# Return Service Agreement in the Context of the Universal Health Care Act: Using International and Local Experiences to Guide Application of the RSA

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#### **ABSTRACT**

**Background.** Philippines is in a constant struggle to address shortage and maldistribution of health professionals, affecting equity in service delivery. The government endeavors to generate adequate supply of health workforce through scholarship and training programs which have been further expanded with the enactment of the Universal Health Care (UHC) Act. This article aimed to give a background for discussion on the application of return service agreement (RSA) provisions in the light of attaining universal health care.

**Methods.** A modified systematic review of literature was conducted guided by the key issues determined by the Department of Health with focus on the extent of scholarship grants and on number of recipients.

**Results.** The Philippine government enacted policy reforms through implementing RSA in response to the progressive decline of the net flow of health professionals. However, the criticisms lie in that RSA is not a long-term solution. With the RSA provisions in the UHC Law, metrics on determining the under-produced and maldistributed professional cadre must be created. These should be responsive in addressing facility-level and health system-level gaps.

Conclusion and Recommendation. Paucity of current local literature impedes attaining a conclusive body of evidence, therefore, further research is needed. Operationalization of RSA should not be viewed as a singular means to solve the health workforce gaps, but as part of holistic assessment, taking into consideration epidemiological, geographical, political, and social determinants. Stakeholders must ingress in collaborative intersectoral policy actions to warrant bottom-up support. Activities related to mapping, monitoring, and incentivizing medical and health-related professionals must be established to support a system conducive for workforce retention.

Key Words: health workforce, medically underserved area, return service

### **INTRODUCTION**

### A worldwide health human resource crisis

Approximately half of the global population live in rural areas, yet only around a quarter of the world's health workforce live and serve in these areas. The World Health Organization (WHO) identified 57 countries including the Philippines, whose health worker to population ratio is below the critical threshold of 2.3 per 1,000. These critical areas lag behind in health outcomes, even with considerable funding support for certain vertical programs. Implementation and sustainability of these programs have had gaps and challenges, in which lack of health workers is a major contributor.

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The World Health Assembly formulated a Medium-Term Strategic Plan to mitigate the gaps of demand and supply of health workforce. The strategic plan identified the three obstacles faced by the countries: 1) limited production capacity; 2) geographical imbalance in the distribution of health workers; and 3) migration from poor to developed countries.<sup>2</sup>

In the Philippines, the health human resource (HRH) crisis is mainly caused by the maldistribution of health workers and emigration of health professionals to developed countries. Studies showed that concerns about career opportunities, job satisfaction, landscape of continued privatization of the health system, and better salaries and working conditions were some of the accounted reasons why health professionals opt to serve in urban areas and consider emigration for employment.<sup>3</sup> As a policy response, the government implemented programs in order to decrease the net migration outflow of health professionals, one of which is the implementation of a return-for-service agreement or return service agreement (RSA).

### RSA to address health workforce gaps

The RSA is a financial incentive strategy which involves the provision of scholarships and other education subsidies with enforceable return of service.1 There are four identified ways where return service agreements bundled with scholarships may work. First, it would decrease the number of health professionals emigrating to other countries, at least for the early part of their careers. 4 Second, potential health professionals who would not attain a degree without scholarship would be added to the pool of national health workforce. Third, from a regulatory standpoint, one can prolong the retention of health professionals by increasing the number of years required to stay in rural or underserved areas. Fourth, it might have positive effect on retention of personnel by increasing the number of health professionals in an area, thereby decompressing workload and social isolation.<sup>5</sup>

### Issues surrounding return service agreements

Issues surrounding accessibility of higher education arise if it comes with mandatory service agreements, such as in the case of Republic Act (RA) 10931, otherwise known as Universal Access to Quality Tertiary Education Act, where there was a motion to remove the provision that requires return service for students who benefit from the free tuition.<sup>6</sup> The dispute was clarified in succeeding hearings wherein the remedial strategy is to leave the scope of agreements to the institution's discretion.<sup>7</sup> Return service agreement is also criticized for being a band aid solution in increasing the number of health workers in underserved areas as it is does not guarantee retaining the number of professionals in the long term.<sup>8</sup> Nevertheless, in a survey among health professionals, the implementation of RSA is justified, especially for those who receive government scholarships.<sup>3</sup>

#### **UHC Act and RSA**

The UHC Act prescribes the formulation and implementation of a National Health Human Resource Master Plan, which would include strategies for health workforce generation, recruitment, retention - three primary strategies that would involve financial incentives for health professionals at different stages of their careers. Stipulated in the Act is the creation of a national health workforce system that prioritizes deployment to Geographically Isolated and Disadvantaged Areas (GIDA). This illustrates the current reality of lack of health professionals in certain areas of the country, and that the health human resource crisis is an obstacle to the implementation of the Universal Health Care Act. As such, the Act also explicitly states in Section 25 the creation and expansion of government scholarships and training programs through the collaboration of DOH, Professional Regulation Commission (PRC), and Technical Education and Skills Development Authority (TESDA). Furthermore, DOH and PRC, in coordination with PRCaccredited professional societies, shall set up a registry of medical and allied health professionals, including the current number of practitioners and location of practice. Complementary to this provision is Section 26 stating the return service agreement among all graduates of allied and health-related courses who are recipient of government scholarships have to serve at least three years in priority areas in the public sector. Further, "graduates of allied and health professionals of SUCs and private schools shall be encouraged to serve in these areas." This provides a clear window of opportunity for policy makers to impact the future of Philippine health workforce and strengthen their retention.<sup>9</sup>

Moving forward, the paper makes two key assumptions: that increasing HRH density will improve health outcomes, and that the RSA will be used by the government with the intent to fill gaps and increase HRH density in underserved areas. This paper recognizes that while the current scientific evidence is mixed, and that health worker density in isolation may not result to improved health outcomes across the board; 10,11 attracting, recruiting, and retaining health professionals in underserved areas has still been consistently recommended by the WHO. 12

#### **METHODS**

A modified systematic search of literature was conducted guided by the key issues determined by the Department of Health including the scope of academic fields that would fall under RSA and the extent of scholarship grants and number of recipients. Non-empirical articles were excluded. Screening was conducted at three levels: by title, by abstract, and by full text reading of the resources. Two searches were done. The first search process aimed to generate resources discussing the current situation of health human resource in the Philippines. MEDLINE was searched using the terms "Health Workforce [MeSH] AND Philippines" yielding

three titles after the first level screening. All three were included in the review. The other search used the terms "Health Workforce [MeSH] AND Medically Underserved Areas [MeSH] which generated 286 articles. First level screening resulted to 28 titles, which was reduced to 7 titles upon second level screening, finally reaching 6 titles after full text reading. From the references cited by these 6 articles, a snowball sampling approach was used to include articles and reports which specifically covered health education and financial incentives. For Philippine-related policies, the Official Gazette was explored while performance reports of national government agencies such as PRC were cited based from their official websites. Figure 1 shows the article search diagram of all the records used in review.

### **RESULTS AND DISCUSSION**

### The health workforce pipeline

While RSA is one of the policy options the Philippine government can implement to generate healthcare workers, it should come with complementary policy strategies to ensure that various gaps in the health workforce are addressed. For the operationalization of RSA to be effective, it should be viewed holistically, through the lens of the health workforce pipeline; for example, ensuring that there is enough public

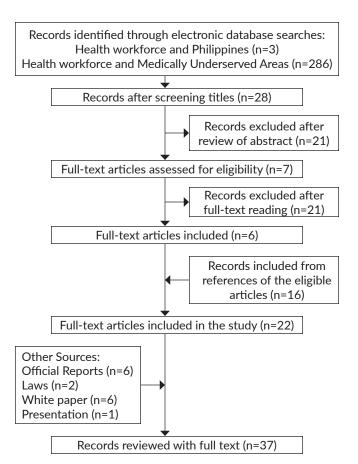


Figure 1. PRISMA diagram of article search.

and private investments in health human resource is important to ensure that the produced workforce can be absorbed by the health system. Objective 2 of the WHO Global Strategy for Human Resources for Health 2030 states that investments in human resources should be aligned with current and future needs of the population, considering labor market dynamics, education policies, and government capacity to recruit and retain health professionals.<sup>13</sup>

To help guide policy direction, the WHO recommended the 'pipeline' framework for health worker generation.<sup>14</sup> Figure 2 shows a framework designed for eye care health system, in which the main context can be adopted in general health systems. This includes process of selection, training, accreditation, employment, distribution, retention, and productivity. The RSA would affect selection, training, employment, distribution, and consequently retention. Screening of eligible candidates for RSA should be meticulous to capture the target subgroup and that accessible and available capacity building must be in place. These pave the way for the human resource to be absorbed in the right job, location, and work condition. The figure also details the set of attributes that needs to be accounted in using the pipeline framework: starting with determining the needs of the health system, examining both the education sector and the labor market, and finally, preparing the investments and policies to address the gaps.<sup>15</sup>

### Conditional scholarships in the Philippines

Providing conditional scholarships has been part of the Philippine educational system. The Department of Science and Technology (DOST) offers scholarships under the provisions of RA 7687 or the "Science and Technology Scholarship Act", and RA 2067 or "An Act to Integrate, Coordinate, and Intensify Scientific and Technological Research and Development and to Foster Invention" for merit scholarships, with the goal to produce career scientists.<sup>16</sup> From the private sector, one foundation provided medical scholarships with the condition that they are required to apply to the Doctors to the Barrios program of the DOH and to serve for two years.<sup>17</sup> Recently, the DOH has revived the midwifery and medical scholarship programs, offering scholarships that prioritize students residing in underserved areas or are members of vulnerable groups such as indigenous people. In the context of the health workforce pipeline, eligibility for conditional scholarships varies depending on the program. For the DOST scholarships, the target would be high aptitude individuals with interest in science and technology; while for medical scholarships, recipients are selected from certain groups that are willing to be deployed to underserved areas, provided that set academic requirements are met.

### The return service agreement as part of a value system of training institutions

The Training for Health Equity Network (THENet) was formed to better respond to the needs of underserved

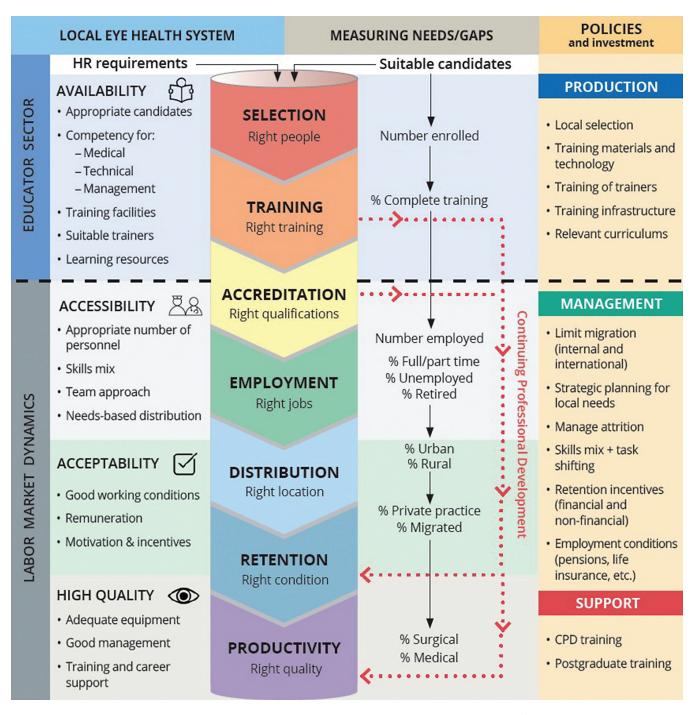


Figure 2. The pipeline framework of health workforce generation used for the eye health system.<sup>14</sup>

areas.¹ It is a group of medical schools that focuses on recruitment from underserved communities, with learning programs that are community-based and involve community participation in the curricula, and emphasizes commitment to public service to their graduates.¹¹¹ These schools use an approach called "socially-accountable health professional education (SAHPE)." This approach uses preferential admission policies to focus recruitment from communities. In the Philippines, two medical schools that adopt SAHPE

approach are the Ateneo de Zamboanga University School of Medicine (ADZU SOM) and the University of the Philippines Manila School of Health Sciences (UPM SHS).

The UPM SHS with campuses in the provinces of Leyte, South Cotabato, and Aurora uses the unique SHS Step-Ladder Curriculum where there will be only one entry point for all students, and each student will have the opportunity to become a midwife, or nurse, or physician, depending on the curriculum level the recipient decided to

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finish. One unique aspect of the UPM SHS model is its admission policy, wherein recruitment de-emphasize past academic performance but rather focus on the commitment of the applicant to provide community service. Return service obligation includes two years of service for each year of study. Meanwhile, the Ateneo de Zamboanga University School of Medicine (ADZU SOM) focuses on recruiting within the Zamboanga Peninsula Region, with 35% of students availing scholarships with return-of-service requirements. Both universities explicitly foster service commitment to the applicants which is essential to SAHPE schools.

It is interesting to note that both schools have demonstrated higher graduate retention and deployment rate to underserved areas compared to 'conventional' medical schools.<sup>20</sup> However, the success of SAHPE schools may not be solely attributed to the value systems with social accountability. Literature showed that other social and geographical determinants play roles in retention such as university location, extensive community exposure of the student, and student background.<sup>21</sup> Attributes that both apply to UPM SHS and ADZU SOM include, being located in sub-urban areas and featuring longer community exposure than other schools, total of 18 months and 16 months, respectively.<sup>22</sup>

### Expanding the availability of scholarships to the private sector

Expanding the availability of scholarships to the private setting may not only be an issue of service and profit, but also of the location. The WHO recommends to locate schools outside of major cities, as their graduates are more likely to work in rural areas. Similarly, the training location of students has high impact in retaining graduates in underserved areas.<sup>1,23</sup> A 2015 study in Australia noted that through a decentralized training model, there is a high correlation between the location where students were trained and the area of their future practice.<sup>24</sup> Private institutions may also augment the few number of quality public institutions to produce and capacitate health professionals. Hence, offering government-funded scholarships in these private schools could be a complementary strategy to increase the pool of health professionals who would practice in rural and underserved areas. It is imperative that standards for these private schools shall be monitored and assessed, moreover, awarded academic accreditations. This is to safeguard quality education from substandard requirements which were observed during the boom of private nursing schools wherein varying standards for a nursing degree were noted.<sup>25</sup> Increasing the availability and accessibility of government scholarships without strict monitoring and compliance might expose the system to this risk.

### Determining the need for health professionals

The UHC Act explicitly states that conditional scholarships would be offered for programs that are specifically needed in underserved areas. The WHO also recommends to increase investments to boost market-based demand and supply of health workforce, and align them with population needs, including developing strategies and incentives to deploy health workers in underserved areas. This calls for the need to detail the mechanisms that affect the scope of RSA degree programs, mainly by identifying underproduced and maldistributed professional cadres.

Approaches and strategies in assessing health workforce needs vary in scope; from determining the needs of a facility, to programs, and to health systems in general.<sup>26</sup> One example is the Workload Indicators for Staffing Needs (WISN) developed by the WHO to determine staffing needs per facility based on the actual workload. This is in contrast to earlier standards that use population to health human resource and institutional size such as bed capacity of a hospital.<sup>27</sup> It applies business planning principles to provide facility managers guidance in analyzing and determining health worker requirements for their facility.1 These assessment strategies need to be guided by key principles such as the objectives of the policy, expectations from the workforce, and the interests of the labor market.<sup>28</sup> These three concerns should be first clearly illustrated and addressed before moving forward to granting scholarships. Further, it is crucial to first pour investments to the health system to increase its capacity to absorb incoming health workforce to avoid overproduction and unemployment.1

### Philippine health workforce statistics: current production and projected need

After securing the efficient targeting system of eligible scholarship recipients, capacity building, and placement in quality academic institutions, the next challenge is to guarantee provision of employment in the right areas. Stipulated in Section 25 of the UHC Law is the collaborative role of PRC in providing scholarships and training programs. To project the need of educational resources, mapping and profiling of the academic and training institutions to estimate the current capacity to produce health professionals are needed. The passing rate of medical and allied health professionals is an important factor to consider in health workforce production. Figure 3 shows the average passing rate of medical and allied health professionals from 2008 to 2018 based on PRC records.

Next to consider is the productive capacity of the nation for health professionals. Policy makers can estimate HRH productive capacity based on enrolment and graduation data.

Table 1 shows the production of HRH per cadre (2013) which can also be utilized as a variable in the equation in projecting workforce requirements for a country (Table 2), considering the expected changes in population structure. Other approaches in health worker planning, aside from health workforce to population ratio, are utilization-based or demand-based assessment (e.g. the WISN approach), needs-based assessment, and target-setting. These approaches

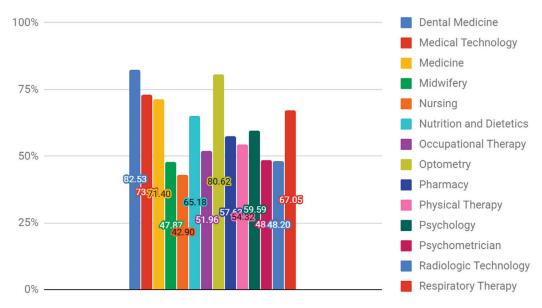


Figure 3. Average passing rate of medical and allied health professionals,2008 to 2018.<sup>29</sup>

differ on the identification of health service requirements which policy makers can take advantage of in combining context- and country setting-appropriate assessments.<sup>31</sup> Australia initially started with a demand-based assessment using current service utilization patterns, then matched it with the current needs of age and gender cohorts. These were used to project population structure change to guide health workforce planning.<sup>32</sup>

**Table 1.** Production of HRH per cadre per year in the Philippines, 2013<sup>30</sup>

HRH cadre	Production per year	Number of colleges/schools
Nurses	45,000-100,000	355
Doctors	2,000	30
Midwives	1,500	129
Dentists	2,000	31
Pharmacists	1,500	35
Physical therapists	1,000	95
Occupational therapists	200	95

In the Philippines, there are stark differences among regions, and between provinces, in terms of health worker distribution. There is higher density of health workers in urban areas, and who are hospital-based.2 In the case of the volume of physicians and midwives in the National Capital Region (NCR) and the Autonomous Region of Muslim Mindanao (ARMM) (Table 3), the significant gap could be a consideration when offering scholarships to residents of the corresponding regions. As a caveat, relying solely on health worker density to estimate scholarship volume should be avoided. Regional variation in political, social, and geographical context for each region or area must be examined thoroughly to increase effectivity. In addition, with the advent of the UHC, where province-wide health systems will be used to coordinate the distribution of health resources, a more granular look at the needs of the provinces, down to the municipal level, would aid the policy makers and health system managers.

Table 2. Projected workforce requirements in the Philippines, 2005-2030<sup>33</sup>

Professions	Projected Workforce Requirements						
	2005	2010	2015	2020	2025	2030	
Doctors	17,797	19,402	21,158	23,080	25,185	27,491	
Nurses	170,423	185,788	202,603	221,010	241,166	263,244	
Dentists	8,629	15,954	9,871	10,761	11,735	12,802	
Medical Technologists	6,386	6,393	6,633	7,033	7,553	7,779	
Physical Therapists	7,036	7,644	8,346	9,117	9,964	10,893	
Occupational Therapists	5,285	5,733	6,250	6,820	7,443	8,126	
Pharmacists	21,572	23,518	25,646	27,976	30,527	33,322	
Midwives	17,338	18,897	20,603	22,469	24,513	26,751	

Source: Lorenzo, F. E. (2008). The Philippine HRH Master Plan (2005-2030). Retrieved from https://www.who.int/workforcealliance/forum/presentations/Fely\_Marilyn\_Elegado.pdf

Table 3. Health workers in institutions per 10,000 population in 2017<sup>2</sup>

Group of islands		Region	Doctors	Nurses	Midwives	Medical Technologists
NCR	1	NCR	10.6	12.6	3.3	3.2
The rest of Luzon	2	CAR	6.4	15.8	9.9	2.2
	3	llocos (I)	4.0	11.2	5.6	1.4
	4	Cagayan Valley (II)	3.4	12.1	6.9	1.4
	5	Central Luzon (III)	3.6	7.5	3.3	1.2
	6	Calabarzon (IV-A)	2.8	6.5	2.3	0.6
	7	Mimaropa (IV-B)	1.9	5.8	5.2	0.6
	8	Bicol (V)	2.5	7.8	5.1	0.9
Visayas	9	Western Visayas (VI)	3.1	7.2	4.9	1.0
	10	Central Visayas (VII)	3.1	10.4	4.3	1.3
	11	Eastern Visayas (VIII)	2.6	7.0	4.7	1.3
Mindanao	12	Zamboanga Peninsula (IX)	2.6	9.5	4.8	1.1
	13	Northern Mindanao (X)	2.9	9.3	5.2	0.9
	14	Davao Region (XI)	3.0	7.1	3.0	1.0
	15	Soccksargen (XII)	2.3	7.6	4.8	1.0
	16	Caraga (XIII)	2.1	7.9	5.3	1.1
	17	ARMM	0.9	4.2	2.6	0.3
		Philippines	3.9	8.6	4.1	1.3

Source: Dayrit MM, Lagrada LP, Picazo OF, Pons MC, Villaverde MC. The Philippines Health System Review. Vol. 8 No. 2. New Delhi: World Health Organization, Regional Office for South- East Asia; 2018.

### Going beyond the Return Service Agreement

While the UHC Act is explicit in going forward with the conditional scholarship strategy, the RSA will only be effective if retention of health workforce in underserved areas is addressed. The main challenge is to appropriately contextualize the gaps and challenges in retention specific to the area. 10 Despite the available policy instruments recommended to improve retention, the mechanisms behind these remain unclear due to several factors affecting cost-effectiveness of incentives. Further, in the economic valuation, controlling for these factors poses compounded challenges. In using SAHPE models for rural-based schools, it should be noted that community participation in direct healthcare provision could result to familiarity with the local settings, health system, and colleagues. <sup>22,34</sup> Hence, these factors can be assimilated into the curriculum, in relation to the prescribed community exposure.

It was also observed that professionals who applied for financial-incentive programs such as conditional scholarships are more likely to leave their initial area of assignment compared to those who are not obligated. There could be multiple reasons behind this, encompassing external and internal considerations such as work environment and work satisfaction, respectively. Hence, without significant investments in improving the local health system, including structural domain (e.g. water, electricity, communication, and transportation, etc.), maldistribution of the health workforce would still exist. As such, it would be beneficial to provide, even the contractually obligated health professionals, a reasonable space to negotiate the terms of their return service, such as the area of deployment. Deployment concerns may

be addressed using the *least restrictive alternative* principle of policy creation.<sup>36</sup> Moreover, other incentives could be used in conjunction with the conditional scholarships. One common example is the provision of higher salaries in underserved areas which can entice scholars to opt serving in these areas.

Finally, the WHO recognizes that there is a dearth of sound evidence related to strategies for addressing the lack of health workers in underserved areas. Most of observational studies suggested factors that might improve health worker retention, and make return-for-service arrangements more impactful. However, these findings were not free of bias and some confounding factors were observed in the studies, even the ones cited in this paper. The RSA strategy is an opportunity to do a well-designed research since it is expected to subsequently increase the number of potential health professionals in underserved areas.

### SUMMARY OF RECOMMENDATIONS

Determining the scope of the scholarship grants would strongly rely on a systematic assessment of the health human resource needs of the country. It is also important to define at what level does a health system assessment cover, as situations may differ from an LGU to another, and between political regions. Scholarships are also likely to be offered to private institutions, but with criteria that could include the quality of training and the location of the schools. In addition to social accountability, considerations must include other concrete representations of this value that affect admissions and the curriculum. This entails extensive community exposure for both pre-graduate and residency programs,

and targeted recruitment of students from underserved areas. Finally, policymakers should differentiate between the conjectures, and the assumptions made on what cause the disparities and gaps in the health human resource distribution in the Philippines. Evidences on financial incentives and conditional scholarships are just recently building up, and we have yet to see a sizeable number of studies that are methodologically sound that can clearly show the mechanisms behind these strategies. Initial rollout of the RSA through UHC Act may provide an opportunity to generate local evidence prior to nationwide implementation.

### **Statement of Authorship**

All authors participated in data collection and analysis, and approved the final version submitted.

### **Author Disclosure**

All authors declare no conflicts of interest.

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### **REFERENCES**

- World Health Organization. Increasing access to health workers in remote and rural areas through improved retention: Policy recommendations [Internet]. 2010 [cited 2009 Feb]. Available from: https://www.who.int (https://www.who.int)/hrh/retention/Executive\_ Summary\_Recommendations\_EN.pdf.
- Dayrit M, Dolea C, Dreesch N. Addressing the HRH crisis in countries: how far have we gone? What can we expect to achieve by 2015? Rev Peru Med Exp Salud Publica. 2011; 28(2):327-36.
- Castro-Palaganas E, Spitzer DL, Kabamalan MM, Sanchez MC, Caricativo R, Runnels V, et al. An examination of the causes, consequences, and policy responses to the migration of highly trained health personnel from the Philippines: The high cost of living/ leaving—a mixed method study. Hum Resour Health. 2017;15(1):25. doi: 10.1186/s12960-017-0198-z
- Stilwell B, Diallo K, Zurn P, Vujicic M, Adams O, Dal Poz M. Migration of health-care workers from developing countries: strategic approaches to its management. Bull World Health Organ. 2004 Aug; 82(8):595-600.
- Charles DM, Ward AM, Lopez DG. Experiences of female general practice registrars: are rural attachments encouraging them to stay? Aust J Rural Health. 2005 Dec; 13(6):331-6. doi: 10.1111/j.1440-1584.2005.00731.x.
- 6. Republic Act 10931. An Act promoting universal access to quality tertiary education by providing for free tuition and other school fees in state universities and colleges, local universities and colleges and state-run technical-vocational institutions, establishing the tertiary education subsidy and student loan program, strengthening the unified student financial assistance system for tertiary education, and appropriating fund therefor.7th Cong; 1st Session. 2017.
- Tomacruz S. Return service' up to state universities CHED [Internet].
   Rappler. 2018 September 23 [cited 2019 Sep]. Available from https://www.rappler.com (https://www.rappler.com)/nation/212452-return-service-students-free-higher-education-law-for-review.
- Bärnighausen T, Bloom D. Financial incentives for return of service in underserved areas: a systematic review. BMC Health Serv Res. 2009 May; 9:86. doi: 10.1186/1472-6963-9-86.
- Republic of the Philippines. Republic Act 11223. An Act Instituting Universal Health Care for All Filipinos, Prescribing Reforms in the

- Health Care System, Amending for The Purpose Certain Laws, Appropriating Funds Therefore and for Other Purposes; 2018.
- Anand S, Bärnighausen T. Human resources and health outcomes: cross-country econometric study. Lancet. 2004;364(9445):1603-9. doi:10.1016/S0140-6736(04)17313-3.
- 11. Pozo-Martin F, Nove A, Lopes SC, Campbell J, Buchan J, Dussault G, et al. Health workforce metrics pre- and post-2015: a stimulus to public policy and planning. Hum Resour Health. 2017 Feb; 15(1):14. doi: 10.1186/s12960-017-0190-7.
- Liu X, Zhu A, Tang S. Attraction and retention of rural primary health-care workers in the Asia Pacific Region. New Delhi: World Health Organization, Regional Office for South-East Asia, 2018.
- Campbell J, Dussault G, Buchan J, Pozo-Martin F, Guerra Arias M, Leone C, et al. A universal truth: no health without a workforce. Forum Report. Global Health Workforce Alliance World Health Organization; 2013.
- World Health Organization. Global Strategy on Human Resources for Health: Workforce. Switzerland: WHO Document Production Services. 2015.
- 15. Patel D. Human resources for eye health: ensuring a smooth pipeline. Community Eye Health. 2018; 31(102):40.
- sei.dost.gov.ph. Undergraduate Scholarships [Internet]. n.d. [cited 2019 Feb 2]. Available from: http://www.sei.dost.gov.ph/index.PhP/ programs-and-projects/scholarships/undergraduate-scholarships#samp-t-undergraduate-scholarships.
- Philippine Daily Inquirer. First Gentleman sends doctors to the barrios. PDI. 2010 June 21.
- Pálsdóttir B, Neusy A-J, Reed G. Building the evidence base: networking innovative socially accountable medical education programs. Educ Health (Abingdon). 2008 Jul; 21(2):177.
- Shs.upm.edu.ph. The SHS Step-Ladder Curriculum [Internet].
   2016 [cited 2019 Feb 7]. Available from: http://shs.upm.edu.ph/academics.
- Woolley T, Cristobal F, Siega-Sur JJ, Ross S, Neusy AJ, Halili S, et al. Positive implications from socially accountable, community engaged medical education across two Philippines regions. Rural Remote Health. 2018 Feb; 18(1):4264. doi: 10.22605/RRH4264.
- Chang LW, Kaye D, Muhwezi WW, Nabirye RC, Mbalinda S, Okullo I, et al. Perceptions and valuation of a community-based education and service (COBES) program in Uganda. Med Teach. 2011;33(1):e9-15. doi: 10.3109/0142159X.2011.530317.
- Reeve C, Woolley T, Ross SJ, Mohammadi L, Halili S, Cristobal F, et al. The impact of socially-accountable health professional education: a systematic review of the literature. Med Teach. 2017 Jan; 39(1): 67-73. doi: 10.1080/0142159X.2016.1231914.
- Safi N, Naeem A, Khalil M, Anwari P, Gedik G. Addressing health workforce shortages and maldistribution in Afghanistan. East Mediterr Health J. 2018 Dec; 24(9):951-8. doi: 10.26719/2018.24. 9 951
- Woolley T, Sen Gupta T, Murray R. James Cook University's decentralised medical training model: an important part of the rural workforce pipeline in northern Australia. Rural Remote Health. 2016 Jan-Mar. 16(1):3611.
- Marcus K, Quimson G, Short SD. Source country perceptions, experiences, and recommendations regarding health workforce migration: a case study from the Philippines. Hum Resour Health. 2014 Oct; 12:62. doi: 10.1186/1478-4491-12-62.
- Fakhri A, Seyedin H, Daviaud E. A Combined Approach for Estimating Health Staff Requirements. Iran J Public Health. 2014 Jan; 43(1):107–15.
- World Health Organization. Workload Indicators of Staffing Need User's Manual. Geneva: WHO Press; 2010.
- Dussault G, Buchan J, Sermeus W, Padaiga Z. Assessing future health workforce needs. Denmark: World Health Organization. Regional Office for South-East Asia; 2010.
- PRC. Licensure Examination Results [Internet]. [cited 2019 Sep].
   Available from: https://www.prc.gov.ph/<yr>-licensure-exam-results
- Lorenzo F. Recruit, Retain, Retrain, Reassess: The 4 Rs of Health Human Resource Development. Manila: College of Public Health; nd.

- Al-Sawai A, Al-Shishtawy M. Health Workforce Planning: An overview and suggested approach in Oman. Sultan Qaboos Univ Med J. 2015 Feb; 15(1):e27-33.
- Crettenden I, McCarty M, Fenech BJ, Heywood T, Taitz MC, Tudman S. How evidence-based workforce planning in Australia is informing policy development in the retention and distribution of the health workforce. Hum Resour Health. 2014 Feb; 12:7. doi: 10.1186/1478-4491-12-7.
- Lorenzo FE. The Philippine HRH Master Plan (2005-2030) [Internet]. 2008 [cited 2019 Sep]. Available from: https://www.who.int/workforcealliance/forum/presentations/Fely\_Marilyn\_Elegado.pdf
- Strasser R, Neusy AJ. Context counts: training health workers in and for rural and remote areas. Bull World Health Organ. 2010 Oct; 88(10):777–82. doi: 10.2471/BLT.09.072462.
- Pathman DE, Konrad TR, Ricketts 3rd TC. The National Health Service Corps experience for rural physicians in the late 1980s. JAMA. 1994 Nov; 272(17):1341-8.
- Chen Y-C. Pursuing a less restrictive means to health equity. Am J Bioeth. 2012; 12(5):40-1. doi: 10.1080/15265161.2012.66514
- Grobler L, Marais BJ, Mabunda SA, Marindi PN, Reuter H, Volmink J. Interventions for increasing the proportion of health professionals practising in rural and other underserved areas. Cochrane Database Syst Rev. 2009 Jan; (1):CD005314. doi: 10.1002/14651858.CD005314. pub2

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