ORIGINAL ARTICLE

Implementing Lessons Learned from Past Versions of the Philippine National Unified Health Research Agenda

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ABSTRACT

Background. Considering the scope and magnitude of the National Unified Health Research Agenda (NUHRA), the implementation of the agenda requires adequate planning. Reviewing the implementation of the first and second versions of NUHRA, implemented from 2006 to 2010 and from 2011 to 2016 respectively, is thus useful in identifying potential challenges for implementing the current version.

Objectives. This article aimed to 1) describe strategies employed in the previous NUHRAs,2) describe uptake of the previous NUHRAs; and 3) identify lessons learned from the implementation of NUHRA 1 and 2.

Methods. Review of the NUHRA 1 and 2 evaluation reports and minutes of PNHRS Research Agenda Committee meeting was conducted. Interviews with PCHRD division head and staff and representatives from the academe and regional consortia were also conducted.

Results. A total of 96 of the 422 NUHRA 1 priorities were implemented, while 45 of the 56 NUHRA 2 priorities were implemented. While NUHRA 1 implementation was delegated to numerous agencies, dissemination was conducted primarily by PCHRD through launch events and fora. Implementation of the NUHRA 2 was delegated only to the four core agencies of the PNHRS, with each agency employing different strategies for the dissemination of the NUHRA 2.

Conclusion. Involvement of agencies beyond the core of PNHRS may be the better direction for implementation of the current NUHRA. Strong support and commitment of the core agencies will be key in the effective implementation of the NUHRA.

Key Words: National Unified Health Research Agenda, health priorities, implementation, Philippines

INTRODUCTION

There is recognition that research agenda setting helps ensure that research is relevant to the needs of society.[1,2] Setting a national research agenda will help prioritize implementation of researches that will improve the nation's public health system. This will be important in providing sound evidence to guide policy decisions on health development. The Philippine National Health Research System (PNHRS), with the Philippine Council for Health Research Development (PCHRD), the Department of Health (DOH), the Commission on Higher Education (CHED), and the University of the Philippines Manila–National Institutes of Health (UPM-NIH) as core agencies, ensures health researches in the country is aligned with current needs and opportunities through the development of the National Unified Health Research Agenda (NUHRA). The NUHRA outlines the areas and topics that needs to be addressed in the Philippines for the next five years.[3] To

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date, three versions of NUHRA have been developed: 1) NUHRA 2006-2010 (hereinafter referred to as NUHRA 1), which involved a combination of top-down and bottom-up approach agenda setting creating a comprehensive set of topics, 2) NUHRA 2011-2016 (hereinafter referred to as NUHRA 2) which involved a top-down approach and had a lesser number but focused set of priorities, and 3) NUHRA 2017-2022 which utilized the combination of the top-down and bottom-up approach.

Considering the nationwide scope and magnitude of the agenda, as well as its importance as a gatekeeping mechanism ensuring the relevance of health research output in the country, its implementation thus requires adequate planning, especially given the unique archipelagic setting of the country.[4] This paper aimed to describe the implementation of the NUHRA 1 and 2. Specifically, it aimed to 1) describe strategies employed in the previous NUHRAs, 2) describe uptake of the previous NUHRAs; and 3) identify lessons learned from the implementation of the NUHRA 1 and 2.

METHODS

This was a qualitative study involving review of reports and documents, and key informant interviews. Review of the following documents was conducted: 1) NUHRA 1 evaluation report by Ramos-Jimenez and Arguelles (2011)[2]; 2) NUHRA 2 evaluation report by Ramos-Jimenez *et al.* (2015)[3]; and 3) minutes of PNHRS Research Agenda Committee (RAC) meetings.[4] In-depth interviews using semi-structured interview tools were also conducted among selected PCHRD division heads and staff and representatives from the academe and regional consortia.

A conceptual model based on "Sphere of Influence" (SOI) by Souvairan *et al.*[5] was used as analytical framework for this study. The SOI is traditionally defined in international relations as formation of political networks in which a dominant entity controls or influences other entities.[6,7] More recently, the model has been used generally in many fields such as social responsibility and healthcare.[8,9] The model was used in this study to visualize the sphere of control (inputs, outputs, and activities), sphere of influence (outcomes), and sphere of interest (impact) that emanates from the effort to develop, disseminate and implement the NUHRA.[5] This framework assumes that an entity's degree of influence diminishes with distance from its sphere of control. To develop the SOI of the NUHRA (Figure 1), the spheres of control and influence were defined by the details from the evaluation reports of NUHRAs 1 and 2. To fill in the sphere of interest, statements of desired purpose as indicated in the NUHRA documents were used.

Using the evaluation reports, interview notes and transcriptions, and minutes of consultation and feedback meetings, two of the authors read the textual and verbal data twice and coded the content and emerging themes,[10] using NVivo 11 and Microsoft Excel. Subgroup analysis was done by examining the verbal data among individual transcriptions and minutes of events.[11] The SOI model also was used as guide in the content and thematic analysis of the qualitative data. It is likewise important to note that since the NUHRA is a gatekeeping mechanism for access to health research

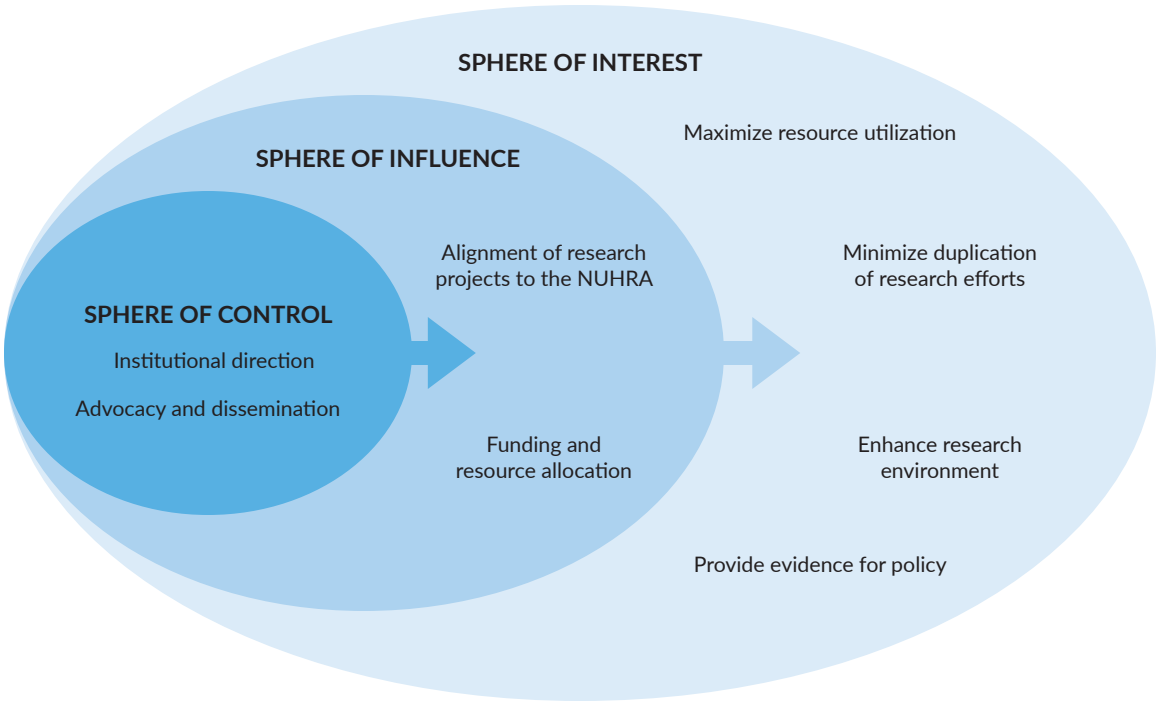

Figure 1. Sphere of Influence (SOI) analytical framework as applied to the study.

funds, utilization of the NUHRA was thus measured by funds allocated, and the priorities that were declared by research institutions that applied for and accessed the concerned funds. The completion of these allocated projects was not monitored by this study and is thus a limitation which may be explored in future studies. Another limitation is the lack of detailed financial information on the allocations for NUHRA 1, which can be linked to how its methodology was relatively devolved to end-user agencies.

RESULTS

Sphere of Control

A comparison of how NUHRA 1 and NUHRA 2 were disseminated hints at the importance of ensuring the involvement of stakeholders, which may help increase awareness and ensure that all concerned agencies are on board. Given the bottom-up combination approach employed in the agenda setting, a wide set of priority topics was generated for the NUHRA 1. Hence, implementation was delegated to numerous agencies. Advocacy and dissemination, however, was done primarily by the PCHRD through launch events, regional workshops and fora, hiring of public relations organizations for press releases and radio programs, and distribution of print-outs. Call for proposals for research grants was also made available online through the PCHRD website. Despite these efforts, researchers from the academe were reportedly not aware of the NUHRA. The annual CHED awards also showed no research projects related to NUHRA 1. Furthermore, dissemination of the NUHRA 1 to private sectors, civil societies, and health research community was perceived to be inadequate due to the lack of awareness and knowledge of various groups on the agenda.[2]

Meanwhile, with the research priorities in the NUHRA 2 (2011-2016) primarily decided by the four core agencies of the PNHRS, implementation was broken down into individual institutions' efforts. Each institution had their focus topics: 1) health technology development for the PCHRD; 2) health financing, health service delivery, and socio-environmental health for the DOH; 3) health technology development, health service delivery, and socio-environmental health for CHED; and 4) a mix of all the topics for NIH. It is notable that in contrast with the implementation of the NUHRA 1, the core agencies of the PNHRS had their own hand in the implementation of the NUHRA 2 within their areas of jurisdiction. While PCHRD utilized similar strategies employed in the NUHRA 1, the DOH, on the other hand, created the Health Systems Research Management (HSRM) Program to support its own research and capacity building, which included the NUHRA priorities. Moreover, the CHED incorporated the NUHRA priorities in its National Higher Education Research Agenda (NHERA), being a research institution housing researchers and experts from different fields, conducted NUHRA-related researches through various local and international support. The NUHRA priorities were likewise disseminated to the deans of the different Colleges of the University of the Philippines (UP) Manila to inform students and faculty of the NUHRA. While the four core agencies of the PNHRS had their own different strategies for the dissemination of the NUHRA 2, dissemination and advocacy at the national level was not observed, nor documented in any reports.

Sphere of Influence

Each previous version of the NUHRA articulated health research priorities differently. Interestingly, outputs from the NUHRA 2 implementation was reported in more detail, and with apparent greater success, in contrast with NUHRA 1. A total of 422 health research priorities were generated from the NUHRA 1. Of these, 96 were assumed by the DOH. In partnership with other units of its system and other national agencies and partners, DOH also took responsibility for the other 91 research priorities.[2] The remaining priorities were implemented by other agencies. Table 1 shows the number and percent distribution of the NUHRA priorities to different agencies as well as the total number of priorities implemented by each responsible agency. Data shows that of the 422 research priorities generated, only 96 (14%) were implemented.

Meanwhile, a total of 56 research priorities, on the other hand, were generated for the NUHRA 2. Considering the process employed in the generation of the agenda, implementation was delegated only to the four core agencies of the PNHRS. Of the 21 research priorities on health technology development assumed by the PCHRD, a total of 15 (71%) were implemented, with funding of PHP 1,043,022,851. Various institutions in the Philippines were provided funding to carry out researches related to health technology development. Table 2 shows the list of grantees of the PCHRD. Data shows that majority of the institutions funded by the PCHRD were based in NCR.

Specifically, in the case of the NUHRA 2 implementation, the DOH allocated a total of PHP 173,942,370 for health research. A large portion of this (PHP 129,752,457), however, was not expended for the NUHRA 2. In addition, only 39 of the 104 DOH-supported studies were in line with the NUHRA 2 priorities, majority were HSRM priorities.[3] Of the 35 research priorities on health financing, health service delivery, and socio-environmental health concerns assumed by the DOH, a total of 19 (54%) were implemented, with a total funding of PHP 44,189,913 (25.4% of the total allocated budget of the DOH for health research). Similar with PCHRD, majority of the researchers and research institutions funded by the DOH were from NCR.[3] Further to this, of the 44 research priorities on health technology development, health service delivery, and socio-environmental health concerns assumed by CHED, a total of 4 (9%) were implemented, with a total funding

Table 1. Number of NUHRA 1 priorities assigned to each agency and number of NUHRA 1 priorities implemented by each assigned agency (source: Ramos-Jimenez and Arguelles, 2010)

Responsible agency*	Number of NUHRA 1 priorities assigned	Number of NUHRA 1 priorities implemented
TOTAL	**422**	**96**
DOH	96	2
DOH internal units and partners	91	10
Commission on Higher Education (CHED)	33	8
PCHRD	31	14
Philippine Health Insurance Corporation (PHILHEALTH)	21	1
National Nutrition Council (NNC)	21	12
Philippine Nuclear Research Institute (PNRI) - Department of Science and Technology (DOST)	17	11
Commission on Population (POPCOM)	15	5
Council for the Welfare of Children (CWC)	14	2
Occupational Safety and Health Center (OSHC) - Department of Labor and Employment (DOLE)	14	6
National Statistics Office (NSO)	12	5
Department of Environment and Natural Resources (DENR) (Ecosystem Research and Development Bureau (ERDB)- Ecosystem Research and Development Services (ERDS)	11	2
Department of Social Welfare and Development (DSWD)	9	4
Industrial Technology Development Institute (ITDI) -Department of Science and Technology (DOST)	7	6
Food and Nutrition Research Institute (FNRI)	6	6
Dangerous Drugs Board (DDB)	6	0
PLAN Philippines Coalition	6	0
Other stakeholders	5	0
Department of Environment and Natural Resources (DENR) – Environment and Management Bureau (EMB)	4	2
Bureau of Food and Drugs (BFAD) (now FDA)	2	0
Tropical Disease and Research Foundation (TDRF)	1	0

** NB: Agencies are arranged in order of number of NUHRA priorities assigned.*

Table 2. Institutions funded by PCHRD for the implementation of NUHRA 2-related researches

Institutions based in NCR	Institutions outside NCR
Food and Nutrition Research Institute	Central Luzon State University (Region 3)
Institute of Philippine Culture, Ateneo de Manila University	De La Salle Health Sciences Institute (Region 4A)
Metahelix Information Management and Novartis Foundation for Sustainable Development/Novartis Philippines	University of San Carlos (Region 7)
Philippine Children's Medical Center Inc.	Central Mindanao University (Region 10)
UP Diliman	Mindanao State University - Iligan Institute of Technology (Region 10)
• Electrical and Electronics Engineering Institute	UP Mindanao (Region 11)
• Institute of Chemistry	UP Baguio (CAR)
• Marine Science Institute	
• National Institute of Molecular Biology and Biotechnology	
• Natural Science Research Institute	
UP Manila	
• College of Medicine	
• College of Public Health	
• Institute of Clinical Epidemiology, NIH	
• Institute of Molecular Biology and Biotechnology, NIH	
• Institute of Pharmaceutical Sciences, NIH	
• National Telehealth Center, NIH	
• Philippine General Hospital	
• Philippine Genome Center, NIH	
Philippine Women's University	
University of Santo Tomas	
University of Santo Tomas Hospital	

of PHP 157,956,640. Of the funds expended by CHED for NUHRA 2, PHP 153,774,208 (97.4%) were granted to two studies on health technology development through the Philippine-California Advanced Research Institutes (PCARI) program. The remaining PHP 4,182,432 (2.6%) were distributed to researches on the three priority areas.

Moreover, of the 56 NUHRA 2 priorities, 21 (38%) were implemented by NIH through funding from various local and international organizations. Funding from the Philippines were mostly from government agencies, amounting to PHP 195,921,141. A total of PHP 1,366,317 was from private/non-government organizations in the Philippines, while PHP 3,126,383 were of foreign funding. Similar with CHED, a large proportion of the funding received by NIH was on health technology development researches. In sum, of the 56 research priorities of the NUHRA 2, a total of 45 (80%) were implemented by the four core agencies, with a total funding of PHP 1,459,100,789. Table 3 summarizes the funds allocated by the PNHRS core agencies for each of the NUHRA 2 research priorities, while Table 4 summarizes the number of research priorities addressed and number of studies funded by the PNHRS core agency for each NUHRA 2 research priority. Data shows that majority of the funds allocated (95.5%) were for researches on health technology development. Most number of funded studies were on health technology development while the least were on socio-environmental health concerns. Most number of priorities addressed, however, were on health service delivery while the least was socio-environmental health concerns. The PHP 1,459,100,789 funds allocated for NUHRA 2 -related researches comprise 85.7% of the total funds (PHP 1,702,050,919) that were made available to the four core agencies for health research projects.

Sphere of Interest

In evaluating the impact of the NUHRA, intensive monitoring of the NUHRA-related researches will be critical. Its socio-economic impact, however, can only be

Table 3. Number of NUHRA priorities assigned to each agency and number of NUHRA priorities implemented by each assigned agency (source: Ramos-Jimenez and Arguelles, 2010)

Priority area	PCHRD	DOH	NIH	CHED	Total
Health technology development	1,043,022,851	0	194,000,276	156,392,766	**1,393,415,893**
Health financing	0	12,583,378	0	0	**12,583,378**
Health service delivery	0	30,112,923	15,883,685	815,000	**46,811,608**
Socio-environmental health concerns	0	1,493,612	4,047,424	748,874	**6,289,910**
Total	**1,043,022,851**	**44,189,913**	**213,931,385**	**157,956,640**	**1,459,100,789**

Table 4. Institutions funded by PCHRD for the implementation of NUHRA 2-related researches

Priority Area	Agency	Number of research priorities addressed	Number of studies funded/allocated by each PNHRS core agency
Health technology assessment *(21 priorities)*	PCHRD	15	114
	DOH	0	0
	NIH	7	161
	CHED	2	5
	Subtotal	***24***	***280***
Health financing *(12 priorities)*	PCHRD	0	0
	DOH	5	18
	NIH	2	2
	CHED	0	0
	Subtotal	***7***	***20***
Health service delivery *(18 priorities)*	PCHRD	0	0
	DOH	13	20
	NIH	13	38
	CHED	1	1
	Subtotal	***25***	***59***
Socio-environmental health concerns *(5 priorities)*	PCHRD	0	0
	DOH	1	1
	NIH	2	10
	CHED	2	2
	Subtotal	***5***	***13***
	Total	**61***	**372**

NB: Tallies do not sum up to 45 due to overlap in priority topics of the different agencies.

observed years after its culmination. Evaluation of the NUHRA 1 showed that a total of 55 studies contributed to policies, while 39 contributed to program development. Meanwhile, the contribution of outputs from the NUHRA 2 implementation to policies and programs are yet to be measured. It may well be expected, nonetheless, that accomplishments from the implementation of NUHRA 2 will be reported in greater detail due to the development of the PNHRS Monitoring System. To date, four monitoring forms for consortia, institutions, researchers, and projects were created. A Joint Memorandum with the PNHRS member institutions was also signed to ensure the uptake of the system. Figure 2 shows that hierarchical flow chart of the PNHRS' monitoring and evaluation system. Currently in the process of development is the online platform and database. This will allow readily available datasets but would still require additional human resources, training, and incentives to ensure full usage. This monitoring system will be centrally led and implemented by the PCHRD. Figure 3 shows the PNHRS data flow monitoring system. Upon full development of the system, the outputs to be monitored shall be backtracked from 2015.

DISCUSSION

This paper underlines the importance of measuring the impact of health research agenda, not only in being able to catalyze research productivity, but also in facilitating access to funding. This will enable the PNHRS core agencies to determine points for improvement and successfully stimulate research productivity nationwide. While the actual measurement of this impact is beyond the scope of this article, nonetheless, the success of a research agenda document may be hinted by how well the list depicts existing gaps in knowledge, and how well-used the identified research priorities are. In the case of the NUHRA, accomplishing the former would require that the document should consider prevalent diseases and health system

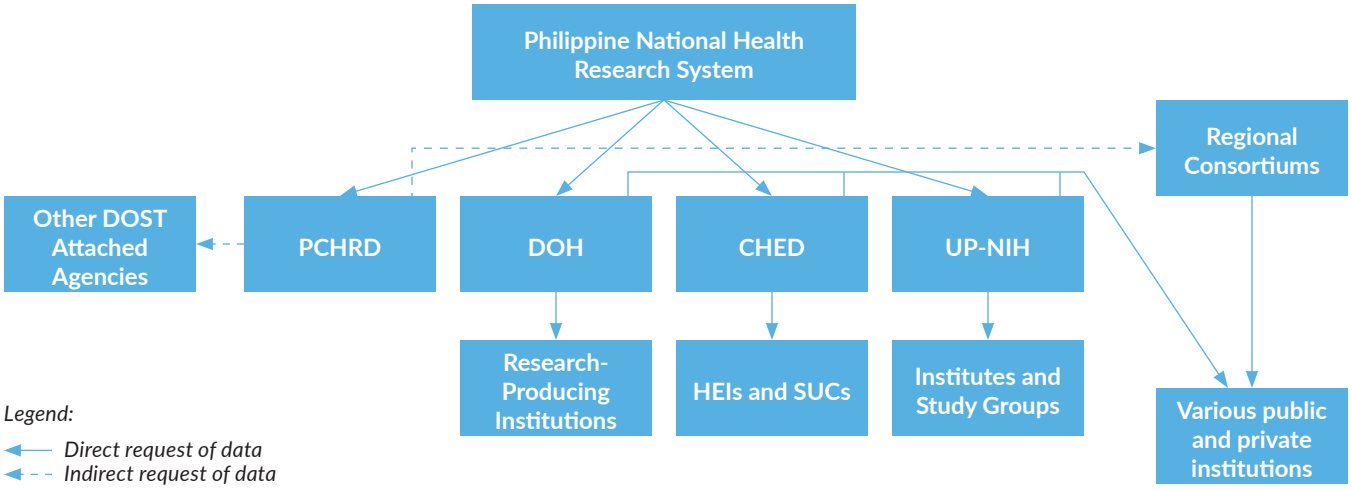

Figure 2. Hierarchical flow chart of the PNHRS' monitoring and evaluation system.

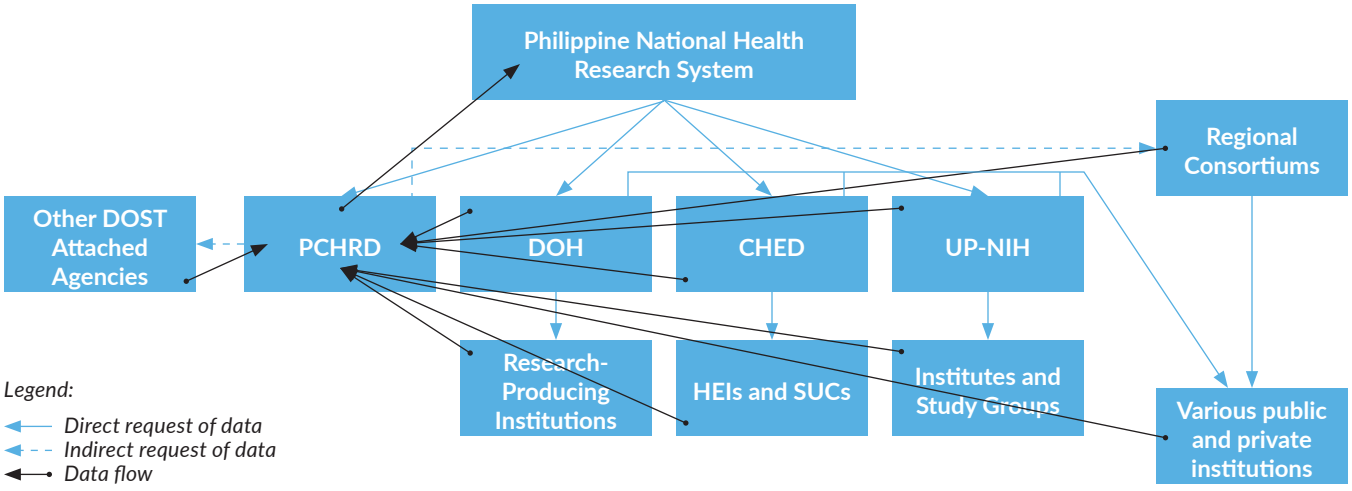

Figure 3. PNHRS data flow monitoring system.

concerns, which would need a robust health information system.[12-13] Meanwhile, ensuring the latter would involve addressing a more complex set of factors, such as 1) the availability and capacity of researchers and facilities, 2) the extent of dissemination of research priorities to be funded, and 3) the relative ease of accessing funds and other resources.[12,14] Due to this immense scope, we have elected to limit our analysis to assess which research priorities are not well adopted, and thus, not well-funded. Furthermore, in this discussion, we also focused on an aspect that can be effectively controlled by the PNHRS core agencies: the dissemination of the research agenda. Developing effective communication in research agenda is important in order to reach all stakeholders, including the general public.[15] This may well apply with effectively enforcing the NUHRA, as it is a document developed through multi-agency collaboration, which should be likewise disseminated by collaborating agencies, especially since the research output of all involved stakeholders would be affected by what will be included in the NUHRA. The following issues warrant further discussion: stakeholder involvement and funding.

Funding

It may be noted that majority of the funds (95.5%) were spent on health technology development while only the remaining 4.5% were spent on the three remaining priorities. In the case of CHED, while a large amount was spent on NUHRA 2 researchers, only a few research priorities were covered owing to the large proportion of the fund that was awarded to only two projects, both of which are on health technology development. It is thus suggested that implementation of the current NUHRA should include a budget review and appropriate allocation among the different priority areas be laid out to ensure that all priority areas are adequately funded, with due consideration that some research priorities, particularly those that involve development of new technologies, may require more financial resources than others. Nevertheless, the success of the NUHRA cannot be entirely ensured by its dissemination and availability of funding, as will be explained further.

Stakeholder involvement

In the case of the NUHRA 1, assessments done by Ramos-Jimenez and colleagues, reports, and our key informants strongly suggest that the low uptake of the NUHRA 1 may be attributed to communication strategies, which were solely conducted by the PCHRD, and were implemented passively by other core agencies, such as through wide availability of the NUHRA itself. While specific priority areas were distributed to various agencies, factors such as 1) inadequate mechanisms to ensure implementation, e.g., memoranda of agreement between PNHRS and the implementing agencies, policies and guidelines within the agency on the implementation of the NUHRA; 2) inadequate dissemination and advocacy efforts; 3) absence of a monitoring and evaluation mechanism; and 4) unclear funding mechanisms may have contributed to the low uptake of the NUHRA 1.[2] On the other hand, the PNHRS-core-agency-focused approach that was employed in the implementation of the second NUHRA suited well the top-down agenda setting. The defined and smaller number of priorities allowed the splitting of tasks amongst core agencies, completing more than five times than the first version. One major drawback, however, was that majority of researches were carried out by NCR- based institutions, as shown in Table 2. There may be a need, therefore, to continue strengthening dissemination efforts and capacities of researchers in the regions—from proposal development, to research implementation, data management, and research dissemination—for them to be able to carry out researches related to NUHRA.

Furthermore, to further sustain the support for the NUHRA, policies should be developed that help eliminate barriers to health research and help improve health research environment and capacity in the country.[16] Researchers have expressed their concerns on the barriers in the utilization of funds, particularly in public institutions, and the lack of special positions or incentives to encourage research activities. The lack of involvement of agencies that are not part of the PNHRS core, such as those that are not from the health sector as well as the private sector, remains a grave challenge. Despite the increase in government funds for research and effective governance, these systemic barriers continue to hamper progress and discourage the pursuit for health research. Apart from the usual call for proposals, capacity building activities, and provision of incentives may be explored to encourage researchers and other enabling individuals/institutions to build their research capacity.[15,17]

These are recommendations that would require a concerted effort, involving not only the PNHRS RAC and the PNHRS core agencies, but more importantly, the end-user agencies. A low-lying fruit towards achieving the above-mentioned suggestions would be the strengthening of component committees of the PNHRS, such as Capacity Building (CB), Structure, Organization, Monitoring and Evaluation (SOME), Research Utilization (RU), and Resource Mobilization (RM) in a way that these committees become more responsive of needs of research institutions. It may be argued that this role is already being carried out by the health research and development consortia (HRDCs), which are alliances of research institutions that are convened by the regional PCHRD, DOH and CHED offices,[18] yet there remains an unequal level of research productivity across HRDCs, which may be linked to various factors that are beyond the scope of this paper. Nonetheless, continued active involvement of the DOH and CHED, similar to the implementation of the previous NUHRA, will be vital given their direct control and oversight of research implementers like the academe and hospitals. Continued commitment of the NIH will

likewise be essential, particularly in establishing local and international partnerships to draw additional resources for the implementation of the NUHRA. Aside from research funding, these core agencies should complement the initiatives of PCHRD to boost researchers' interests and capacities in carrying out researches on NUHRA.

Given the combination of top-down and bottom-up approaches employed in the development of the current NUHRA, a collaborative approach involving agencies beyond the core of PNHRS may be the better direction for implementation. Aside from ensuring that all active committees within PNHRS are tapped towards achieving NUHRA goals, involving strong enablers (organizations) with very high capacity to promote and support a specific research agenda directly supports the attainment of the goals.[15] Enablers can serve as a source of funding, oversight, or technical support.

Understandably, envisioning how the NUHRA should be implemented, and how its implementation should be strategized towards achieving its desired outcomes and impact will require the identification of key action points and mapping of stakeholders, especially those who have not been involved in previous versions. Success in the implementation will ultimately rely on the active involvement of stakeholders, particularly the core agencies, in defining the vision, prioritizing strategies, and creating an action plan.[19] The findings of this study can serve as a primer which can be used in creating an action plan for the implementation of the NUHRA 2017-2022.

CONCLUSION AND RECOMMENDATIONS

As reflected in the relatively high percentage of addressed priority areas, implementation of the NUHRA 2 has seen a lot of improvements compared with the NUHRA 1. Implementation strategies employed, however, are not enough to fully reach desired health research outcomes. Strengthening advocacy and dissemination of the agenda continue to be a recommended action in the implementation of the NUHRA. A strategic advocacy plan is a good initial step to increase awareness on the agenda in order to facilitate uptake. Use of social media and other online platforms to complement launch events and other activities conducted in the previous NUHRAs may be explored for a more effective and efficient dissemination of the current agenda. Strengthening capacities of researchers and research institutions, particularly in the regions, should also be sustained. Developing policies and guidelines, particularly on resource allocation, formalizing partnerships (*e.g.* memoranda of agreement), and establishing roles and responsibilities of involved parties are recommended for a more strategic implementation of the NUHRA. A monitoring and evaluation mechanism should also be in place to track progress towards achievement of desired impact.

Lastly, implementation of the NUHRA should be highly collaborative and should involve agencies other than the PNHRS. The four core agencies, however, should lead the enforcement of the agenda. Strong support and commitment from these agencies will be key in the effective implementation of the NUHRA.

Ethical Considerations

Ethics clearance for this study was given by the St. Cabrini Medical Center-Asian Eye Institute Ethics Board, under protocol no. ERC-2018-003. Dr. Maria Lourdes Otayza, the lead author of the paper, is a member of the PNHRS Research Agenda Committee.

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Statement of Authorship

All authors approved the final version submitted.

Author Disclosure

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