



HEALTH SYSTEM AND ORGANIZATIONAL RESILIENCE OF PUBLIC HOSPITALS IN BATANGAS PROVINCE

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ABSTRACT

In highly volatile and uncertain times, organizations need to develop a resilience capacity which enables them to cope effectively with unexpected events, bounce back from crisis and foster future success. This study is meant to deepen the understanding of the public health system and the embedded construct of resilience of public hospitals in the province of Batangas. Adapted from the Health System Rapid Diagnostic Tool (2012) and Organizational Resilience Capability Assessment (2016), the study aimed to come up with a typology of the public hospitals in the province based on their health system and organizational resilience. Results revealed that public hospitals in the province of Batangas have a good achievement in the standards of health workforce while fair achievement in terms of service delivery, information, financing, medicines and leadership and governance. It revealed that the public hospitals have a defined level of resilience and that there is a significant relationship between the health system and organizational resilience. Based on the focus group discussion, the challenges encountered by the public hospitals match the gaps in resources and governance. Lastly, eight public hospitals in the province of Batangas were classified as developing and three as progressive. Health interventions and strategies were also developed to improve resilience during health emergencies and achieve sustainable transformations in the field of health care delivery.

Keywords: health system, organizational resilience, explanatory sequential, typology, Philippines

INTRODUCTION

The Philippine health system has rapidly evolved with several challenges through time. Various health reforms were implemented to enhance the delivery of quality, safe and equitable health care services, improve the health outcomes of the population and increase financial risk protection among the vulnerable and impoverished sector. The Department of Health (DOH) pursues the medium-term strategic framework for health titled the National Objectives for Health (NOH) 2016-2022, which supports the attainment of the priority thrusts of the Philippine Development Plan (PDP) 2017-2022: *Malasakit, Pagbabago at Patuloy na Pag-unlad* or enhancing the social fabric, inequality-reducing transformation and

increasing growth potential. The medium-term health sector plan is vital in realizing the health targets of Sustainable Development Goals (SDG) 2030 particularly Goal 3 which is “Good health and well-being” by and endorses the attainment of AmBisyon Natin 2040: “*Matatag, Maginhawa at Panatag na Buhay*” which represents the 25-year long-term vision and aspirations of the Filipino people for themselves and for the country. It aspires that the Philippines shall be a prosperous, predominantly middle-class society where no one is poor; people shall live long and healthy lives, be smart and innovative, and shall live in a high-trust society (Department of Health, 2018).

In both developed and developing countries, the public health system is considered as the first line of defense against the health

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threats associated with new or newly emerging diseases, natural or man-made disasters and other complex events with potential catastrophic impact on human health. Paradoxically, hospitals are also susceptible to disasters, mainly due to their multifaceted combinations of surgical and diagnostic equipment and hazardous materials, along with numerous patients with various conditions of physical and mental health. The study of Geroso and Caelian (2020) revealed that the overwhelming number of patients availing of health care services and lack of medical professionals are among the challenges encountered in the local health care systems.

On the other hand, Azuela, et.al. (2020), in their study, emphasized the need to identify the gaps in the current healthcare system and further integrate its capacity to provide quality health care for all. Given these conditions, the national government must therefore take responsibility for building an effective public health system. The goal is to build a resilient health care system which can cater to the needs of the entire population and enable robust responses to health emergencies.

In 2010, The World Health Organization developed a framework which includes six building blocks to assess the performance of a health system. This includes service delivery, health workforce, health information systems, access to essential medicines, financing and leadership and governance. The utilization of these building blocks provides a more comprehensive and systematic approach in evaluating the underlying causes of problems and challenges faced by the health systems. Similarly, resilience contributes to health system performance measurement as it relates to the ability of hospitals to respond productively to significant disruptive changes and potentially momentous impact on human health in population. It reduces vulnerability to crisis and enables health care institutions to perform functions under challenging conditions.

OBJECTIVES OF THE STUDY

This study aimed to assess the health system and resilience of public hospitals in the province of Batangas. Specifically, the study sought to: 1) determine the significant relationship

between the health system and organizational resilience of the public hospitals; 2) analyze the challenges encountered by the public hospitals during the pandemic; 3) identify the typology of public hospitals based on their health system and organizational resilience.

METHODS

To achieve the set objectives, the researcher used the explanatory sequential mixed method of research to explore the health system and resilience in the public hospitals. Stratified proportionate sampling design was used to identify the total sample size per strata. With a 4.76% margin of error, the total required respondents for the study are 280.

The survey instrument included eighty-three questions and was adapted from two structured namely the Health System Rapid Diagnostic Tool developed by the Family Health International (FHI) 360 in 2012 and the Organizational Resilience Capability Assessment developed by the International Consortium for Organizational Resilience (ICOR) in 2020. Part I of the questionnaire consists of performance questions which express the dimensions of the six-health system building blocks. On the other hand, Part II of the questionnaire involved the three dimensions of organizational resilience, which include three strategies that should be implemented to increase the resilience of an organization. The questionnaires were subjected to reliability test where the overall rating was excellent, as evidenced by a reliability coefficient of 0.965. In addition, frequency and percentage, weighted mean and cluster analysis were utilized as statistical tools in the study.

Aside from the adapted questionnaire, virtual focus group discussion was conducted with four Chief Administrative Officers and one Chief Nurse from the five districts of the province of Batangas. Frequency, percentage, and weighted mean were employed to treat the quantitative data. On the other hand, cluster analysis was utilized to identify the typology of the public hospitals in the province of Batangas.



RESULTS AND DISCUSSION

1. Status of Health system and Level of Organizational resilience of the public hospitals

1.1 Status of Health System. Health systems have contributed enormously to the better health of the population during 20th century and beyond. According to Department of Health (2018), health system refers to all organizations, people, and actions whose primary intent is to promote, restore, or maintain health. Table 1 shows the status of the health system of public hospitals in the province of Batangas. As shown, service delivery was nearly met by the public hospitals, as evidenced by its composite mean of 2.45. This means that the government hospitals have fairly achieved the standards of service delivery.

Table 1
Status of Health System of Public Hospitals

Health System Building Blocks	CM	VI	PM
Service Delivery	2.45	NM	FA
Health Workforce	2.50	M	GA
Information	2.49	NM	FA
Medical Products, Vaccines and Technologies	2.35	NM	FA
Financing	2.33	NM	FA
Leadership and Governance	2.44	NM	FA

The enactment of the Republic Act 7160 or the Local Government Code of 1991 mandated the devolution of health service functions to the local government units (LGUs) which initially aimed to deliver efficient and effective health services to the public by reallocating decision-making capability and resources to LGUs. However, the effect of this law posed impact in terms of access of the public to health services and has resulted in fragmentation of administrative control of health services between the rural hospitals and the different levels of political structure (World Bank, 2011).

It can be pointed out from the results that the public hospitals have met the standards of health workforce in the province of Batangas having a composite mean of 2.50. This equates to a good achievement of health workforce standards and indicates an appropriate mix of skills and

balance in the demographic deployment in the province. However, LGUs still have difficulty in attracting and retaining medical professionals to comply with the staffing required by the DOH licensing policy because of low level of remuneration and widespread partial compliance with Magna Carta benefits (World Bank, 2011).

It can be drawn from the results that the health information system was assessed as nearly met by the respondents, having a composite mean of 2.49. The findings of the study underscore that the public hospitals in the province of Batangas have fairly achieved the standards in terms of health information system. In general, the public hospitals have the facility to collect data and information from the health system and to report core health indicators on a regular basis. Computerized information systems were developed such as the Hospital Operations and Management Information System (HOMIS) to address the operations, workflows, and reporting systems and to ensure that health information is used rationally, effectively, and efficiently to improve health actions or decision-making process (Department of Health, 2011). However, it is also apparent from the results that the available information was not properly utilized in the planning and decision making, promoting public awareness on healthy behaviors and in the sensible investigation of possible outbreaks.

In terms of medical products, vaccines, and technologies, it was revealed that the public hospitals nearly met the standards as supported by its composite mean of 2.35. This equates to a fair achievement of health standards, which also underscored the need to revisit programs and policies aligned with the prices, availability and affordability of essential medical products, vaccines, and technologies in the province. In the local context, public hospitals are responsible for ensuring the availability of essential medicines in their health facilities (Salenga, et al., 2015). However, because of budgetary constraints or inefficiencies in supply chain management, the supplies of medicines in the public health facilities become unreliable.

Findings revealed the respondents perceived that those public hospitals nearly met the standards as shown by a composite mean of 2.33



which equates to fair achievement in financing standards. Undeniably, challenges remain in the health financing with the devolved set up of public hospitals in the province. The increase in public spending on health in the last few years has mainly taken place at the national government level, but local government spending has stagnated in real terms which has important equity implications for the poor. Since the Internal Revenue Allotment (IRA) and intergovernmental fiscal systems do not fully reflect fiscal capacity and need, many LGUs have very limited fiscal space to finance any expenditure, whether in health or other sectors (World Bank, 2011). Likewise, the shortfall in health financing made it difficult for less developed LGUs to maintain quality of health standards, resulting inequities between richer and poorer municipalities and cities (Cuenca, 2018).

Lastly, the building block of leadership and governance was assessed by the respondents as nearly met by the public hospitals in the province of Batangas, as represented by a composite mean of 2.44. It is notable from the results that the public hospitals have fairly achieved the standards when it comes to leadership and governance. The decentralization aimed to empower the local government to oversee and steer their own health services (Dayrit, et.al., 2018). However, the decision space granted for the local authorities made impact in the devolved governance and decision making for local health performance. The performance of the public hospitals in managing health outcomes varies upon the priorities of local decision makers who have the most influence over decisions related to planning, resource management and budget allocation.

1.2. Level of Organizational Resilience.

Table 2 exhibits the level of organizational resilience of public hospitals in the province of Batangas. Organizational resilience is defined by Lengnick, et.al. (2011) as the ability of a firm to effectively absorb, develop situation-specific responses and ultimately engage in transformative activities to capitalize on disruptive surprises that potentially threaten organizational survival.

As illustrated, having a shared vision, understanding contexts and relationships, and

having effective leaders were performed by the public hospitals to some extent as assessed by the respondents, having a composite mean of 3.27, 3.21, and 3.34 correspondingly.

Table 2
Level of Organizational Resilience of Public Hospitals

Resilience Dimensions and Strategies	CM	VI	PM
Leadership and Strategy – Having a Shared Vision	3.27	TSE	D
Leadership and Strategy – Understanding Contexts and Relationships	3.21	TSE	D
Leadership and Strategy – Having Effective and Empowered Leaders	3.34	TSE	D
Culture and Behaviors – Having a Healthy Culture	3.32	TSE	D
Culture and Behaviors – Sharing Information and Knowledge	3.31	TSE	D
Culture and Behaviors – Continuous Improvement	3.32	TSE	D
Preparedness and Managing Risk – Availability of Resources	3.26	TSE	D
Preparedness and Managing Risk – Managing Risk	3.26	TSE	D
Preparedness and Managing Risk – Managing Change	3.33	TSE	D

Having a shared vision was a strong driving force which can establish a culture that will favor quality and safety improvement in patient care. Department of Health (2018) emphasized the significance of synchronization as it defines the different roles and responsibilities of all actors at all levels of the health system and fosters a type of collaboration to bring in positive results for better health outcomes for the population. In the anticipation of these needs, the National Economic Development Authority (NEDA) developed *AmBisyon Natin 2040* to ensure that all Filipinos will have access to affordable, high quality and safe health-related goods and services (National Economic and Development Authority, 2015).

Having a healthy culture, sharing of information, and continuous improvement have a composite mean of 3.32, 3.31 and 3.32 respectively, demonstrating that the public hospitals are able to achieve these standards to some extent.

Promoting a healthy culture within health care institutions is a major concern that transcends



from the national down to the local boundaries. While stereotyping from the public still exists relative to the culture of government hospitals as mostly bureaucratic, the public health care institutions have the control on what type of culture should be emphasized to support its purpose, vision and goals (Health Research and Educational Trust, 2014).

One of the significant and enabling conditions to build resilience at an organizational level is knowledge sharing. According to Emmons (2013), these include processes that encourage mindfulness; capabilities for reconfiguring resources; respectful interaction that enriches the exchange and processing of information; diverse analytical perspectives about the organization's processes; the willingness to question current knowledge and value a new mental view; ad hoc problem-solving networks where problems flow toward expertise; and the use of rich communication available through social capital and relationships.

Similarly, Annarelli, et.al. (2020) stressed that organizations need to put in action continuous monitoring efforts, such as implementing a set of activities aimed at helping actors to constantly monitor organizational processes and eventually correct and reiterate the actions taken through information gathered. This leads not only to the assessment of the gap between what is planned and what is being achieved, but also to underscore any incongruity that may emerge in a system.

Likewise, availability of resources, managing risk, and managing change were executed by the public hospitals to some extent as indicators got a weighted mean of 3.26, 3.26 and 3.33 correspondingly.

Kantur & İşeri-Say (2012) stressed that making resources available and ensuring capability of employees to handle adversity is part of organizational strategies to deal with unexpected events. It is also expected that these resources are diverse and different from those being utilized in daily operations to boost resilience in extraordinary situations. Employees need to be capable enough to exhaust all possible efforts to exploit resources in challenging times and be able to connect to those who are capable to handle the situation.

Managing risk is imperative in the Philippines, which is one of the world's disaster hot spots. To support the country with actions and measures pertaining to all aspects of DRRM, the Philippine Disaster Risk Reduction and Management Act of 2010 or Republic Act No. 10121 was enacted to provide policies and plans, to establish risk assessment and early warning signals, to raise awareness to the public and reduce underlying risk factors to ensure preparedness for effective response and early recovery.

Similarly, resilience has been associated with multiple expressions of flexibility including knowing how to accept situations which cannot be changed, having the capacity to switch between different modes of thought and coping mechanisms, learning from failure, and finding meaning, opportunity and the potential for growth in the context of adversity (Southwick, et.al., 2017).

From all the above outcomes, it can be inferred that the public hospitals in the province of Batangas have a defined level of organizational resilience.

2. Relationship between Health System and Organizational Resilience

Table 3 demonstrates the relationship between health system building blocks and leadership and strategy indicator of organizational resilience. It was found out that among all health system building blocks, leadership and governance, health workforce and service delivery have a strong positive relationship with leadership and strategy.

The challenges that a health system involves complexities which necessitate a clear definition of challenges, seeking of alternatives and implementing a solution (Arroliga, et.al., 2014). This suggests a need for modern leaders who have a compelling vision and the ability in mobilizing their staff to accomplish great things, offering hope during traumatic circumstances, modeling exemplary client care and delivering on the bottom line, all while exhibiting the highest levels of integrity, optimism and innovation (Wicks & Buck, 2013).



Table 3
Relationship between Health System and Leadership and Strategy

Health System Building Blocks	P values	Computed r values	R	D	VI
Leadership and Governance	.000	.538	SP	RH	S
Financing	.000	.437	MP	RH	S
Information	.000	.486	MP	RH	S
Health Workforce	.000	.526	SP	RH	S
Medicines	.000	.471	MP	RH	S
Service Delivery	.000	.578	SP	RH	S

Table 4 displays that among the building blocks of the health system, leadership and governance, health information system and service delivery had a strong positive relationship with culture and behavior.

Table 4
Relationship between Health System and Culture and Behaviors

Health System Building Blocks	P values	Computed r values	R	D	VI
Leadership and Governance	.000	.555	SP	RH	S
Financing	.000	.437	MP	RH	S
Information	.000	.538	SP	RH	S
Health Workforce	.000	.472	MP	RH	S
Medicines	.000	.448	MP	RH	S
Service Delivery	.000	.529	SP	RH	S

Grote (2018) encapsulated the fundamental role of culture as a powerful stabilizing force that helps to coordinate action and integrate work processes in decentralized and flexible modes of health care operations. A shared norm of always speaking up with concerns and ideas will foster respect for the viability of different perspectives on problems and their most effective

solutions and may address any paradoxical conflicts that may arise in an organization.

Moreover, based on Table 5, among all the building blocks, leadership and governance, health information system and service delivery have a strong positive relationship with preparedness and managing risk.

Table 5
Relationship between Health System and Preparedness and Managing Risk

Health System Building Blocks	P values	Computed r values	R	D	VI
Leadership and Governance	.000	.578	SP	RH	S
Financing	.000	.449	MP	RH	S
Information	.00	.512	SP	RH	S
Health Workforce	.000	.496	MP	RH	S
Medicines	.000	.477	MP	RH	S
Service Delivery	.000	.525	SP	RH	S

According to Bollettino, et.al. (2018), preparedness is the process of anticipating the effects of risks before it happens. It is the combination of knowledge and the capacities of different sectors, such as governments, organizations, communities, and individuals. Likewise, Khan et.al. (2018) underscored in their study that understanding risk is a critical contribution of public health agencies during an adverse event. Though risk assessment is a crucial step in understanding the context and dynamics of interrelationships within each community, it is also imperative to make analysis and build strategies to enhance the resilience capacity of the organizations.

3. Challenges Encountered during Pandemic

From the collective responses of participants in the focus group discussion, two relevant themes were identified, namely resources and



governance. Each of them has three sub-themes which also supported the findings of the quantitative data. Based on the findings, there is an insufficient number of human resources for health in the public hospitals as one participant revealed.

"We only have 13 nurses in the hospital and four doctors. This pandemic, there is a need for additional manpower to manage the triage area and isolation rooms."

The participant explained that due to the establishment of special areas in the hospital, such as triage and isolation rooms to accommodate the COVID patients, their workforce was distributed to cater to health services for the patients. There was also lack of physical resources as one participant shared her thoughts about the present challenge,

"I think, there is a bias in the distribution of medical equipment. I think it is because of our low bed capacity and accreditation. How can we elevate our services if we do not have enough manpower? How can we attract patients, if we were not able to deliver essential services because we are not equipped with medical technologies?"

Unavailability of essential medicines also emerged, as one participant stated,

"Out of the pocket expenditures are still present from NBB patients (No Balance Billing) because of the unavailability of essential medicines."

It can be inferred that the unavailability of essential medicines to provide to patients leads to low compliance to the Universal Health Care.

There was also a lack of continuous monitoring from the public health authorities, as participants underscored the importance of monitoring for early detection of discrepancies in the functioning of the health system. As one participant stated,

"District hospitals should be monitored, their status, availability of their resources and the like."

The ease of doing business for health financing was also identified as one participant expressed her sentiment,

"At some point, it is irritating because rules are too strict especially before the release of funds, particularly in the processing of documents. Those should be handled with care and coordination should be made whenever possible to ensure fast processing of government transactions."

Lastly, the retention of Human Resources for Health was also a challenge as a participant claimed that,

"In spite of having insufficient number in workforce, the situation worsened due to an increase in employee resignations. Most of them went to hospitals which are DOH retained due to higher offers in salaries and benefits."

Hence, there is an issue of low compensation and benefits for the local health workers which lead to high employee turn-over.

Correlated to this, participants also positively shared how thankful they were because of the support they have received from other stakeholders.

"During the pandemic, we have experienced the unity of the public and private sector, philanthropists, other private individuals who rendered their capacities to extend whatever they can give to the hospitals."

4. Typology of Public Hospitals Based on their Health System and Organizational Resilience



Table 6 presents the output of the study, which is the typology of the public hospitals based on the status of their health system and resilience. The public hospitals were classified as basic, developing and progressive.

Table 6
Typology of Public Hospitals in the Province of Batangas per Cluster

Developing Hospitals	Progressive Hospitals
Calatagan Medical Hospital	Apacible Memorial District Hospital (Nasugbu)
Laurel Memorial Hospital (Tanauan)	Dr. Ernesto H. Malabanan Memorial Hospital (Laurel)
Lipa City District Hospital	Don Manuel Lopez Memorial District Hospital (Balayan)
Lobo Municipal Hospital	
Martin Marasigan District Hospital (Cuenca)	
MVM Sto. Rosario District Hospital	
San Jose District Hospital	
San Juan District Hospital	

The public hospitals which have a weak performance in terms of status health system and have a low organizational resilience are identified as basic hospitals. On the other hand, developing hospitals are those which are average performers in terms of health system and have a moderate organizational resilience. Lastly, progressive hospitals have strong performance in health system and have a relatively high level of organizational resilience. Further, the researcher developed strategies for each of the identified typologies that actors in the public health sector may work to improve resilience during health emergencies and achieve sustainable transformations in the field of health care delivery.

CONCLUSIONS

After the study had been made, results revealed that the health system of the public hospitals in the province of Batangas have a good achievement in terms of the status of health workforce while fair achievement in terms of its status in service delivery, information, financing, access to essential medicines and leadership and

governance. In addition, the resilience of public hospitals is of defined level. A significant relationship was also found out between the health system of the public hospitals and its resilience. Further, the challenges encountered by the public hospitals pertain to insufficient number of human resources, lack of physical resources, unavailability of essential medicines, lack of continuous monitoring from public health authorities, ease of doing business in health financing and retention of human resources for health. Lastly, eight of public hospitals in the province of Batangas are classified as developing and three as progressive in terms of the status of health system and resilience.

RECOMMENDATIONS

In the light of the findings and conclusions of this study, the researcher hereby recommends the following:

1. The public hospitals in the province of Batangas may encourage extensive monitoring procedures and mechanisms through appropriate utilization of health information systems, putting into consideration the application of modern technologies to investigate and evaluate failures and inefficiencies in the health-related processes and transactions.
2. The public hospitals may collaborate with external stakeholders and encourage the private sector participation to improve overall efficiency in the health care system and to contribute to the attainment of the Universal Health Care.
3. The Provincial Government of Batangas may consider the evaluation of remuneration and incentives for the public health workers to ensure that they are competitively compensated and may expand capacity-building efforts to promote the equitable distribution of health care resources and services across the province.
4. The Provincial Health Office is recommended to strengthen evidence-based research by increasing support in improving the data collection and access, investing in educating



a pool of experts and legislators on health system issues to significantly improve approaches to health policy making.

5. The public hospitals in the other provinces of CALABARZON may conduct a similar study to assess the health system and resilience as a basis for regional evaluation and improvement.
6. The strategies per typology may be reviewed and considered not only by the hospital officials and administrators of the public hospitals in the province of Batangas but also by the leaders of private institutions in the health care field, in their conceptualization and implementation of organizational approaches and new initiatives to consistently improve their health system and resilience during health emergencies.
7. Future researchers may examine resilience within a larger database by considering its relationship to individual and organizational performance and measure the ability of the health care institutions to cope with disasters of all kinds.

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