Health Statistics 2012. [http://www.who.int/healthinfo/EN\\_WHS2012\\_Full.pdf](http://www.who.int/healthinfo/EN_WHS2012_Full.pdf)

### Human Resources for Primary Health Care

The country's health worker density<sup>13</sup>—at 1.45 per 1000 population—is higher than those of Sierra Leone and South Sudan but still a significant departure from the WHO's density benchmark.

The reaction of the Government of Zimbabwe to this health worker shortage is stark:

Zimbabwe, once renowned in the Sub-Saharan region for providing high quality, accessible and affordable health care services to its populace, is now facing a challenge in attracting and retaining qualified health personnel. The effects of the increased burden of disease and the high demand for services as well as low staff motivation have worsened the situation. Without a well-trained and motivated health workforce it will be difficult to provide health care services to the standards required (MoCHW 2010).

<sup>13</sup> This ratio accounts for doctors, nurses and midwives.

Nurses and midwives represent the majority of primary health care workers in Zimbabwe and they greatly outnumber physicians (See Table 5). While nurses constitute 46 percent of the primary health workforce and midwives 19 percent, physicians represent only 7 percent (Gupta and Dal Poz 2009). Although improvements have been made with regards to nurse/midwife staffing increases, nearly 51 percent of physician positions and 10 percent of nursing/midwifery positions remained vacant as of 2010.<sup>14</sup> Even if all established MoHCW positions for doctors, nurses and midwives were filled in Zimbabwe, health care worker density would still be only 1.65 per 1000 population, well short of the WHO recommended 2.28 per 1000 population (MoCHW 2010).

Table 5: Primary health care workforce density trends in Zimbabwe (personnel per 1000 population).

Year	2004	2007	2008	2009	2010
Physician	0.16	0.0546	0.0598	0.0669	0.069
Nurses/Midwives	0.72	1.21	1.11	1.35	1.38

Source: Zimbabwe Health Professions Authority Data and Statistics. <http://www.hsb.co.zw/data-and-statistics.html>

Research by Gupta and Dal Poz (2009) found that 41 percent of physicians, 7 percent of nurses and 10 percent of midwives report dual employment, which reflects the health system's inability to sufficiently compensate its more highly trained staff. This phenomenon may also have negative connotations for service availability within the public sector as health workers may sacrifice their public service obligations for the greater financial incentives of the private sector.

Although approximately two-thirds of Zimbabweans live in rural communities, there is a clear urban bias in the distribution of public sector health workers. Rural areas suffer from vacancy rates of 60 percent for both physicians and nursing positions, compared to 20 percent for physicians and 43 percent for nurses in urban areas. Nevertheless, urban health facilities still suffer from significant service delays as health worker supply continues to fall short of service demand (Mudyarabikwa and Mbenga 2006).

#### *Human Resources for Health Development and Training*

As with Sierra Leone and South Sudan, Zimbabwe has been losing health workers more quickly than training institutions are able to replenish them (Chikanda 2007, ZHWO 2009). In response, the Zimbabwean government has attempted to encourage training facilities to double enrollment. However, enrollment has declined over the past five years while 60 percent of academic and tutoring positions at medical and nursing schools remain unfilled. Staff shortages have been blamed for high failure rates among medical and nursing students and, in turn, for the shortage of trained nurses, medical generalists and specialists in the country (Todd et al. 2009, GoZ 2010). Under recent government austerity measures, most training facilities lack the financial resources to increase enrollment or to adequately recruit and retain health professors and tutors (Osika et al. 2010). In some cases, budgetary cuts have forced training facilities, such as the University of Zimbabwe's College of Health and Sciences, to temporarily shut down (Todd et al. 2009).

<sup>14</sup> Professional specialization in Zimbabwe's health workforce is somewhat segregated along the gender divide. In a 2009 human resources survey of the primary healthcare workforce in Zimbabwe, Gupta and Dal Poz found that nearly 85 percent of nurses and midwives were female, compared to only approximately 25 percent of physicians.

### *Policy Context*

In 2009, the Zimbabwean Health Service Board released a Human Resource for Health Strategic Plan 2010-2014. It is intended to ramp up human resources at every health service level. Key priorities mentioned in this strategic plan are to:

- strengthen HRH financing and planning;
- implement policies which prioritize strengthening HRH production, training, retention, deployment and management; and,
- build health systems, information and research capacities.

The report also recognizes a number of barriers limiting the capacity of the MoHCW to implement these activities, including the lack of technical expertise to build systems and tools in this sector, a continued reliance on donor funds and priorities, and limited coordination of services.

## Observations and Conclusion

Various similarities can be drawn from these micro case studies in health from Sierra Leone, South Sudan and Zimbabwe.

All three countries fail to meet the HRH density benchmark of 2.28 per 1000 population, indicating an acute shortage of health workers. Anand and Baernighausen (2004) suggest that the critical shortage of health staff in these three countries and other FCAS has a direct influence on population health indicators. Indeed, when mortality rates were compared to regional averages, the three countries fared poorly (with the exception of Zimbabwe's child and infant mortality rates). The lack of health professionals with appropriate technical skills affects not only the quality and coverage of health services, but also evaluation and planning processes which could otherwise help alleviate the crisis. We found that poor quality training facilities and a lack of qualified personnel to staff them—at both the pre-service and in-service training levels—significantly limit the sector's human resource growth in all three countries, resulting in a vicious cycle.

Other influential variables exacerbating the HRH crises in these countries were the unequal distribution of health professionals between rural and urban areas and the effect of emigration. Although the rural-urban dichotomy of health professionals is a global phenomenon (WHO 2006, Dal Poz *et al.* 2007), it can be argued that the negative impact on rural health care access is particularly devastating in FCAS, owing to various compounding factors such as poor infrastructure and unsafe travel. Emigration, on the other hand, will likely continue to hamper the ability of FCAS to address these problems, particular as attention is directed towards development of pre-service training. For example, Chen *et al.* (2012) suggest that on average 27.5 percent of health sciences graduates in sub-Saharan Africa will migrate out of their country of origin and 22.5 percent will leave Africa entirely. The continued threat of political instability, economic instability or conflict will continue to drive emigration of health professionals from these environments.

Our research did not find any publicly available targets or progress updates on the implementation of national HRH policies. In fact, the WHO reports that there has been little delivery of HRH policies in the three countries at all (WHO 2012). The slow progress on delivering health sector strategies is likely not only a reflection of lack of financial resources but also of poor capacity—politically, technically, and administratively (WHO 2012).

As FCAS governments work to rebuild their public health systems, the role of bilateral and multilateral donors in strengthening health service delivery will be crucial.

In South Sudan, the Canadian International Development Agency (CIDA) has made significant contributions to improving access to essential primary health care services. CIDA has supported the rehabilitation of health facilities across the country and has placed major emphasis on ramping up services for maternal and newborn care as part of the Muskoka Initiative.<sup>15</sup> UNFPA, another key donor to the sector in South Sudan, has worked with the Juba College of Nursing and Midwifery and government authorities to improve the regulatory environment and training institutions supporting midwifery care (FMoHS, 2010).

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<sup>15</sup> CIDA's results under the MNCH program include a 30 percent increase in births attended by skilled health personnel and a 33 percent increase in the number of doctors in South Sudan. For more information, see: <http://www.acdi-cida.gc.ca/sudan>

In Sierra Leone, key donors including UNICEF, the World Bank, UNFPA, the African Development Bank, the EU, Irish Aid and USAID, provide support to health sector human resource development (WHO 2009). Together with the WHO, these partners have contributed in areas such as public management capacity for HRH and multi-tiered technical assistance and training to improve health service delivery.

In Zimbabwe, various NGOs, faith-based organizations, multilateral and bilateral donors support health sector programs;<sup>16</sup> yet in the context of high HIV prevalence rates and other crucial health challenges, HRH capacity development is not necessarily a priority (WHO 2009a). Exceptions include the WHO, the EU, the Global Health Workforce Alliance. In 2009, they published an in-depth profile of Zimbabwe's health workforce (ZHWO 2009), which provides guidance to decision makers on HRH development and planning.

In future, donors could add value by supporting HRH in FCAS by: creating centralized, coordinated HRH information and statistical systems; identifying needs and gaps; and, relocating human resources to address these gaps, both internally and internationally. The International Organization for Migration, through programs like the Temporary Return of Qualified Nationals, has already begun moving in this direction in Sierra Leone.

At the same time, substantial progress cannot be expected overnight in FCAS, even with substantial donor support. Short-term interventions—such as non-financial incentives to practice in rural areas (Munga and Mbllllyl 2008)—can be identified as entry points for national governments, development partners and donors alike. Coordination of planning and service delivery remains a substantial policy challenge in the health sector. Efforts to strengthen government ownership and coherence (between and within public and donor programming) is essential to implementing long-term, national health strategies that are effective on the ground. Innovative, and feasible practices taken from similar country contexts can also help inform the roll-out of health strategies in coming years.

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<sup>16</sup> Primary donors for health in Zimbabwe include: the EU, USAID, The US Center for Disease Control, DFID, UNFPA, UNICEF, UNAIDS, the Global Fund, the Expanded Support Programme, Consolidated Appeal Process (WHO 2009a).

## References

- AHWO (African Health Workforce Observatory). 2012. World Health Organization. Last accessed August 8, 2012. <http://apps.who.int/globalatlas/DataQuery/default.asp>
- Anand, S. and Baernighausen, T. 2004. Human Resources and Health Outcomes. Global Equity Initiative, USA, and Oxford University, United Kingdom.
- Beesley, M. 2010. Off the road: the mapping of health training facilities in Southern Sudan. Ministry of Health, Government of Southern Sudan in collaboration with the Liverpool Associates in Tropical Health. Available at: <http://www.bsf-south-sudan.org/sites/default/files/LATH%20Report%20-%20Mapping%20of%20Health%20Training%20Facilities%20in%20Southern%20Sudan.pdf>
- Chen, C., Buch, E., Wasserman, T., Frehywot, S., Mullan, F., Omaswa, F., Greysen, R., Kolars, J., Dovlo, D., Gali Abu Bakr, E., Haileamlak, Koumare, K., Olapade-Olaopa, E. 2012. *A survey of Sub-Saharan African medical schools*. Human Resources for Health 10:4.
- Chikanda, A. 2007. *Medical migration from Zimbabwe: Magnitude, causes and impact on the poor*. Development Southern Africa 24: 1, 47-60
- CIA (Central Intelligence Agency). 2012. "World Factbook: South Sudan Country Profile" Last Accessed April 5, 2012. Available at: <https://www.cia.gov/library/publications/the-world-factbook/geos/od.html>
- Dal Poz, M.R., Kinfu, Y., Drager, S., Kunjurnen, T. 2007. *Counting health workers: definitions, data, methods and global results*. Department of Human Resources for Health. World Health Organization. Available at: [http://www.who.int/hrh/documents/counting\\_health\\_workers.pdf](http://www.who.int/hrh/documents/counting_health_workers.pdf)
- Ensor, T., Lievens, T., Naylor, M. 2008. *Review of financing of health in Sierra Leone and the development of policy options*. Oxford Policy Management. Available at: <http://www.opml.co.uk/sites/opml/files/Review%20of%20Financing%20of%20Health%20in%20Sierra%20Leone%20150708.pdf>
- Gberie, L. 1998. *war and state collapse: The case study of Sierra Leone*. Thesis and Dissertation (Comprehensive). Paper 30. Available at: <http://scholars.wlu.ca/cgi/viewcontent.cgi?article=1029&context=etd>
- GoZ (Government of Zimbabwe). 2010. *The National Health Strategy for Zimbabwe (2009-2013), Equity and Quality in Health: A People's Right*. Available at: [http://www.mohcw.gov.zw/index.php?option=com\\_docman&Itemid=63](http://www.mohcw.gov.zw/index.php?option=com_docman&Itemid=63)
- Gupta, N., and Dal Poz., M. R., 2009. *Assessment of human resources for health using cross-national comparison of facility surveys in six countries*. Human Resources for Health. 7:22.

- Hernandez, P., Drager, S., Evans, D. B., Tan-Torres Edejer, T., Dal Poz, M. R. 2006. Measuring expenditure for the health workforce: evidence and challenges. Evidence and Information for Policy. World Health Organization. Geneva. March, 2006.
- HSB (Health Service Board). Ministry of Health and Child Welfare. 2011. Zimbabwe. *Zimbabwe Human Resource for Health Strategic Plan 2010 - 2014*. HRH Strategic Planning Meeting. Harare. 14-17 June 2011.
- Kinfu, Y., Dal Poz, M., Mercer, H., Evans, D. 2009. *The health worker shortage in Africa: are enough physicians and nurses being trained?* Bulletin of the World Health Organization 87: 225-230
- Lemiere, C., Herbst, C., Jahanshahi, N., Smith, E., Soucat, A. 2011. *Reducing geographical imbalances of health workers in Sub-Saharan Africa: A labour market perspective on what works, what does not and why*. World Bank Working Paper 209. Africa Human Development Series.
- MoH (Ministry of Health, Government of South Sudan). 2006a. *A human resource assessment of the health sector in Southern Sudan: Situation Analysis*. Available at: <http://www.unsudanig.org/workplan/mande/assessments/docs/GoSS,%20Human%20Resource%20Assessment%20of%20Health%20Sector.pdf>
- . 2006b. *GoSS Southern Sudan Household Survey 2006*. Southern Sudan Medical Journal. Available at: <http://www.southsudanmedicaljournal.com/assets/files/misc/SHHS.pdf>
- . 2007. *Health Policy for the Government of Southern Sudan 2006 – 2011*. Available at: [http://ghiqc.usaid.gov/tasc3/docs/650-09-313/annex\\_a.pdf](http://ghiqc.usaid.gov/tasc3/docs/650-09-313/annex_a.pdf)
- . 2008. *Basic package of health and nutrition services in Southern Sudan*. Available at: [http://ghiqc.usaid.gov/aidstar/docs/650-09-321/annex\\_f.pdf](http://ghiqc.usaid.gov/aidstar/docs/650-09-321/annex_f.pdf)
- . 2010. *Basic Package for Hospital Care Services*. Available at: <http://www.wessexdeanery.nhs.uk/pdf/BASIC%20PACKAGE%20OF%20HOSPITAL%20CARE%20SERVICES.pdf>
- . 2011. *Health sector development plan 2011 – 2015: Transforming the health system for improved services and better coverage*. Available at: <http://www.gunneweg-imprint-consultants.nl/wp-content/uploads/2011/10/HSSDPL2010-2015-SOUTH-SUDAN.pdf>
- MoHCW (Ministry of Health and Child Welfare), Government of Zimbabwe. April 2010. *Human Resources for Health Strategic Plan, 2010- 2014*.
- MoHS (Ministry of Health and Sanitation), Government of Sierra Leone. 2006. *Sierra Leone Human Resource for Health Development Plan 2006 – 2010*. Available at: [http://www.hrhresourcecenter.org/hosted\\_docs/Sierra\\_Leone\\_HRH\\_Development\\_Plan\\_2006-2010.pdf](http://www.hrhresourcecenter.org/hosted_docs/Sierra_Leone_HRH_Development_Plan_2006-2010.pdf)
- FMoHS (Federal Ministry of Health for Sudan). 2006a. *Human Resources for Health Policy in Sierra Leone for the Ministry of Health and Sanitation*. Available at: [http://www.hrhresourcecenter.org/hosted\\_docs/HRH\\_Policy\\_Sierra\\_Leone.pdf](http://www.hrhresourcecenter.org/hosted_docs/HRH_Policy_Sierra_Leone.pdf)

- , 2009. *National Health Sector Strategic Plan 2010 – 2015*. Available at: <http://www.health.gov.sl/home/images/stories/mohs/NHSSP-2010-2015.pdf>
- , 2010. *National Strategy Document For Scaling-up Midwifery in the Republic of the Sudan*. Available at: [http://www.unfpa.org/sowmy/resources/docs/library/R100\\_MOHSUDAN\\_2010\\_MidwiferyStrategyDRAFTv3\\_26Apr2010.doc](http://www.unfpa.org/sowmy/resources/docs/library/R100_MOHSUDAN_2010_MidwiferyStrategyDRAFTv3_26Apr2010.doc)
- Mudyarabikwa, O and Mbengwa, A. 2006. *Distribution of public sector health workers in Zimbabwe: A challenge for equity in health*. EQUINET discussion paper number 34. Available at: <http://www.equinetafrica.org/bibl/docs/Diss34hresZim.pdf>
- Munga, M.A., and Mbillnyl, D.R. 2008. *Non-financial incentives and the retention of health workers in Tanzania*. Equinet Discussion Paper 61. Available at: <http://www.equinetafrica.org/bibl/docs/Diss61TANZHR.pdf>
- NSCSE (New Sudan Centre for Statistics and Evaluation)/UNICEF, 2004. *Towards a Baseline: Best Estimates of Social Indicators for Southern Sudan*. NSCSE Series Paper 1/2004. Available at: <http://ssnbs.org/storage/Towards-Baseline.pdf>
- Osika, J., Altman, D., Ekbladh, L., Katz, I., Nguyen, Ha, Rosenfield, J., Williamson, T., Tapera, S. 2010. *Zimbabwe Health System Assessment 2010*. Health Systems 20/20 Project, Abt Associates Inc. Available at: <http://www.healthsystems2020.org/content/resource/detail/2812/>
- Rajkotia, Y., Boulenger, S., Pressman, W. 2007. *Southern Sudan Health System Assessment*. Health Systems 20/20 Project; USAID. Available at: <http://www.healthsystems2020.org/content/resource/detail/2103/>
- RSSNBS (Republic of South Sudan National Bureau of Statistics)(2011). *Key Indicators for South Sudan*. Accessed 20 July 2012. <http://ssnbs.org/>
- Speybroeck, N., Kinfu, Y., Dal Poz, M. R., Evans, D. B., 2006. *Reassessing the relationship between human resources for health, intervention coverage and health outcomes*. World Health Organization. Available at: [http://www.who.int/hrh/documents/reassessing\\_relationship.pdf](http://www.who.int/hrh/documents/reassessing_relationship.pdf)
- SSL (Statistics Sierra Leone), Ministry of Health and Sanitation. *Sierra Leone Demographic and Health Survey (SLDHS) 2008. Preliminary Report Statistics*. Freetown, Sierra Leone, Macro International Inc. Calverton, Maryland USA December 2008. Available at: [http://pdf.usaid.gov/pdf\\_docs/PNADN709.pdf](http://pdf.usaid.gov/pdf_docs/PNADN709.pdf)
- Todd, C., S. Ray, F. Madzimbamuto, and D. Sanders. 2009. *What is the way forward for health in Zimbabwe?* The Lancet 375: 606-609.
- UNFPA (2012) "South Sudan gets 19.5 million for Midwifery Programmes". Last accessed Apr 11, 2012. <http://africa.unfpa.org/public/cache/offonce/news/pid/10331;jsessionid=B5E2806060D1E50D15FD83D3A86E6487.jahia01>
- USAID. 2010. *USAID Country Health Statistical Report: Sierra Leone*. Available at: [http://pdf.usaid.gov/pdf\\_docs/PNADU731.pdf](http://pdf.usaid.gov/pdf_docs/PNADU731.pdf)

van den Broek, A., Gedik, G., Dal Poz, M., Dieleman, M. 2010. Policies and practice of countries that are experiencing a crisis in human resources for health: tracking survey. World Health Organization. Available at: <http://www.who.int/hrh/resources/observer6/en/index.html>

World Bank. "Zimbabwe Data and Statistics". Accessed April 5, 2012. Available at: <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/ZIMBABWEEXTN/0,,menuPK:375762~pagePK:141132~piPK:141109~theSitePK:375736,00.html>

World Health Organization, 2006. *World Health Report 2006: Working Together for Health*. World Health Organization. Available at: : [http://www.who.int/whr/2006/whr06\\_en.pdf](http://www.who.int/whr/2006/whr06_en.pdf)

----, 2009. WHO Country Cooperation Strategy 2008 – 2013. Sierra Leone. [http://www.who.int/countryfocus/cooperation\\_strategy/ccs\\_sle\\_en.pdf](http://www.who.int/countryfocus/cooperation_strategy/ccs_sle_en.pdf)

----, 2009a. WHO Country Cooperation Strategy 2008 – 2013. Zimbabwe. [http://www.who.int/countryfocus/cooperation\\_strategy/ccs\\_zwe\\_en.pdf](http://www.who.int/countryfocus/cooperation_strategy/ccs_zwe_en.pdf)

----, 2010. *Now It's free, how to pay for it? Sierra Leone's Dilemma*. Bulletin of the World Health Organization. December 2010. 88:12. Last Accessed July. 31, 2012. <http://www.who.int/bulletin/volumes/88/12/10-021210/en/index.html>

----, 2012. World Health Statistics 2012. World Health Organization. Available at: [http://www.who.int/healthinfo/EN\\_WHS2012\\_Full.pdf](http://www.who.int/healthinfo/EN_WHS2012_Full.pdf)

World Health Organization Global Health Observatory Data Repository. Last accessed August 7, 2012. <http://apps.who.int/ghodata/>

ZHWO (Zimbabwe Health Workforce Observatory), 2009. *Human Resources for Health Country Profile*. World Health Organization. Last accessed August 8, 2012. [http://www.hrh-observatory.afro.who.int/images/Document\\_Centre/zimbabwe\\_hrh\\_country\\_profile.pdf](http://www.hrh-observatory.afro.who.int/images/Document_Centre/zimbabwe_hrh_country_profile.pdf)