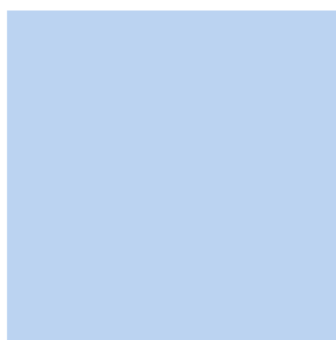
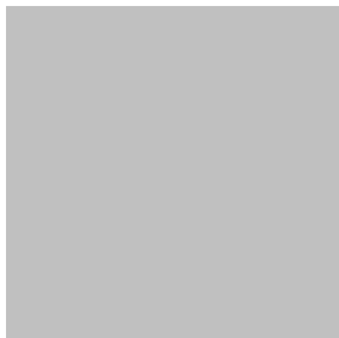
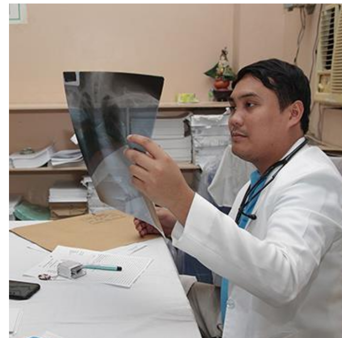
USAID
FROM THE AMERICAN PEOPLE

HRH2030
HUMAN RESOURCES FOR HEALTH IN 2030







FINAL | DECEMBER 2019

2020-2040 Human Resources for Health Master Plan: Blueprint

ACKNOWLEDGEMENTS

This publication was developed with support from the United States Agency for International Development (USAID) through the HRH2030 Program.

December 18, 2019

Cooperative Agreement No. AID-OAA-A-15-00046

Cover photo: Dr. Redentor Rabino, one of the first doctors to the barrios in Bongao, Tawi-tawi, conducts the Snellen's test to one of his patients. (Credit: Blue Motus, USAID HRH2030/Philippines)

DISCLAIMER

This material is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of cooperative agreement no. AID-OAA-A-15-00046 (2015-2020). The contents are the responsibility of Chemonics International and do not necessarily reflect the views of USAID or the United States Government.

Contents

Contents ... i
Acronyms ... 3
Background ... 5
Vision, Mission, and Goals for the HRH ... 5
Guiding Principles ... 5
Methodology ... 6
HRH Key Issues ... 7
Strategy Development ... 10
  Criteria in identifying strategies of the HRH Materplan ... 10
  Prioritizing the strategies of the HRH Masterplan ... 10
  Strategic Focus ... 11
  Strategy Map ... 12
  Production Strategies ... 14
  Workforce Strategies ... 16
  Exit and Re-entry Strategies ... 21
  Cross-cutting Strategies ... 22
Monitoring and Evauation ... 26
Plan of Action ... 26
End Notes ... 27

LIST OF FIGURES

Figure 1: Process Diagram on Developing HRH Masterplan Blueprint ... 6
Figure 2: Health Labor Market Framework for UHC ... 6
Figure 3: HLMA Framework and HRH Key Issues ... 9
Figure 4: The HRH Problem Tree in 2019 ... 9
Figure 5: Results of the prioritization of strategies ... 11
Figure 6: Strategic Focus of the Masterplan ... 12
Figure 7: Strategy Map of 2020-2040 HRH Masterplan ... 13
Figure 8: Accountability Mechanism ... 26

Acronyms

APO	Accredited Profession Organization
AQRF	ASEAN Qualification Reference Framework
ASEAN	Association of Southeast Asian Nations
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao
BHW	Barangay Health Worker
BNS	Barangay Nutrition Scholar
BLA	Bilateral Agreement
CSC	Civil Service Commission
CPG	Clinical Practice Guideline
COA	Commission on Audit
CHED	Commission on Higher Education
CPD	Continuing Professional Development
CAR	Cordillera Administrative Region
DOH	Department of Health
DILG	Department of Interior and Local Government
DOLE	Department of Labor and Employment
DOST	Department of Science and Technology
GAA	General Appropriation Act
GIDA	Geographically Isolated and Disadvantaged Area
HLMA	Health Labor Market Analysis
HCHEEG	High Commission on Health Employment and Economic Growth
HEI	Higher Education Institution
HRH	Human Resources for Health
HRHMP	Human Resources for Health Master Plan
HRMD	Human Resources Management and Development
IRA	Internal Revenue Allotment
LGC	Local Government Code
LGU	Local Government Unit
NEDA	National Economic and Development Authority
NHWA	National Health Workforce Account
NHWR	National Health Workforce Registry
NCD	Non-Communicable Disease
OSH	Occupational Safety and Health
PS	Personnel Services
PAASCU	Philippine Accrediting Association of Schools, Colleges and Universities
PPTA	Philippine Physical Therapy Association

PQF	Philippine Qualifications Framework
PSA	Philippine Statistics Authority
PHC	Primary Health Care
PRC	Professional Regulation Commission
QA	Quality Assurance
RSA	Return Service Agreement
SGLG	Seal of Good Local Governance
SHS	Senior High School
SA	Situation Analysis
SPMC	Southern Philippines Medical Center
SDG	Sustainable Development Goal
TESDA	Technical Education and Skills Development Authority
UN	United Nations
UHC	Universal Health Care
UP	University of the Philippines
USAID	United States Agency for International Development
WISN	Workload Indicator Staffing Needs
WB	World Bank
WHO	World Health Organization

Background

Prompted by the passage of the Universal Health Care (UHC) Law in 2018, the 2020-2040 Human Resources for Health Master Plan (HRHMP) is being crafted and will serve as an overarching document that guides the whole of society and whole of government to meet the HRH component of the UHC goals. The HRHMP addresses the need to improve the country's health outcomes and achieve UHC. To do so, it is critical to have a sufficient number of 'appropriately skilled and motivated, equitably distributed and well supported' health workers in the system.[1 2]

As stated in the UHC Law, the goal of the national 2020-2040 HRH Master Plan is to provide policies and strategies for the appropriate generation, recruitment, retraining, regulation, retention, and reassessment of the health workforce based on population health needs. The HRH Masterplan provides a picture of the current situation of the HRH sector in the Philippines, which has been presented following the World Health Organization (WHO) Working Lifespan Strategies. Data and information drawn from published and unpublished studies, policy documents, and other reports are presented about the health workers from entry to the workforce or pre-service (i.e. education and training), in the workforce, and exit out of the workforce. In addition, HRH stakeholders and its policy context were reviewed. The Masterplan will be progressive, technically, economically feasible and sustainable, and will have sufficient details for implementation and operationalization to guide the health sector to achieve better HR management.

Vision, Mission, and Goals for the HRH

Proposed Vision

By 2040, all Filipinos shall have access to responsive health facilities, staffed with appropriate number of competent, people-centered, compassionate HRH. They shall be highly motivated with permanent work and competitive salaries, to enjoy a comfortable life with their families without the need to work overseas.

Proposed Mission

Ensure adequate/equitable and sustainable number of compassionate and responsive HRH at all levels to deliver health care through the continuum of promotive, preventive, curative, rehabilitative health interventions.

Goals for the HRH

- To develop highly skilled and highly motivated health workers
- To ensure adequate and equitable distribution of health workers across the Philippines
- To contribute in improving population health outcomes

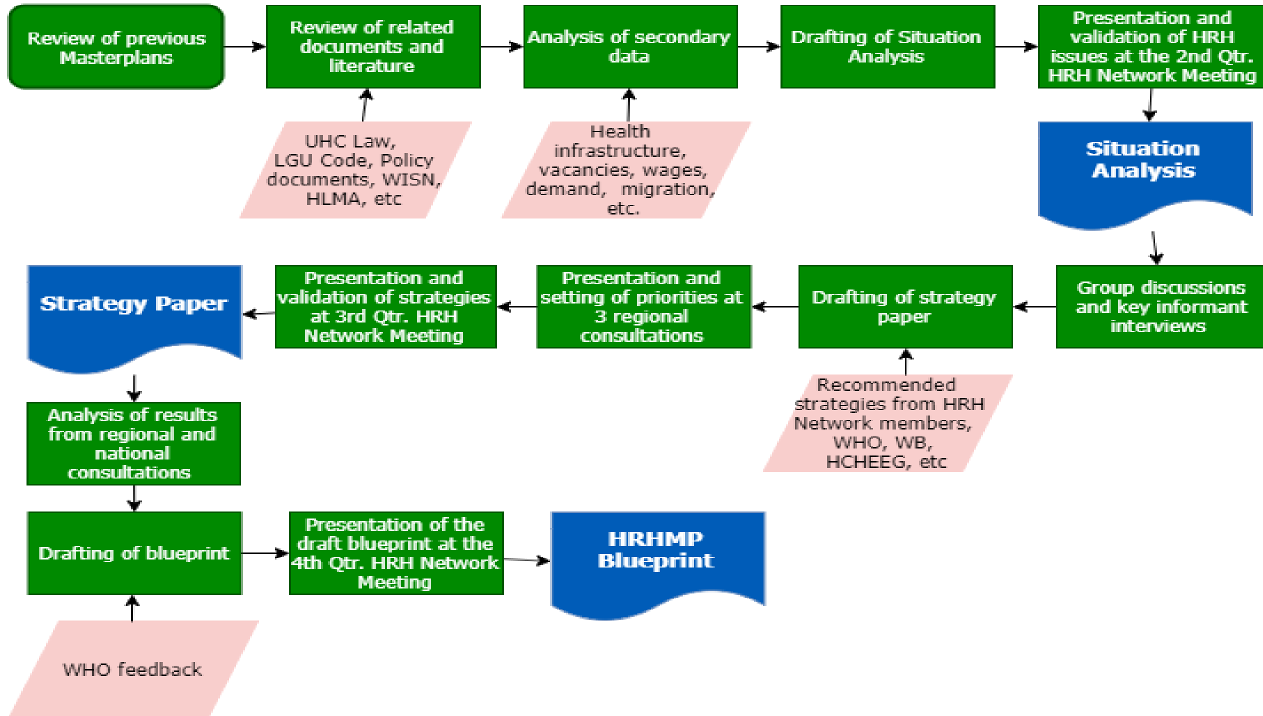
Guiding Principles

The HRH Masterplan will espouse the following principles in support of the national initiative towards provision of primary health care (PHC) for all Filipinos. The principles will be embedded in the strategic objectives and strategies of the Masterplan.

- UHC principles including universality, equity, accountability, sustainability, participation, social solidarity, individual responsibility, and progressive realization
- Primary care including initial contact, continuous, comprehensive, and coordinated care
- Improve individual's experience of health care, improve population health, reduce cost of care, and a healthy, sustainable, and productive workforce

Methodology

The HRH Master Plan blueprint was developed by conducting two major activities – a situation analysis (SA) and strategy development. Figure 1 shows the process that was undertaken to develop the HRHMP Blueprint. The health labor market analysis (HLMA) framework (Figure 2) which was adapted to include the HRH-related provisions of the UHC Law guided both activities.



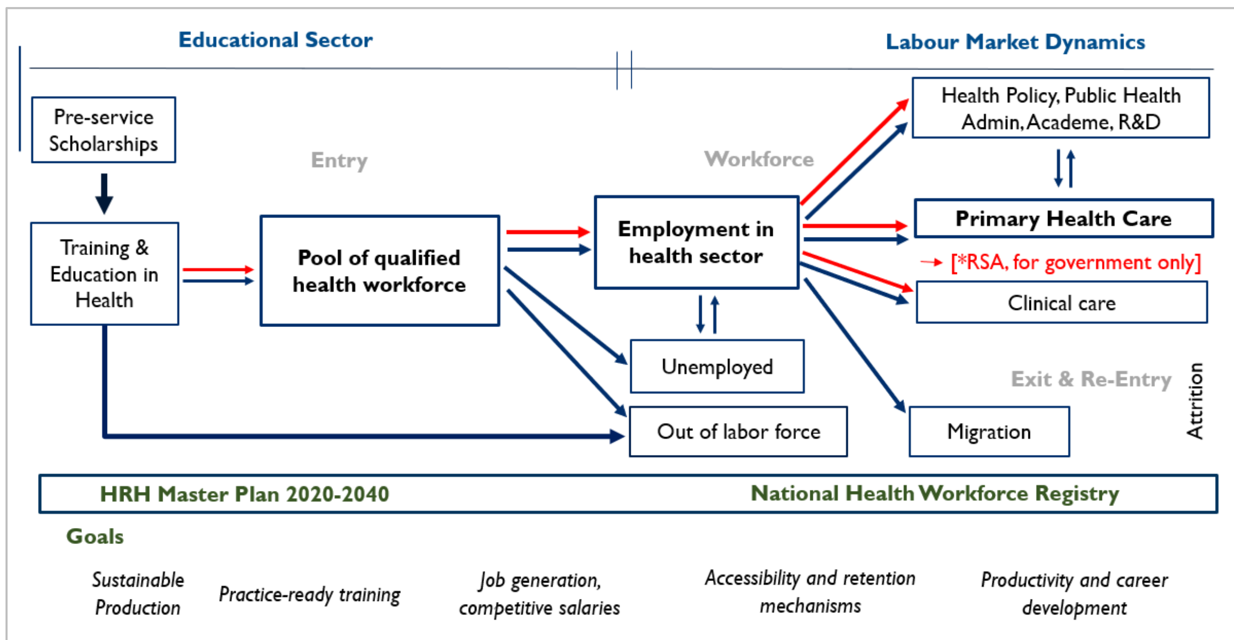


Figure 2: Health Labor Market Framework for UHC

In the course of preparing the Masterplan, the following limitations were encountered:

- While national, subnational and some private key stakeholders have been consulted, the consultations with practitioners at the grassroots level have been limited.
- Participation of the private sector is not as extensive so that their views on the HRH situation may not have been fully captured.
- Participation of key stakeholders such as other local government units (LGUs) and the Department of Interior and Local Government (DILG) at the national level has also been limited.
- Limitations of the quantitative data from relevant sectors of the HRH sector might not provide a true picture of the current situation, although this is mitigated to a certain extent by qualitative data obtained from regional and national consultations with stakeholders.
- At present, there is a dearth of re-entry data of health workers i.e. the number of health workers rejoining the workforce after being abroad, working in other sectors, or for some other reason has left and would like to rejoin the health sector.
- Since the process of scenario building has not started, the Masterplan does not include the results of the scenario building exercise.

Hence, the strategies should be revisited at a relevant period to ensure appropriateness and applicability to the issues that need to be addressed.

HRH Key Issues

From the situation analysis of the HRH Masterplan, major issues were identified that will be addressed by the proposed Masterplan strategies, as follows:

- Lack of accurate HRH information to guide planning and policy. The currently available data on the number of health workers in the country is not up to date and comes from multiple sources and does not accurately reflect the actual numbers. The estimate of the total number of health workers for instance, is based on the number renewing their Professional Regulation Commission (PRC) license. There are disparate information systems so that the number of workers in the health sector comes from the NDHRHIS, an information system operated by the Department of Health (DOH). Other HRH-related data such as on production and migration are housed by other agencies. There is no data on HRH out of work or unemployed health workers. There is no single source of HRH related data and information. There is a lack of support and structure for HRH information management.

- Inadequate number of health workers in the health sector. This is based on various estimates despite the large number of active health workers in the workforce according to PRC data. For instance, there are 869,974 health professionals who renewed their PRC identification cards in 2018. However, there is a gap of about 25 HRH per 10,000 population in 2018 when compared to the WHO estimate of 44.5 per 10,000 population needed to achieve coverage of sustainable development goals (SDGs). Estimates from the DOH also point to a shortage of 9,287 health workers in health facilities. This caused in part by fewer number graduates in the health sciences due to high attrition rates; the limited number of decent jobs in the health sector; unclear career paths of health workers; the inadequate support for health workers' health, safety, and well-being; and the increasing demand for Filipino health workers in overseas destination countries. For health workers who decide to work abroad, some of the pull factors include higher salaries, the prospect of better social, economic, and professional opportunities abroad, and the presence of relatives in the destination country. Factors that facilitate the move to other countries are also present. For instance, some receiving countries have visa provisions that allow family members to join the migrating health worker. The effect of temporary and permanent health worker migrants has been on the quality and quantity of workers left in the country. A growing phenomenon is for health workers, particularly nurses, to work in non-health sectors.

- Inequitable distribution of HRH across levels of care. Closely linked to the inadequacy of workers in the health sector is inequitable distribution as is evident in the HRH density across the country e.g. Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) has <1% of the total human resources in the country. The results of the workload indicator of staffing need (WISN) study by USAID's HRH2030 indicated varying degrees of surpluses, shortages, and normal workloads in various levels of care and cadres. Factors affecting the maldistribution of health workers include the inadequate remuneration in low income class municipalities; disparities in salary between private and public, national and local; and the inability of some LGUs to absorb health

workers such as those who are deployed. In addition, the poor working conditions and the characteristics of the place of assignment can affect retention. These include poor health infrastructure, inadequate health system and social support, limited training opportunities, the limited employment and educational opportunities and hospital facilities for family members, the relative isolation, etc. Many health workers study in urban areas, creating a bias in terms of place of employment.

The growing local and international demand exerts pressure to address the poor wages and poor working conditions facing health workers in the country. Domestic demand drivers include geographically isolated and disadvantaged areas (GIDA) as these are priority areas. Demand for health care is growing as shown by health expenditures, and a growing population group of 65 years old and above. Abroad, the demand for Filipino HRH is continuous. For health workers, better wages, the prospect of professional growth, and the opportunity to improve their socio-economic standing abroad on the other hand, are pull factors.

- Disjoint between the education and health sectors. This is an effect of the presence of multiple interlinked HRH systems that are not fully functional and many HRH stakeholders that operate independently. While this has been acknowledged (e.g. the HRH Network as a mechanism for discussing issues and decision making, data sharing, among others), accelerated action is required to have fully functional integrated HRH systems and policies. For example, there is a lack of collaborative planning in the production of HRH. There are too many schools in urban areas which is a business response to external demand without regard to the quality of the graduates being produced. There is no information coming from the health sector to inform the production of health workers for the country. Representatives from the education sector value the remittance from health workers working abroad, which while important, disregards the population health needs of the country, particularly in rural areas. There is weak regulatory capacity, and limited accountability and responsiveness of the education sector's accreditation system to health priorities.

- Fragmented HRH governance and unclear accountability mechanisms. The DOH is responsible for the recruitment of health workers at the national level, the Deployment Program, and for DOH retained hospitals. On the other hand, LGUs have the responsibility of staffing field health facilities. Frequently mentioned in the regional consultations is the political and bureaucratic interference in HRH processes and management. For example, the recruitment process is non-transparent with those having connections to those in power being favored. Health workers that are locally recruited are not always adequately compensated, provided benefits or given security of tenure, which can be traced to the personnel services (PS) cap mandated in the Local Government Code (LGC), and the income of municipalities and provinces. Additionally, local chief executives (LCEs) may not prioritize health during their tenure to the detriment of health workers and health care provision in the locality. The private sector, while guided by the policies, standards, and programs established by the DOH, operates independently. Temporarily or permanently migrating HRH are governed by a different set of agencies and policies. In general, there is poor HRH management as shown in the unclear job descriptions of health workers; inadequate supervision in clinical, public health, and health systems administration; and the variable capacity of local health systems in HRH management and development. HRH governance consists of complex interactions and further illustrates the lack of coordination among stakeholders.

A related issue is the lack and poor implementation of policies. At present, there is variable implementation of policies. There are several policy gaps and issues, most prominent of which are the lack of policies on competency standards and skill mix, effective deployment of HRH, strengthening health leadership and performance management systems, and innovative approaches to coaching, mentoring, supportive supervision, and training. Additionally, there are policy gaps in setting data standards and strengthening data sharing. There is no policy to identify a central custodian for HRH information. Human resources management and development (HRMD) standards, roles, and functions are also not promoted among national and local governance structures. The implementation of HRH policies showed some weaknesses due to fragmented HRH systems and use of ineffective guidelines. There is a lack of consistency and strategic coherence in linking critical policies between the education, labor, and other sectors. Policies emanating from non-health sectors also impact the HRH sector.

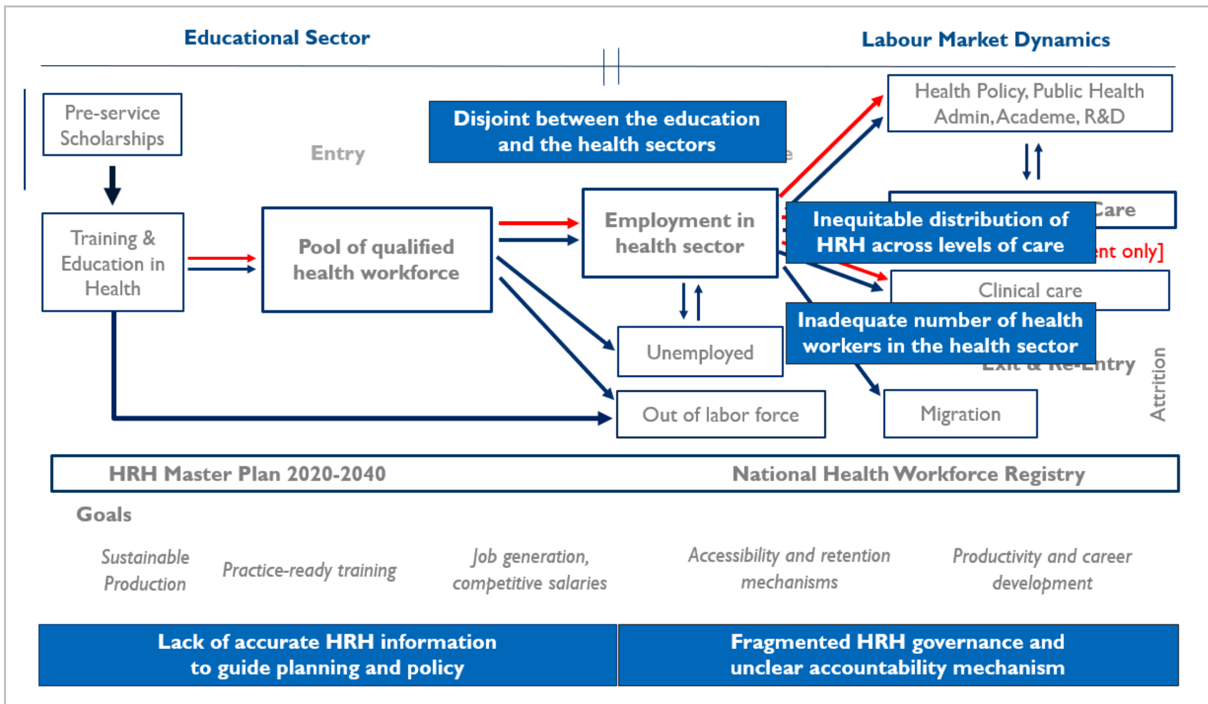


Figure 3: Health Labor Market Analysis (HLMA) Framework and HRH Key Issues

The major issues and their sub-issues briefly described above have been classified as either a cause or an effect of the core problem of the HRH sector in the Philippines. They can be seen in totality in the problem tree (Figure 4). A problem tree is planning tool that maps causes and effects arising from a core problem. In 2019, the core problem is the lack of a fully functional integrated HRH system including information systems, production planning, professional development, attractive compensation packages, management and regulation, and sustainable deployment. The core problem, its causes, and its multiple effects will b addressed by the Masterplan.

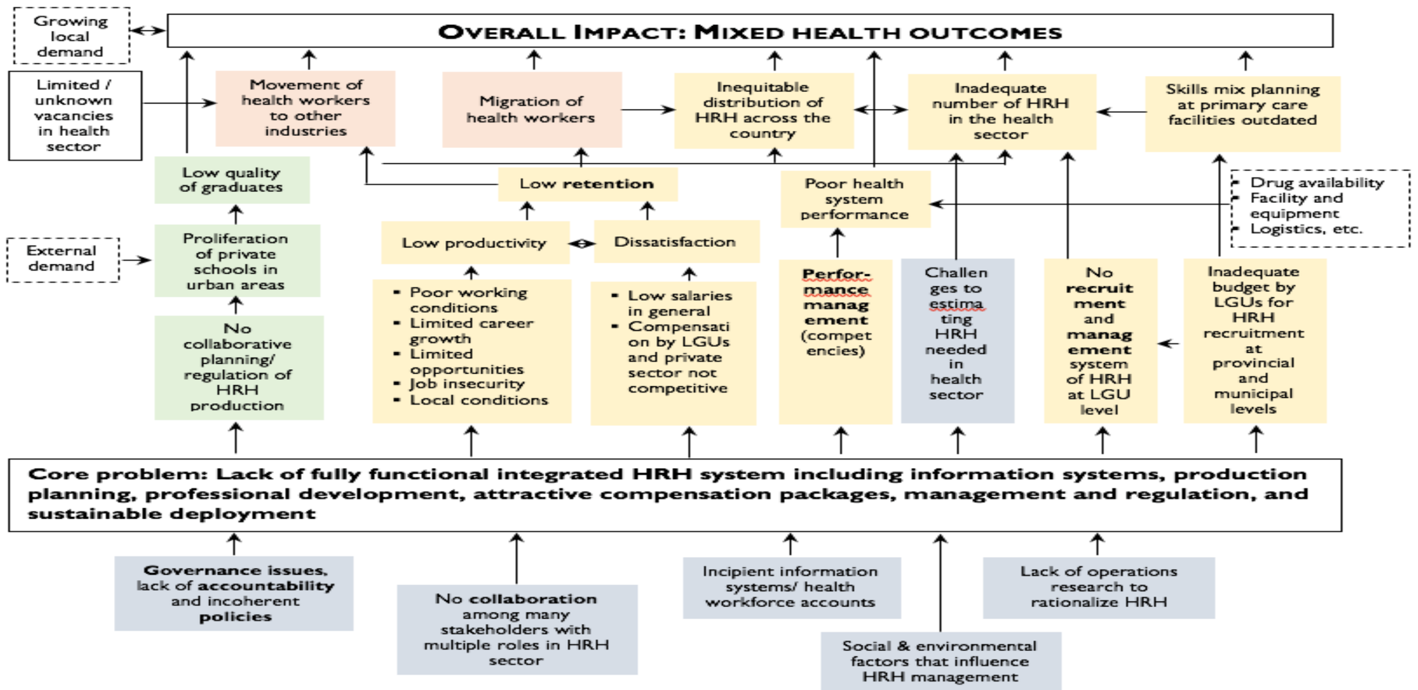


Figure 4: The HRH Problem Tree in 2019

Strategy Development

The suggested strategies from the 2nd Quarterly Meeting of the HRH Network were the starting point in the development of the HRH Masterplan strategies. These were complemented by recommended strategies and actions from WHO and World Bank (WB) reports on retention, recruitment, and productivity; the WHO Global Workforce Strategy, and the report of the High Commission on Health Employment and Economic Growth (HCHEEG) on Working for Health and Growth.[3]

Strategies identified for the HRH Masterplan are distinguished between transformative and enabling i.e. cross-cutting strategies. Transformative strategies will consist of strategies that will address the pressing issues that were identified in the first HRH Masterplan in 2005 and continue to face the HRH sector at present. These are the effects of the core problem comprising of the inadequate HRH in the health sector and inequitable distribution of HRH in the country. Other effects of the core problem that are contributory factors to the inadequacy and inequitable distribution of HRH are migration and movement of health workers to other countries and industries, low retention, low productivity, worker dissatisfaction, poor working conditions, inadequate remuneration, among others. Recruitment, retention, and productivity are known strategies that in combination can effectively address these issues. However, among the strategies enumerated below, there is no single strategy that is focused solely on retention. While improving wages and working conditions as well as developing career paths can go a long way in improving the retention of health workers, this can be further improved if the process begins prior to entry into the workforce i.e. as students. Students who have a rural background or exposed to rural topics or conditions are more likely to return and serve in rural communities upon completion of their studies.[4]

Enabling strategies address cross-cutting issues that are the root causes of the core problem. These include the lack of collaboration among many stakeholders in the HRH sector, manifested for instance in the disjoint between the education and labor sectors; governance issues including the absence and the lack of implementation of some policies and lack of accountability mechanisms; nascent information systems that need to speak to interoperability of systems, data sharing, data standards, among other issues; the lack of research; and other related issues.

Strategies should not be implemented discretely and independent of each other but as bundles to increase the likelihood of successfully making systemic changes and ensuring that persistent issues are resolved and do not recur.

Criteria in identifying strategies of the HRH Masterplan

The criteria used for identifying HRHMP strategies were determined based on the a) need to respond to the current driver of change i.e. the UHC Law in the health sector including the HRH sector; b) need to resolve persistent issues facing the HRH sector; c) prevailing wisdom that strategies should be bundled; and d) commitments of the health sector to national and international health goals.

The strategies are expected to meet the aforementioned criteria and expected to be implemented at the system, facility or institutional, and individual levels. Strategies should:

- Support the UHC law provisions i.e. expand scholarship and training programs, reorient the curriculum to PHC, guarantee permanent employment and competitive salaries, return service agreements (RSA), and set up a workforce registry and support system;
- Address persistent HRH issues i.e. the causes of the core problem in order to create system changes and the effects of the core problem;
- Build on and reinforce each other and create synergistic effects; and
- Contribute to attainment of national and international policies and commitments.

Prioritizing the strategies of the HRH Masterplan

During the regional consultations, quadrant analysis or a 2x2 matrix, was used to determine the short-, medium-, and long-term strategies. Typically, the two axes of the quadrant analysis are defined depending on the purpose. Since the objective was for the regions to prioritize the strategies, urgency was placed on the y-axis and relevance on the x-axis. Of the original 38 strategies, 32 were deemed necessary in the short-term, three in the long term, and two were not classified. In the 3rd Quarterly Meeting of the HRH Network, the priorities set by the regions were validated by Network members. The result was that all the strategies were to be

undertaken in the short term. There are several reasons why rolling out all the strategies in the short term is not feasible: it is unlikely that there will be enough financial resources to do so; political support is not widespread e.g. health is not a priority in some LGUs; and, the need for preparatory activities such as research and policies for some strategies. Hence, the strategies were subjected to another prioritization exercise using the MoSCoW technique.

MoSCoW is a prioritization technique practiced in management, business analysis, project management, and software development. It is applied with stakeholders to determine priorities collaboratively. The technique was developed in 1994 initially for use in rapid application development of software projects. MoSCoW is an acronym derived from Must have, Should have, Could have, and Won't have (at this time) with the 'o' added for readability and pronunciation. MoSCoW has been adapted for use in the Masterplan as follows:

- Must have refers to requirements that have highest priority for success and critical in terms of delivery timelines. In the context of the Masterplan, this refers to strategies that: directly address and/or directly support the provisions of UHC Law, have evidence, have impact and are innovative, and have less than or equal to three feasibility issues
- Should have are requirements that have higher priority for success and are less critical timewise. These strategies do not address UHC provisions, have evidence, have impact and are innovative, and and have less than or equal to three feasibility issues.
- Could have are requirements that are desirable but do not affect the success. Won't have are requirements that stakeholders want to have but can be put off. These two have been combined. These strategies do not address UHC provisions, have limited evidence, has impact, not necessarily innovative, and have more than three feasibility issues.

In the regional consultations, 32 strategies were deemed necessary in the short-term, 3 in the long-term, and 3 were unclear regarding the time frame (Figure 5). In the 3rd quarter meeting of the HRH Network, members categorized all the strategies as short-term. In applying the MoSCoW technique, 16 strategies were categorized as short-term, 5 as medium-term, and 10 as long-term. While prioritizing the strategies, several were combined so that from the original 38, the number of strategies was reduced to 31.

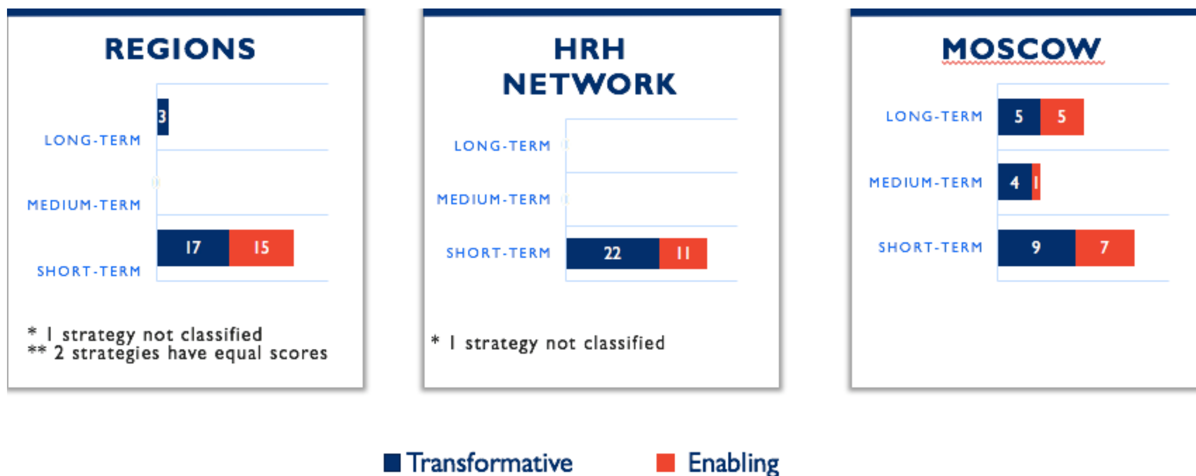
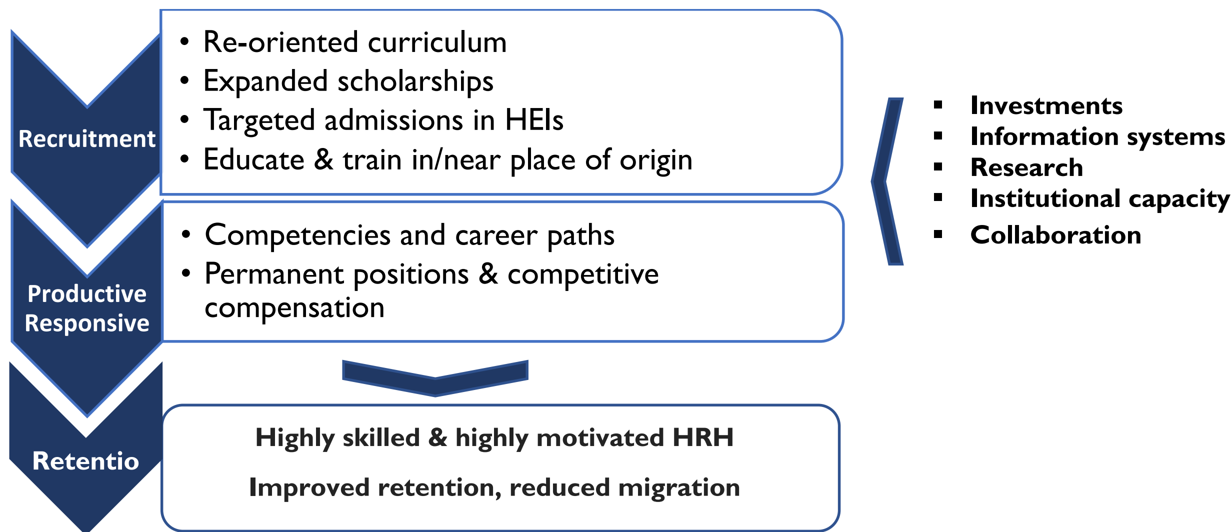


Figure 5: Results of the prioritization of strategies

Strategic Focus

The 2020-2040 HRH Masterplan's overall strategic focus is improving retention of health workers, especially in rural areas including GIDAs. From several estimates (e.g. there is a gap of about 25 HRH per 10,000 population in 2018 when compared to the estimated 44.5 per 10,000 population needed to achieve coverage of SDGs), the number of health workers in the health sector is inadequate and their distribution across the regions shows a wide disparity. For instance, the Cordillera Autonomous Region (CAR) has an HRH to population ratio of 28.2. To improve retention, the Masterplan's strategies propose that the process commence before entry in the workforce. Hence, there are pre-service strategies such as having targeted admissions, educating and training students in or near their places of origin, and using scholarships as incentives. Once in the workforce, competencies will be enhanced, and career paths developed. Guaranteed employment and competitive salaries will go a long way in promoting retention of health workers and reducing

retention. To ensure the implementation of these strategies, there should also be enabling strategies on investments, information systems and research, institutional capacity, and collaboration.



To improve the likelihood of achieving the strategic objectives, studies have found that it is best to not implement strategies as single interventions but as a combination of contextually relevant recommendations, especially for recruitment and retention, taking into account potential complementarities.[5] [6] [7] The proposed strategies that are being recommended have been found to work with varying levels of success based on evidence i.e. systematic and literature reviews that have been carried out. In many cases, these are espoused by the WHO. Where there was insufficient evidence such as on strengthening institutional capacity in the health sector, reviews in other sectors were used.

Strategy Map

To better understand how the proposed strategies interrelate and combine to achieve the goal of the Masterplan as well as contribute to national goals, a strategy map is laid out (Figure 3). The strategies are summarized according to the four dimensions of the Balanced Scorecard which commonly used when applied to the private sector: customer, internal processes, financing, learning and growth or organizational capacity. Since the strategies are for the HRH sector, two of the dimensions of the Balanced Scorecard have been adapted to people (customer) and processes (internal processes) while keeping financing and learning and growth. In addition, stakeholders and partnership and collaboration have been added and used as organizing elements due to the sector's multi-sectoral nature. Financing, partnerships and fostering learning, and growth will facilitate the necessary processes that will lead to adequate and equitable distribution of HRH. This will in turn impact positively on the stakeholders of the HRH sector ultimately leading to improved health outcomes.

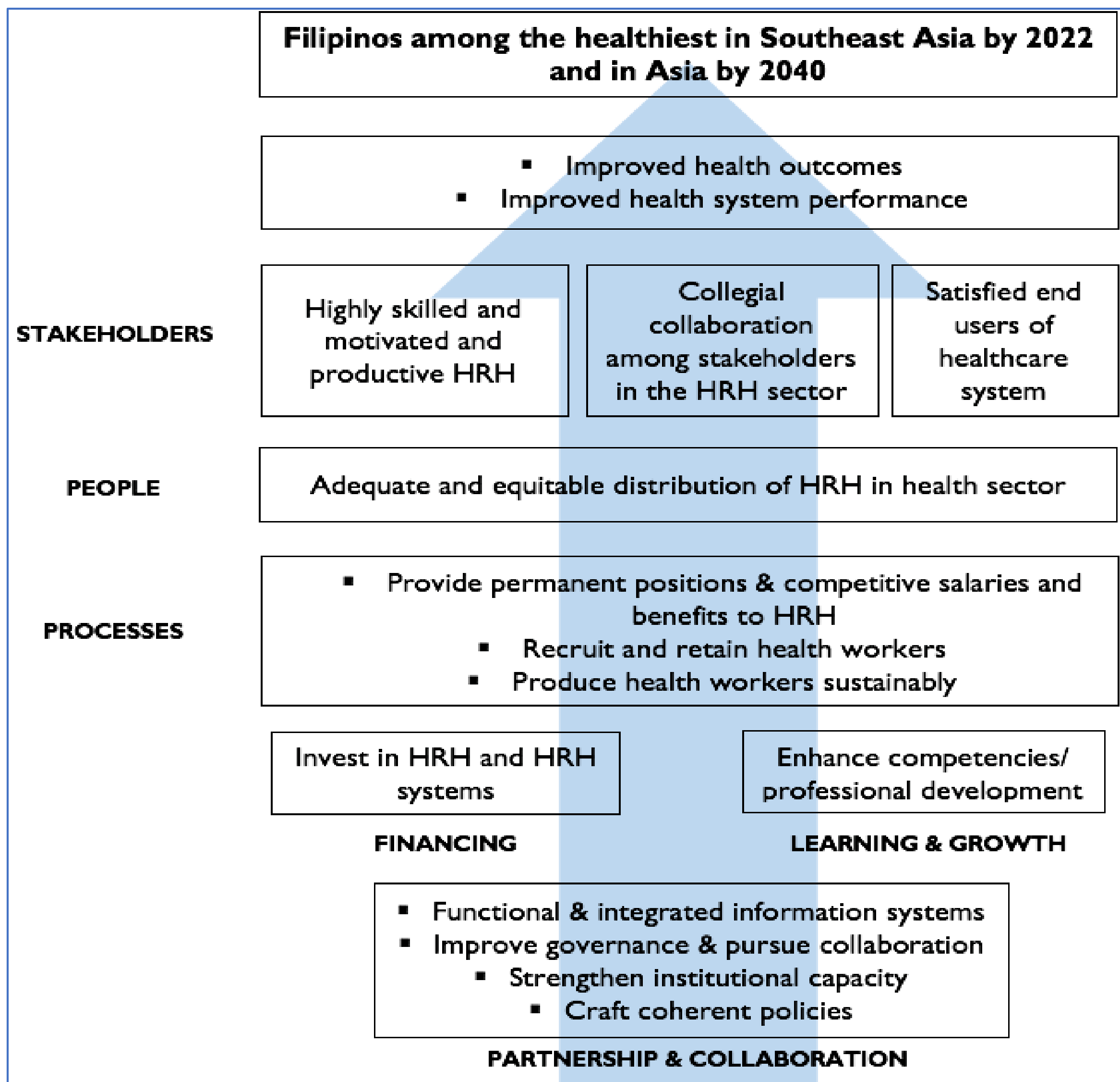


Figure 7: Strategy Map of 2020-2040 HRH Masterplan

The 2020-2040 HRH Masterplan's draft strategy map proposes that by addressing the key issues confronting the HRH sector with a mix of transformative and enabling strategies, the availability and distribution of health workers in the Philippines can be rationalized, leading to an improvement in the health system performance and improved health outcomes. In the short- and medium-term, the Masterplan aims to address the provisions of the UHC law such as expansion of scholarships, RSA, and re-orienting curriculum, through recruitment, retention and productivity strategies. The long-term impact or goal of the HRH Masterplan is improved health outcomes, thereby contributing to the vision of Filipinos as one of the healthiest in Southeast Asia by 2022 and one of the healthiest in Asia by 2040 as stated in the DOH's National Objectives for Health and consistent with the goal of Filipinos having long and healthy lives according to National Economic and Development Authority's (NEDA) AmBisyon Natin 2040. The improved health outcomes will also contribute to the accomplishment of the Philippines' commitment to the United Nation (UN) SDGs and the WHO Global Strategy Workforce.

Production Strategies

A. Short-term Strategies

Strategic Objective 1

Install systems that will improve **recruitment** of HRH fit for practice and fit for work to sustainably **produce** and deploy HRH and to promote greater HRH **retention** in the health sector leading to adequate and equitable HRH distribution vis-à-vis local health needs

Proposed strategy	Evidence	Hindering/ facilitating factors
Establish targeted admission practices in education institutions	▪ A rural background increases the likelihood of graduates returning to practice in rural communities.[8] [9] [10] [11] A Cochrane review found that 'it appears to be the single factor most strongly associated with rural practice'.[12]	▪ A facilitating factor would be priority investment in public higher education institutions (HEIs). ▪ Hindering factors include weak regulation in the private HEI's, and the need to coordinate with school officials and family. ▪
Expand scholarships with enforceable RSA that also offers incentives	▪ Two reviews found that compulsory service in remote/underserved area increases healthcare workers in remote/ underserved areas.[13] ▪ An overview of systematic reviews, a systematic review, and a literature review found that financial incentives such as service requiring educational loans with service requirements, service option educational loans, loan repayment programs, and direct financial incentives attract healthcare professionals to remote/underserved areas.[14] [15]	▪ Facilitating factors include the availability of funds and there are existing models in Caraga Region and Region 9 which can be replicated. ▪ Hindering factors are budget constraints and the resistance of students to longer RSA.
Educate and train future HRH in or near their places of origin	▪ A systematic review found that scaling up education and training and deployment to underserved areas, particularly poor remote/underserved communities have increased midwives and nurses in rural and other underserved areas.[16]	▪ A facilitating factor is that Caraga Region and Region IV-A have experience doing this. In Caraga, senior high school students are interviewed before taking health science courses. Those who really want to take up these courses are identified and are offered scholarships since some schools mostly offer courses in science, technology, engineering and mathematics (STEM). In Region 11, there are indigenous people that can be recruited to take up health science courses. ▪ Hindering factors include lack of funds, policy support, political support, the unavailability of schools in the area, the lack of experts, and the unwillingness of people to teach in GIDAs. Moreover, alternative learning may be limited by connectivity issues.
Re-orient curriculum to PHC and integrate public health, rural health courses/ topics, and rural exposure/immersion	▪ A systematic review mentioned that admission selection criteria and targeted curricular activities may be able to address the	▪ A facilitating factor is that this has been done before in CAR, Region 6, and Region 12 according to participants in the regional consultations. In Region 12, this strategy was done in partnership with the WHO while for

Proposed strategy	Evidence	Hindering/ facilitating factors
	shortage of primary care physicians[17] ▪ A literature review found that the inclusion of rotations in remote/ underserved areas and remote/underserved area's health issues in curricula increases the interest of health professions to work in remote/underserved areas.[18]	Region 6, immersion is part of the curriculum although the practice needs strengthening. In CAR, the strategy is already in place. An assessment could be made of the past and current implementation of this strategy in three regions with the aim of drawing lessons and avoiding pitfalls in its implementation. Other facilitating factors include reorienting curriculum to be more in sync with local needs including increasing community immersion and the provisions of the UHC Act thatg specifies need to reorient curriculum with focus on Primary Health Care ▪ Hindering factors include lack of political will, inadequate budget, and weak structure. Additionally, private schools might resist.

B. Medium-term Strategies

Strategic Objective 1

Install systems that will improve **recruitment** of HRH fit for practice and fit for work to sustainably **produce** and deploy HRH and to promote greater HRH **retention** in the health sector leading to adequate and equitable HRH distribution vis-à-vis local health needs.

Proposed strategy	Evidence	Hindering/ facilitating factors
Establish inter-profession education and training in universities and institutions	▪ Three systematic review mentioned that inter-professional education has positive outcomes on the students and patient care.[19] [20] [21]	▪ A facilitating factor is that this is already being done e.g. University of the Philippines (UP) Manila so knowledge and experience is present. ▪ Hindering factors identified are the poor compliance of schools, culture, and professional laws that define the scope of practice of different health workers.
Incentivize schools (e.g. tax breaks) and non-monetary incentives to ensure quality graduates	▪ CHED gives accreditation status to schools producing quality graduates- i.e. CHED centers of excellence and development as well as designated excellent schools as autonomous not needing to be regulated anymore. There are sometimes monetary incentives that these schools can use for further program development.	▪ Facilitating factors – CHED programs on rewarding and facilitating excellence in Higher Education ▪ Tax breaks can be explored using the UHC law to leverage the innovation.

C. Long-term Strategies

Strategic Objective 4

Foster sustained intersectoral collaboration/co-development to develop responsive and coherent plans and policies among health and non-health agencies and organizations to generate shared goals, synergize functions, and produce collective impact.

Proposed strategy	Evidence	Hindering/ facilitating factors
Strengthen private sector regulation in HRH production and employment e.g. address rapid growth of schools	▪	▪ Hindering factors include lack of political will, lack of unity of purpose, and the need to strengthen Commission on Higher Education's (CHED) regulatory functions. ▪ A facilitating factor in the long-term could be CHED's regulatory functions once these are strengthened.

Workforce Strategies

A. Short-term Strategies

Strategic Objective 3

Raise HRH productivity and responsiveness by promoting job satisfaction and motivation at all levels and improve greater HRH retention.

Proposed strategy	Evidence	Hindering/ facilitating factors
Create permanent positions for health workers	▪	▪ Facilitating factors include UHC Act and IRR provision directing the DOH, DBM and CSC to establish mechanisms to create permanent positions to meet staffing standards for health professionals and health workers in government-owned and controlled health facilities ▪ Hindering factors include weak/lack of policy, regulation, budgetary constraints, limited number of plantilla positions, and political support. Moreover, HRH not being informed about vacancies and the Civil Service Commission (CSC) website is not user friendly.
Institutionalize a system of providing incentives for HRH (including Barangay Health Workers [BHWs] & Barangay Nutrition Scholar [BNS]) to meet public health goals	▪ Two systematic reviews, one literature review, and one overview of systematic reviews reported on financial incentives to retain and recruit staff in rural/remote areas. Financial incentives lead to higher attraction rates to rural and remote areas[22] [23] [24] [25]	▪ Facilitating factors include policies (e.g. BHW Law, some LGU ordinances to adopt the BHW Law), the special health fund of the UHC Law, existing workers' organizations that can lobby for BHWs, and potential provision of PhilHealth shares as incentives to HRH. Highly feasible in the context of UHC, at the national level, and for BHWs, if the DOH absorbs them. ▪ Hindering factors include the inadequate budget (e.g., total amount of Barangay Health Workers' incentive is prerogative of LGUs depending on available budget, etc.), weak implementation of existing policies (e.g., not all LGUs implement full Magna Carta for Public Health Workers benefits, implementation of BHW Incentives Act varies among LGUs depending on budget availability, etc.),, structure, status of employment i.e. HRH with job orders do not have employee-employer

Proposed strategy	Evidence	Hindering/ facilitating factors
		relationship, political and other support e.g. Romblon gives honorarium for BHWs but was disallowed by COA. LGUs don't have similar income and cannot provide similar incentives. Laws are present but funding is not assured.
Standardize health workers' positions and competitive compensation and benefits (public and private sectors; national and local)		▪ Facilitating factors are the Magna Carta and the UHC Laws. ▪ Hindering factors include funds to provide benefits under the Magna Carta Law, no existing health worker registry, salary difference in different levels, political support e.g. LCEs may not want to spend more for HRH, policies, private sector compliance, and the influence of market forces.

Strategic Objective 2

Create systems for developing HRH competencies and the careers of health workers to improve productivity and responsiveness, and to promote greater HRH retention.

Proposed strategy	Evidence	Hindering/ facilitating factors
Support career development of BHWs	▪ 12 systematic reviews and one single study reported on the benefits of community health workers. One systematic review conducted in low and middle income countries reported that community health workers interventions are effective regarding prevention, knowledge and attitude in the following areas malaria prevention, health education, breastfeeding promotion, essential newborn care and psychosocial support.[26] The benefits of community health workers was also reported in providing immunization and raising awareness on immunization[27], conducting home visits for antenatal and neonatal care,[28] providing non-communicable diseases (NCD) interventions which resulted in NCD prevention, tobacco cessation, blood pressure management, diabetes control[29] and HbA1c changes,[30] decreased asthma symptoms and emergency care for asthma patients,[31] and reducing BMI percentile of children that are obese.[32] A stepwise approach to integrate community health workers can reduce some of the barriers of implementation.[33] Community health workers need	▪ Facilitating factors include the existing Technical Education and Skills Development Authority (TESDA) NCII program for BHWs and the stepladder program of UP Senior High School (SHS) in Palo, Leyte. ▪ Hindering factors include no law supports the trainings of BHWs and are co-terminus with LCEs. Other barriers are budget constraints, structures/processes, and political factors i.e. not a priority for LGUs and accreditation depends on support

Proposed strategy	Evidence	Hindering/ facilitating factors
	to be formally linked to the health system and be regular trained to prevent feelings of frustration and ensure safe services.[34] It is also critical to ensure that the volunteers are trained, there is sufficient financial incentives, clear role identification, infrastructural support and sufficient monitoring and supervision.[35, 36]	
Enable health workers to obtain appropriate skills, knowledge and attitudes through training and other learning methods	▪ Four systematic reviews and one literature review reported that continuing education based on local needs has an important role in improving health professional skills and performance.[37, 38, 39, 40, 41] ▪ An overview of systematic reviews found moderate evidence that supporting continuous professional development in remote/ underserved areas has an effect on nurse retention in remote/underserved areas.[42] ▪ A systematic review mentioned that eLearning has a high utility yet there is a need to ensure that the time, cost, and interactivity are considered prior to the sessions.[43]	▪ Facilitating factors include the available opportunities e.g. DOH has existing eLearning platform, and budget. ▪ Hindering factors include the lack of time by HRH, the disapproval of LCEs since this may cause absenteeism, the high cost of trainings and conventions, policy, and access to continuing professional development (CPD). For online learning, barriers include internet access, and the quality of trainings.
Enforce/strengthen the provision of coaching, mentoring, and supportive supervision to health workers	▪ An overview of systematic reviews showed moderate evidence that supportive supervision (i.e. mentorship, preceptorship, clinical supervision) have a positive effect on promoting nurse retention in remote/ underserved areas.[44] ▪ Two systematic reviews mentioned that supportive supervision improves patient health outcomes and supports staff with safe utilization of resources[45] and retention of staff in rural areas.[46]	▪ Facilitating factors include the existing pool of experts, easy to implement since this is already existing e.g. private sector practices in mentoring and coaching. ▪ Hindering factors include the inadequate coaching and mentoring in the public sector.
Develop career paths of health workers	▪ An overview of systematic reviews reported that implementing career pathways for remote/ underserved area health workers may have a positive effect on recruiting healthcare professionals in remote/underserved areas.[47] ▪ A systematic review showed that strategies such as part-time employment, decreased workplace bureaucracy, and workload pressure, supporting workforce	▪ Facilitating factors include the career progression and specialization program of PRC using the Philippine qualifications framework (PQF) and Association of Southeast Asian Nations (ASEAN) qualification reference framework (AQRF), and the feasibility of the strategy at the national level. ▪ Hindering factors include limited policy and guidelines on career paths for all health workers (e.g., career progression for public health workers also follows the general government practice of vertical hierarchy for a specific government organization like being promoted to Salary Grade 18 position from Salary Grade 15

Proposed strategy	Evidence	Hindering/ facilitating factors
	health and providing opportunities for career development supported an increase in intent to stay in job positions.[48]	position, rather than following an identified cadre career paths.), effect of political factors, the varying conditions of LGUs, and the lack of support for career paths for HRH by LGUs.

B. Medium-term Strategies

Strategic Objective 3

Raise HRH productivity and responsiveness by promoting job satisfaction and motivation at all levels and improve greater HRH retention.

Proposed strategy	Evidence	Hindering/ facilitating factors
Define and ensure that the appropriate skills mix in health facilities is met	▪	▪ Hindering factors include the absence of standard skills mix, policy support, and political factors. ▪ A facilitating factor is the passage of UHC which will make this highly feasible.
Standardize care through the implementation of national Clinical Practice Guidelines (CPGs)	▪	▪ Hindering factors include the policy, the process of developing CPGs takes too long, and the lack of harmonization or standardization of CPGs. ▪ A facilitating factor is the UHC law which mandates standardizing CPGs (Section 27.7 and 27.8)

C. Long-term Strategies

Strategic Objective 2

Create systems for developing HRH competencies and the careers of health workers to improve productivity and responsiveness, and to promote greater HRH retention.

Proposed strategy	Evidence	Hindering/ facilitating factors
Identify and implement appropriate collaboration activities to facilitate cooperation among health workers across HCPNs and the development of professional and health worker networks is to reduce professional isolation (i.e. connecting HRH in GIDA with HRH in non-GIDA), promote learning among health workers, and encourage communities of practice.[1]	▪	▪ A facilitating factor is that Marinduque, Davao, and Southern Philippines Medical Center (SPMC) have telehealth in place so can learn from their experience. ▪ Hindering factors include the lack of policy support, structure, support of LCEs and the Data Privacy Act which prevents sharing of information. Other barriers are the need for strong/stable connectivity and electrical supply, the non-existence of accredited professional organizations (APOs) in some areas, the lack of support of the DOH for Philippine Physical Therapy Association (PPTA), the need for health workers to develop partnerships with

[1] This a proposed combination of 2 similar strategies: a) Identify and implement appropriate outreach activities to facilitate cooperation between health workers from better to underserved areas and where feasible use telehealth to provide additional

Proposed strategy	Evidence	Hindering/ facilitating factors
		professional organizations and for strong leadership.

Strategic Objective 3

Raise HRH productivity and responsiveness by promoting job satisfaction and motivation at all levels and to improve HRH retention.

Proposed strategy	Evidence	Hindering/ facilitating factors
Ensure well-being of health workers including their mental health (e.g. hospitalization benefits, wellness programs, etc.)	▪	▪ Facilitating factors include RA11058 (compliance with occupational safety and health [OSH] standards), some hospitals having special lanes for health workers, and existing practices like in Sultan Kudarat. ▪ Hindering factors are the lack of a system by which the rank and file can be served, no assessment of the effect of the rationalization plans, LGUs have limited plans, and the hazard policy does not cover actual exposure. Other barriers are time, policy, and political support.
Ensure a good and safe working environment by implementing OSH standards and the provision of appropriate equipment and supplies[2]	▪ Two systematic reviews discussed human resources working hours. One systematic review showed that strategies such as part time employment supported an increase in intent to stay in job positions. Another systematic review mentioned that for physicians weekends off during a 14-day work period reported significantly less burnout.t[49] Sick leave decreased by 90% when physician working hours dropped from 56 to 58 hrs. per week. Shift based time arrangement resulted in less burnout.[50] ▪ One systematic review found strong evidence of training on occupational health and safety on the behavior of the healthcare worker.[51]	▪ Facilitating factors include the Joint Memorandum Circular and law on OSH for the public and private sectors. The private sector is already implementing OSH and the DOH has an action plan for occupational health. ▪ Hindering factors include policy, budget, political support, time, and the system of procurement.
Introduce and regulate enhanced scopes of practice of health workers i.e. task shifting	▪ An overview of systematic reviews and a systematic review found evidence that policies to expand scope of practice of nurses and midwives were successful in increasing supply of nurses and midwives in primary healthcare	▪ A facilitating factor include laws such as RA 10912 (CPD law) and RA 9173 (Nursing Act). A hindering factor is the lack of policy on task shifting/enhanced scopes of practice.

support; and b) Support development of professional networks, rural health professional associations, etc. to improve morale and status of rural health workers

[2] This is a proposed combination of 2 strategies: a) Provide a good and safe working environment including appropriate equipment and supplies; and b) Establish, and where present, strengthen occupational health and safety programs in healthcare institutions.

Proposed strategy	Evidence	Hindering/ facilitating factors
	centers and remote/underserved areas.[52] [53] ▪ A systematic review evaluated the impact of doctor-nurse substitution in primary care found that nurses and physicians may lead to similar health outcomes for patients.[54]	

Exit and Re-entry Strategies

A. Long-term Strategies

Strategic Objective 4

Foster sustained intersectoral collaboration/co-development to develop responsive and coherent plans and policies among health and non-health agencies and organizations to generate shared goals, synergize functions, and produce collective impact.

Proposed strategy	Evidence	Hindering/ facilitating factors
Enhance health workers migration policies to consider the country's population health needs[3]	▪	▪ Facilitating factors include the WHO code of practice of ethical recruitment of health workers, POEA only deploys workers to countries with bilateral agreements (BLAs) which are 'numerous', recognition of the HRH needs of the country, and the existence of Department of Labor and Employment (DOLE) bilateral review committee. ▪ Hindering factors are the Data Privacy Act that impede effective data collection and sharing, political support/will, budget, policy, structure, economic considerations, the contents of the agreement, and the priority of the government. Other barriers are limited data on returning HRH, the willingness of other countries to compromise, and some countries' visa requirements make it easier for HRH to obtain residency.

[3] A proposed activity is the strategy "Ensure provisions of bilateral agreements will consider the health workforce needs of the Philippines"

Cross-cutting Strategies

A. Short-term Strategies

Strategic Objective 5

Strengthen information systems/data on HRH for monitoring, informing decision making, and ensuring accountability.

Proposed strategy	Evidence	Hindering/ facilitating factors
Strengthen and integrate information systems to ensure up-to-date HRH data and data sharing across the HRH sector e.g. National Health Workforce Registry (NHWR), National Health Workforce Account (NHWA)	▪ Two studies mentioned that human resources data is critical secure skill mix of specialties[55] [56] according to the need of the community. ▪ A literature review showed that information technology is essential in collecting evaluating and communicating data. This leads to better-targeted interventions and higher efficiency in providing services.[57] ▪ One case study reported that monitoring of human resources data is critical to understand the matches/mismatches between demand and supply of human resources in terms of skill mix gender and specialties. This can be accomplished through strong involvement of stakeholders in the process of development and implementation of information systems.[58]	▪ Facilitating factors include budget, policy (e.g. UHC, Data Privacy Act), the technical assistance from USAID's HRH2030, and the sustained commitment of agencies to collaborate on this undertaking. ▪ Hindering factors include time, policy (e.g. Data Privacy Act), budget, and political support.
Undertake robust research (including operations research and analysis of health labor markets)	▪	▪ Facilitating factors include the availability of funds from Philippine Statistics Authority (PSA) for nationwide surveys, the law mandating PSA to provide technical assistance for community-based monitoring system, and the research support from Department of Science and Technology (DOST). ▪ Hindering factors include the high cost of research, the tedious process of research reviews, policy, time for research, and the availability of research online.

Strategic Objective 7

Increase investments in HRH and align investments with current and future population health needs and of health systems.

Proposed strategy	Evidence	Hindering/ facilitating factors
Generate resources for HRH from various sources (domestic, international, and other sources)	▪ A review of 51 documents on the use of different financial mechanisms to facilitate intersectoral collaboration on health promotion found that common approaches to financing	▪ Facilitating factors include the presence of international partners, private companies that can fund programs of the public sector, sources of funds like the general appropriation act (GAA), internal revenue allotment (IRA) sin tax, and funds earmarked for health.

Proposed strategy	Evidence	Hindering/ facilitating factors
	included earmarked funding, recurring delegated financing, and joint budgeting between two or more sectors. Influencing factors included legal and organizational structures, differences in culture and objectives between sectors, and the level of mutual trust and respect between participants. However, few publications have explicitly looked at the effectiveness of intersectoral financing mechanisms.[59]	▪ Hindering factors include the lack of policy, budget, and political support.
Invest in the education and training, recruitment, deployment and retention of health workers to meet national and subnational needs	▪	▪ Facilitating factor is the availability of funds that will be used to invest in staff education and training. ▪ Hindering factors are the lack of specific amount allotted to health in the IRA of LGUs, the priority of LCEs, time, policy, and structures.
Develop capacity to absorb and utilize effectively and transparently both domestic and international resources	▪	A hindering factor identified was policy.

B. Medium-term Strategies

Strategic Objective 6

Build the capacity of institutions for effective public policy stewardship, leadership, and governance.

Proposed strategy	Evidence	Hindering/ facilitating factors
Expand membership of the HRH Network and strengthen involvement of diverse set of stakeholders	▪	▪ Hindering factors include inconsistent representation of agencies, policy, time, and people.

C. Long-term Strategies

Strategic Objective 6

Build the capacity of institutions for effective public policy stewardship, leadership, and governance.

Proposed strategy	Evidence	Hindering/ facilitating factors
Build planning capacity to develop or improve HRH policy and strategies	▪ Two high quality studies (one systematic review and one meta-synthesis) discussed the organizational climate with its effect on human resources for health. Organizational climate refers to the following dimensions: leadership and supervision, group	▪ A facilitating factor is the UHC Law which includes a provision for an HRH Masterplan. Hindering factors include policy, political factors, structure, budget, and time.

Proposed strategy	Evidence	Hindering/ facilitating factors
	behaviors and relationships, and communication and participation. One of the systematic reviews mentioned that good organizational climate reduced burnout and had better mental health.[60] ▪ The meta-synthesis added that organizational support and opportunities for professional development affect the recruitment and retention of occupational therapists and physiotherapists in rural areas. Professional support from management and/or organizations and understanding of rural area were reported to contribute to the recruitment and retention of occupational therapists and physiotherapists in rural areas especially for new graduates.[61] ▪ A review of three case studies on strengthening institutional capacity for equitable health research showed positive outcomes through coordinated use of existing networks despite limited funds. Success factors include supportive and committed leaders, provision of training by building on existing initiatives, and creating good regional and international partnerships. The collaborations of North-South and South-South was also important in increasing research capacity.[62] ▪	
Institutionalize HR management at all levels	▪	▪ Facilitating factors include policies such as the Magna Carta and HR Prime by the CSC, and training from TESDA. ▪ Hindering factors include the lack of compliance on hiring standards, political patronage, the classification of BHWs as volunteers, and policy 'bias'- CSC policy on recruitment (e.g. varying interpretations of CSC recruitment policy and most BHWs are old so they may not be recruited). Other barriers are budget, political support, time, and that this is labor intensive.

Strategic Objective 3

Build the capacity of institutions for effective public policy stewardship, leadership, and governance.

Proposed strategy	Evidence	Facilitating/ hindering factors
Establish/strengthen quality assurance (QA)/ accountability mechanisms in health facilities	▪ Two systematic review discussed accreditation and its effect on human resources for health. The study reported that nursing accreditation increased staff and patient satisfaction, improved the relationship between the nurse and the patient and the quality of care, and reduced turnover rates.[63] Healthcare providers are more likely to work in hospitals that are awarded excellence such as magnet status.[64]	▪ Facilitating factors are policies such as the PQF, the CPD law, political will, and existing systems such as Philippine Accrediting Association of Schools, Colleges and Universities (PAASCU). ▪ Hindering factors include the priorities of LCEs, available manpower, time, policy, structure, and the lack of a QA system in all health facilities.

Strategic Objective 4

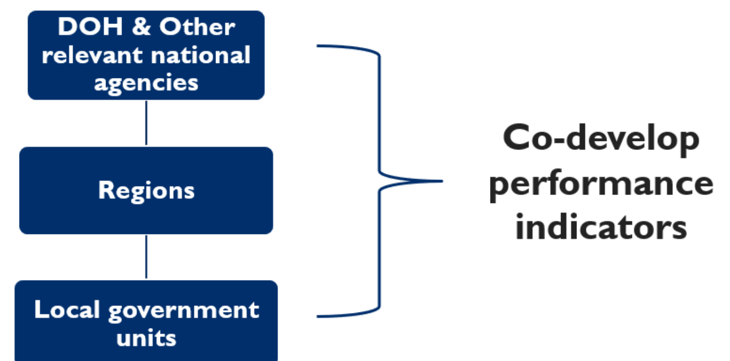
Foster sustained intersectoral collaboration/co-development to develop responsive and coherent plans and policies among health and non-health agencies and organizations to generate shared goals, synergize functions, and produce collective impact.

Proposed strategy	Evidence	Facilitating/ hindering factors
Integrate policies on production, employment and migration involving the education, labor, and other relevant sectors.	A systematic review found that intersectoral collaboration was important to reduce prevention and control of vector borne diseases. However, very few studies measured how much intersectoral collaboration contributes to the impact.[65] A review that included one systematic review, 14 quantitative studies and two qualitative studies found that intersectoral collaboration have moderate to no effect on social determinants of health or health equity. However, this may be due to the limited body of evidence or the poor methodological quality of available evidence as opposed to the effectiveness of interventions.[66] Other reviews have found that there is limited literature evaluating the evidence of intersectoral action on health equity,[67] evidence for intersectoral actions are in early stage of development but suggest potential for improving health outcomes for indigenous children and their family,[68] or determinants and implementation variability on intersectoral action on childhood obesity was not explained.[69]	▪ Hindering factors include policy and agencies have different mandates. ▪ Facilitating factors include the UHC law and the presence of the HRH Network whose members are willing to collaborate and integrate.

Monitoring and Evauation

Balanced scorecard is a carefully selected set of quantifiable measures derived from strategies organized around financial, customer (people), internal processes (activities), and learning and growth perspectives.[70] Because of the not for profit nature of the HRH sector, stakeholders and partnership and collaboration have been included as additional dimensions of the Masterplan balanced scorecard.

As part of the monitoring and evaluation system, an accountability mechanism will be established between the DOH, regions and LGUs to ensure that HRH are appropriately recruited, compensated, incentivized, and managed to provide primary health care the local population. The following schema illustrates an option for an accountability mechanism between and among the national, regional, and local levels, linked by incentives and penalties depending on the performance of the LGUs in the delivery of health (Figure 7). A set of performance indicators will be co-developed by the DOH with LGUs to which both will commit. For instance, an excellent performance by an LGU will allow them to access more funds for the LGUs while the opposite will earn an LGU penalties. This accountability mechanism will put into practice RA 11292 or the Seal of Good Local Governance (SGLG) Act of 2019. The SGLG Act creates a Council where the DOH is a member and will participate in the development of performance indicators for LGUs. An LGU that complies, qualifies, and passes the assessment criteria will be awarded the SGLG and granted the corresponding financial incentive.[71]



Plan of Action

Upon finalizing the HRH Masterplan Blueprint an operational plan will be prepared for the short-term (2020-2023) consisting of the following:

- Forecast staffing needs and costing;
- An implementation plan including an implementation framework, the roles & responsibilities of stakeholders, and mechanisms that will serve as the platform for the roll out of short-term the strategies. This will include a governance structure, a working group that will undertake preparatory activities for strategy implementation including addressing facilitating and hindering factors, and other mechanisms;
- A communication plan; and a
- Sustainability action plan.

For the medium- and long-term (2024-2030), scenario building will be crafted. Additionally, a strategic focus for the medium term that builds on the short-term strategies will be developed. For the long-term, the strategic focus will build on the strategies in the medium-term and will bring attention to ensuring sustainability of HRHMP strategies.

End Notes

[1] WHO (2006) Working together for health. The World Health Report 2006. Geneva, Switzerland

[2] World Health Organization (2010). Increasing access to health workers in remote and rural areas through improved retention. Global policy recommendations. The World Health Report 2010. Geneva, Switzerland

[3] High Commission on Health Employment and Economic Growth (2016). Working for Health and Growth. World Health Organization. Geneva, Switzerland

[4] Woloschuk W, Tarrant M. Do students from rural backgrounds engage in rural family practice more than their urban-raised peers? *Medical Education,* 2004, 38:259–261

[5] Araújo, Edson, Maeda, Akiko (2013). How to recruit and retain health workers in rural and remote areas in developing countries. A guidance note. IBRD/World Bank. Washington DC

[6] World Health Organization (2016). Global Strategy on Human Resources for Health: Workforce 2030. World Health Organization. Geneva, Switzerland

[7] WHO 2010 supra

[8] Laven G, Wilkinson D. (2003). Rural doctors and rural back- grounds: How strong is the evidence? A systematic review. *Australian Journal of Rural Health*, 2003, 11:277–284

[9] De Vries E, Reid S. (2003). Do South African medical students of rural origin return to rural practice? *South African Medical Journal*, 2003, 93(10)

[10] Rabinowitz HK et al. (2005). Long-term retention of graduates from a program to increase the supply of rural family physicians. *Academic Medicine*, 2005, 80:728–732

[11] Woloschuk W et al supra

[12] Grobler L et al. Interventions for increasing the proportion of health professionals practising in rural and other underserved areas (Review). The Cochrane Library, 2009, Issue 1

[13] Dolea, C., Stormont, L., & Braichet, J.-M. (2010). Evaluated strategies to increase attraction and retention of health workers in remote and rural areas. *Bulletin of the World Health Organization, 88*, 379-385

[14] Lassi et al, supra

[15] Archer, J., Lynn, N., Coombes, L., Roberts, M., Gale, T., Price, T., & Regan de Bere, S. (2016). The impact of large scale licensing examinations in highly developed countries: a systematic review. *BMC Medical Education, 16*, 212. doi:10.1186/s12909-016-0729-7

[16] Grobler, L., Marais, B. J., & Mabunda, S. (2015). Interventions for increasing the proportion of health professionals practising in rural and other underserved areas. *Cochrane Database Syst Rev*(6), Cd005314. doi:10.1002/14651858.CD005314.pub3

[17] West, D. C., Robins, L., & Gruppen, L. D. (2014). Workforce, learners, competencies, and the learning environment: Research in medical education 2014 and the way forward. Academic Medicine, 89(11), 1432-1435.

[18] Lassi, Z. S., Musavi, N. B., Maliqi, B., Mansoor, N., de Francisco, A., Toure, K., & Bhutta, Z. A. (2016). Systematic review on human resources for health interventions to improve maternal health outcomes: evidence from low-and middle-income countries. Human Resources for Health, 14(1), 10

[19] Marcussen, M., Nørgaard, B., & Arnfred, S. (2019). The effects of Interprofessional education in mental health practice: findings from a systematic review. Academic Psychiatry, 43(2), 200-208.

[20] Guraya, S. Y., & Barr, H. (2018). The effectiveness of interprofessional education in healthcare: a systematic review and meta-analysis. The Kaohsiung journal of medical sciences, 34(3), 160-165.

[21] El-Awaisi, A., Joseph, S., El Hajj, M. S., & Diack, L. (2018). A comprehensive systematic review of pharmacy perspectives on interprofessional education and collaborative practice. Research in social and administrative pharmacy, 14(10), 863-882.

[22] Bhutta et al, supra

[23] Garner, S. L., Conroy, S. F., & Bader, S. G. (2015). Nurse migration from India: a literature review. *International Journal of Nursing Studies, 52*(12), 1879-1890

[24] Lassi et al, supra

[25] Marchand, C., & Peckham, S. (2017). Addressing the crisis of GP recruitment and retention: a systematic review. *British Journal of General Practice, 67*(657), e227-e237

[26] Gilmore, B., & McAuliffe, E. (2013). Effectiveness of community health workers delivering preventive interventions for maternal and child health in low- and middle-income countries: a systematic review. *BMC Public Health, 13*, 847

[27] Glenton, C., Scheel, I. B., Lewin, S., & Swingler, G. H. (2011). Can lay health workers increase the uptake of childhood immunisation? Systematic review and typology. *Tropical Medicine & International Health, 16*(9), 1044-1053

[28] Gogia, S., & Sachdev, H. S. (2010). Home visits by community health workers to prevent neonatal deaths in developing countries: a systematic review. *Bulletin of the World Health Organization, 88*(9), 658-666B

[29] Jeet, G., Thakur, J. S., Prinja, S., & Singh, M. (2017). Community health workers for non-communicable diseases prevention and control in developing countries: Evidence and implications. *PLoS ONE [Electronic Resource], 12*(7), e0180640

[30] Little, T. V., Wang, M. L., Castro, E. M., Jimenez, J., & Rosal, M. C. (2014). Community health worker interventions for Latinos with type 2 diabetes: a systematic review of randomized controlled trials. *Current Diabetes Reports, 14*(12), 558

[31] Postma, J., Karr, C., & Kieckhefer, G. (2009). Community health workers and environmental interventions for children with asthma: a systematic review. *Journal of Asthma, 46*(6), 564-576

[32] Schroeder, K., McCormick, R., Perez, A., & Lipman, T. H. (2018). The role and impact of community health workers in childhood obesity interventions: a systematic review and meta-analysis. *Obesity Reviews, 19*(10), 1371-1384

[33] Zulu, J. M., Kinsman, J., Michelo, C., & Hurtig, A. K. (2014). Integrating national community-based health worker programmes into health systems: a systematic review identifying lessons learned from low-and middle-income countries. *BMC Public Health, 14*, 987

[34] Kane, S., Kok, M., Ormel, H., Otiso, L., Sidat, M., Namakhoma, I.,…de Koning, K. (2016). Limits and opportunities to community health worker empowerment: A multi-country comparative study. *Social Science & Medicine, 164*, 27-34

[35] Woldie, M., Feyissa, G. T., Admasu, B., Hassen, K., Mitchell, K., Mayhew, S., . . . Balabanova, D. (2018). Community health volunteers could help improve access to and use of essential health services by communities in LMICs: an umbrella review. *Health Policy & Planning, 33*(10), 1128-1143

[36] Zulu et al, supra

[37] Bhutta, Z. A., Lassi, Z. S., & Mansoor, N. (2010). *Systematic review on human resources for health interventions to improve maternal health outcomes: evidence from developing countries*: World health organization (WHO).

[38] Hastings, S. E., Armitage, G. D., Mallinson, S., Jackson, K., & Suter, E. (2014). Exploring the relationship between governance mechanisms in healthcare and health workforce outcomes: a systematic review. *BMC Health Serv Res, 14*(1), 479. doi:10.1186/1472-6963-14-479

[39] Nguyen, D. T., Leung, K. K., McIntyre, L., Ghali, W. A., & Sauve, R. (2013). Does integrated management of childhood illness (IMCI) training improve the skills of health workers? A systematic review and meta-analysis. *PLoS One, 8*(6), e66030. doi:10.1371/journal.pone.0066030

[40] Sarkis, N., & Mwanri, L. (2014). The role of information technology in strengthening human resources for health. *Health Education, 114*(1), 67-79. doi:http://dx.doi.org/10.1108/HE-02-2013-0008

[41] Willis-Shattuck, M., Bidwell, P., Thomas, S., Wyness, L., Blaauw, D., & Ditlopo, P. (2008). Motivation and retention of health workers in developing countries: a systematic review. *BMC Health Serv Res, 8*, 247. doi:10.1186/1472-6963-8-247

[42] Archer et al, supra

[43] Berndt, A., Murray, C. M., Kennedy, K., Stanley, M. J., & Gilbert-Hunt, S. (2017). Effectiveness of distance learning strategies for continuing professional development (CPD) for rural allied health practitioners: a systematic review. BMC medical education, 17(1), 117.

[44] Archer et al, supra

[45] Snowdon, D. A., Leggat, S. G., & Taylor, N. F. (2017). Does clinical supervision of healthcare professionals improve effectiveness of care and patient experience? A systematic review. *BMC Health Services Research, 17*(1), 786

[46] Mbemba, G., Gagnon, M. P., Pare, G., & Cote, J. (2013). Interventions for supporting nurse retention in rural and remote areas: an umbrella review. *Hum Resour Health, 11*, 44. doi:10.1186/1478-4491-11-44

[47] Archer et al, supra

[48] Silver, M. P., Hamilton, A. D., Biswas, A., & Warrick, N. I. (2016). A systematic review of physician retirement planning. *Hum Resour Health, 14*(1), 67. doi:10.1186/s12960-016-0166-z

[49] Silver, M. P., Hamilton, A. D., Biswas, A., & Warrick, N. I. (2016). A systematic review of physician retirement planning. *Human resources for health, 14*(1), 67

[50] Bernstrom, V. H., Alves, D. E., Ellingsen, D., & Ingelsrud, M. H. (2019). Healthy working time arrangements for healthcare personnel and patients: a systematic literature review. *BMC Health Services Research, 19*(1), 193

[51] Robson, L. S., Stephenson, C. M., Schulte, P. A., Amick III, B. C., Irvin, E. L., Eggerth, D. E., ... & Peters, R. H. (2012). A systematic review of the effectiveness of occupational health and safety training. Scandinavian journal of work, environment & health, 193-208.

[52] Dawson, A. J., Nkowane, A. M., & Whelan, A. (2015). Approaches to improving the contribution of the nursing and midwifery workforce to increasing universal access to primary health care for vulnerable populations: a systematic review. *Hum Resour Health, 13*, 97. doi:10.1186/s12960-015-0096-1

[53] Mbemba et al, supra

[54] Laurant, M., Reeves, D., Hermens, R., Braspenning, J., Grol, R., & Sibbald, B. (2005). Substitution of doctors by nurses in primary care. Cochrane database of systematic reviews, (2).

[55] El-Jardali, F., Jamal, D., Abdallah, A., & Kassak, K. (2007). Human resources for health planning and management in the Eastern Mediterranean region: facts, gaps and forward thinking for research and policy. *Human resources for health, 5*(1), 9

[56] Kuhlmann, E., Lauxen, O., & Larsen, C. (2016). Regional health workforce monitoring as governance innovation: a German model to coordinate sectoral demand, skill mix and mobility. *Human resources for health, 14*(1), 71

[57] Ajami, S., & Arab-Chadegani, R. (2014). The effects of applying information technology on job empowerment dimensions. Journal of Education and Health Promotion, 3, 84. doi:http://dx.doi.org/10.4103/2277-9531.139250

[58] Kuhlmann, E., Lauxen, O., & Larsen, C. (2016). Regional health workforce monitoring as governance innovation: a German model to coordinate sectoral demand, skill mix and mobility. *Human Resources for Health, 14*(1), 71. doi:10.1186/s12960-016-0170-3

[59] McDaid D, Park A-L. Evidence on financing and budgeting mechanisms to support intersectoral actions between health, education, social welfare and labour sectors. Copenhagen: WHO Regional Office for Europe; 2016 (Health Evidence Network (HEN) synthesis report 48)

[60] Bronkhorst, B., Tummers, L., Steijn, B., & Vijverberg, D. (2015). Organizational climate and employee mental health outcomes: A systematic review of studies in health care organizations. *Health Care Management Review, 40*(3), 254-271

[61] Roots, R. K., & Li, L. C. (2013). Recruitment and retention of occupational therapists and physiotherapists in rural regions: a meta-synthesis. *BMC Health Serv Res, 13*, 59. doi:10.1186/1472-6963-13-59

[62] Tulloch-Reid, Marshall, Saravia, Nancy Gore, Dennis, Rodolfo J, Jaramillo, Andres, Cuervo, Luis Gabriel, Walker, Susan P, Salicrup, Luis Alejandro (2018). Strengthening institutional capacity for equitable health research: lessons from Latin America and the Caribbean. BMJ 2018;362:k2456

[63] Brubakk, K., Vist, G. E., Bukholm, G., Barach, P., & Tjomsland, O. (2015). A systematic review of hospital accreditation: the challenges of measuring complex intervention effects. *BMC Health Services Research, 15*, 280

[64] Lee, D. M., & Nichols, T. (2014). Physician recruitment and retention in rural and underserved areas. *International Journal of Health Care Quality Assurance, 27*(7), 642-652

[65] Herdiana, Herdiana, Sari, Jana Fitria Kartika, Whittaker, Maxine (2018). Intersectoral collaboration for the prevention and control of vector borne diseases to support the implementation of a global strategy: A systematic review. PLOS one. October 10, 2018

[66] National Collaborating Centre for Determinants of Health (2012). Assessing the impact and effectiveness of intersectoral action on the social determinants of health and health equity: An expedited systematic review. St. Francis University, Nova Scotia

[67] Ndumbe-Eyoh, Sume, Moffat, Hannah (2013). Intersectoral action for health equity: a rapid systematic review. BMC Public Health 2013, 13:1056

[68] Lopez-Carmen, Victor, McCalman, Janya, Benveniste, Tessa, Askew, Deborah, Spurling, Geoff, Langham, Erika, Bainbrdige, Roxanne (2019). Working together to improve the mental health of indigenous children: A systematic review. Children and Youth Services Review 104 (2019) 104408

[69] Van der kielj, Rianne MJJ, Verblest, Marjolein, Van Assema, Patricia (2015). Implementation of intersectoral community approaches targeting childhood obesity: A systemtatic review. Obesity Reviews 16(6) March 2015

[70] Niven, Paul R (2003). Balanced Scorecard Step by Step for Government and Nonprofit Agencies. New Jersey: John Wily & Sons Inc.

[71] Philippine Congress (2018). An Act Establishing and Institutionalizing the Seal of Good Local Governance for Local Government Units, and Allocating for this Purpose the Seal of Good Local Governance Fund. Quezon City