HUMAN RESOURCES FOR HEALTH: RETENTION, MIGRATION AND GENDER RETENTION

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The 5th edition of The Evidence for Health Newsletter discusses researches targeting Human Resources for Health. HRH are a particularly important component of any health system, and the issue of migration and retention has become a global concern which needs to be addressed, and one that plagues Sudan in particular in its current time of economic and political instability. The Public Health Institute took the lead in several researches related to this issue, with help from national and international experts to ensure the quality and strength of the studies and reliability of their results. These studies are expected to contribute to further human resource policy and each study gives several evidence-based recommendations for such policies.

These researches were funded by the Global Fund through the WHO, with initial funding from GAVI Health System Strengthening.

The issue also includes contributions from an external collaborator, Dr Margaret Kruk from University of Columbia, and Dr Hasim Obeid, Asst. Professor from University of Khartoum, both of whom contributed to the studies and training of researchers.

We welcome your feedback and questions, please send these to the.evidence@phi.edu.sd, and visit out website http://phi.edu.sd for regular updates on all the projects PHI is involved in.

Dr. Reem Gaafar
Advocacy Coordinator and Editor in Cheif

Words from an international collaborator
Margaret E. Kruk
Columbia University

Sudan faces a health worker crisis marked by a low health worker to population ratio, a skill mix and geographical distribution imbalance, and extensive physician emigration. The Human Resources for Health Directorate of the Federal Ministry of Health (FMOH), the Public Health Institute (PHI) have partnered with the WHO to identify and pursue key research questions related to the retention of health workers in rural areas. I was engaged to assist the team with discrete choice methods. I am currently faculty at Columbia University in the United States and have conducted many DCEs in low- and middle-income countries.

Specifically, the research team investigated what incentives may be most effective in encouraging newly graduating physicians to accept rural postings. My overall assessment is that the DCE study was very well done and that the PHI team has achieved a high level of competence with a complex methodology. The design phase—the most important part of DCE methodology—was consistent with best practices in the field. In particular, the team is to be commended for their thorough and participatory approach to selecting the attributes and levels for the experiment.

The team’s findings reflect some of the challenges facing the Ministry of Health of Sudan, in particular, the need to tackle the problem of outflow from the country, which limits numbers available for rural postings and diminishes the importance of any rural incentives. Going forward, I strongly encourage the team to continue to use their new DCE research skills to address questions of public health importance in Sudan. The knowledge can only be sustained with practice and there are many potential ways to apply DCE in health systems research.
Overview of the HRH Researches
Dr Muna I Abdel Aziz
Deputy Director, PHI
Project Focal Person

Human resources for health are an extremely critical and valuable component for the health system to be able to function effectively and efficiently. Therefore there is great need to attract, retain and equitably distribute them within the decentralized fragmented system of Sudan.

This project was directed towards building capacity of student researchers in the field of human resources. Alongside that, the project aimed to contribute evidence for policy makers to guide decisions for appropriate strategies to attract, retain and distribute human resources for health.

Seven student researchers with interest in the HRH field were recruited to undertake these student researches and took part in a step by step development of research proposals, going through official and ethical clearance through to field work. Coverage by these researches covers all the states in Sudan with in-depth data collection from particular selected states for each specified topic. The project addressed several issues related to human resources.

The research question being tackled is as follows:

“What are the most appropriate strategies for redressing the rural/urban mal-distribution of the health workforce, and what are the potential financial implications of these strategies?”

Retention and equitable distribution of health workers: Does it matter? The case of maternal health and mortality in Sudan
Dr Ghada H. Ibrahim

Background Sudan is committed in all its efforts to meeting the Millennium Development Goals (MDGs); however, maternal mortality and morbidity still pose a significant challenge to policy makers and health professionals. Understanding the maternal health impact, particularly maternal mortality levels is mainly dependent on a wide range of cross cutting factors that represents useful entry points and constitute the input component of the conceptual framework. Some of these determinants are related to Human Resources for Health.

Methods This was an ecological study where a quantitative method is applied to develop a conceptual framework that links input indicators to impact on the state level. The analyses were based on four main data sets of national surveys in Sudan; reflecting a position in 2006, 2008 and 2010.

Results There is notable inequity across states in health worker and health facilities distributions, with some states having larger numbers of health workers relative to the low antenatal and delivery care. Very few women actually receive all the ANC components, and there is no clear impact from distribution of doctors and maternal mortality, although that of nurses/ midwives distribution is real.

Conclusions and recommendations for policy Aside from distribution and retention of health workers, there remains a much needed emphasis on quality of care that includes all the essential components and service packages.
Decentralized Human Resources Management: Influence on Attraction, Retention and Migration in Sudan Public Health Sector
Dr Najla El Tijani El Fadhil

Background
The introduction of decentralization in many countries aimed to resolve several of the health system problems, including human resource management (HRM). Despite Sudan’s long history with decentralization, HRM systems are the least developed and emphasized. This study aimed to assess the influence of decentralized HRM on attraction, retention and migration of medical doctors and nurses in Gazira, Kassala and Blue Nile States.

Methodology
This is a mixed methods study, consisting of a quantitative component conducted among doctors and nurses working in public sector facilities, and a qualitative component among decision makers at federal, state, and locality level in the selected states.

Results
Human resource management functions were found to be partially decentralized, with some intra-state variation. Incentive schemes found in different states were financial, local training and career enhancement, but were rarely appreciated. Health workers had a high perception that decentralization had assisted in providing incentives for health workers in rural and remote areas. Job satisfaction was found to increase with incremental income.

Conclusions and recommendations for policy
Financial reasons are the driving force behind migration and retention, and non-financial schemes are not equally valued. The study recommends strengthening human resource management functions in all states to attract and retain staff, focusing on performance-based incentive schemes, training and a conducive working environment.

The Impact of Career-Pathway policy on Attraction and Retention of Medical Doctors in Underserved Areas of Sudan
Dr Bahaa Eldin Mohamed Dafaallah

Background
The health system in Sudan faces many challenges in relation to human resources for health including retention of health workers. Management mechanisms for retention and equitable deployment in the rural and underserved areas are not well developed, with few implemented initiatives that have not been studied or evaluated. The federal MOH has prepared a policy document on the career-pathway for medical doctors, endorsed as a policy statement in 2005. Since then it is not clearly known if the policy has been successful in improving disparities or not.

Methodology
This study used qualitative methods to evaluate and appraise the career-pathway policy, using key informant interviews with decision makers at federal and state levels (one under-served and the other better-served), and focus group discussions for medical doctors as end-users of the policy in the two states.
Results Most respondents interviewed were not aware the policy existed. Most states officials claimed the policy has no effect because of lack of resources, while medical doctors in rural areas lacked quality training.

Conclusion and recommendations for policy The policy faces many difficulties in all phases, mostly in dissemination, stakeholder participation and commitment in implementation, and hence has low effects on attraction and retention of doctors in underserved areas. It needs to be revised, keeping in mind that a single intervention will not be successful. Wide participation and dissemination is crucial and strong commitment from all levels is the corner stone for sustainability.

Role of CPD on Retention of Health Workforce in 2 States in Sudan
Dr Sara Ahmed Hashim

Background CPD stands as a professional imperative of all health care providers as it promotes individual as well as organizational performance. In Sudan, the National and States CPD centers of the FMOH have been providing various in-service training programs for health professionals since 2006. This study aimed at studying the impact of the provided CPD as a non-financial incentive, determine its effect on enrollment, motivation and job satisfaction, as well as retention and migration for health professionals in Gezira and White-Nile states.

Methodology This is a mixed methods design with quantitative and qualitative components for health workers of all backgrounds and specialties working in governance and provision facilities as well as in-depth key informant interviews. Key documents and secondary data were also looked into.

Results Many respondents acknowledged the importance of CPD in motivation, job attraction and satisfaction. However, it was suggested that it be accompanied by other non-financial incentives, e.g. opportunity for private work, and financial factors like salary; allowances for accommodation, travel, childcare, clothing and medical needs.

Financial and non-financial factors differ by place of work and category of profession. Such incentives are mainly provided for health workers practicing in rural and remote settings and special incentive schemes provided for rare medical specialities.

Conclusions and recommendations for policy CPD as a non-financial incentive is a good motivation factor only for health workers who choose to remain. It does not attract cadres or retain them, but might assist them in marketing their skills to compete for other jobs. Retention interventions should combine both financial and non-financial incentives, including CPD. These interventions should be carefully balanced, based on evidence and supported by adequate financial resources and management capacities.
Feminisation among doctors; implications on attraction and retention in rural areas

Dr Eiman Mohamed Ibrahim

Background The gender composition of doctors is changing; females now comprise (67%) of medical school entranc-es) and 52% of the health workforce, (NHRHO, 2011). This gender imbalance phenomenon is considerable and is expected to rise (HWS, 2006), bringing with it both benefits and challenges. There is evidence that male and female doctors differs in many ways; one of which is choice of practice location, as female health workers may be unwilling to work in remote area away from their families. This study was conducted to assess the effect of feminisation among doctors, both juniors and registrars, in their attraction to, retention and intention to work in rural areas.

Methods This was a mixed methods study conducted in Khartoum and Gadarif states among house officers at Sudan Medical Center; 58 % of the participants were females, and registrars at Sudan Medical Specialisation Board to quantify their previous experience of rural working and explore how gender perspectives impact the availability and access to health services, both in rural and urban areas. A qualitative study was conducted with doctors working in both rural and urban areas in Khartoum and Gadarif states.

Results 36% of house officers intend to migrate immediately after completion of their internship and have no interest in working in rural areas inside Sudan. overall, males were more optimistic about rural areas than females, but females from rural areas were more likely to continue working there regardless of marital status. Working conditions reflected to be unsupported or supervised working, over work and inability to take up CPD. Living conditions were perceived as basic, yet it was acknowledged that the higher need in rural areas did need a larger number of doctors.

Conclusion and recommendations for policy Restriction of female intake in medical schools, preference of those from rural areas and developing female-friendly working enviroments can be considered.

The Effect of Dual Practice on Rural Retention among Doctors in Khartoum & Gadarif states, 2012

Dr Hind Amin Mubarak

Background The private health sector in Sudan is growing with more and more health workers dually employed in both private and public facilities. Dual practice is known to be common in Khartoum state but to the best of our knowledge has never quantified. It is defined here as private practice among public sector doctors. This study examined the impact of dual practice among public sector doctors on retention and attractiveness of rural areas.

Methods The study used mixed methods and targeted doctors in Khartoum and Gedarif states in the period between November and December, 2013. It included a survey among doctors to quantify the prevalence and extent of dual practice, with use of focus group discussions as a means of exploration and further triangulation.
The qualitative component explored perspectives of doctors about dual practice and private practice opportunities in both states, and explored the understanding of rurality and rural services, both public and private.

**Results** Of all the doctors surveyed, almost half of them were found to be dual practitioners. It was generally acknowledged that dual practice opportunities were better in urban areas; despite less competition in rural areas between doctors, and possibly higher volume of patients. Private practice in Khartoum and in urban areas appears to prevent doctors from wanting to work in other states or rural areas. Rurality per se (basic conditions) appears to put off doctors from wanting to work in rural areas in general, and private practice cannot compensate for this. This was mainly because private practice opportunities are available more widely such that doctors have a choice of working in private practice anywhere (urban and Khartoum).

**Conclusion and recommendations for policy:** Regulation of dual practice is important since its increase may bring about inequity and mal-distribution of health services. Many doctors are unaware that the private sector policy provides incentives and waivers to attract investors to less developed states and localities. Although a private sector policy does exist, detailed mechanisms for implementation are required and it needs to be updated.

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**Evaluation of the Academy of Health Sciences in the Production of Health Workforce and Correction of Skill Mix Imbalance**

**Dr Mohamed Hassan M. Taha**

**Background** The Academy of Health Sciences (AHS) in Sudan, through 15 state branches recruits nursing and allied health professional students based on locality of residence. They are nominated by locality governments and expected to return to their towns and villages. This study aimed to explore the potential of AHS to plug the gap in nursing especially in rural areas, and to reduce the skill mix imbalance between doctors and nurses.

**Methods** This is a mixed methods research. The qualitative case study used the Afro Regional Guidelines for evaluating nursing and midwifery colleges adopted from World Federation of Medical Education standards. The quantitative element consisted of a spreadsheet calculator for the numbers of students and graduates.

**Results** An analysis of strategic objectives indicates the much needed emphasis on quality of educational programmes with graduates meeting the health system needs, and also the much needed emphasis on advocacy for nursing and allied health graduates of the AHS through career development. This latter objective is core to secure posts and further training of graduates to retain them in the local health system. Part of the rationale for AHS was to fill the gap in nursing. The number of AHS graduates by the end of 2012 was 5275; of whom 2949 were nurses. If production of nurses by AHS continues with the assumption of zero attrition, the gap in nurses is expected to be plugged within 10 years.
Conclusions and recommendations for policy:
Due to roughly similar numbers of graduating doctors and nurses each year, it is unlikely that skill mix imbalance will be readdressed by AHS at this time. The optimistic scenario of modeling above does not take account of the real situation on the ground where many of the nursing graduates do not have posts. There is an urgent need to review recruitment and deployment of nurses.

The impact of Academy of Health Sciences on retention of health workers in rural areas
Dr Yasir Ahmed Mohamed ElHassan
Background During recent years, statistics taken from strategic health plans showed a huge shortfall in human resources for health in nursing and midwifery and other allied health cadres. The Academy of Health Sciences (AHS) is generally considered a good response to the Sudan Declaration to bridge the gap in health workers and develop health services towards the desired level of quality. This study was conducted to ascertain motivations, career intentions and preferences of graduating students at AHS in States; and determine the factors that influence these preferences regarding intentions to work in rural areas after graduation.

Methods The study covered all State branches with total coverage of all final year students to assess their preferences and future intentions. Further cohort followup of alumni and students is intended in 2013.

Results Only 32% of impending graduates have a pre-existing post with the Ministry of Health. This means that without advocacy, two thirds of the AHS graduates could potentially be lost to the health system due to lack of posts. Rural residence, bridging degree and selection by locality did appear to increase the preference for rural working. However, the effect of this on the numbers of graduates intending to stay is so small as to have little effect on the vast majority of graduates.

Conclusions and recommendations for policy The vast majority of graduating students prefer to stay where they trained or with family and friends in their home state. To realise the vision and impact of AHS, there should be a policy directive that advocates for careers and posts for AHS graduates. This is of paramount importance to ensure that AHS production does really benefit the local health system.

Mapping of HRH retention initiatives in Sudan, 2012
Anoud Rashad Ibrahim Omer
Background Around two thirds of the Human Resources for Health (HRH) in Sudan are in urban settings serving only 30% of the total population. Historically, Sudan had a good record of deployment & retention systems for doctors in different parts of the country, but this changed. The problem of turnover and instability is clear in the peripheries but the lack of comprehensive evidence about those past experiences challenges the planning required to improve the HRH retention in rural areas. This study is an attempt to identify and describe those systems.
in order to support future HRH policy making, to map the HRH attraction/retention initiatives applied by the public sector to improve Health workers retention in the states and rural areas of Sudan.

Methods A cross-sectional descriptive complete coverage study conducted in 16 Sudanese states

Results 12 types of retention initiatives were used in Sudan during the past 2 decades and fall under recommended WHO types of retention initiatives as follows: (4) educational, (2) regulatory, (1) financial and (5) personal and professional initiatives. Financial incentives are the most popularly used initiative at state level while supporting work environment and applying curricula reflecting rural health issue were the least used. Quarter of those initiatives target only doctors while there is less focus on other cadres. Again only quarter of them were translated into an approved policy while the rest are still applied with no regulating documents. Although some of those initiatives revealed partnerships with other stakeholders, the greatest burden of managing the initiatives remains the responsibility of health authorities (FMOH and SMOH). No formal evaluations were ever conducted for any of those initiatives at the time of the study.

Conclusions and recommendations for policy The health system in Sudan has several initiatives at state level to retain health workers in rural areas, mostly doctors, using with the involvement of some stakeholders. The study recommends summative evaluation of targeted initiatives, more translation into policy regulation documents, to revisit the focus of retention initiatives on cadres other than doctors, and to involve partners in planning, implementation and regulation of initiatives.

Magnitude and trends of doctors and nurses outmigration in Sudan, 2012

Ayat Siddig Abuagla & Nour Yousif

Background Migration shapes today’s political, social and economic world and has become a major influence on the community. Migration of health professions from developing to developed regions impacts their countries with different patterns according to the health profession, country of origin and goal.

Methodology A mixed methods study was conducted in Khartoum in 2013 to identify the magnitude, trends and causes of out migration among HRH.

Results The past five years have witnessed a huge outflux among Sudanese health professions with 85.6% intending to migrate. It is estimated that 75% of Sudanese doctors are working abroad, followed by an uprising trend of nurse migration, especially among females. The recent advent of recruitment agencies has accelerated the rate of migration among Sudanese doctors. Sudanese health professionals are mainly attracted by markets in Gulf countries mainly Saudi Arabia, UAE, Kuwait and Qatar. Poor financial rewards, lack of chances for post graduate studies together with bad work environment is pushing health-professionals out.
Family responsibilities, cost of requalification and costly immigration procedure force many to stay.

Conclusions and recommendations for policy A migration management policy must be developed, together with a sound database conclusive to Sudanese health professions abroad. Retention strategies addressing exacerbating factors in the form of financial and non-financial rewards must be set.

Attracting Junior Doctors to Rural Sudan: a Discrete Choice Experiment
Dr Amal Bashir
Background Discrete choice experiments (DCE), establish preferences for a good, service, or program by having respondents choose one of several hypothetical alternatives described by a set of characteristics. The DCE method has been applied in this study to ascertain the preferences of junior doctors for rural postings, and estimate proportions of junior doctors who would (hypothetically) accept rural posting given the specific incentives.

Methods The study targeted junior doctors who had completed internship and were sitting for the Medical Licensing Exam in the Sudan Medical Council for permanent registration. Informed by focus group discussions, six attributes were included in the study (basic/advanced facility, supervisor on-site, visiting or by telephone, duration of commitment in post, postgraduate training opportunity and housing provision).

Results Four hundred and fifty five doctors completed the survey giving an 80% response rate. The findings showed that improving the standards and equipments of health facilities to an advanced level and providing on-site supervision were the attributes that were most preferred by the respondents.

Conclusion and recommendations for policy Further modelling of the proportions of doctors who would take up rural posts predicted that improving the conditions in rural hospitals (advanced facility with on-site supervisor) would attract up to 40% of doctors to rural areas (but only 11% would work in rural health centres). Meanwhile improving facilities in health centres to advanced level with visiting supervisors would double the attractiveness of health centres to 21% (but this itself would be a really costly intervention).

Human Resources for Health (HRH) Projection in Sudan
Dr Nazar Abdelrahim Mohamed
Background Sudan recently developed its National HRH Strategic Plan 2012-16 to guide human resource development at different levels of the health system. As the previous HRH projections ended in 2012, the National HRH Strategic Plan envisaged priority revision of the projections for the next ten years under the strategic objective ‘adequate HRH planning to support health service needs.

Methods The projections exercise was led by staff from PHI and the Human Resources Directorate, supported in the modelling...
by national and external consultants. Separate teams considered the evidence and data requirements for the projections and the modeling team to actually develop the tool.

**Results** The modeling team reviewed available tools and studies in the process of developing the Sudan specific tool. For the supply side, the tool takes account of the current stock, the inflow of students in the production pipeline, and the main outflow or attrition factors including migration. The demand-side model considers various morbidity indicators and the national standards and benchmarks for services. Data inputs for the tool were secured with the exception of key variables that could not be compiled due to deficiencies in the source data. The tool is being refined after initial pilot for the medical category of health workers.

**Conclusions and recommendations for policy** Projections exercises that move beyond supply towards the demand-side are needed to enable strategic HRH planning. The current national standards and benchmarks themselves should be revised to become more sensitive to actual need. Further scenario testing of the projections should include State-level projections and sensitivity analysis.

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**Words From The Experts**

Hasim Abdalla Obaid
Asst. Professor, Dept of Applied Mathematics, University of Khartoum

I joined the HRH team in June 2012 as the head of the modeling team. Our main role is divided into two:

First: modeling the processes that can take place in the system, where the modeling team studied the whole system from different aspects until we arrived at a conceptual model based on some mathematical formulas.

Second: Designing a computer based tool, where we started designing a computer tool that can handle/perform the operations of the conceptual model. To build the model, we used Microsoft Office Excel 2007 where Visual Basic is used extensively to build and control the tool.

Aiming to produce a robust and reliable tool fits to our context in Sudan; we have been working with other teams, like the evidence-based team. We also studied available tools so that we can benefit from them.

To me, participating in the projection was the first of its kind. It was interesting and very useful where I could find a platform to apply some of what I learned during my higher studies.

I would like express my gratitude to my all colleagues especially Dr Safa Abdelaziz and Dr Rupa Chilver.
PHI welcomes:
o Dr. Hiba Ahmed Khalil, MBBS, MD: Director of Woman and Child Health Unit
o Dr. Osama Elnour Abdallah, MBBS, MD, MA HMS: Head of Health Systems Unit

Farewell and good luck to:
Dr Amjad Dr. Amjad Idries (PhD, MPH, PG Dip PH, B.Pharm, IDipMBA, F1stPM)

Student News:
Master of Public Health
o Batch 1: thesis writing
o Batch 2: advanced module
o Batch 3: foundation module completed, Biostatistics module started

Master of Disaster Management:
o Batch 1: graduated
o Batch 2: proposal preparation
o Batch 3: introduction module

Family Medicine
o Batch 1: distribution and assignment to health facilities
o Batch 2: introductory course and student registration conducted in White Nile

Leadership:
o Batch 1: phase one of studies

Visits and Meetings:
o Portfolio Manager from the Global Fund and WHO Mission in Sudan visit for TB Prevalence Survey debriefing meeting
Workshops:

- Knowledge Management for Healthcare in Sudan, ‘Linking Practice, Evidence and Performance’: PHI partnered with Soba Training, Education and Examination Centre – University of Khartoum, Epidemiological Laboratory – Public Health Research Centre and Sudan Medical and Scientific Research Institute – UMST in organization, with presentations from Dr Abdelmoniem Mukhtar and Dr Nazik M Nurelhuda


Projects:

- MPR: phase 1 completed
- Malaria Indicator Survey: date entry completed
- TB Prevalence Survey: started 14/2/2013, with a total of 114 clusters and 800 tested people per cluster, covering all 17 states. Each state has between 1 and 20 clusters.
  - Pilot: Conducted in 2 states (Kassala and South Darfour), with a total of 4 clusters (1 rural and 1 urban in each state) containing 400 eligible patients per cluster in Kassala and 200 in SD.
  - Progress: 4 clusters in progress, 3 in Khartoum and 1 in Kasala. One cluster completed in Khartoum.
  - Next state: Blue Nile

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