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Oral Abstracts

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Health Workforce Demand and Supply Forecast of the Health Sector in Ghana - Decision Analytic Modelling

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Background: Ghana is implementing activities towards Universal Health Coverage (UHC). However, lack of empirical analysis of the health workforce demand and supply appear to hinder responsive workforce planning and policies. We sought to answer the questions, what is the required health workforce for the health sector in Ghana? What are the demand-supply gaps and how much would it cost in terms of salaries to bridge the deficits?

Method: On demand side, we used a Decision Analytic Model (DAM) based on Markov process to predict the health facilities needed in Ghana and the accompanying number of selected staff required. We derived transition probabilities from routine health service utilization (workload) data from the District Health Management Information System (DHIMS-2) to develop a predictive model to estimate the future healthcare facilities needed in Ghana. The projected healthcare facilities were translated into aggregate staffing requirements using staffing standards developed by Ghana's Ministry of Health. The supply side model took account of current workforce stock, inflows and outflows based on data obtained from administrative databases of the Ghana Health Service and health professions regulatory bodies.

Results: The forecast shows a mismatch between demand and supply for professionally trained health workforce but a potential over-supply of the auxiliary staff by 2020. The forecast also shows wide variations in the rate of filled vacancies which ranges from 15% to 94% (average being 68%) across various staff categories. Whilst there are serious shortages of staff especially specialists, at least 11,000 health workers are paradoxically unemployed. Amidst fiscal constraints, addressing the shortages requires at least 60% increase in government's expenditure on salaries alone.

Conclusion: Ghana has about 68% of the needed health workforce currently employed, leaving serious shortages of the essential health professionals amidst a paradoxical unemployment of some 11,000 nurses, doctors, pharmacist and laboratory workers.

ASAMANI, James Avoka. Ghana Health Service, Ghana.

Bridging Inequities in Health Workforce Distribution Using Evidenced-Based Staffing Norms: Insights from Ghana

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Introduction: Due to skilled health workforce (HWF) shortages and maldistribution, Ghana increased investments in HWF production and retention, culminating in doubling the HWF stock from 1.07 to 2.14 per 1,000 population in 2005 and 2015 respectively. Staffing norms/standards have also been developed using Workload Indicators of Staffing Needs (WISN) to guide equitable HWF distribution. The service delivery agencies, particularly, Ghana Health Service (GHS) have since 2014 been using the staffing norms as the basis for distributing and deploying the HWF. Additionally, for budgetary control, the staffing norms is being used for establishing workforce ceilings in health. We sought to assess the level equity gains made.

Methods: To measure geographical inequity in HWF distribution, we calculated Gini coefficients for General Practitioners (Doctors), Professional Nurses, Midwives and Auxiliary Nurses over six years (2011-2016) using administrative data. The three-year trend of Gini Coefficients following the implementation of staffing norms was compared with the trend of the preceding three years.

Results: The preliminary findings show that following the implementation of the staffing norms, inequities in health workforce distribution is declining by 4 to 9 percentage points over three years. Particularly, geographical inequity in General Practitioners distribution reduced by 9% in three years compared with a widening inequity of 1.3% in the three years preceding the staffing norms implementation. Similarly, inequity in midwives' distribution is bridged by 4.2% as opposed to a widening gap of 1.6% three years earlier. Inequity in the distribution of Professional Nurses also declined at a faster rate of about 7% compared to a previous rate of 1.6%.

Lesson/main message: This paper provides some empirical support for using evidenced-based staffing norms/standards to guide equitable staff distribution for effective utilisation of available HWF to optimise performance. However, medium-to-long term commitment is imperative as the annual equity gains tend to be marginal.

Bluestone, Julia. Jhpiego, United States of America

Better Planning, Costing and Data for Community-Based Cadres: Illustrations from Egypt, Ghana and Namibia

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This roundtable shares experiences from Egypt, Ghana and Namibia in policy and implementation experiences in community level care. The UN High Commission “Working for Health and Growth: Investing in the Health Workforce” report recommends to reform service models from a hospital to a community focus to help achieve UHC and equity.

Participants: ministry of health, finance, labour and/or education representatives.

Objectives: describe recommendations and tools to support national level CHW planning, costing, determine scope of practice and data management systems for community-models of care.

Focus: This interactive round table will share community-focused examples of inter-sectoral assessment and planning in Egypt, determining scope of practice and costing in Ghana, and health information systems in Namibia. All of these efforts were supported by the Maternal and Child Survival Program, (MCSP), USAID's flagship maternal and child survival program.

- **Egypt: Planning and Policy for CHW Scale Up** Egypt established the Raedat Refiat (RR) CHW cadre in 1994, presently is a workforce of 14,000+ CHWs providing PHC. We will describe the MoHP national planning process with other sector ministries, to determine how to improve and scale the RR CHW program. The presenter will also share the CHW coverage and capacity (C3) tool, used to help national stakeholders assess and determine CHW scopes of work, population based coverage and forecasting based on desired services.
- **Ghana: Determining an appropriate scope of practice:** The community-based care in Ghana's is implemented through the Community-based Health Planning and Services (CHPS) strategy. The primary cadre in CHPS zones are community health officers (CHOs). The training and expected scope of work for CHOs was inconsistent. A task analysis with 401 active CHPS providers identified needed revisions to their scope of practice. A technical working group consisting of various MoH and Ghana Health Service divisions is using the data to standardize CHO education and regulatory requirements.
- **Ghana: Costing for community-level scale-up:** Costing and financing is essential for health workforce scale-up. As part of Ghana's effort to scale up the (CHPS) strategy, the MOH's Ghana Health Service (GHS) is using an excel-based CHPS planning tool to develop cost estimates. The CHPS Planning Tool allows district, regional, and national level stakeholders to cost CHPS scale-up by easily projecting investment and annual operating costs.
- **Namibia/HIS:** The Ministry of Health and Social Services (MOHSS), has increased access to integrated PHC, TB, and HIV services (reaching almost 3,000 communities) through the national Health Extension Program (HEP). The MOHSS and the newly-created Health Information and Research Directorate (HIRD), with MCSP support, have integrated the more than 60 Health Information System (HIS) data collection and reporting systems and built capacity in the data collection, quality, and use. Now all HEP data is housed in one national HIS, a web-based central DHIS 2.0 maintained by the MOHSS HIRD.

Gender, equity and diversity: This roundtable addresses gender, equity and diversity by ensuring equitable gender of speakers and identifying how policy and planning can improve equity and access at the community level.

BUCH, Eric. School of Health Systems and Public Health, University of Pretoria, South Africa

Lessons from the South African Albertina Sisulu Executive Leadership Programme in Health (ASELPH)

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Topic/Issue/Problem: After fifteen years of democracy South Africa had not achieved a cadre of executive leaders and managers at the district level that has matched aspirations of an efficient and equitable health system. This led to the establishment of the Albertina Sisulu Executive Leadership programme, a partnership of the Universities of Fort Hare and Pretoria, the Harvard TH Chan School of Public Health, South African Partners and the National Department of Health.

Objective and relation to sub-theme: The objective of this paper is to share an approach to building a new kind of innovative executive leader who is not only effective, but is values driven and has the ability to motivate and mobilise. The importance of aligning the education of health leaders and managers to optimize workforce performance at the is often overlooked.

Results, findings and lessons to date: The paper describes the transformative approach used, the determination of competences and the curriculum and the use of innovative delivery models and technologies. Experience including the value of case studies and hybrid / e learning and approaches to bridging the classroom to service learning experience are shared. The methods used for process and outcome evaluation and the positive findings are shared. The complexities of and methods evolving for measuring impact of the ASELPH programme, including on workforce performance, are described. There is limited literature on the impact of health leadership training, possibly because of the difficulty of attribution.

Main Message: The lessons in designing, conducting and evaluating the ASELPH programme has relevance for strategies and implementation of health leadership programmes in Africa and globally.

CONLON, Leocadia. Shenandoah University, United States of America.

A student-led community health worker (CHW) program – an innovative project to address community health needs and build capacity for an interprofessional workforce

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Background: With increasing complexity of health and health care, comes increased demand for a skilled interdisciplinary workforce and innovation in delivery of care models. Over the past decade roles such as the Community Health Worker (CHW) have emerged to increase access to basic health services. However, in some communities, recruitment for the role of the CHW is challenging among some of the most vulnerable populations. A team of educators and students at a health professional university in the U.S. partnered with a public health department to develop a new CHW model that aligns community needs and interprofessional education. The program goal is to train an interdisciplinary group of health professional students, through a student-led initiative, with the following objectives:

- Respond to community need to enhance CHW workforce
- Enhance interprofessional education by providing students collaborative practical experience while in their respective academic programs.
- Promote in depth understanding of the social determinants of health, and strategies to overcome health inequities, by providing the opportunity for interaction with vulnerable populations early in the career of health professional students.

Learning objectives for the panel discussion:

1. Develop a CHW training model that aligns community need and interdisciplinary health professional education.
2. Describe the impact of a student-led CHW program in addressing community needs.
3. Describe the impact of a student-led CHW program on health professional education.
4. Identify barriers and facilitators to the implementation of a student-led CHW program.
5. Generate innovative ideas for aligning community need and interdisciplinary health professional education for future initiatives.

Focus: The main topics to be discussed included the alignment of community needs and health professional education, innovations in interprofessional education, and building capacity for the non-physician workforce.

Main Message: A key strategy to building an effective health care workforce is to provide health professional students the opportunity to engage in meaningful interprofessional collaboration and interaction with their community early in their academic endeavors. This panel discussion provides the opportunity to learn of an innovative student led program that is interprofessional and fosters community partnerships. It also provides an opportunity to learn directly from students themselves, giving a voice to the next generation of health professionals who are motivated to contribute to building the global health workforce.

Intended participants: Four health professional students, all with varying backgrounds in healthcare, and one faculty member/faculty liaison from Shenandoah University (SU). SU graduate health professional programs include physician assistant, pharmacy, physical therapy and occupational therapy.

SU is located in a rural area of Virginia that is surrounded by some of the poorest counties in the state of Virginia and West Virginia. Significant disparities exist within these counties across all health outcomes due to socio-economic disadvantages and, in many areas, historical and contemporary injustices. This proposed education and community partnership for the student led CHW program provides an opportunity to promote an in depth understanding of the social determinants of health, and encourage students to consider strategies to overcome health inequities.

DE SOUSA VAN STRALEN, Ana Cristina. Federal University of Minas Gerais (UFMG), Brazil

ASSESSMENT OF THE SCOPE OF PRACTICE OF PHYSICIANS PARTICIPATING IN THE MORE MEDICAL DOCTORS PROGRAM, AND ASSOCIATED FACTORS.

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In Brazil, More Medical Doctors Program (MMD) was implemented in 2013 with the main purpose to reduce physician shortage in remote and underserved areas and promote access to health care services. The review of the scope of practice of primary health care providers has been an important tool to address this worldwide and well-known problem.

The purpose of this study was to characterize the scope of practice of physicians working in primary healthcare participating in MMD and investigate the factors associated with execution of a larger number of clinical activities. It is an exploratory study carried over January to March 2016, through a self-applied questionnaire containing a list of 49 procedures, activities and actions carried out in primary healthcare.

A total of 1,241 physicians took part in the study, most of them female, between age 40 and 49, and of Cuban nationality. The physicians carried out an average of 22.8 ± 8.2 procedures; they reported knowing how to carry out a larger number of procedures. Factors associated with executing a larger number of procedures were: being male, having graduated more recently, two years or less practicing in their primary healthcare unit, practicing in the North or South geographical regions, in small towns and more distant from the regional health headquarters. The main reason for not carrying out the procedures and activities that they reported knowing how to perform, was the lack of materials and inadequate infrastructure.

In this sense, the use of professional competences can be optimized by structuring health care units. The results show that the scope of practice of the physicians of the MMD is lower than their capacities, and that interventions aimed to expand their scope of practice are necessary.

DUNLEAVY, Gerard. Centre for Population Health Sciences, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

Digital learning for healthcare professional education: is mobile learning effective? An inquiry of 29 studies across 15 countries around the world

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Background: There is a pressing need to implement efficient and cost effective training to adequately combat the calamitous shortage of healthcare professionals. Mobile learning (mLearning) has been mooted as an effective means to deliver healthcare professional education due to the high access, low cost and portability of mobile devices.

Objectives: The objective of this study is to assess the effectiveness of mLearning interventions in healthcare professional education in terms of knowledge, skills, attitude and satisfaction. In this review, mLearning will be defined as the use of handheld, mobile devices connected through wireless connections to deliver educational content to pre- and post-registration healthcare professionals in order to extend the reach of learning and teaching beyond physical space and distance.

Methods: We used standard Cochrane methods for evidence synthesis. Seven electronic databases were searched for studies on mLearning from 1990 to August 2016.

Results: Twenty-nine RCTs with 2364 participants were included for the analyses. The interventions tested in studies consisted of smartphone and tablet applications, Short Message Service (SMS), Personal Digital Assistant (PDA), podcasts and multimedia videos delivered on an iPod. The interventions that these were compared to (the control interventions) were traditional classroom/paper-based learning. Our initial findings suggested that certain subgroups of mLearning (SMS and PDA) improved knowledge gain post-intervention for pre and post-registration healthcare professionals compared to traditional learning (face-to-face lecture, paper-based learning, clinical placement).

Conclusion: Based on our preliminary findings, the effectiveness of mLearning interventions in healthcare professional education is promising. These findings were derived from studies across a range of settings including university and hospital, with varying curricular design and learning contents delivered in both high and low resource settings.

DUNLEAVY, Gerard. Centre for Population Health Sciences, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

Digital education for healthcare professional education in low and middle-income countries

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Background: The World Health Organization (WHO) estimates a shortage of approximately 17.4 million healthcare workers globally, of which, almost 2.6 million are doctors and over 9 million are nurses and midwives. The most critical shortage of health workers is experienced in low and middle-income countries (LMIC), and this deficit will intensify due to population growth, a lack of educators, the inadequacy of training programmes, and the brain drain phenomena. These shortfalls could be partly addressed by innovative educational approaches that can reach large groups of participants in a timely manner.

Objectives: The objective of this study is to assess the effectiveness of various eLearning interventions in healthcare professional education in LMIC, in terms of knowledge, skills, attitude and satisfaction.

Methods: Seven electronic databases were searched for studies on eLearning from 1990 to 27th August 2016. Studies from LMIC using mobile devices, virtual reality environments and computer-based interventions to deliver learning content to pre- and post-registration healthcare professionals were selected.

Results: Sixteen RCTs with 1590 participants were included for the analyses. Five studies used mLearning interventions, with four studies reporting results favoring the intervention group while one study reported no difference to the control group. Nine studies used computer-based education, five studies reported results favoring the intervention group while two studies reported no difference to the control group. Two studies used virtual reality education, one study reported results favoring the control group while one study reported no difference between groups.

Conclusion: The results from included studies were mixed, however, our preliminary findings suggest the use of digital education on various educational outcomes is encouraging for pre-and post-registration healthcare professionals in LMIC. Nonetheless, the overall quality of evidence was low due to unknown risk of bias and the heterogeneity of included studies.

ELFAKI, Nazar. Ministry of Health, Oman

Adjusting the workload indicators of staffing needs in setting the standards for PHC institutions in Sultanate of Oman

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Introduction: The Ministry of Health in the Sultanate of Oman recognized the importance of ensuring all health facilities have the right number and mix of health workers to deliver quality care to the population. A joint team worked in adjusting the workload indicators of staffing needs (WISN) method, to develop the national standards for primary health care (PHC) institutions that will inform better recruiting and distributing the health workers.

Methods: Health care services provided at PHC were listed and categorized into three packages based on the location and catchment population. They were Core, Supplementary, and Complementary services. The workload components of all professional categories were listed, activity standards and standard workloads were identified, and national norms were formulated. The norms were simulated in Muscat governorate, which has 32% of the total population and encompassed the large number of health facilities compared to the remaining 10 governorates.

Findings: The national norms were compared with the existing staffing levels in Muscat governorate. Overall, it showed shortage in nurses and slight surplus of doctors, with some variations among the facilities. The WISN ratio showed doctors were less workload stressed (1.02) compared to nurses (0.66) with some variations between facilities (doctors range 0.6 – 2.3, while nurses range 0.4 – 1.6).

The WISN, after being adapted, proved to be useful in setting national norms, comparing existing staffing patterns, knowing equity gaps in staff distribution, identifying workload pressure, and highlighting information gaps. However, the estimates used to calculate the required staffing were linked mainly to the package and pattern of health services provided to current population (which might not be applicable to the future population). Thus estimates need to be frequently adjusted based on the new developments.

FAZA DIALLO, Mohamed. World Health Organization, Switzerland

Le développement de l'approche du pipeline rural pour améliorer la fidélisation des ressources humaines de la santé en milieu rural: Le cas de la Guinée

Topic: La question du déploiement et maintien des ressources humaines en santé en milieu rural où vit la majorité de la population de nombreux pays représente un grand défi. C'est dans ce contexte que la Guinée est en train de mettre en œuvre l'approche du pipeline rural. Cette approche vise à ce que les personnels de la santé soient:

- (i) sélectionnés pour leur formation dans les zones rurales où ils résident,
- (ii) formés dans ces zones,
- (iii) exposés au maximum aux cas cliniques ruraux et
- (iv) affectés et bénéficient d'un plan de carrière dans ces zones.

Objectifs :

1. Identifier les facteurs favorables et les défis à la mise en œuvre
2. Définir le processus de mise en œuvre et la faisabilité

Méthode: Participation des parties prenantes au-delà du secteur de la santé, y compris ceux du développement économique, au niveau national et régional.

Results : L'intégration de l'approche du pipeline rural dans le programme de l'UNDAF est un facteur important facilitant la mise en œuvre de cette approche. De plus, la transformation des agents techniques de santé en agent de santé communautaire (ASC) ainsi que le développement d'un référentiel de compétences des ASC sont des éléments clés du processus de mise en œuvre, ainsi que les réformes des écoles communautaires, notamment à travers le développement de curricula mieux adaptés aux compétences locales.

Lessons: Importance du dialogue intersectoriel. Intégration d'une approche de développement économique pour assurer le succès du pipeline rural. Rôle clé pour la gouvernance et la fonction publique locale. Adaptation des modèles d'éducation et de prestation de services.

Main messages: Dialogue intersectoriel est fondamental pour le succès du développement du pipeline rural. Cette approche contribue à favoriser la participation des femmes et des jeunes au marché du travail, et l'accès aux services santé dans les zones rurales

FORSYTH, Kevin. Global Pediatric Workforce Development Alliance, Australia

The development and maintenance of a competent and motivated child health workforce

Co-Authors: Kevin Forsyth, Global Pediatric Workforce Development Alliance, AS|Australia; Christiana Russ, Boston Children's Hospital, US|United States of America; Robert Armstrong, Aga Khan University, Nairobi, KE|Kenya; Snupam Sachdev, Indian Academy of Pediatrics, IN|India

Background: There are enormous disparities in child health outcomes. The countries and regions with the highest child mortality rates and the greatest disease burdens also have the lowest number of child health professionals. Given that the child health workforce is so stretched in such jurisdictions, the capacity and ability to train the required workforce is also severely hampered. Without a well trained workforce, there will continue to be major child health burdens and poor outcomes. Health system strengthening requires good leadership, good leadership requires competency on a systems approach to health and its delivery. In response to these pressures, national and international pediatric training organizations are coming together as a global pediatric workforce development alliance, to drive a more systematic approach to workforce planning and development.

Learning Objectives and intended participants: To appreciate the HRH in child health at the global level in comparison with health outcomes in the context of new data on the existing global pediatric workforce. To know of the major training programs and supply lines. To understand the approach by the global alliance, with an emphasis on leadership development to assist in strengthening health systems. To understand the need for governing principles in global work, to ensure new educational paradigms and technologies are used globally to drive learning and reform. The intended participants include health professional educators, human resource and health system planners, and government officials with focus on addressing strategies for advancing the child health agenda.

Focus: The workshop will provide a model for bringing global resources to national child health and workforce development strategies with focus on low resource countries. The model includes strengthening national leadership, building context relevant educational tools and enablers, linking to health systems development and ensuring effective monitoring evaluation and research is in place. Participants will be actively engaged in critiquing and further developing the model.

Main messages: That training in child health is key to developing and sustaining a competent health workforce. That all pediatric training groups should act in partnership and cooperatively to bring about major reform. Collaboration at the global level to develop partnerships and coordination is required. New educational paradigms can greatly enhance training and hence the development and maintenance of a competent and motivated child health workforce.

Indicative list of speakers

- Dr Christiana Russ (Boston Children's Hospital)
- Dr Snupam Sachdev, President, Indian Academy of Pediatrics
- Prof Bob Armstrong, Dean, Aga Khan University, Nairobi
- Prof Kevin Forsyth, Chair, Global Pediatric Workforce Development Alliance (GPWDA)

How submission addresses gender, equity and diversity: Children represent all genders, are a minority group without a voice. This submission addresses matters of profound importance to this group. Women are the predominant child health care providers and the workshop will have specific focus on addressing leadership development among women. Focus on equity in educational opportunity for the child health workforce will be an important component of the workshop.

GARCIA GUTIERREZ, Jose Francisco. Pan American Health Organization (on behalf of ISAT Working Group), United States of America.

Aligning Health Professions Education to Community Health Needs: Presenting ISAT, a new diagnostic tool for Social Accountability (SA)

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Background: Social Accountability (SA) is about directing health professions education, research and service towards priority health concerns of the community, especially underserved populations. Recently, three reference groups have proposed tools and indicators on SA, mainly aimed to the “recognition of excellence”: ASPIRE (International Recognition of Excellence in Education) THEnet (Training for Health Equity Network) and the Beyond Flexner Alliance. In June 2017, PAHO/WHO brought together a number of experts in measurement tools for SA to build a foundation for the development of a diagnostic tool that medical schools can use to assess their progress towards social accountability. This session will present the instrument ISAT (Indicators of the Social Accountability Tool) That will help participants, not only to understand the methodology used and the phases, milestones and core indicators proposed, but also to recognize the “pearls and pitfalls” on the path to SA.

Learning objectives and intended participants

- To learn about a new tool that medical schools could use to assess their progress towards social accountability.
- To identify developmental phases and milestones towards SA;
- To incorporate milestones and core indicators on SA ;
- To recognize the main challenges in the promotion of SA in schools and communities;
- To understand the necessary steps towards the implementation of SA actions in underserved areas.
- To promote innovations in education integrated with social awareness.

Intended participants: HRH policy makers, planners, employers, managers, health workers, educators, students, community leaders.

Focus: A panel representing the ISAT Working Group shall introduce four topics (presentations of 15 minutes each) followed by open discussion with participants (30minutes)

- Accountability for SA: From excellence recognition to developmental phases
- The case of new public medical schools in Brazil
- Implementing SA inside accreditation systems: The example of Canada
- A road map towards SA: The instrument ISAT (Indicators of the Social Accountability Tool)

The ISAT instrument contemplates the following core components: 1) Student recruitment, selection and support to guarantee diversity and gender equity; 2) Faculty recruitment and development; 3) Educational program; 4) Research activities ; 5) Governance and community engagement; 6) Societal impact. Each core component is divided in four developmental phases (traditional no reform, social responsibility, social responsiveness and social accountability) and accompanied by milestones, standards and indicators, as appropriate.

Key messages: Schools of health professions should move towards an efficient implementation of the principles of SA and to:

- Promote education, research and service delivery programs to meet population priority health needs linked with health system policies and actions;
- Recruit students and faculty that reflects ethnic, geographic and socioeconomic diversity of the populations served;
- Support advocacy at the political level for the adoption of health and academic policies and accreditation systems consistent with the values and principles of SA.

Speakers

- PAHO/WHO representatives
- Association of Faculties of Medicine of Canada
- THEnet (Training for Health Equity Network)
- ASPIRE (International Recognition of Excellence in Education)
- Representatives from Latin American Medical Schools

GEORGE, Asha. School of Public Health, University of the Western Cape, South Africa.

Missed opportunities: A literature review on gender and human resources for health in low and middle income countries

Co-Authors: Asha George, School of Public Health, University of the Western Cape, SF|South Africa; Elizabeth Larson, Johns Hopkins School of Public Health, US|United States of America; Rosemary Morgan, Johns Hopkins School of Public Health, US|United States of America; Stephany Gaboud, NYU School of Medicine, US|United States of America; Jungwoo Lee, Independent Researcher, KS|Republic of Korea.

Topic: Gender is a critical yet neglected aspect of human resources for health (HRH), particularly in low and middle-income country (LMIC) contexts.

Objectives and Methods: We summarize key developments since 2007, updating a previous review on gender and HRH. A systematic search was conducted across six electronic databases: Pubmed, Embase, Scopus, CINAHL, Global health Ovid and Web of Science. Following inclusion and exclusion criteria, we collectively reviewed 4375 records, of which 2144 were duplicates, and 1828 were excluded for not being relevant, leaving 403 records, with just over 15% being from LMIC contexts.

Findings: The narrative synthesis of the LMIC articles revealed further information on the gendered distribution across cadres or over time, underpinned by gender discrimination, combined with stress, poor mental health and violence as gendered phenomena within HRH. Further analysis revealed gender issues in medical training and the challenges faced by female doctors. Within nursing, studies reviewed the gendered motivation to join nursing, the experience of male nurses, working conditions for nurses and their experience of migration. With regards to community health workers, several articles reviewed their gendered working conditions. Many more articles highlighted carers as a gendered aspect of HRH, reflecting on their social context and status, the role of men, and the effects of programs and policies on them.

Lessons to date/ Main messages: While research on gender and HRH continues to increase, the quality and coherence of the literature leaves much to be desired. Even when gender analysis is undertaken it is mainly in the form of sex disaggregation with little cross tabulation with other variables to understand more comprehensively the gendered patterns that exist. More needs to be done to mainstream gender into HRH research and to improve the caliber of existing gender analysis.

GRAHAM, Ronnie. International Agency for the Prevention of Blindness, United Kingdom of Great Britain and Northern Ireland.

Optimizing the Impact of Eye Health Workforce in AFRO region – A multi-faceted approach as a model for other specialised health professions

Co-Authors: Johannes Trimmel, International Agency for the Prevention of Blindness, UK|United Kingdom of Great Britain and Northern Ireland; Simona Minchiotti, World Health Organisation, CF|Congo; Michael Gichangi, Ministry of Health Kenya, KE|Kenya; Juliet Milgate, Sightsavers, UK|United Kingdom of Great Britain and Northern Ireland; Wanjiku Mathenge, Dr Agarwal's Eye Hospital, RW|Rwanda; Ibrahim Matende, COECSA (College of Ophthalmology of Eastern Central and Southern Africa), KE|Kenya; Ronnie Graham, International Agency for the Prevention of Blindness, SF|South Africa.

Background: Until the launch of the new WHO HRH strategy, 'Workforce 2030', specialist health workers, such as eye health workers, were largely ignored in policies and national HRH plans. Despite this neglect, IAPB (a global network promoting universal eye health) and its members have promoted the full integration of all eye health workers in national workforce plans and taken initiative to increase the impact of the existing eye health workforce in the AFRO region. Progress was achieved by complementing actions on information and data, educational models and cooperation, regulations on eye health cadres and their competencies, and inclusive eye care delivery.

Learning Objectives and Intended Participants: Intended participants are specialist health professionals, Directors of HRH in Ministries of Health, specialist professional associations and trade unions, training institutions, regulatory bodies and civil society. They can expect to learn through the session on what are major interlinked building blocks to increase impact of specialist health workers, along the following learning objectives:

- The full integration of specialist health workers in national HRH plans
- The importance of curriculum reform and cross-country educational standards
- The power of reliable data and evidence
- Building health teams along defined core competencies
- Empowering health teams to reach the unreached
- Partnerships within and beyond the health sector to increase impact of health workforce

Focus: The key discussion point of the Roundtable will be how best to make health systems work for specialist health workforce to be able to provide quality services to people at all levels, especially for those usually left behind. The round table speakers will bring in their expertise on the areas that need to be addressed to succeed:

- Education, training and curricula
- Embedding specialist health cadres in national HRH policies, building on a defined set of competencies
- Create the necessary data and evidence in HMIS systems
- Engage health workforce to promote equity by accessible and inclusive health care
- Partnerships to increase health workforce impact in current settings
- All these areas are interlinked, and are necessary building blocks to stimulate change, that's needed so that people in need of health services can get them at the time of need.

Main messages: The experience in improving the impact of the eye health workforce in AFRO region demonstrates the importance of a multi-faceted approach from policy-making to education/training and service delivery to be effective. This is an experience to inspire other specialist health services. Reaching the un-reached by specialist health workforce is possible in existing health systems even if inadequate, while scaling up respective policies and their implementation.

Addressing gender, equity and diversity: One specific focus of the discussion will be around the learning of a pilot project on inclusive eye health and its impact on the health workforce – which was developed to measure access of persons with disabilities to services. The information available also provides information on access of people across different wealth levels and gender. Gender, Equity and Diversity are a cross-cutting issue in the Roundtable.

PORTER, Andrea. Canadian Institute for Health Information, Canada.

Gender, workforce and health system change in Canada

Co-Authors: Ivy Bourgeault, Telfer School of Management, CA | Canada

Topic: In Canada, women represent a larger proportion of the health workforce yet they remain under-represented in leadership and decision-making positions, are more likely to encounter pay inequities, and be affected by workplace violence. As care moves out of hospitals and into communities and homes, how does the shift affect men and women in the health workforce?

Objective: This presentation will use Canadian Institute for Health Information's Health Workforce Database and Scott's Medical Database, as well as Statistics Canada's Labour Force Survey to provide an overview of the changing gender dynamics of the Canadian health workforce. Focus will be on regulated nurses, pharmacists and physicians.

Results: Women's participation in Canada's health workforce has increased more than 90% over 20 years. The highest preponderance of women is in home and community settings, where recent healthcare investment has shifted; although the proportion of women in medicine has increased 124% over 20 years, more are likely to be family doctors in the community. Men continue to hold a greater proportion of leadership and decision-making positions in hospitals; women lead fewer than 20% of them, and only 4% of other health care organizations. Even in professions where women account for a greater proportion of the workforce, they are less likely to hold leadership and decision-making positions.

Lessons: Despite women's overall increased health workforce participation, their occupancy in leadership positions remains relatively elusive. As care delivery shifts into communities and homes, the proportion of women in the healthcare workforce will increase.

Messages: Women's equitable access to facility leadership positions, and male-focussed recruitment efforts for community care, could help all Canadians receive appropriate care they are comfortable with no matter the setting.

Statement: This presentation addresses gender distribution across the health workforce including equitable access to leadership positions and diversity amongst care providers.

KOROMA, Emile. Ministry of Health and Sanitation, Sierra Leone

An Overview of the Human Resources for Health Strategy 2017-2021

Topic: The Ebola outbreak highlighted gaps in Sierra Leone's health system, especially the lack of a skilled health workforce. Some 250 health workers lost their lives during the outbreak. As a country with one of the world's lowest density of health workers, this was a devastating loss. Sierra Leone continues its recovery to build a functional health system. In May 2017, the Ministry launched new HRH Strategy for 2017-2021 harnessing an inclusive process oriented along three key thematic working groups training, financing and management.

Objectives and Methods: I am interested in presenting 1) an overview of a consultative, evidence-based policy process to create a new strategy - leveraging lessons learnt towards building a resilient workforce; 2) a summary of multi-sectoral strategy, including extensive priority-setting exercises to identify strategic drivers; and 3) an update on our implementation progress to date.

Results and findings: Our new HRH strategy envisions interventions, measurable targets, and an M&E framework to train, manage, and regulate the health workforce to meet the country's health needs.

Lessons to date and main messages: 1) Gathering evidence, building on experiences and bringing in best practices is necessary to inspire change; 2) Crowding-in actors across Ministries and key stakeholders is an effective way to build support and momentum for complex policy processes; 3) Participatory policy processes cannot be rushed - while ours took close to one year to complete, we now have a better Strategy and committed allies and partners to implement the strategy. We have a shared understanding of the challenges 4) Regular monitoring of the plan and focusing on proactive problem solving is vital to successful implementation.

Gender, equity and diversity: Our policy process was specifically designed to ensure we included diverse voices across cadres

KUHLMANN, Ellen. Institute for Economics, Labour and Culture Goethe-University Frankfurt, Germany

The gender gap in management and leadership in European academic health centres: a comparative approach

Co-Authors: Ellen Kuhlmann, Institute for Economics, Labour and Culture Goethe-University Frankfurt, GM|Germany; Pavel V Ovseiko, Medical Sciences Division, University of Oxford, John Radcliffe Hospital, UK|United Kingdom of Great Britain and Northern Ireland; Mia von Knorring, Karolinska Institutet, Medical Management Centre, LIME, SW|Sweden

Women's participation in medicine and the need for gender equality in healthcare are increasingly recognised, yet little attention is paid to leadership and management positions in large publicly-funded academic health centres. This study investigates gender equality, using a qualitative explorative case study approach and cross-country comparison, including four large European centres: Charité Berlin (Germany), Karolinska Institutet (Sweden), Medizinische Universität Wien (Austria), and Oxford Academic Health Science Centre (United Kingdom). The findings reveal progress in closing the gender leadership gap on boards and other top-level decision-making bodies, but the level of achieved gender-balance varies significantly between the centres and largely mirrors country-specific welfare state models, with more equal gender relations in Sweden than in the other countries. There are also similar trends across countries and centres: gender inequality is stronger within academic enterprises than within hospital enterprises, and stronger in middle-management than at the top level. These novel findings reveal fissures in the 'glass ceiling' effects at top-level management, while the barriers for women shift to middle-level management and remain strong in academic positions.

The uneven shifts in the leadership gap are highly relevant and have policy implications. Academic health centres should pay greater attention to gender equality as an issue of organisational performance and good leadership at all levels of management, with particular attention to academic enterprises and newly created management structures.

Key messages:

- Setting gender balance objectives exclusively for top-level decision-making bodies may not effectively promote a wider goal of gender equality, because gender equality is moving to middle-level management.
- Gender equality targets must be monitored on all levels of management to improve organisational performance and effective use of human resources.

This study focuses on gender equality in academic health centres including diverse types of health systems and gender equality in European high-income countries.

LIKOFATA, Jean-Robert. IntraHealth International, Democratic Republic of the Congo

Co-Authors: Jean-Robert Likofata, IntraHealth International, CG|Democratic Republic of the Congo; Epiphane Ngumbu, Ministry of Health of the Democratic Republic of the Congo, CG|Democratic Republic of the Congo; Leah McManus, IntraHealth International, US|United States of America

« L'innovation numérique de gestion de Ressources Humaines pour la Santé dans la mobilisation des Ressources financières locales »

Issue: In Africa, “ghost workers” represent a longstanding drain on scarce domestic resources. In the Democratic Republic of Congo (DRC), only about a third of public-sector health workers draw a salary, while about half receive monthly “risk allowances.” In this context of inadequate compensation, DRC leaders are taking steps to eradicate ghost workers.

Objectives/Methods: With technical support from IntraHealth International, the Ministry of Public Health (MOH) developed an integrated human resources information system (iHRIS) for health worker tracking, management, deployment, and mapping. Together, iHRIS and the Ministry of Finance’s electronic payroll system made it possible to conduct a high-quality census and clean payroll for over 11,500 health workers in two large provinces (Kasaï, Kasaï Central) representing one-tenth of DRC’s population.

Results: Over one-fourth (27%) of health workers listed as salary recipients in payroll were ghost workers as determined by iHRIS, as were two-fifths (42%) of risk allowance recipients. The MOH rapidly reallocated nearly US\$2million away from ghost workers to cover 781 salaries and 2,613 risk allowances for health workers who had not previously received civil service compensation. About half (49%) of individuals receiving salaries and over two-thirds (68%) receiving risk allowances for the first time were clinical cadres (e.g., nurses, midwives, laboratory technicians).

Lessons: Keys to success included commitment and involvement of government and provincial health officials, and confidence in the data due to rigorous data collection in challenging circumstances. Interoperability between iHRIS and payroll systems is needed to streamline future updates.

Main messages: Offering a relevant example for other countries, DRC’s payroll cleaning improved health worker motivation and represents unprecedented collaboration among MOH (which oversees risk allowances), Public Service (which pays salaries), and Finance (which controls the health budget).

Gender equity: iHRIS data revealed that less than 40% of clinical health workers in Kasaï and Kasaï Central are female.

MAIER, Claudia B. Technische Universität Berlin, Germany

Co-authors: Claudia B Maier, Technische Universität Berlin, GM|Germany; Julia Köppen, TU Berlin, GM|Germany; Reinhard Busse, TU Berlin, GM|Germany

Division of work in highly specialised care: task shifting and sharing between physicians and nurses in hospitals in nine European countries

Topic: Countries vary in nurses' scopes-of-practice (SoP) and reforms, however, less is known how reforms affects inpatient care.

Objectives/Methods: Analysis of health professionals' perceptions of role change and task shifting between the medical and nursing profession, based on the EU-funded MUNROS research. Multi-country, cross-sectional design with surveys completed by 1,716 health professionals treating patients with breast cancer and Acute Myocardial Infarction (AMI) in 161 hospitals across nine countries (Czech Republic, England, Germany, Italy, Netherlands, Norway, Poland, Scotland, and Turkey). Descriptive and bivariate analysis on staff role changes and independence (with/without physician oversight). Individual task-related analyses were performed for physicians and nurses, and Advanced Practice Nurses/Specialist Nurses (APN/SN).

Results: Health professionals from the Netherlands, England and Scotland, which had implemented SoP policy reforms between 2010 and 2015, more frequently reported changes to staff roles vs. the six other countries (BC: 74.0% vs. 38.7%, $p<.001$; AMI: 61.7% vs. 37.3%, $p<.001$), and higher independence (BC: 58.6% vs. 24.0%, $p<.001$; AMI: 48.9% vs. 29.2%, $p<.001$). A higher proportion of nurses and in particular APN/SN from the three countries reported to undertake tasks related to breast cancer diagnosis, therapy, prescribing of medicines compared to the six countries. Similar cross-country differences existed for AMI on prescribing medications and follow-up care, but not for diagnosis and therapy, which remained largely within the medical profession's domain.

Lessons: SoP reforms trigger skill-mix changes, however, vary by conditions. Most tasks were shared between the professions.

Main messages: Higher levels of changes to staff roles and task shifting were reported in the Netherlands, England and Scotland, suggesting that professional boundaries have shifted following SoP expansions, for instance on chemotherapy or prescribing medicines. Skill-mix changes have implications for change management, collaboration and multidisciplinary team work.

Statement on gender/equity/diversity: SoP reforms targeting nurses (predominantly female) offer better career opportunities if well governed.

MARSDEN, Paul. Pact (Inc.), South Africa

A Purposeful Fit: Demand and Supply Modelling for South Africa's Social Services Workforce

Co-Authors: Paul Marsden, Pact (Inc.), SF|South Africa; Sibusiso Mcanyana, Mott MacDonald, SF|South Africa

Issue: The social services workforce addresses social, structural and behavioural determinants of health and social development, and provides the conduit that links care within the community. The burden of health and social issues requires a competent workforce that is enabled to meet demand, access and uptake of services, based on population needs.

Objectives: The Demand & Supply Model for the social development sector provides evidence-based workforce planning and investment projections that consider the number, ratio and distribution of social services practitioners (SSP) for social work, child & youth care and community development service delivery. Qualitative and quantitative aspects of SSP supply were determined through survey results and data. Demographic and prevalence drivers of demand and utilization enabled the determination of SSP workforce projections over a 15-year horizon.

Results: On the supply side: 23% of enrolled SSP students successfully graduate, and 89% of these are absorbed by the sector. A 1% increase in GDP per capita increases enrollment by 1.48%, associated with an enabling bursary scheme. The average number of years in service is seven. The major reason for exit is resignation (32%). The model projects a government to NGO & private sector split of approximately 60% to 40%. Supply forecasts over 15 years show an additional 11,700 SSPs onto the 2017 baseline of 33,600. Demand-side calibrations are based on workload and population coverage, disaggregated across the core programmes of the sector (HIV, Child Protection, Care for Families, Women & Youth Empowerment). Approximately 76% of SSP are female.

Lessons: Demand calibrations on demographic, health and social trends, linked to workload, requires sustained and systematic data collection from programmes to inform utilization and demand patterns.

Messages: While demand and supply modelling is a rigorous process, it helps countries develop a robust business case for workforce investment.

MARTINEAU, Tim. Liverpool School of Tropical Medicine, United Kingdom of Great Britain and Northern Ireland.

The resilience of Human Resource Management (HRM) in the context of crisis: the case of health worker deployment in Northern Uganda and Zimbabwe

Co-Authors: Tim Martineau, Liverpool School of Tropical Medicine, UK|United Kingdom of Great Britain and Northern Ireland; Yotamu Chirwa, Biomedical Research and Training Institute, ZI|Zimbabwe; Wilson Mashange, Biomedical Research and Training Institute, ZI|Zimbabwe; Richard Mangwi, Makerere University School of Public Health, UG|Uganda; Alvaro Alonso-Garbayo, Liverpool School of Tropical Medicine, UK|United Kingdom of Great Britain and Northern Ireland

Topic: The responsiveness of human resource management (HRM) in the health sector in crisis contexts is a major determinant of an effective workforce. Deployment is a key HRM function both to support equitable access to health services and for staff retention. Systems changes may be made at both policy and practice level in response to crisis.

Methods: This study in Northern Uganda and Zimbabwe – the former affected by conflict and the latter by economic crisis - assessed changes in deployment policy and practice in the public sector and explored its impact on health worker availability. Data was collected using document reviews, key informant interviews and interviews with health workers, balanced by gender, and managers in three districts in each country to enable triangulation. Gender and equity are included in the study; diversity was not specifically addressed.

Findings: We found that no significant changes to deployment policies were made specifically in response to the crises. However, implementation of policy by local managers was pragmatic. There were examples of managers interpreting the deployment rules leniently, to avoid putting staff in danger and to retain staff in times of severe shortage. There were also examples of managers using less popular informal and undocumented deployment strategies, such as temporary secondment, to fill much-needed posts.

Lessons: In our study the resilience of the HRM systems was demonstrated not at policy level, but rather at practice level by local managers. However, managers need improved competencies in HRM to respond more effectively to future crises, and therefore to support equitable access to quality health services. Greater flexibility at policy level should also be explored. Further research on the resilience of both policy and practice in HRM systems is needed in all countries to support an effective health workforce in potential future crises.

MUKAMI, Diana. Amref Health Africa, Kenya

A Purview of the Future: East, West, and Southern Africa's experience in improving health worker performance through innovative approaches

Problem: The World Health Organisation declares “a universal truth” that there is “no health without a workforce”. 36 Sub-Saharan Africa countries average only 1.1 health workers per 1,000 population, against recommended minimum of 2.3. HRH challenges of shortage, skill-mix imbalances, mal-distribution and barriers to inter-professional collaboration, affect all health workers, from community to specialist levels. At the root of the problem is chronic under-investment in education and training of health workers in some countries, resulting in inadequate training institutions; hence the need for disruptive approaches.

Objectives

- Increase number and skills of health workers in East, West, and Southern Africa;
- Increase absorption capacity of health training institutions;

Methods: Since 2005 Amref Health Africa has tried and tested a blended eLearning approach for in-service and pre-service training of health workers in East, West, Southern Africa. The approach has been implemented through public-private partnerships and is accredited by respective regulatory bodies of countries including Kenya, Uganda, Tanzania, Senegal, and Zambia. Continuous improvement is informed by regular evaluations using the Kirkpatrick model.

Significance of the topic: Using technology-enhanced innovations to produce qualified health workforce within resource constrained settings.

Results and findings: This initiative has reached 15,000+ health workers, ~80% female, realising a sharp (86.2% in Kenya) increase in absorption capacities of training institutions. Similar/better performance academic performance for instance in Uganda where 61% of eLearners passed with credits compared to 45% classroom based students and in Kenya where an eLearning school has consistently (100%) outperformed national licensure exam results. Changes in policy to favour technology-supported learning realised in countries like Kenya, Tanzania and Zambia.

Lessons to date: Considerations in use of sustainable delivery infrastructure, learner support mechanisms, and localisation are critical to success. Partnerships are necessary to build large scale eLearning programmes.

Main messages: Technology-supported learning customised for the region works.

MURIUKI, Janet. IntraHealth International, Kenya

Transforming Human Resources for Health Coordination Structures under Kenya's Devolved System

Background: The 2008 First Global Forum on Human Resources for Health (HRH) raised concerns regarding inadequate country HRH coordination. Participating countries were requested to adopt the World Health Organization/Global Health Workforce Alliance Country Coordination and Facilitation (CCF) approach to establish and support effective governance structures for inter-sectoral HRH coordination and collaboration while working through one national HRH plan.

Through the USAID-funded Capacity Kenya Project, led by IntraHealth International, and the leadership of the Ministry of Health (MOH), Kenya adopted the CCF approach in 2009 by forming a technical working group (TWG) to coordinate HRH activities countrywide. In 2010, the TWG evolved into a national HRH Interagency Coordination Committee (NHRHICC) mandated to spearhead HR reforms to improve effectiveness and efficiency in health services delivery. The MOH chairs the NHRHICC, whose members include donors, implementing partners, health and HR regulatory bodies, medical training institutions, health unions and associations, Public Service Commission, and private and faith-based sectors. Through three working groups—HR management, HR development, and HR information systems—with IntraHealth's support for the secretariat and technical aspects, the NHRHICC has since 2010: 1) hosted quarterly meetings to deliberate HRH issues, 2) led development and implementation of HRH policies/guidelines, and 3) monitored implementation of the 2009-2012 HRH strategic plan and subsequent 2014-2018 national HRH strategy along with Kenya's 2013 global HRH commitments.

Following the devolution of Kenya's health sector in 2013, NHRHICC was decentralized, generating seven inter-county HRH stakeholder coordination forums operating on the same principles as the national committee. The forums, chaired by county departments of health, normally meet quarterly to deliberate HRH issues, validate and disseminate policies, receive outcomes of NHRHICC meetings, and share county forum deliberations with the national level.

To transform the HRH agenda into action, the NHRHICC and inter-county forums have been instrumental in 1) expediting development, customization, and dissemination of policies, especially at county level; 2) enabling national HRH officers to mentor/coach their county counterparts; 3) fostering sustainability of HRH interventions including the government's stewardship in hosting, coordinating, and managing the meetings themselves; 4) hosting inter-governmental annual HRH conferences beginning in 2011, and subsequently three others under the devolved system; and 5) providing vibrant and effective collaborative platforms for stakeholders to resolve HRH challenges and harmonize HR practices country-wide.

Learning objectives and intended participants: Intended participants include donor, implementing partner, government, and civil society representatives. Participants will learn:

- Using Kenya's experience, how to establish and implement a HRH CCF at national level and under a devolved system
- Benefits of a strengthened HRH coordination platform for monitoring a country's HRH strategy/commitments/priorities.

Focus:

- Lessons from establishment of Kenya's CCF/NHRHICC and its decentralization
- Lessons about HRH coordination towards achievement of the HRH agenda at national and sub-national levels

Main messages:

- Intra- and inter-sectoral coordination is a best practice for HRH
- Kenya's achievements and lessons in operationalizing the CCF approach under devolution can have relevance for other countries/settings

Gender equity: This submission addresses diversity of stakeholders--public, private, health, non-health, different levels of government--in HRH dialogue and coordination.

Co-authors: David Njoroge, Ministry of Health, Kenya, KE | Kenya; Douglas Bosire, County Government of Nyamira, KE | Kenya

NAYER, Israt. Save the Children, Bangladesh

Applying Workload Indicators of Staffing Need (WISN) method at different levels of health care in Bangladesh: Challenges and opportunities

Co-Authors: Israt Nayer, Save the Children, BG|Bangladesh; Liaquat Ali, Bangladesh University of Health Science, BG|Bangladesh; Faiz Ahmed, MOHFW, BG|Bangladesh; Sukumar Sarker, USAID Bangladesh, BG|Bangladesh; Masuma Mannan, Bangladesh University of Health Sciences, BG|Bangladesh

Topic/Issue/Problem: Bangladesh health workforce strategy 2015 recommends determining service level wise health workforce needs adopting a workload analysis approach, so that right categories of health workers in right numbers with proper skill mix can be determined.

Objectives and Methods: WISN method developed by WHO was customized for country context and applied in one tertiary and selected secondary and primary level facilities in two districts. Objectives were to assess existing workload of different category of health workers and identify gap between current and required number of health workers to cope with the workload. Workload components and activity (time) standards were determined through discussion with experienced practitioners at the facilities and field level and matching with findings of direct observation of actual delivery of services. Annual service statistics and human resources data collected directly from facilities and cross checked with national level MIS and HRIS.

Results and Findings: Many staff with different designations found to have same roles and responsibilities. Over nine hundred types of staff designations were grouped into 67 categories based on their interchangeable job responsibilities. Another major challenge was unavailability of segregated service data of the activities that account significant amount of available working time of relevant staff category. Mismatch found between the HRIS data and actual HR at facility level which was further complicated by different types of posting such as deputation, attachment, current charge etc.

Lessons to date: Huge number of staff designation in health system needs review and rational categorization. Proper record keeping system at facility level is essential is for determining the workload more precisely. HRIS needs to be strengthened.

Main messages: Improved recordkeeping and regular updating of HIRS data will support health managers to determine the actual workload.

The presentation addresses equity and diversity issues by examining data from rural Bangladesh.

NOVE, Andrea. Novametrics Ltd, United Kingdom of Great Britain and Northern Ireland

New methods for planning the sexual, reproductive, maternal, newborn and adolescent health (SRMNAH) workforce to meet population need.

Co-Authors: Andrea Nove, Novametrics Ltd, UK|United Kingdom of Great Britain and Northern Ireland; Muna Abdullah, UNFPA East and Southern Africa Regional Office, SF|South Africa; Mohamed Afifi, UNFPA Arab States Regional Office, EG|Egypt; Hla Hla Aye, UNFPA Myanmar Country Office, BM|Myanmar; Zoe Matthews, University of Southampton, UK|United Kingdom of Great Britain and Northern Ireland; Francisco Pozo-Martin, London School of Hygiene and Tropical Medicine, UK|United Kingdom of Great Britain and Northern Ireland; Petra ten Hoop-Bender, UNFPA, SZ|Switzerland; Martin Boyce, Novametrics Ltd, UK|United Kingdom of Great Britain and Northern Ireland

Methods for workforce planning often focus on 'one size fits all' benchmarks, but because populations vary in terms of their demography (e.g. fertility rate) and epidemiology (e.g. HIV prevalence), the level of need for SRMNAH workers also varies, as does the ideal workforce composition. In recognition of this, the team responsible for the 2014 State of the World's Midwifery (SoWMy) report devised a new method of estimating need for SRMNAH workers and the potential of the available workforce to meet this need. Estimates were projected forward to 2030 as per the SDG timeframe.

In this session, we will present a number of different ways in which the SoWMy method has been developed and applied. It will be of interest to policy-makers, researchers and health service managers at global, regional and national levels. They will leave with a good understanding of the principles behind the method and how it can be applied, and appreciation that there are feasible alternatives to 'one size fits all' benchmarks.

There will be five presentations. The first will give an overview of the objectives and premises of the SoWMy method. It is a needs-based method of estimating the extent to which the workforce has the potential to meet the population need for essential SRMNAH care. It also estimates the likely impact of different policy options on future workforce availability.

The second and third presentations will describe the recent regional SRMNAH workforce assessments in East and Southern Africa and the Arab States. Most countries in these regions provided workforce data, which were used to estimate the proportion of each country's need that could potentially be met each year to 2030.

The fourth presentation will feature the Myanmar workforce assessment from 2016. The method was tailored to the national context, and the modelling took into account accessibility, acceptability and quality of health workers as well as availability. Different policy options were modelled to assess their likely impact on effective coverage of SRMNAH workers.

The fifth presentation will introduce the 'Dream Team' method of estimating how many SRMNAH workers from specific cadres are needed to deliver full coverage of essential services. The method allocates tasks to cadres according to their competencies. The answer is different for different countries due to variations in prevalence of key diseases, contraceptive preferences and other variables.

Participants will leave with an understanding of how the SoWMy method is a novel, adaptable, needs-based workforce planning tool. They will be able to ask technical and substantive questions about how it works and its potential for use on other parts of the workforce. We will address equity by focusing on the female-dominated SRMNAH workforce and user base, and by making the point that workforce planning must be context-specific rather than assuming that all countries need the same thing.

Indicative list of speakers: Muna Abdullah (UNFPA), Mohamed Afifi (UNFPA), Martin Boyce (Novametrics), Hla Hla Aye (UNFPA), Zoë Matthews (University of Southampton), Andrea Nove (Novametrics), Francisco Pozo-Martin (LSHTM), Petra ten Hoop-Bender (UNFPA Geneva).

NOVE, Andrea. Novametrics Ltd, United Kingdom of Great Britain and Northern Ireland

Investments in the health labour market will result in important multiplier employment effects for non-health workers in the broader economy/« L'innovation numérique de gestion de Ressources Humaines pour la Santé dans la mobilisation des Ressources finan

Co-Authors: Andrea Nove, Novametrics Ltd, UK|United Kingdom of Great Britain and Northern Ireland; Xenia Scheil-Adlung, International Labour Organization, SZ|Switzerland; Christiane Wiskow, International Labour Organization, SZ|Switzerland

Health workers can be fully effective only with the support of workers in non-health occupations (NHOs), e.g. manufacturers of drugs and equipment, vehicle mechanics, health insurance workers and construction workers. Understanding the size and composition of the NHO workforce is therefore essential for health and employment policies aiming at universal health coverage (UHC). However, there has never been a systematic attempt to quantify existing numbers of NHO workers or estimate the numbers needed.

Some NHO workers supporting the health workforce are employed within the health sector, but many are not – and some, such as informal care providers, are not formally employed at all. This means their numbers cannot be estimated accurately from existing published data sources. A new method was developed for estimating health worker and NHO worker numbers using ILO and WHO global databases, based on a combination of survey data, government data and assumptions based on proxy variables.

This analysis indicates that, globally, each health professional is supported by 1.5 formal NHO workers and 0.8 informal workers, and that the global decent job potential of NHO workers is larger than that of health workers, with the most important potential in Africa and Asia where unemployment and underemployment are globally highest. Projecting forward to 2030, it is estimated that investments in the health workforce to achieve UHC will result in jobs for an additional 57 million NHO workers.

The analysis indicates that the broader economy will benefit from investing in the health workforce to achieve UHC. Focused investment in under-served locations and in female-dominated spheres such as informal care work will also bring about increased equity. However, improved data collection methods are needed, to allow this type of analysis to be based more on empirical evidence and less on assumptions and proxies.

NSUNGWA, Jessica. Ministry of Health Uganda, Uganda

Health Workforce Wage bill ceiling; a challenge to health worker absorption in Uganda.

Uganda is one of the 56 countries identified in the WHR 2006 as having critical shortages of health workers. Staffing norms that were established over ten years ago for health worker positions in the health sub-districts are filled to 71%. However, these positions have not been revised despite increased demand in workload due to population growth rate of 3% per annum and expansion of treatment guidelines for HIV and increased awareness and demand for maternal and child health services. As a response, the ministry of health sought and received support from development partners to train and bond more than 1200 midwives. These midwives completed training but cannot be recruited into the public health service due to the wage bill ceiling from the ministries of Finance and Public Service. The MOH has had to lift the bonding and allow the newly trained midwives to seek employment elsewhere in and out of the country; leaving critical shortages in the public service.

Learning Objectives:

1. Uganda and other African countries lack fiscal space to recruit key health workers needed to achieve UHC.
2. The Addis Ababa conference on Financing for Health emphasised the need to focus on domestic resources for financing health services in LMICs. This approach calls for further examination as other countries on top of Uganda are facing similar challenges.

Intended participants: Policy makers from low and high income countries, development partners, health workforce managers, educators and researchers

Focus Issues to be discussed:

1. Increasing demand for health workers in Uganda and other African countries arising from population growth and higher levels of population awareness and uptake of health services.
2. The economic realities in Uganda and other low income countries that restrict the ability to hire the requisite numbers of health workers to meet expectations of UHC.
3. The need to re-examine the call to focusing on domestic resources as the principal source of health financing in low income countries.
4. To propose additional innovative financing approaches including national and community insurance schemes.

Key messages:

1. The economies and tax base in many low income countries is inadequate for the employment of health workers needed for UHC.
2. More effort is needed to mobilise governments and communities on innovative health financing approaches in the face of increased demand.
3. The call for focus on domestic resources to finance health for UHC in LMICs needs re-examinations.

OMASWA, Francis. Executive Director, African Center for FGlobal Healrh and Social Transformation (ACHEST)., Uganda

Empowering health workers to improve productivity and performance using quality improvement methods.

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Background: The factors that determine the productivity of the health workforce are multiple and key among these is their ability to lead and solve local problems and effectively manage the available resources in the workplace. Quality improvement methods (Total Quality Management) and tools are of proven value and are widely used in health systems around the world to improve health outcomes and strengthen health systems. However, these have not yet gained widespread use in LMICs especially in sub-Saharan African health systems. The purpose is to show case experience on the use of QI methods and tools in improving the productivity of health workers by empowering them to achieve the full potential of their training and skills to solve problems as well as the ability to self-organize and maximize the use of available resources and thereby meet the expectations of their clients.

Learning Objectives:

1. To increase awareness on the potential of Quality and Performance improvement principles and methods in improving the productivity of health workers using examples from Uganda, University Research Corporation and JICA experience in other countries round the world.
2. To advocate for the inclusion of the QI methodology in the curriculum of training institutions so that graduates can have the skills to organize their work environment and achieve full the potential of their training.

Intended participants: This targets policy makers, health professions training institutions, health systems managers, frontline health workers and development partners.

Specific Issues to be discussed:

- Definition and role of QI in health systems strengthening and performance improvement in health. The empowerment if HRH to plan, evaluate and improve their own personal and collective and institutional performance will be show cased.
- The Uganda Quality Assurance Program will be presented as one of the oldest and most decentralized QI Program in Africa. Examples of how political leaders have been recruited to lead and empower HRH to own and address bottle necks in district and central levels will be presented.
- QI programs in other countries such as Afghanistan, Kenya, West Africa and Asia by the URC and JICA who have been long-term leaders and champions of this approach.

Main messages:

- Productivity of health workers can be enhanced by QI methods,
- Ownership and control of work environment is critical to achieving maximally the potential of HWF skills,
- QI methods should be included in training curricula of training institutions.

O’SULLIVAN, Cliona. University College Dublin, Ireland.

Rehabilitation 2030: Panel Discussion on Education and Training for Rehabilitation Professionals in Low Income Countries

Background and context: The WHO report, Human Resources for Health, highlights the chronic shortage of health workers, particularly in developing countries. The WHO reports the need for 18 million additional health workers globally, primarily in low resource settings, by 2030, if the United Nations Sustainable Development Goal 3; ‘Ensure healthy lives and promote well-being for all at all ages’, is to be achieved. Key to this is to increase the number and quality of health professions programmes in low income countries, ensuring that graduates are capable of meeting local health needs. The WHO recommends that policies that “strengthen the capacity and quality of educational institutions and their faculty through accreditation of training schools and certification of diplomas awarded to health workers” should be considered. It advocates for competency based learning to ‘equip health workers with skills to work collaboratively in inter-professional teams, with knowledge to intervene effectively on social determinants of health and expertise in public health’, (WHO 2016).

The recent WHO report, ‘Rehabilitation 2030: A call for action’ committed to ten areas of action to strengthen rehabilitation across the world. Key to this is availability and provision of quality education and training for rehabilitation professionals.

Focus: The focus of this panel discussion therefore is education and training for rehabilitation professionals in low income countries. Rehabilitation workers include but are not limited to: physiotherapists, occupational therapists, speech and language therapists, prosthetists, orthotists, community rehabilitation workers, therapy assistants.

Learning objectives and participants: Participants at this session will be clinicians, patient representatives, educators, NGOs and government agencies. At the end of the session participants will have a greater awareness of the need for and impact of rehabilitation services and of strategies to strengthen education and training for rehabilitation professionals in low income countries

Main messages: This session will highlight the following in relation to rehabilitation training in low income countries:

- Current availability of education programmes
- Challenges in education provision
- Strategies to strengthen education and training

Format: The session will bring together key stakeholders from across different sectors and regions, (see below). The session will take the format of a panel discussion with key stakeholders making a 10 minute presentation followed by a moderated discussion with the opportunity for members of the audience to contribute. Stakeholder groupings are outlined below:

1. Patient representative: Disability Groups
2. Education representative: Universities and third level institutions
3. Clinician representative: Professional Associations, e.g. World Confederation for Physical Therapy, International Society for Prosthetics and Orthotics, World Federation for Occupational Therapists,
4. NGO representative: e.g. Handicap International, International Red Cross
5. Government Organisation: e.g. Irish Aid, USAID, DFID

The output from this session will be a discussion paper regarding education and training for rehabilitation professionals in low income countries. Should this application be successful, the authors will issue invitations to participants early August 2017, confirming speakers before 15th September 2017. The speakers will then hold 2 online meetings in advance to prepare for the panel discussion, (end of September and October)

Statement: This submission addresses disability

PRASAD, Rajnish. Institute of Health Management & Research (IIHMR University), India.

Using IT for streamlining payment of field level health staffs: Learning from Rajasthan, India

Co-Authors: Rajnish Prasad, Institute of Health Management & Research (IIHMR University), IN|India; Shweta Bhardwaj, Family Health International, IN|India; Shrutika Badgajar, Tata Institute of Health Sciences, IN|India

Issue: Under the National Rural Health Mission in India, ASHAs (Accredited Social Health Activist) were recruited to provide health services at the community level. In the state of Rajasthan, around 48,000 ASHAs are functioning. These ASHAs are provided a small fixed honorarium and around 75% of their income is provided in form of incentives for services delivered. However, payment for the incentives to ASHAs often get delayed as it takes time to match claims for incentive with target achievements and also, there were frequent complaint of corruption in making payment.

Objectives and Methods: To streamline the payment to ASHAs, development of ASHA Soft (Online Payment & Monitoring System) was undertaken. Under the system, progress on targets were reported and incentive was automatically calculated. It was made mandatory for district officials to verify the achievements in a time bound manner and accordingly payment was released to ASHA's bank account.

Results: With implementation of ASHASOFT, payment of around Rs 1000 Million (INR) are made to ASHAs in a year in a timely manner and processing time for incentive reduced from 45 days to 10 days. It has improved the motivation and performance of ASHAs. It also improved the reporting by more than 20%.

Lessons Learnt: Timely payment of incentives in a transparent manner is very important to improve retention and performance of field staffs.

Main Messages: Use of IT has helped in streamlining payment mechanism for field staffs. Timely payment and ease in monitoring performance of field staffs have helped in improving delivery of health services at community level.

Gender and Equity Issues: All the ASHAs are female staffs and they mostly deliver services to poor women at the community level. Hence timely payment and improvement in performance of ASHAs have helped in addressing gender and equity issues.

PRYTHERCH, Helen. Swiss Tropical and Public Health Institute, Switzerland

Strengthening decentralised human resources management to improve health workforce performance - PERFORM

Co-Authors: Helen Prytherch, Swiss Tropical and Public Health Institute, SZ|Switzerland; Tim Martineau, Liverpool School of Tropical Medicine, UK|United Kingdom of Great Britain and Northern Ireland; Moses Aikens, School of Public Health University of Ghana, GH|Ghana; Sebastian Baine, School of Public Health Makerere University, UG|Uganda; Ambrose Kessy, University of Dar-es-Salaam, TZ|United Republic of Tanzania; Joanna Raven, Liverpool School of Tropical Medicine, UK|United Kingdom of Great Britain and Northern Ireland; Reinhard Huss, Nuffield Centre for International Health & Development, UK|United Kingdom of Great Britain and Northern Ireland; Kaspar Wyss, Swiss Tropical and Public Health Institute, SZ|Switzerland

Challenge/Rationale: As countries push towards Universal Health, the district remains critical to integrated and comprehensive health care delivery and serves to bring the functions of planning, policy development, and management closer to the communities served.

Stronger, decentralised management lies at the heart of optimized health worker performance, improvements in service delivery and strategies to address broader health system challenges in areas such as governance or financing.

Objectives and methods: PERFORM, an implementation research initiative funded by the European Union from 2011 to 2015, introduced an Action Research approach across three sub-Saharan countries. It equipped health managers in selected districts in Ghana, Tanzania and Uganda with the skills and tools to analyse their health workforce situation, including from a gender and diversity perspective; and to develop, implement and monitor response strategies. These strategies addressed management improvements (job descriptions, staff appraisals, supervision) as well as workforce performance (task allocation, reducing staff absences, making workplaces more conducive etc.).

Lessons to date: In all settings the Action Research approach:

- strengthened management by honing skills in problem analysis; planning, and use of disaggregated data
- fostered collaboration amongst district health managers through regular, focused meetings
- increased supportive supervision and access to in-service training

In Ghana and Tanzania the strategies contributed to improvements in equitable service coverage and drug availability as reflected in facility staff and client perceptions, backed by HMIS data. In Uganda the strategies were associated with a documented decline in absenteeism, greater productivity and strengthened communication.

Peer learning across districts was an integral part of the Action Research approach and highly valued.

Dissemination took the form of concise national workshops, cross-district and cross-country exchange, discussion with Ministries of Health and Local Government and the development of policy briefs and an AR toolkit (<http://www.performconsortium.com/action-research-toolkit/>).

REEVES, Mantue. Jhpiego Liberia Office, Liberia

Gender issues affecting student performance and attrition in Midwifery and Laboratory Technician pre-service education programs in Liberia

Co-Authors: Varwo Sirtor-Gbassie, Jhpiego Liberia Office, LI|Liberia; Allyson Nelson, Jhpiego Liberia Office, LI|Liberia; Marion Subah, Jhpiego Liberia Office, LI|Liberia; Mantue Sunday Reeves, Jhpiego Liberia Office, LI|Liberia

Topic: Gender inequality in Liberia is evident in the gender disparities in the workforce, women's lack of control over resources, secondary education and literacy, and high rates of gender-based violence . The USAID-funded Maternal and Child Survival Program (MCSP) conducted a gender analysis to investigate gender biases that may affect students' experiences and performance in school, ultimately affecting health workers' development and deployment.

Objective/Methods: MCSP is strengthening pre-service education for midwives and laboratory technicians (LTs) in Liberia. The gender analysis sought to strengthen the gender-responsiveness of pedagogy, curricula, and institutional structures in order to increase matriculation, reduce dropout, and enhance academic performance. Twenty-one staff and 128 students participated in key informant interviews and same-sex focus group discussions (FGDs), respectively, from three midwifery programs and two LT programs. Interviews focused on gender issues that affect students, including instructional biases, and health and safety systems. FGDs sought opinions on hypothetical case studies related to gender issues faced in school. Deductive methods were used to code and analyze all notes.

Results/Findings: Students and health care staff are significantly more aware of sexual harassment issues and how these issues affect performance, absenteeism, and dropout in schools than are teachers and administrators. Schools lack adequate security, health provisions, and food and accommodation for students. Teaching staff portrayed actions and attitudes reflecting gender biases in students' abilities with potential impact on student performance. School policies do not adequately address gender constraints that impact female student retention.

Lessons to Date: PSE institutions have some insufficient policies and structures but implementation is lacking to address gender issues that affect student performance and retention.

Main messages: Findings can be used to shape gender-responsive policy and gender-sensitive environments in midwifery and LT schools to improve learning outcomes and ultimately strengthen the health workforce in Liberia and throughout the region.

SALSBERG, Edward. George Washington University, United States of America

Innovative Use of Workers to Increase Access and Constrain Costs

Topic/Issue/Problem: Almost all countries want to increase access to health care but have limited resources. Even wealthy countries want to provide services in an efficient manner. One result of the pressure to do more with less is exploration of how to use workers to their fullest capacity. In the U.S. this has led to the experiments with new health occupations and expanding scopes of practice for existing health workers.

Objectives/Methods: This presentation will review six promising health workforce innovations based on a review of the literature and an invitational meeting held in late 2016: nurse practitioners; physician assistants; dental hygienists and assistants; community health workers; grand-aides; and a system of remote support for local practitioners through telecommunications.

Results and Findings: While the progress at implementation, evaluation and dissemination varies by innovation, they all hold great promise to increase access in a cost-effective manner.

Lessons to Date: It is possible to develop new categories of workers and to modify the scope of practice of existing workers to make better use of their skills and to increase access in a cost-effective manner. However, there are a number of common barriers including: overcoming resistance of existing professional groups; establishing an appropriate regulatory framework; providing adequate and appropriate payment; and aligning educational pathways to match the delivery innovations.

Main Message: Health workforce innovations have an important role to play in improving access to needed services but there are barriers that need to be addressed.

Impact on gender, equity, diversity: The emergence of new occupations and expanded roles provide an opportunity for women, minorities and others. For example, expanded roles for dental hygienists, the vast majority of whom are women, can increase access to needed oral health services and provide opportunities for women.

SINGH, Neha. London School of Hygiene & Tropical Medicine, United Kingdom of Great Britain and Northern Ireland

Effects of payment for performance interventions on health workers and key elements of their work environment in low- and middle-income countries

Co-Authors: Neha Singh, London School of Hygiene & Tropical Medicine, UK|United Kingdom of Great Britain and Northern Ireland; Josephine Borghi, London School of Hygiene & Tropical Medicine, UK|United Kingdom of Great Britain and Northern Ireland

Rationale: Payment for performance (P4P) interventions aim to improve health worker motivation to perform better, though little is known about how P4P works, or its causal pathways.

Objectives and Methods: This study aims to use the realist review approach to assess the effects of P4P on health workers and key elements of their work environment in low and middle-income countries (LMICs). We began by developing a novel theory of change. The realist review's search strategy ensures a focus on gender equality, equity and diversity in LMIC literature searched.

Results/lessons to date: The P4P theory of change shows that health workers are affected directly by financial incentives and are expected to become more motivated to adhere to clinical guidelines for incentivised care, and to adopt strategies to achieve targets. Subsequently, health services are expected to become more affordable and responsive to community and patient needs. P4P also involves verification of performance data by supervisors, strengthening relations between health workers and managers, which may enhance the governance function of the system through more frequent and focused supportive supervision, and can facilitate reduced absenteeism and improve staffing levels and composition. However, P4P can also result in unintended consequences such as mis-reporting performance, a displacement of effort away from un-incentivised services, and positive spillover effects. Additional results are forthcoming in August 2017.

Main messages: To date, there is no published literature on the effects of P4P on health workers. As over 30 LMICs are implementing P4P schemes with financial support from international donors, with major funding expected globally for women's, adolescent and children's health via the new Global Financing Facility, evidence is urgently needed to inform these investments. Results from our study will assess the evidence base for the effects of P4P on health workers and key elements of their work environment in LMICs.

SINGH, Shweta. National Health Systems Resource Center, India

Empowering Nurses through the prism of gender, power and politics: experiences from five Indian states

Co-Authors: Shweta Singh, National Health Systems Resource Center (NHSRC), IN|India; Vinay Bothra, NHSRC, IN|India; Priya Chichwadkar, NHSRC, IN|India; Nishant Sharma, NHSRC, IN|India; Prankul Goel, NHSRC, IN|India; Radheka Gupta, NHSRC, IN|India; Dilip Singh Marirembam , NHSRC, IN|India

Problem: Nurses constitute two-third of the health workforce and are the first point of contact for communities. Gender disparities in society also have its reflection in health systems as seen in power dynamics of the nursing cadre in health systems hierarchy and their involvement in policy-level decision-making. Therefore empowering nurses is crucial for enhancing delivery of universal health care services.

Objective: This abstract is part of a study conducted by the National Health Systems Resource Center to reviews dynamics of engaging nurses in policy-level decision-making in the Indian health system context.

Methods: The study was conducted in two phases: the first phase involved policy landscaping while in the second phase primary data collection was done through in-depth discussion and interviews with 146 key stakeholders and informants across the five selected states.

Findings: The study revealed that involvement of nurses in policy-level decision-making is crucial in enhancing ownership and better implementation of policies.

In some states, better governance mechanisms, proactive leadership, decentralization of power, professional development opportunities have accelerated engagement of nurses in policy-level decision-making. The principles of equity and equality have catalyzed nurses' empowerment in these states.

Findings also revealed that Doctors, especially males, exercise a disproportionate degree of power and influence over Indian health systems. This is exhibited in the governance structure, professional hierarchy and decision-making resulting in the relative disempowerment of nurses in contrast to doctors. The socio-cultural framework and gender inequity existing in society also has a negative influence on the professional status of nurses.

Lessons and main message: The deep-seated gender inequity in health systems has not been addressed in most states. It is crucial that the dynamics of gender, power, and politics within health systems' should be reflected in its policies and actions. This will ensure empowerment of nurses and contribute towards better health outcomes.

SIYAM, Amani. World Health Organization, Switzerland

The burden of recording and reporting PHC data to health workers and the expanded monitoring demands under UHC and the SDGs

Co-Authors: Amani Siyam, World Health Organization, SZ|Switzerland; Jan Ties Boerma, University of Manitoba, CA|Canada.

Health workers spend considerable time on recording and reporting health data. Such data are gathered for multiple purposes, including managing service provision, logistics and reporting on health statistics and KPIs. The latter are part of a national routine health facility information system that aims to collect data for a set of core indicators, enabling an assessment of progress and performance at national, regional/provincial, district and facility/community levels. The amount of time health workers have to spend on collecting data for statistical purposes has been a concern at all levels of the health system from local to global. There is however no objective and systematic information on how much time health workers actually spend on recording and reporting. The pressures to gather more data are often strong, including disaggregation, and many forms are introduced by government and often also specific disease programmes. Implemented in 5-countries, the study presents: (i) through a desk-review inventory, an overview of the striking number of recording registers and reporting forms currently used at the PHC level; (ii) through routinely reported health statistics, an estimate of the recording/ reporting time and the implication to the routinely available health workforce FTE and PHC service provisions; (iii) and, concludes with insights and future considerations of the eminent and extending demands on monitoring the PHC agenda for UHC and the SDGs.

STAVDAL, Anna. World Organization of Family Doctors, Thailand

Transforming the medical workforce – shifting the curve to cost-effective generalist primary health care

Co-Authors: Anna Stavdal, World Organization of Family Doctors, NO|Norway; Job Metsemakers, WONCA, NL|Netherlands; Ana Nunes Barata, WONCA, PO|Portugal; John WynnJones, WONCA, UK|United Kingdom of Great Britain and Northern Ireland

The Global Workforce 5 year action plan advocates for “prioritizing the deployment of multidisciplinary primary health care teams .. with broad competencies, avoiding the pitfalls and escalating costs of excessive dependence on tertiary care”. Starfield’s work showed that higher ratios of primary to secondary care staff have better outcomes at lower costs, and that this achieves more equitable care. The Commonwealth Fund ranked the U.K.’s health system as the most effective and efficient in 8 / 11 indicators, attributing this to its comprehensive coordination of care through a registered population, with family doctors leading teams of workers offering comprehensive care focused on individuals and their overall needs. In this setting, 90% of health care is delivered for just 8% of the health budget, and a year of primary health care costs less than a day in hospital.

Examples like this mean that many governments are now beginning to focus on the need to train generalists to work as first point of medical care in community settings. But many governments do not yet understand the new discipline of family medicine and what it can offer to a strong health system - nor how to recruit and retain doctors to the primary care setting, especially in areas of urban and rural deprivation. Explicit policies that train doctors for primary care and universal population coverage, and avoid the continued drift to hospital settings and subspecialisation, are needed to deliver a medical workforce that is fit for purpose and that can deliver cost effective person centred care.

This session will: Explain what family medicine as a speciality does within global health care systems: why it is needed, how to get doctors to choose to do it, what the postgraduate specialty should cover to get an equitable workforce of a high quality, and key structural components that ensure delivery and sustainability. The panel will draw upon the global experience of WONCA’s 150+ country members to show successful evidence based strategies. These include 1) educational approaches - medical school selection criteria, person-centred learning, community placements, mentorship, and a generalist curriculum which emphasises need-led care that can reduce inequalities in population health (2) social accountability - setting postgraduate standards, ensuring exposure to both rural and urban settings, raising the status of postgraduate family medicine as a choice through national and academic strategies, and addressing early years flexibility and workforce support: combined with emphasis on professional values of respect for patients and other professionals 3) professional conditions - the role of financial incentives, career support, and strategies such as public contracts with private and self employed professionals to achieve workforce retention.

WONCA has a diverse Council representing doctors from all parts of the world, including young doctor representation and medical students. Our panellists will prepare their material using case studies from all global regions, which reflect WONCA’s work on gender, geographical, and health equity as key dimensions of a humane and personcentred workforce. The young doctors on the panel will comment on the issues for the next generation.

VELAZQUEZ, Adriana. World Health Organization, Switzerland

Need for multidisciplinary actions to tackle cancer and other non-communicable diseases in low and middle income countries.

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The rise of non-communicable diseases (NCD) adds to the pre-existing healthcare burden of trauma, emergencies, and infectious diseases - particularly in low and middle income countries (LMIC), where 70% of global cancer cases take place. Lack of specialized human resources, appropriate technologies and infrastructure, hinder the attention to patients and prevent early diagnosis which lead to more costly interventions and higher morbidity and mortality in NCD patients in these settings. In order to meet population needs it is indispensable to scale up education and availability of different cadres to ensure interdisciplinary teamwork to deliver health care to cancer and other NCD patients. WHO published a study on the priority medical technologies for cancer management and included a list of the sample roles and occupations required. The scopes of practice and competencies need further development, to ensure education and accreditation to these competencies is available in LMIC.

The learning objectives are: to recognize the multidisciplinary occupations necessary to support the NCD health care provision at different levels of care; apply the concepts of the Global Strategy on Human Resources for Health and know how to implement its requirements on training, recognition and paid positions of the cadre required to tackle NCDs; identify the professional societies and institutions that can support the development of these emerging professions and alternative cadres.

The panel will discuss the role of healthcare workers in cancer management, from prevention, screening, diagnosis, treatment, follow up, palliative care and end of life care.

Medical laboratory and surgery, are essential components of healthcare, and have direct relevance for to treatment and monitoring of patient health. Technology innovations and advancements in clinical interventions needed for cancer diagnostic, treatment and palliation, require specialists in pathology, endoscopy, radiology, nuclear medicine, radio-and chemo-therapy and palliative care. Integration of "omics" data into imaging data opened new horizons for delivering health care to cancer and other NCD patients. To manage these oncology technologies, emerging professions such as medical physics and biomedical engineering, are required for the safe and appropriate use of the technology.

The roles to be discussed are: pathologists, biomedical laboratory scientists and technologists, radiologists, nuclear medicine physicians, radiation oncologists, medical physicists, radiographers and radiological technologists, radiopharmacists, biomedical engineers and biomedical engineering technicians, and palliative care staff

Different health professionals working in multidisciplinary teams are necessary to provide safe, efficient, reliable and appropriate screening, diagnostics, treatment and follow up of NCDs.

Poor diagnostic capacity leads to both under- and over-diagnosis due to lack of precision and capacity to correctly interpret the tests.

Effective treatment can prevent NCDs and secondary health problems that have substantial impact on quality of life for individuals, and impose burdens on families and societies when people become disabled or lose their capacity to work and be productive.

In LMIC there is a need to encourage quality educational programmes to ensure all the skills of this different cadre can work as a team to provide comprehensive integrated care.

WIEDENMAYER, Karin. Swiss Tropical and Public Health Institute (SwissTPH), Switzerland.

Adapting pharmaceutical skills to the needs of rural areas- a new cadre to serve and stay at Primary Health Care facilities in Tanzania

Co-Authors: Karin Wiedenmayer, Swiss Tropical and Public Health Institute (SwissTPH), SZ|Switzerland; Valence Ndesendo, St. John's University of Tanzania, TZ|United Republic of Tanzania; Fiona Chilunda, Health Promotion and System Strengthening Project (HPSS), TZ|United Republic of Tanzania; Victor Meshack, Health Promotion and System Strengthening Project (HPSS), TZ|United Republic of Tanzania; Romuald Mbwasi, St. John's University of Tanzania, TZ|United Republic of Tanzania; Helen Prytherch, Swiss Tropical and Public Health Institute (SwissTPH), SZ|Switzerland

Introduction: The general crisis of the health workforce in Tanzania is reflected in low staffing levels of pharmacy staff in the public health system in Dodoma region. Studies carried out by the Health Promotion and System Strengthening (HPSS) project revealed shortage of medicines and weak supply management skills. Medicines management is mostly done by non-pharmaceutically trained clinical cadres.

Objectives: St. John's University of Tanzania (SJUT) together with HPSS established a new modular one year curriculum for basic pharmaceutical staff in Tanzania. The aim of this vocational training programme is to produce adequately trained medicine dispensers who will work in primary health care (PHC) facilities such as dispensaries and health centres and to retain this new cadre in rural areas.

Methods: A curriculum for a basic certificate course was developed and accredited by the Pharmacy Council and the National Council for Technical Education. This level is meant to teach basic pharmaceutical sciences knowledge and skills. Financial and technical support by HPSS allowed renovation of required laboratories and recruitment of lecturers. A Memorandum of Understanding between HPSS and SJUT defined the public-private partnership. Students signed a binding contract for 3 years.

Results: The course was launched in 2016. 107 students enrolled and 96 students graduated after 40 weeks of study. Next to theoretical training, field work was designated for pharmacy practice, i.e. dispensing and stores management. Modules are intended to build students' vocational competencies for supply chain management. The modular programme offers an opportunity to progress to higher career levels.

Conclusion: The certificate course is designed to suit the professional needs of the health sector in the country. Dispensers will mitigate shortage and low retention of qualified supply staff at primary health facility level in rural areas. They will fill a critical gap in the supply chain contributing to better medical care.

WOOLLEY, Torres. College of Medicine & Dentistry, James Cook University, Douglas Campus, North Queensland., Australia

An evaluation framework for identifying and quantifying health workforce and community impacts from socially-accountable health professional education (SAHPE)

Co-Authors: Torres Woolley, College of Medicine & Dentistry, James Cook University, Douglas Campus, North Queensland., AS|Australia; Fortunato Cristobal, Ateneo de Zamboanga University, Mindanao, Philippines, RP|Philippines

Problem: Socially-accountable health professional education (SAHPE) institutions develop student selection, curriculum and training strategies specifically to produce graduates dedicated to strengthening local health systems and improving community health indicators equitably across all socio-economic and cultural groups. However, there is a relative paucity of published literature around the impact of SAHPE on local health workforce and communities. A major reason is a current lack of consensus on appropriate methods for undertaking impact evaluations; in particular, identifying and quantifying the range of impacts that may result from multi-faceted programs such as SAHPE.

Objective: To develop an evaluation framework to identify and quantify health workforce and community impacts from SAHPE students and graduates.

Methods: All 11 partner schools of THEnet organization developed a SAHPE Logic Model. The Logic Model incorporated key philosophy, values, strategies, desired outcomes and impacts common to all SAHPE programs, and acted as the 'road map' for the evaluation design and study questions.

- An evaluation framework (EF) was then developed following 5 key principles:
- Involvement of all stakeholders (SAHPE students, graduates and faculty, local health services, community)
- Multiple studies to evaluate the range of local health workforce and community impacts
- A mixed-methods approach (surveys and interviews)
- Counter-factual for quantitative studies (control group/community)
- Local 'experts' to provide content validity on interview and survey questions, while international partners provide methodological and statistical direction.

Findings: THEnet's EF was successfully trialed in the Philippines with Ateneo de Zamboanga University (Zamboanga Peninsula), and the University of the Philippines Palo-Leyte (Eastern Visayas).

Lessons: THEnet's EF provided evidence that SAHPE institutions shape and train their students to have significant, wide-ranging impacts across geographically and culturally-diverse health systems and communities.

Main message: Appropriately-designed, multi-study, EFs involving local partners can successfully evaluate health workforce and community impacts from SAHPE graduates and student community-based activities.