

Rural Healthcare Service Delivery in Pantabangan, Nueva Ecija, Philippines: Basis for Rural Health Program and Service Planning

Gregorio, Ma. Victoria¹, Lopez, Laila Lyn¹, De Dios, Nick Angelo M. ^{2,3}, Casimiro, Rosemarie^{1,2,3}, Ramos, Vilma^{1,2,3}

¹*Nueva Ecija University of Science and Technology, College of Public Administration and Disaster Management, Gen. Tinio St., Quezon District, Cabanatuan City 3100 Philippines*

²*Graduate School, Department of Public Administration*

³*Local Government Unit, Cabanatuan City*

*vbramos21@gmail.com

Abstract. The significance of health cannot be overemphasized. The maintenance of optimal health is of paramount importance, necessitating the cultivation of holistic well-being that encompasses not only physical health but also mental and emotional well-being. The state of an individual's health is a determining factor in their overall functionality. The study evaluates the healthcare service delivery of rural health center in Barangay Marikit, Pantabangan, Nueva Ecija, Philippines and the challenges they encountered. The study utilized a descriptive approach, involving the distribution of questionnaires to individuals residing in the barangay. The respondents were selected based on their firsthand experience with the provision of healthcare services. Based on the findings, there are several potential measures that may be taken to ensure that government investment is in line with the present and future requirements of the population and health system. Additionally, efforts can be made to enhance the capabilities of health workers in emergency and disaster management. There is a need to ensure that health care service personnel possess the necessary skills and receive proper training and support to effectively convey information to patients and their families with clarity and compassion.

Keywords: Healthcare service delivery; Philippines; Rural health

1. Introduction

The significance of health is paramount for every individual. It is imperative for individuals to prioritize their whole well-being, encompassing not just physical health but also emotional and psychological well-being. The overall well-being of an individual significantly influences their level of functioning. As commonly expressed, the adage "health is wealth" underscores the significance

of maintaining good health, hence establishing a fundamental entitlement and obligation for individuals to adopt a lifestyle conducive to their well-being. Nevertheless, the attainment of a state of well-being necessitates access to healthcare services, which can be facilitated by many entities such as hospitals, institutions, nurses, doctors, government agencies, and voluntary organizations.

Healthcare refers to the provision of services aimed at maintaining or enhancing an individual's health by means of preventing, diagnosing, treating, alleviating, or curing diseases, injuries, and other physical and mental impairments. Health care services are delivered by professionals that specialize in various fields within the medical and allied health industries (Aziz, 2016). The primary objective of healthcare is to enhance the overall well-being and welfare of individuals by promoting and enhancing their health. Commercial companies prioritize the generation of financial profit as a means of sustaining their worth and overall well-being. The primary objective of the health care sector should be to generate social value, thereby fulfilling its societal obligations. The distinction between health care and healthcare lies in the respective roles and functions of the individuals involved. Health care encompasses activities such as patient consultations and prescription writing, whereas healthcare refers to the business sector that offers necessary medical services to individuals.

The healthcare system in the Philippines is often regarded as meeting high levels of quality according to international assessments (Collado, 2022). As an example, the World Health Organization (2019) has assessed and ranked the effectiveness of the healthcare system in the Philippines as the 60th globally. In accordance with the evaluation conducted by the Bill & Melinda Gates Foundation (2019), the Philippines is positioned at the 124th level globally, based on their assessment of medical access and quality. Irrespective of the specific evaluation criteria employed, it is evident that the healthcare system in the Philippines is exhibiting a consistent trend of enhancement. Primarily, this can be attributed to governmental reforms aimed at achieving a more comprehensive system at the national level (Santiago et al. (2021). Consequently, every resident of the Philippines is granted the right to receive cost-free healthcare services provided by the Philippine Health Insurance Corporation, commonly referred to as PhilHealth. In the initial months of 2019, the nation achieved a noteworthy accomplishment through the implementation of the Universal Healthcare Act. Subsequently, the scope of Philhealth coverage was broadened to encompass

complimentary medical consultations and laboratory examinations. In addition, it should be noted that all citizens of the Philippines will be enrolled in the national program by default.

Notwithstanding the implementation of governmental reforms, rural regions have consistently encountered challenges in preserving their access to medical care (Sidek & Martins, 2017) of superior quality. A rural area is characterized by its peoples' involvement in primary industries, wherein they engage in the direct production of goods in collaboration with the natural environment. According to Patricia (2007), Rural areas are geographically distinct settlements that are located at a considerable distance from major urban centers and towns, hence experiencing less impact from their influence. These regions are differentiated from urban and suburban areas that have higher population densities and better developed infrastructure. Rural places may exhibit an agricultural nature, however numerous rural regions are distinguished by an economic structure centered around mining, small-scale businesses, or tourism. A community comprised of individuals who share a common characteristic or interest, residing collectively inside a village. A rural community can be categorized as such by virtue of its lower population density, reduced social differentiation, limited social and spatial mobility, and a relatively sluggish pace of social change.

The availability to health services for rural communities is frequently hindered by factors such as low socioeconomic position or potential ethnic/cultural disadvantage, exacerbating the problem (Larkins et al., 2013). The persistent global challenge of addressing the shortage of adequately trained healthcare professionals in rural areas has been further compounded by the geographical imbalance of medical schools and the disproportionate concentration of doctors in urban settings (World Health Organization, 2010). According to Frenk et al. (2010) and publications by the World Health Organization (WHO), it is emphasized that the improvement of health professional education and health systems must be based on evidence obtained via community involvement. This is necessary to ensure that the quantity, quality, and appropriateness of health professionals align with the specific healthcare requirements of rural areas. Health issues are of significant importance in all locations, particularly in the rural regions of Nueva Ecija. According to Villanueva (2021), rural inhabitants often encounter obstacles in accessing healthcare services, which impede their capacity to receive necessary medical attention. In order to guarantee sufficient access to

healthcare services (Palanisam & Thirunavukarasu, 2017) for individuals residing in rural areas, it is imperative to ensure the availability and accessibility of necessary and appropriate healthcare services in a timely way (Kim et al., 2017). Despite the presence of a sufficient array of healthcare services within the community, there exist other aspects that warrant consideration with regard to healthcare accessibility (Kunz, 2022).

The health sector has encountered numerous issues that posed significant threats to the operational capacity of hospitals inside the nation (Bustamante et al., 2022). Several significant issues have been recognized, including financial difficulties, the implementation of healthcare reform, government mandates, and concerns regarding patient safety and quality. Kirchgaessner (2012) conducted a study. Healthcare providers are unable to provide an absolute assurance of patient safety and quality. The current state of affairs is deteriorating as a result of the escalating expenses associated with medical supplies (Sheikhali et al., 2016). Healthcare providers engage in regular contract evaluations with their suppliers and strategically reduce their workforce in order to align with their financial constraints. Kirchgaessner (2012) conducted a study. The evaluation of contracts has a significant impact on the availability of medical supplies and might impede the operational efficiency of hospitals. The reduction of medical personnel exacerbates the burden on staff members to maintain the necessary levels of patient safety and quality requirements. Healthcare facilities strive to deliver services of the utmost quality in alignment with the hospital's mission and vision. Due to limited financial resources, some institutions are unable to fulfil their intended objectives (Mantaring et al., 2019). The majority of challenges encountered by healthcare facilities stem from divergent political perspectives. If adequate funding is allocated to healthcare facilities, they will be able to provide high-quality healthcare services to all individuals. In order to achieve success, it is imperative for governments and states to optimize their policies with the aim of facilitating healthcare professionals in delivering high-quality Medicare services to all individuals (Sandra et al., 2020).

The health centers in the Municipality of Pantabangan include the Barangay Poblacion East and Marikit, which is a health center owned by the government, among others. The health center located in Barangay Marikit, Pantanangan, Nueva Ecija, has gained recognition for its active engagement in the field of herbal medicine. The health center has a high level of cleanliness and is diligently

maintained. Additionally, a medication has been developed specifically for individuals seeking to manage their weight. The medication in question comprises a combination of vitamins, minerals, herbs or other botanical substances, amino acids, enzymes, or other constituents with the purpose of providing supplementary nourishment to the diet (Prdims, 2020).

The Barangay Health Center is a community-oriented facility that aims to provide essential health services, including first aid, maternal and child health care, management of communicable diseases, and other fundamental health interventions to all residents within the barangay. Health services encompass a comprehensive range of medical practitioners, institutions, and auxiliary healthcare personnel who deliver medical treatment to individuals requiring assistance (Hassan et al., 2017). Health services have a crucial role in providing care and support to individuals, families, communities, and broader populations. The responsibilities of these individuals encompass various tasks, including administering initial medical assistance, gathering essential data, managing documentation, and generating reports. Additionally, they actively engage in community gatherings, offering support to health center initiatives such as educating individuals on nutrition, overseeing and distributing immunizations, providing family planning services, promoting and educating on sanitation and hygiene practices, as well as participating in disaster relief efforts and rehabilitation programs, among other duties.

The study evaluates the present condition of the healthcare service delivery in the rural health center at Barangay Marikit, Pantabangan, Nueva Ecija. Specifically, the study sought to answer the following questions:

- 1.) How may the rural health center be described in terms of:
 - 1.1 Facilities
 - 1.2 Supplies and equipment
 - 1.3 Workers
2. How may be the healthcare service delivery of the rural health center be described in terms of:
 - 2.1 Services offered
 - 2.2 Delivery System

3. What are the challenges encountered by the rural health center in the delivery of healthcare services?

4. What recommendations may be offered to address the challenges and harness the opportunities in the rural health center?

1.1. Conceptual Framework

The study employs a rural health framework patterned after White (2013) as shown in Figure 1.

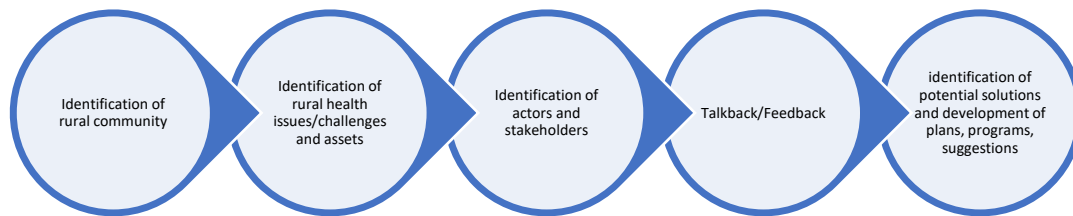


Figure 1. Rural health framework

The rural health framework highlights the need to identify the rural health issue in order to address rural health challenges and maximize assets. In this study, the framework is applicable as it offers program designers a chance to contemplate the primary concerns confronting rural communities. This reflection is crucial in order to devise policies and programs that are both practical and sustainable in addressing the health requirements of the community.

2. Methods

This part is dedicated to discussing the methodologies employed for data gathering in order to obtain the most pertinent information for this study. This section will elucidate the process of participant selection for the research, including the criteria and number of samples, to ensure the acquisition of relevant data. This section also includes the ethical considerations, informed consent, and reliability and validity of data.

The study employed descriptive approach involving questionnaires with residents of Barangay Marikit in Pantabangan, Nueva Ecija, who availed of the

health services of the rural health center. The data were analyzed using Statistical Package for Social Sciences (SPSS) Software.

The researchers selected the residents of Barangay Marikit as the participants for this study due to the presence of a health center inside the barangay, making it a suitable location for conducting research. The researcher employed purposive sampling in selecting the respondents, utilizing the following criteria: resident of Barangay Marikit, Pantabangan, Nueva Ecija, b) 18 years old and above, c) availed of the health services of the rural health center/with involvement in the delivery of healthcare services, and d) willing to participate in the study.

During the course of data gathering, it was ensured that all participants provided their informed consent. The provision of anonymity and secrecy was ensured, along with the inclusion of a comprehensive and individualized narrative pertaining to the professional experiences of the participants. To ensure the confidentiality and anonymity of the participant, their personal information that could potentially reveal their identity as an information source was withheld, with the exception of the barangay in which they reside. Moreover, in order to protect the confidentiality of the participants, the researcher assigned pseudonyms to each individual. The discussion section of this study presents all of the collected data, including comprehensive descriptions and responses to questions.

3. Results and Discussion

3.1. *Distribution of respondents by gender*

According to the data provided in Table 1, a significant proportion of the participants (69.3%) fall within the 18–24 age bracket, whereas 20.8% are categorized under the 25–39 age range.

Table 1. Distribution of respondents by gender

	Frequency	Percent
Male	44	43.6
Female	57	56.4
Total	101	100.0

In the present study, it was observed that 7.9% of the participants fell within the age range of 40–60 years, while 2% of the participants were aged 60 years and beyond. The data aligns with the secondary data acquired from the center, indicating that the most often sought–after treatments include treatment for common ailments including the common cold and fever, as well as child vaccination. The majority of individuals who utilize these services are between the age range of 18 to 24 years old.

3.2 Healthcare facility

The relationship between the socio–demographic characteristics and work performance of COS personnel is depicted in Table 2. The result indicates that there is no correlation between sex and the character of work and COS staff work performance (job evaluation). However, age and length of service were discovered to have a significant correlation with the work performed.

Table 2. Descriptive Statistics as to healthcare facility

Parameters	Weighted Mean	Verbal Description
The building structure of rural health center is in good condition.	3.09	Somewhat Disagree
The rural health center has adequate room space.	3.13	Somewhat Disagree
The rural health center is safe and secure.	3.10	Somewhat Disagree
The rural health center is clean.	3.08	Somewhat Disagree
The rural health center can accommodate all the patients in need	3.12	Somewhat Disagree
The rural health center is accessible.	3.05	Somewhat Disagree
The rural health center has good ventilation.	3.05	Somewhat Disagree
Mean/Verbal Description	3.05	Somewhat Disagree

Verbal Description: 1.00–1.79 (Strongly Disagree), 1.80–2.59 (Disagree), 2.60–3.39 (Somewhat disagree),

3.40–4.19 (Agree), 4.20–5.00 (Strongly agree)

It is noteworthy to mention that the respondents express varying degrees of disagreement across all topics, offering an insight into the current state of the rural health facility. According to the findings of the survey, it is recommended that structural modifications be implemented within the healthcare facility. These adjustments aim to enhance the capacity of the facility to accept a larger number of clients and create a more suitable environment for treatment purposes.

3.3. Availability of supplies and equipment

Table 3. Descriptive Statistics as to availability of supplies and equipment

Parameters	Weighted Mean	Verbal Description
There is enough supply of vitamins in the center	3.00	Somewhat Disagree
There is enough supply of medicines in the center	2.92	Somewhat Disagree
Needed equipment are always available	3.09	Somewhat Disagree
Needed supplies for common treatments are available	3.16	Somewhat Disagree
Needed equipment for emergency cases are available	3.05	Somewhat Disagree
Needed supplies for emergency cases are available	3.16	Somewhat Disagree
Supplies and equipment are accessible	3.17	Somewhat Disagree
Mean/Verbal Description	3.05	Somewhat Disagree

Verbal Description: 1.00–1.79 (Strongly Disagree), 1.80–2.59 (Disagree), 2.60–3.39 (Somewhat disagree),

3.40–4.19 (Agree), 4.20–5.00 (Strongly agree)

According to the provided table, the rural health center exhibits a deficiency in essential supplies and equipment required for both routine care and emergency situations. The consequences of the findings may have an impact on the preparedness and capability of the rural health center to provide healthcare services, particularly during emergency situations.

3.4. Availability of healthcare personnel

Table 4. Descriptive Statistics as to availability of healthcare personnel

Parameters	Weighted Mean	Verbal Description
The medical workers have proper training in utilizing medical equipment.	3.01	Somewhat Disagree
Healthcare workers are responsive to the needs of the patients.	3.14	Somewhat Disagree
Healthcare workers can manage their time efficiently.	3.10	Somewhat Disagree
Healthcare workers use new technologies in the delivery of services	3.00	Somewhat Disagree
There is enough number of healthcare workers in the rural health center.	3.13	Somewhat Disagree
The healthcare workers follow the step-by-step procedures in their work.	2.93	Somewhat Disagree
The wellness and mental health of healthcare provides were also considered.	3.05	Somewhat Disagree
Mean/Verbal Description	3.05	Somewhat Disagree

Verbal Description: 1.00–1.79 (Strongly Disagree), 1.80–2.59 (Disagree), 2.60–3.39 (Somewhat disagree),

3.40–4.19 (Agree), 4.20–5.00 (Strongly agree)

The data presented in the table indicates a deficiency in the training provided to rural health workers. Due to a limited human capacity, the rural health center is currently facing challenges in effectively managing their time to ensure timely service provision and adherence to prescribed procedural guidelines.

3.5. Healthcare Delivery System

Table 5. Descriptive Statistics as to healthcare delivery system

Parameters	Weighted Mean	Verbal Description
Health services are made available for hard-to-reach locations	3.14	Somewhat Disagree
The health workers are accommodating	3.03	Somewhat Disagree
The health workers are easy to reach	3.03	Somewhat Disagree
The employees manage appointment schedules	3.05	Somewhat Disagree
The ambulance in health center is quick to respond to emergencies.	3.07	Somewhat Disagree
Have enough medical workers in health center.	3.12	Somewhat Disagree
Health workers keeps updated medical record of patients	3.07	Somewhat Disagree
Mean/Verbal Description	3.05	Somewhat Disagree

Verbal Description: 1.00–1.79 (Strongly Disagree), 1.80–2.59 (Disagree), 2.60–3.39 (Somewhat disagree),

3.40–4.19 (Agree), 4.20–5.00 (Strongly agree)

The data presented in the table indicates a deficiency in the training provided to rural health workers. Due to a limited human capacity, the rural health center is currently facing challenges in effectively managing their time to ensure timely service provision and adherence to prescribed procedural guidelines.

3.6. Services Offered

Table 6. Descriptive Statistics as to services offered

Parameters	Weighted Mean	Verbal Description
Rural health center offers mental health care.	3.12	Somewhat Disagree
Rural health center offers dental care.	3.00	Somewhat Disagree
Rural health center offers laboratory and diagnostic care	2.59	Somewhat Disagree
Rural health center offered substance abuse treatment	3.09	Somewhat Disagree
Rural health center offered preventative care	3.10	Somewhat Disagree
Rural health center offered physical and occupational therapy	3.02	Somewhat Disagree

Rural health center offered nutritional support	3.06	Somewhat Disagree
Mean/Verbal Description	3.05	Somewhat Disagree

Verbal Description: 1.00–1.79 (Strongly Disagree), 1.80–2.59 (Disagree), 2.60–3.39 (Somewhat disagree), 3.40–4.19 (Agree), 4.20–5.00 (Strongly agree)

According to the available data, the current scope of healthcare services provided by the rural health center is confined to immunization for pregnant women and children, provision of vitamins and medications for common ailments, as well as administering first-aid as required. Specialized therapies are typically administered in secondary and tertiary hospitals, or through collaborative efforts with organizations engaged in medical missions or as part of the program of the municipal health center.

4. Conclusions and Recommendations

The research examined the delivery of healthcare services at a rural health center situated in Barangay Marikit, Pantabangan, Nueva Ecija. The local community of Barangay Marikit has many obstacles in light of its geographical qualities. Based on the findings, it can be deduced that the barangay health center can derive greater advantages from initiatives and strategies aimed at enhancing maternity and child healthcare services, as well as facilitating the provision of supplementary medications and medical resources. In order to effectively tackle concerns pertaining to public infrastructure, it is imperative to consider the implementation of contingency measures such as the installation of auxiliary power generators for healthcare facilities, as well as the provision of emergency boats in each local community.

It is advisable to propose modern approaches for the provision of healthcare, including the use of electronic personal health records. It would be beneficial to establish a framework for organizing healthcare services centered on patients and spanning multiple providers, with the aim of benefiting all individuals seeking medical assistance, particularly children and elderly. Health professionals play a crucial role in the expansion of health service coverage and the realization of the right to the greatest attainable standard of health. The availability, accessibility, acceptance, and quality of health services are contingent upon the presence and effectiveness of these experts. The presence of fiscal constraints may impede the ability of the public sector to accommodate additional health professionals, hence creating an obstacle to achieving universal accessibility to healthcare providers. The insufficiency of healthcare

professionals can have detrimental effects on the public health system, as a result of which a limited number of doctors and nurses are compelled to handle a substantial patient load on a daily basis, so impeding the provision of high-quality healthcare services. There are several potential measures that may be taken to ensure that government investment is in line with the present and future requirements of the population and health system. Additionally, efforts can be made to enhance the capabilities of health workers in emergency and disaster management.

It is imperative to ensure that equipment is consistently maintained in optimal condition and functioning properly in order to mitigate the potential hazards that may arise, hence safeguarding the well-being of both personnel and other individuals. In order to ensure the proper upkeep of equipment, it is imperative to establish a systematic and proactive approach such as planned preventative maintenance program. There is a need to ensure that health care service personnel possess the necessary skills and receive proper training and support to effectively convey information to patients and their families with clarity and compassion.

References

- Aziz, H. A. 2016. A review of the role of public health informatics in healthcare. *Journal of Taibah University Medical Science*, 78–81.
- Bustamante, JY., Ramos, VB., Jacoba, FP., La Penia, RF. 2022. Resiliency Amidst Vulnerability: A Story of the Indigenous Cultural Communities–Indigenous Peoples' Experiences in Mitigating the Impact of Pandemic in the Philippines. *International Journal of Ecosystem and Ecology Science (IJEES)* Volume 12, Issue 4
- Collado, Z., 2022. Challenges in public health facilities and services: evidence from a geographically isolated and disadvantaged area in the Philippines.
- Frenk, J., Chen, L. Bhutta, ZA., Cohen, J., Crisp, N., Evans, T., Fineberg, H., Garcia, P., Ke, Y., Kelley, P., et al. 2010. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet*. 376:1923–1958.

- Hassan, N., Rashid, H., & Das, a. R. 2017. Smart Health Management System for Rural Area of Bangladesh Utilizing Smartphone and NID. 1st International Conference on Business & Management, 191–194.
- Kim, J., Lee, Y., Lim, S., Kim, J. H., Lee, B., & Jae-Ho. 2017. What Clinical Information Is Valuable to Doctors Using Mobile Electronic Medical Records and When? JOURNAL OF MEDICAL INTERNET RESEARCH, 1–13.
- Kunz, E., 2022. Healthcare Access in Rural Communities Overview – Rural Health Information Hub
- Larkins, S., Preston, R., Matte, M., Lindemann, IC., Samson, R., Tandino, FD., Buso, D., Ross, SJ., Palsdottir, B., Neusy, AJ., et al. 2013. Measuring social accountability in health professional education: development and international pilot testing of an evaluation framework. Med Teach. 35:32–45
- Mantaring, AV., Espinoza, MAP and Gabriel, AG. 2019. ‘Complaint Management in the Public Sector Organization in the Philippines,’ Public Policy and Administration Research, vol. 9/2: 1–26.
- Palanisam, V., & Thirunavukarasu, R. 2017. Implications of big data analytics in developing healthcare frameworks: A review. Journal of King Saud University–Computer and Information Sciences, 1–11.
- Patricia M., Marlene M., Sue O., Brad G., (Eds.) 2007. Identifying rural health care needs using community conversations. The Journal of Rural Health 23 (1), 92–96.
- Rosewell, A., Makita, L., Muscatello, D., John, L. N., Bieb, S., & Hutton, R. 2017. Health information system strengthening and malaria elimination in Papua New Guinea. Malaria Journal, 16–278. 5.
- Sandra M., Corey W., Nakeitra B., Erica T., Mauda M. 2020. Peer reviewed: The role of public health in COVID–19 emergency response efforts from rural health perspective. Preventing Chronic Disease
- Santiago, JD., Vasallo, RM., Dionisio, MR., Binuya, FR., Casimiro, RR., Ramos, VB. 2021. Assessing the Benefits of a One–Stop Medical and Financial Support Program: From the Standpoint of Patients of Eduardo L. Joson Memorial Hospital in the Philippines. Journal of Public Administration and Governance, Vol. II, No. 4.

- Sheikhali, S. A., Abdallat, M., Mabdalla, S., Al Qaseera, B., Khorma, R., Malik, M., et al. 2016. Design and implementation of a national public health surveillance system in Jordan. *International Journal of Medical Informatics*, 58-61.
- Sidek, Y. H., & Martins, J. T. 2017. Perceived critical success factors of electronic health record system implementation in a dental clinic context: An organizational management perspective. *International Journal of Medical Informatics*, 88-100.
- Villanueva, E., 2021. Nueva Ecija Provincial Health Office: Health Management System with Web-Based and Mobile Application.
- World Health Organization (WHO). 2010. Increasing access to health workers in remote and rural areas through improved retention: global policy recommendations. Geneva