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Research Article

Institutional Responses to the COVID-19 Pandemic: A Multi-Site Mixed-Methods Study of Philippine Hospitals

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ABSTRACT

The COVID-19 pandemic exposed profound structural vulnerabilities within the Philippine hospital system while simultaneously revealing remarkable adaptive capacities among frontline healthcare workers and institutional leaders. This mixed-methods, multi-site study examined how 34 Philippine hospitals of varying types, levels, and geographic locations responded to the pandemic. One key informant per hospital represented by a healthcare worker with direct institutional experience of the pandemic that served as the institutional respondent, making each response a hospital-level account. Using a structured survey questionnaire administered in January 2026, the study collected demographic and institutional profile data, along with qualitative responses to 32 open-ended items spanning eight thematic sections that were analyzed and reported across four consolidated domains: policy implementation and governance; operational response and resource management; workforce management and leadership; and lessons learned and policy recommendations. Descriptive statistics and frequency distributions were employed for quantitative profile variables, while thematic analysis was applied to qualitative responses. Because the data were gathered retrospectively, several years after the events of 2020–2022, the findings are interpreted with explicit attention to recall limitations. Findings reveal that hospitals rapidly adapted national directives from the Department of Health (DOH) and the Inter-Agency Task Force (IATF) into local protocols, though frequent policy revisions, resource scarcity, and uneven institutional capacity consistently challenged implementation. Tertiary-level and urban hospitals demonstrated faster adoption of digital tools and infection prevention measures, while rural and Local Government Unit (LGU)-managed facilities relied more heavily on community partnerships and improvised protocols. Workforce resilience was

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sustained through leadership agility, peer cohesion, and institutional support mechanisms, including hazard pay and mental health services, albeit with notable inconsistencies across hospital types. The study identifies persistent preparedness gaps in surge capacity, supply chain reliability, and reserve manpower pools, and recommends a whole-of-health-system approach integrating infrastructure investment, PhilHealth reform, and expanded digital health infrastructure.

Keywords: *COVID-19, Health System Resilience, Qualitative Research, Philippine Hospitals, Pandemic Response Healthcare Workers*

Introduction

The emergence of COVID-19 in late 2019 and its subsequent declaration as a global pandemic by the World Health Organization (WHO) in March 2020 placed extraordinary demands on health systems worldwide. In the Philippines, as in many low- and middle-income countries, the crisis exposed longstanding systemic weaknesses while simultaneously catalyzing rapid institutional innovation. Philippine hospitals, public and private alike, were compelled to restructure operations, reallocate resources, and reconfigure governance arrangements under conditions of acute uncertainty.

The Philippine healthcare system operates within a complex multi-level structure that includes the Department of Health (DOH), the Philippine Health Insurance Corporation (PhilHealth), Local Government Units (LGUs), and a heterogeneous mix of public and private hospital providers. During the pandemic, coordination across these layers proved both essential and challenging. National directives from the DOH and the Inter-Agency Task Force for the Management of Emerging Infectious Diseases (IATF-EID) were frequently updated, requiring hospitals to continuously adapt their operational protocols in real time.

Prior studies on the Philippine COVID-19 response have largely concentrated on epidemiological trajectories (Aleta et al., 2020), national policy analysis (Dayrit et al., 2020), and the general experiences of healthcare workers (Gonzales et al., 2021). However, institution-level analyses that document how individual hospitals navigated specific critical events, managed operational transitions across pandemic phases, and translated crisis

experiences into enduring organizational learning remain sparse in the literature.

This study addresses this gap by examining the COVID-19 pandemic response of 34 Philippine hospitals through the accounts of one key informant per institution, a healthcare worker with direct firsthand experience of the pandemic at that facility. Because each respondent represents a distinct hospital, the study functions as a 34-hospital multi-site inquiry spanning primary, secondary, and tertiary facilities across the National Capital Region (NCR), Luzon, Visayas, and Mindanao. Employing a mixed-methods design, the study seeks to understand the institutional factors that enabled or constrained effective pandemic response and to identify the lessons that now inform preparedness against future public health emergencies. Because the study draws on a single structured survey administered in January 2026, it reconstructs these institutional trajectories retrospectively; the implications of this design for recall accuracy are addressed explicitly in the Limitations section.

Research Question

This study was guided by the following main research question: How did Philippine hospitals cope with the COVID-19 pandemic, and what factors influenced their success or failure in responding to the crisis? The following specific research questions operationalized this inquiry:

1. What initial challenges did Philippine hospitals face at the onset of the COVID-19 pandemic?
2. What key activities, strategies, and critical events shaped hospital responses throughout the pandemic?

3. How did leadership, governance, and coordination with DOH, LGUs, and other stakeholders influence hospital performance?
4. How did hospitals manage workforce, resource, and infrastructure constraints during the pandemic?
5. What successes and failures did hospitals experience, and what underlying factors contributed to these outcomes?
6. What lessons were learned from the COVID-19 experience at the hospital level, and what practices have been institutionalized to mitigate future pandemic risk?

Literature Review

The Philippine Health System and COVID-19

The Philippine health system is characterized by a fragmented structure wherein responsibility for public health service delivery is divided between the national government, through the DOH, and LGUs, through devolved hospital governance (Dayrit et al., 2018). This arrangement, while promoting localized responsiveness, has also produced chronic inequities in health system capacity across regions. Before the pandemic, the Philippines had already been grappling with shortages of hospital beds, healthcare personnel, and critical medical equipment, particularly outside of Metro Manila (Ulep et al., 2018).

When COVID-19 arrived, these pre-existing weaknesses were immediately amplified. The DOH and IATF-EID responded with a series of rapidly evolving community quarantine classifications, Enhanced Community Quarantine (ECQ), Modified ECQ (MECQ), and General Community Quarantine (GCQ), that carried direct implications for hospital operations, staff mobility, and patient census (Mendoza, 2020). Hospitals were simultaneously required to implement strict infection prevention and control (IPC) protocols while maintaining essential non-COVID services for a population that continued to experience non-pandemic health needs.

Hospital Responses and Health System Resilience

The concept of health system resilience defined as the capacity of health actors, institutions, and populations to prepare for and effectively respond to crises, while maintaining core functions and reorganizing if necessary (Kruk et al., 2015), has emerged as a central analytical framework in pandemic response research. Studies from diverse contexts have documented how resilient health systems share several common attributes: adaptive leadership, robust information systems, reserve capacity, strong community linkages, and learning cultures (Barasa et al., 2018; Hanefeld et al., 2018).

In the Philippine context, early assessments of the COVID-19 response documented significant heterogeneity across hospital types and levels. Tertiary-level facilities generally demonstrated greater adaptive capacity by virtue of their larger resource bases, stronger digital infrastructure, and more developed specialist workforces (Lasco, 2020). By contrast, primary and secondary hospitals, particularly those under LGU management in provincial and rural areas, frequently encountered severe supply chain disruptions, staffing shortfalls, and limited access to DOH technical support (Gideon, 2021).

Healthcare Workforce Resilience and Well-Being

The psychological and occupational toll of the pandemic on healthcare workers has been extensively documented across global settings. Frontline personnel consistently reported elevated rates of anxiety, depression, burnout, and secondary traumatic stress during periods of intense case surges (Lai et al., 2020; Salari et al., 2020). In the Philippines, specific factors compounding worker vulnerability included fear of nosocomial infection transmission to family members, inadequate PPE during early supply chain crises, and uncertain or delayed hazard compensation (Philippine Nurses Association, 2020).

Conversely, protective factors for workforce resilience identified in the literature include strong peer cohesion, clear institutional communication, perceived organizational support, and adaptive role flexibility (Maben & Bridges, 2020). These factors align with findings emerging from Philippine hospital studies that emphasize the centrality of leadership agility and team solidarity in sustaining frontline performance under crisis conditions (Gonzales et al., 2021)

Gaps in Existing Literature

Despite a growing body of pandemic response research, several gaps remain pertinent to the Philippine hospital context. First, institution-level analyses that trace the full operational arc of pandemic response, initial mobilization through successive waves

to post-pandemic institutionalization, are scarce. Second, comparative analyses across hospital types (public, private, teaching) and geographic zones remain limited. Third, the specific mechanisms through which organizational learning from the pandemic is being embedded into routine preparedness systems have not been systematically examined.

The present study contributes to filling these gaps. It should be emphasized, however, that the operational arc examined here is reconstructed retrospectively from informants' recollections rather than captured contemporaneously; the study therefore addresses the first gap through informant-based reconstruction while acknowledging the recall constraints inherent in such a design (see Limitations).

Conceptual Framework

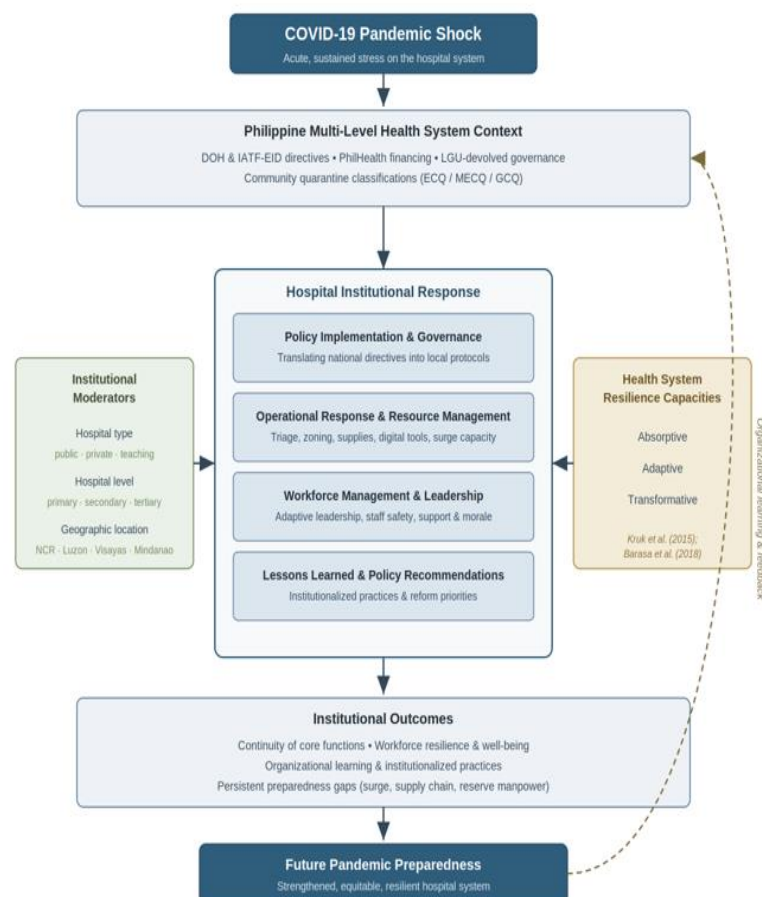


Figure 1. Conceptual Framework

The study is anchored in the health system resilience framework (Kruk et al., 2015; Barasa et al., 2018), which conceptualizes resilience as the capacity of health actors and institutions to prepare for and respond to crises while maintaining core functions and reorganizing where necessary. As depicted in Figure 1, the COVID-19 pandemic constituted an acute system shock that interacted with the Philippine multi-level health system context, DOH and IATF-EID directives, PhilHealth financing, LGU-devolved governance, and shifting community quarantine classifications. Within this context, each hospital's institutional response unfolded across four interrelated domains: policy implementation and governance; operational response and resource management; workforce management and leadership; and lessons learned and policy recommendations. These responses were shaped by institutional moderators (hospital type, level, and geographic location) and drew upon the absorptive, adaptive, and transformative capacities described in the resilience literature. The resulting institutional outcomes, continuity of core functions, workforce resilience, organizational learning, and the identification of persistent preparedness gaps, feed back into the system as institutionalized practices that inform future pandemic preparedness.

Methodology

Research Design

This study employed a mixed-methods design, integrating quantitative descriptive statistics with qualitative thematic analysis. This approach was selected to capture both the demographic and institutional profile of respondents and the rich, context-specific experiential data embedded in their narrative accounts. The mixed-methods framework allowed for triangulation of findings across quantitative and qualitative data streams, enhancing the internal validity and interpretive depth of the study (Creswell & Creswell, 2018).

Participants and Sampling

This study involved 34 healthcare workers, each drawn from a distinct Philippine

hospital, yielding a non-overlapping sample of 34 institutions. Each participant served as the sole institutional key informant for their respective hospital, providing an account of that hospital's pandemic experience. Because responses reflect the experiences and observations of individual informants within a specific institutional context, the effective unit of analysis in this study is the hospital rather than the individual healthcare worker. This design is consistent with key informant methodology in organizational and health systems research, where a knowledgeable representative is selected to provide institution-level data (Creswell & Creswell, 2018).

Participants were recruited via convenience sampling among healthcare professionals enrolled in the Diploma in Hospital Leadership and Management (DipHLM) program of the Philippine College of Hospital Administrators. This enrolled cohort provided accessible key informants who, by virtue of their leadership and management roles, possessed direct institutional knowledge of their hospitals' COVID-19 response. Although the sampling frame was one of convenience, the resulting sample nonetheless spanned a broad range of professional roles (nurses, physicians, administrative staff, and other healthcare personnel), hospital types (public/government, private, and university/teaching), hospital levels (primary, secondary, and tertiary), and geographic regions (NCR, Luzon outside NCR, Visayas, and Mindanao), supporting cross-institutional comparison. Inclusion criteria required that participants had been employed in their current hospital during at least a portion of the pandemic period (2020–2022) and were able to provide informed consent. No two respondents came from the same institution, ensuring that each data point represents an independent hospital-level observation.

Data Collection Instrument

Data were collected using a structured survey questionnaire administered through Google Forms to participants enrolled in the DipHLM program. The instrument comprised two components. The first component

collected demographic and institutional profile data across ten categorical variables: age, sex, educational attainment, professional role, employment status, years of healthcare experience, years of experience in the current hospital, hospital type, hospital level, and geographic location. The second component comprised 32 open-ended items organized across eight thematic sections corresponding to the study's research questions: (1) institutional and local context; (2) early pandemic response; (3) key activities, events, and turning points; (4) leadership, governance, and coordination; (5) healthcare workers and organizational resilience; (6) resource management and system constraints; (7) transition, learning, and institutional change; and (8) lessons learned and future preparedness.

Data Analysis

Quantitative data from the profile section were analyzed using descriptive statistics, including frequency counts and percentage distributions, presented in an APA-formatted table. Because each respondent represents a unique hospital, these distributions describe the characteristics of the 34 participating hospitals rather than a pooled workforce sample. Relationships between key institutional variables (professional role of key informant, hospital type, hospital level, educational attainment, and healthcare experience) were examined through descriptive cross-tabulation.

Qualitative data from the 32 open-ended items were analyzed using thematic analysis following the six-phase approach of Braun and Clarke (2006): data familiarization, initial code generation, theme construction, theme review, theme definition and labeling, and report production. Coding proceeded inductively. During familiarization and initial coding, each of the 32 items was read across all 34 hospital responses, and semantically meaningful segments were assigned open codes descriptive of their content (e.g., "frequent policy revision," "PPE conservation," "hazard pay," "surge-capacity gap"). Related open codes were then clustered into candidate themes within each of the eight questionnaire sections. During theme review and definition, candidate

themes were compared across sections and cognate themes were merged.

Because several of the eight questionnaire sections addressed conceptually overlapping aspects of institutional response, the eight sections were consolidated into four reporting domains aligned with the study's health system resilience framework. This consolidation was theory-guided rather than arbitrary: each domain corresponds to a coherent dimension of institutional response in the resilience literature. The mapping of questionnaire sections to consolidated reporting domains was as follows:

1. **Policy implementation and governance** was derived from Section 1 (institutional and local context), Section 2 (early pandemic response), and the governance elements of Section 4 (leadership, governance, and coordination).
2. **Operational response and resource management** was derived from Section 3 (key activities, events, and turning points) and Section 6 (resource management and system constraints).
3. **Workforce management and leadership** was derived from Section 5 (healthcare workers and organizational resilience) and the leadership elements of Section 4 (leadership, governance, and coordination).
4. **Lessons learned and policy recommendations** was derived from Section 7 (transition, learning, and institutional change) and Section 8 (lessons learned and future preparedness).

Within each domain, final themes were defined and labeled, and their prevalence and variation across the 34 hospitals were examined. Observed variation across themes was interpreted as between-hospital differences rather than intra-institutional diversity. Coding was performed independently and then reviewed collaboratively among the research team to enhance the consistency of theme assignment. Representative verbatim excerpts illustrate each theme, with respondents identified by assigned numerical codes (R1, R2, R3, etc.) to ensure anonymity.

Ethical Considerations

Participation was voluntary, and informed consent was obtained from all respondents before data collection. Anonymity was maintained throughout the analysis and reporting process, and no personally identifiable information was included in the final dataset. The study protocol was reviewed and approved by the ethics and regulatory board in the institution on where the corresponding author is affiliated. The study was conducted in accordance with the

Declaration of Helsinki and the Philippine National Ethical Guidelines for Health and Health-Related Research.

Results and Discussion

The results are organized in three sections: (I) Profile of Respondents, (II) Thematic Analysis of Open-Ended Responses, and (III) Cross-Tabulation Analysis. The consolidated demographic table adheres to APA 7th edition formatting conventions.

Table 1. Consolidated Demographic and Institutional Profile of Key Informants and Their Hospitals (N = 34)

Variable	Category	N	%
Age	20–29	1	2.9
	30–39	21	61.8
	40–49	5	14.7
	50–59	7	20.6
Subtotal: Age		34	100.0
Sex	Male	18	52.9
	Female	16	47.1
Subtotal: Sex		34	100.0
Education	Diploma	1	2.9
	Bachelor's Degree	10	29.4
	Master's Degree	15	44.1
	Doctorate	8	23.5
Subtotal: Education		34	100.0
Professional Role	Nurse	14	41.2
	Physician	9	26.5
	Administrative Staff	5	14.7
	Other Healthcare Staff	6	17.6
Subtotal: Professional Role		34	100.0
Employment Status	Regular/Permanent	26	76.5
	Contractual	4	11.8
	Part-time	2	5.9
	Appointment	1	2.9
	Not Specified	1	2.9
Subtotal: Employment Status		34	100.0
Experience (Healthcare)	Less than 1 year	1	2.9
	1–5 years	5	14.7
	6–10 years	9	26.5
	11–15 years	9	26.5
	More than 15 years	10	29.4
Subtotal: Experience (Healthcare)		34	100.0
Experience (Current Hosp.)	Less than 1 year	3	8.8
	1–5 years	9	26.5
	6–10 years	11	32.4
	11–15 years	6	17.6

Variable	Category	N	%
	More than 15 years	5	14.7
Subtotal: Experience (Current Hosp.)		34	100.0
Hospital Type	Public/Government	19	55.9
	Private	12	35.3
	University/Teaching Hospital	3	8.8
Subtotal: Hospital Type		34	100.0
Hospital Level	Primary	7	20.6
	Secondary	10	29.4
	Tertiary	17	50.0
Subtotal: Hospital Level		34	100.0
Geographic Location	NCR	7	20.6
	Luzon (outside NCR)	16	47.1
	Visayas	5	14.7
	Mindanao	6	17.6
Subtotal: Geographic Location		34	100.0

The key informants were predominantly mid-career professionals: 61.8% were aged 30–39, with a near-equal sex distribution (52.9% male, 47.1% female). Educational attainment was high, 44.1% held a master's degree and 23.5% a doctorate, supporting the credibility of their institutional accounts. Nurses (41.2%) and physicians (26.5%) constituted the largest professional groups, and most informants were in regular/permanent employment (76.5%), affording sustained access to institutional processes and organizational memory across the pandemic period. Informants were experienced, with 82.4% reporting more than five years in healthcare and most having at least one year of tenure in their current hospital. At the institutional level, the 34 hospitals were predominantly public/government (55.9%), with private (35.3%) and university/teaching hospitals (8.8%) also represented. Half were tertiary-

level facilities (50.0%), followed by secondary (29.4%) and primary (20.6%). Geographically, the hospitals spanned all major island groups, Luzon outside NCR (47.1%), NCR (20.6%), Mindanao (17.6%), and Visayas (14.7%), a national spread that supports cross-regional comparison and reduces the risk that findings are confined to Metro Manila or any single cluster.

Section II. Thematic Analysis of Open-Ended Responses

The following tables synthesize the qualitative responses across the 32 open-ended survey items, organized into four thematic domains. Because each respondent represents a distinct hospital, observed themes and variations reflect between-hospital differences in pandemic experience rather than intra-institutional diversity. Representative verbatim evidence is provided for each theme.

Table 2. Thematic Summary: Policy Implementation and Governance

Theme	Description / Key Findings	Representative Evidence
Rapid Policy Adaptation	Hospitals closely followed DOH and IATF directives, translating national guidance into local protocols. Frequent revisions required constant staff re-orientation and workflow adjustments.	<i>"Policies were interpreted as immediate directives for infection control and service restructuring. Implementation included activating emergency protocols." (R3)</i>
Challenges in Implementation	Frequent policy updates, limited testing capacity, and manpower	<i>"The main challenge was the rapid and frequent change in</i>

Theme	Description / Key Findings	Representative Evidence
	shortages created implementation inconsistency at the frontline. LGU-level hospitals faced particular difficulty operationalizing complex national standards.	<i>guidelines... which made consistent implementation difficult in a high-volume public hospital setting.” (R2)</i>
PhilHealth Policy Influence	PhilHealth benefit packages were critical for hospital sustainability, covering COVID-related admissions and dialysis services. However, claims-processing delays strained institutional cash flow.	<i>“PhilHealth reimbursement policies significantly affected hospital sustainability... reimbursements allowed the hospital to maintain essential services.” (R1)</i>
Quarantine Classification Impact	Shifts between ECQ, MECQ, and GCQ directly altered patient volume, staff mobility, and service restrictions, requiring constant operational adjustment across all phases of the pandemic.	<i>“Changes in quarantine classifications directly affected hospital operations by altering patient volume, staffing availability, and service delivery priorities.” (R3)</i>

Hospitals demonstrated consistent alignment with national policies while navigating implementation gaps arising from resource constraints and frequent policy revisions. A recurring finding is the tension

between ideal national standards and practical local capacity, particularly in LGU and provincial hospitals. PhilHealth reimbursement served as both a financial lifeline and a source of administrative burden.

Table 3. Thematic Summary: Operational Response and Resource Management

Theme	Description / Key Findings	Representative Evidence
Triage, Zoning, and Patient Flow	Hospitals established dedicated screening checkpoints, separate pathways for COVID and non-COVID patients, and isolation cohorts. High-risk groups such as dialysis patients received prioritized scheduling.	<i>“Entry-point screening and risk stratification were implemented early. Separate pathways for suspected and non-COVID patients were established.” (R3)</i>
Resource Shortages (PPE, Oxygen, ICU)	Critical shortages of PPE, oxygen, ICU beds, and ventilators were managed through strict prioritization, conservation protocols, and inter-hospital coordination for referrals.	<i>“For PPE, staff implemented strict conservation measures, reuse protocols where safe, and prioritized allocation to high-risk areas.” (R1)</i>
Digital Tools and Telemedicine	Electronic medical records (EMRs), telemedicine platforms, and digital reporting systems improved patient monitoring and reduced unnecessary face-to-face interactions. Adoption rates varied by hospital level and location.	<i>“Telemedicine was implemented for consultations, follow-ups, and monitoring stable patients... Digital reporting systems were also used to submit case data to the DOH.” (R1)</i>
Supply Chain Vulnerabilities	Supply chain delays, particularly in provincial hospitals, complicated timely procurement of essential materials. Public-private partnerships and LGU donations partially bridged these gaps.	<i>“Supply chain vulnerabilities persist, including potential delays in PPE, oxygen, and critical medications.” (R1); “Donations and partnerships helped address shortages.” (R3)</i>

Institutionalization of Changes	Post-pandemic, hospitals retained strengthened IPC practices, structured triage systems, flexible staffing arrangements, and digital reporting as standard operational components.	<i>"Several operational changes became institutionalized... continued using digital tools such as EMRs and strengthened coordination with local government units." (R1)</i>
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The operational response was characterized by improvisation under scarcity and gradual systematization across successive pandemic waves. Resource constraints were universal; however, responses varied substantially by hospital type and level.

Tertiary and urban hospitals demonstrated faster digital adoption, while rural and LGU hospitals relied more on community partnerships and informal resource-sharing networks.

Table 4. Thematic Summary: Workforce Management and Leadership

Theme	Description / Key Findings	Representative Evidence
Leadership Decision-Making	Hospital leaders formed core pandemic response teams, held regular briefings, and rapidly translated DOH/IATF directives into operational adjustments. Collaborative and iterative decision-making was central to institutional agility.	<i>"Leadership emphasized clear communication, flexible planning, and immediate workflow adjustments to maintain essential services." (R1)</i>
Healthcare Worker Safety and Morale	Fear of infection, staffing shortages due to quarantine exposure, and burnout were widespread, particularly during early and peak surge periods. Morale was sustained through teamwork, recognition, and gradual protocol improvement.	<i>"Safety concerns were highest during the early months... Many staff worked under constant fear of infection... which added significant emotional strain." (R2)</i>
Support Mechanisms Provided	Hazard pay, temporary staff accommodations, mental health counseling, and peer support groups were provided. Implementation varied considerably based on LGU resources and individual institutional capacity.	<i>"Hazard pay and risk allowances were given to staff directly caring for COVID-19 patients... Mental health support was also offered." (R1)</i>
Workforce Resilience Factors	Teamwork, shared institutional mission, clearer protocols over time, and visible leadership support were identified as primary resilience factors. Cross-training and flexible role allocation helped maintain service continuity.	<i>"Strong leadership support, clear communication... Teamwork and camaraderie among departments created a sense of shared responsibility." (R1)</i>
Staff Adaptation and Innovation	Healthcare workers demonstrated adaptive problem-solving through improvised PPE conservation measures, modified workflows, cross-departmental redeployment, and patient cohorting innovations.	<i>"Staff carefully scheduled patients to maximize machine use and minimize overcrowding, while cohorting suspected or positive cases to reduce infection risk." (R1)</i>

Leadership agility and workforce resilience were central to sustaining hospital

operations throughout the pandemic. The ability of frontline workers to adapt roles,

innovate within constraints, and maintain psychological endurance reflects both individual commitment and institutional support systems. Hazard pay and mental health

services, while available, were inconsistently implemented across hospital types, pointing to the need for standardized and equitably funded staff welfare policies.

Table 5. Thematic Summary: Lessons Learned and Policy Recommendations

Theme	Description / Key Findings	Representative Evidence
Systemic Weaknesses Identified	Limited surge capacity, workforce shortages, supply chain vulnerabilities, uneven health system capacity across localities, and delayed PhilHealth reimbursements were consistently identified as critical systemic weaknesses.	<i>"The pandemic exposed weaknesses in surge capacity, referral coordination, workforce sufficiency, and supply chain reliability."</i> (R2)
Lessons on Preparedness	Preparedness is multi-dimensional, requiring leadership agility, robust communication infrastructure, and adaptive protocols alongside physical resources. IPC must be embedded in daily clinical practice rather than activated only during crises.	<i>"One of the most important lessons was that preparedness is not only about supplies and equipment, but also about leadership agility and coordination."</i> (R2)
Institutionalized Post-Pandemic Practices	Strengthened IPC routines, structured triage protocols, surge management plans, supply stockpiling, expanded EMR and telemedicine use, and stronger inter-agency coordination have been retained as standing institutional practices.	<i>"The hospital now has a better operational framework for rapid protocol activation, patient zoning, and interdepartmental coordination."</i> (R2)
Remaining Preparedness Gaps	Sustained surge capacity, reserve manpower pools, consistent supply stockpiles, infrastructure expansion, and full digital system integration remain incomplete or inadequately resourced in many hospitals.	<i>"Despite progress, important gaps still remain, especially in sustained surge capacity, workforce reserves, and infrastructure."</i> (R2)
Policy Reform Recommendations	Key reforms identified include infrastructure investment, healthcare workforce development, supply chain resilience mechanisms, integrated health system coordination, improved PhilHealth financing, and expanded digital health infrastructure.	<i>"Policy reforms include sustained funding for emergency preparedness, expansion of critical care infrastructure, and stronger healthcare workforce development."</i> (R3)
Best Practices for Replication	Strict IPC and triage protocols, flexible staffing models, inter-hospital coordination, standardized staff support mechanisms, digital health tools, and resource optimization strategies are identified as replicable best practices.	<i>"Best practices include strong infection control systems, early triage and zoning strategies, flexible staffing models, and clear leadership communication."</i> (R3)

The collective experience of respondents reveals both systemic resilience and persistent

structural preparedness

vulnerabilities. Pandemic cannot be reduced to the

stockpiling of material supplies; it requires organizational culture, flexible governance structures, equitable financing, and sustained investment in health infrastructure and human capital. Policy recommendations converge on the need for a whole-of-health-system approach, with particular emphasis on LGU-level hospital capacity building and PhilHealth financing reform.

Section III. Cross-Tabulation Analysis

To explore associations between key institutional and informant characteristics, cross-tabulations were examined across the 34 participating hospitals. Given the small sample ($N = 34$) and the resulting low cell counts, several cells contained only one or zero observations, these relationships are described narratively and for descriptive purposes only. No inferential significance testing was performed, and percentages derived from single observations are not reported, as they would overstate the precision of the underlying counts. The patterns below are therefore presented as raw frequencies.

Professional role by hospital type.

Hospitals whose key informant was a nurse were most often public/government institutions (10 of 14), with fewer in private (3) and university/teaching (1) settings. Physician informants were more evenly distributed across public/government (5), private (3), and university/teaching (1) hospitals. Administrative-staff informants were drawn only from public/government (3) and private (2) hospitals, while informants classified as other healthcare staff were concentrated in private hospitals (4 of 6).

Healthcare experience by hospital level

Tertiary hospitals tended to be represented by more experienced informants: of the 10 informants reporting more than 15 years of healthcare experience, 7 were from tertiary-level facilities, compared with 2 from secondary and 1 from primary hospitals. Informants with 6–10 and 11–15 years of experience were distributed across all three hospital levels, a pattern consistent with the broader staffing capacity of higher-acuity facilities.

Sex by hospital type

Both male and female informants were most commonly drawn from public/government hospitals (10 male, 9 female), followed by private hospitals (6 each), indicating no pronounced sex-based clustering by institutional ownership.

Educational attainment by professional role

Doctoral qualifications were concentrated among physician informants (6 of 8 doctorate-holders), consistent with the credentialing requirements of medical practice. Master's degrees were most common among nurse informants (7 of 15 master's-holders), and bachelor's degrees were the modal qualification among administrative-staff informants. The single diploma-holder served in an administrative role. These patterns are consistent with standard credentialing norms across professional roles in Philippine hospitals.

Discussion

The findings of this study illuminate both the adaptive strengths and the systemic limitations of Philippine hospital pandemic response to COVID-19. Drawing on the experiences of 34 healthcare workers across diverse institutional and geographic contexts, this discussion interprets the results in relation to the study's research questions and situates them within the broader literature on health system resilience and pandemic preparedness.

Rapid Adaptation Under Constraint

A central finding of this study is that Philippine hospitals demonstrated a high degree of adaptive responsiveness to evolving national directives, translating DOH and IATF guidelines into local operational protocols with notable speed. Because each of the 34 respondents represented a distinct hospital, the thematic patterns identified in this study reflect genuine between-hospital variation rather than perspectives clustered within a small number of institutions. This design strengthens the interpretive robustness of the findings and supports cross-institutional comparison across hospital types, levels, and regions. The adaptive capacity observed is consistent with the health system resilience

literature, which identifies absorptive and adaptive capacities as essential components of resilient health systems (Kruk et al., 2015; Barasa et al., 2018). However, as key informants consistently noted, the frequency and pace of policy revisions, particularly during the early months of the pandemic, created implementation challenges that strained frontline workers and governance structures alike.

The tension between national policy ideals and local implementation realities was particularly pronounced in LGU-managed and provincial hospitals, which lacked the resource buffers and technical infrastructure available to larger tertiary-level facilities. This finding echoes Gideon's (2021) observation that health system decentralization in the Philippines has produced asymmetric institutional capacities, with implications for pandemic response equity.

Resource Management and Operational Innovation

Resource scarcity, particularly in PPE, oxygen supply, and critical care beds, was a near-universal experience across the sample. Respondents described a range of adaptive responses, including conservation protocols, priority-based allocation systems, and improvised inter-hospital referral networks. These strategies align with documented patterns of operational innovation under conditions of resource constraint in pandemic settings (Hanefeld et al., 2018).

The differential adoption of digital health tools across hospital types and levels is a notable between-hospital finding with direct implications for future preparedness planning. Tertiary and urban hospitals reported more rapid integration of telemedicine platforms and electronic medical records, while rural and primary-level facilities relied more heavily on community partnerships and informal resource-sharing arrangements. This digital divide across institutions mirrors broader national patterns of unequal technological access and investment (Ulep et al., 2018) and points to the need for targeted digital health infrastructure support in lower-level and geographically peripheral hospitals.

Leadership, Governance, and Workforce Resilience

The study underscores the central role of institutional leadership in shaping hospital pandemic response. Respondents consistently identified clear communication, collaborative decision-making, and leadership visibility as key determinants of operational continuity and workforce morale. These findings are consistent with the leadership literature on crisis management, which emphasizes adaptive leadership as a prerequisite for organizational resilience (Maben & Bridges, 2020).

Workforce resilience was found to be sustained by a combination of institutional support mechanisms, including hazard pay, temporary accommodations, and mental health services, and informal protective factors such as team solidarity and shared professional mission. The inconsistent implementation of formal support mechanisms across hospital types points to a structural equity gap in staff welfare provision that warrants policy attention.

Limitations

Several limitations of this study merit acknowledgment. First, while the one-informant-per-hospital design ensures institutional non-overlap and genuine between-hospital variation, it precludes within-hospital triangulation. A single key informant cannot fully capture the range of experiences and perspectives held by all staff within a given institution; their account necessarily reflects their own professional role, departmental vantage point, and personal recollection. Second, the sample of 34 hospitals, while appropriate for a qualitative and mixed-methods inquiry, limits the statistical generalizability of the quantitative descriptive findings to the broader Philippine hospital population. Third, because the sample was assembled through convenience sampling of healthcare professionals enrolled in the DipHLM program, it may be subject to self-selection bias, as hospitals whose representatives chose to participate may differ systematically from those not represented in the enrolled cohort.

Fourth, and most consequential for interpretation, the study relied on a single cross-sectional survey administered in January 2026 that asked informants to recall events occurring between 2020 and 2022. This retrospective design, with a gap of roughly three to six years between the events of interest and data collection, introduces well-recognized threats to accuracy, including recall decay, hindsight bias, and temporal telescoping, whereby the sequence and timing of events across successive pandemic waves may be compressed or misordered in memory. Consequently, the operational "arc" reconstructed here should be read as informants' retrospective sense-making rather than as a contemporaneous record of each wave. Several features of the design partially mitigate these threats: informants were selected for their direct involvement in their hospital's pandemic response; questions were anchored to concrete and salient events (e.g., shifts between community-quarantine classifications, PPE shortages, and the establishment of triage pathways); and the analysis emphasizes convergent patterns across 34 independent institutions rather than the precise chronology of any single case. Nonetheless, findings that depend on the timing or ordering of events warrant particular caution. Future research employing larger probability-based samples, multiple informants per hospital, and prospective or longitudinal designs that capture data closer to the events themselves would substantially strengthen the evidence base for hospital-level pandemic preparedness policy in the Philippines.

Conclusion

This study documents the pandemic responses of 34 Philippine hospitals through the accounts of one key institutional informant per hospital, providing a nationally distributed, multi-site perspective on how Philippine

healthcare institutions coped with COVID-19. The findings affirm that Philippine hospitals demonstrated remarkable adaptive capacity under conditions of acute resource scarcity, rapidly evolving policy environments, and unprecedented workforce pressure. Because

each account reflects a distinct institutional experience, the patterns identified across thematic domains represent cross-hospital convergences and divergences rather than perspectives from within a single organizational setting. Taken together, the findings expose persistent structural vulnerabilities, in surge capacity, digital infrastructure, supply chain reliability, and financing mechanisms, that constitute enduring risks to health system performance in future public health emergencies.

The lessons articulated by respondents converge on a clear policy imperative: pandemic preparedness cannot be achieved through episodic emergency responses or the stockpiling of supplies alone. It requires sustained investment in health infrastructure, institutionalized workforce development, flexible governance arrangements, and equitable financing mechanisms that reduce the structural disparities between hospital levels, types, and geographic locations. The institutionalization of IPC protocols, structured triage systems, and digital health tools as post-pandemic standard practices represents a meaningful but incomplete step toward this goal.

This study contributes to the growing body of institution-level evidence on pandemic response in low- and middle-income country health systems and offers a foundation for evidence-based policy reform in hospital pandemic preparedness in the Philippines. Future research should expand the sample to a larger, probability-based selection of hospitals, incorporate multiple informants per institution to enable within-hospital triangulation, and employ longitudinal designs that track preparedness investments and institutionalized practices over time. Such methodological advances would substantially deepen the analytical resolution of hospital-level pandemic response research in the Philippine context.

References

- Aleta, A., Martín-Corral, D., Piontti, A. P., Macy, M., Moretti, M., Mattei, N., Hernando, A., Flahault, A., Moreno, Y., & Vespignani, A. (2020). Modelling the impact of testing, contact tracing and household quarantine

- on second waves of COVID-19. *Nature Human Behaviour*, 4(9), 964–971. <https://doi.org/10.1038/s41562-020-0931-9>
- Barasa, E., Mbau, R., & Gilson, L. (2018). What is resilience and how can it be nurtured? A systematic review of empirical literature on organizational resilience. *International Journal of Health Policy and Management*, 7(6), 491–503. <https://doi.org/10.15171/ijhpm.2018.06>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Dayrit, M. M., Lagrada, L. P., Picazo, O. F., Pons, M. C., & Villaverde, M. C. (2018). The Philippines Health System Review. *Health Systems in Transition*, 8(2). World Health Organization, Regional Office for South-East Asia.
- Dayrit, M. M., Mendoza, R. U., & Valles, J. M. (2020). A framework for the COVID-19 public health response in the Philippines. *Acta Medica Philippina*, 54(2), 1–6.
- Gideon, L. (2021). Health system decentralization and pandemic response in the Philippines: Challenges and lessons from COVID-19. *Asia Pacific Journal of Public Health*, 33(5), 551–560.
- Gonzales, K. K., Bermudez, L., & Cruz, R. (2021). Frontline healthcare workers and COVID-19 in the Philippines: Experiences, concerns, and institutional responses. *Philippine Journal of Health Research and Development*, 25(3), 12–24.
- Hanefeld, J., Mayhew, S., Legido-Quigley, H., Martineau, F., Karanikolos, M., Blanchet, K., Liverani, M., McKee, M., Balabanova, D., & Soucat, A. (2018). Towards an understanding of resilience: Responding to health systems shocks. *Health Policy and Planning*, 33(3), 355–367. <https://doi.org/10.1093/heapol/czx183>
- Kruk, M. E., Myers, M., Varpilah, S. T., & Dahn, B. T. (2015). What is a resilient health system? Lessons from Ebola. *The Lancet*, 385(9980), 1910–1912. [https://doi.org/10.1016/S0140-6736\(15\)60755-3](https://doi.org/10.1016/S0140-6736(15)60755-3)
- Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., Wu, J., Du, H., Chen, T., Li, R., Tan, H., Kang, L., Yao, L., Huang, M., Wang, H., Wang, G., Liu, Z., & Hu, S. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Network Open*, 3(3), e203976. <https://doi.org/10.1001/jamanetworkopen.2020.3976>
- Lasco, G. (2020). Medical populism and the COVID-19 pandemic. *Global Public Health*, 15(10), 1417–1429. <https://doi.org/10.1080/17441692.2020.1807581>
- Maben, J., & Bridges, J. (2020). Covid-19: Supporting nurses' psychological and mental health. *Journal of Clinical Nursing*, 29(15–16), 2742–2750. <https://doi.org/10.1111/jocn.15307>
- Mendoza, R. U. (2020). Governance reforms for pandemic resilience: Lessons from the COVID-19 response. *Ateneo School of Government Working Papers*. Ateneo de Manila University.
- Philippine Nurses Association. (2020). Position paper on the protection and welfare of Filipino nurses during the COVID-19 pandemic. *Philippine Nurses Association*.
- Salari, N., Hosseini-Far, A., Jalali, R., Vaisi-Raygani, A., Rasoulpoor, S., Mohammadi, M., Rasoulpoor, S., & Khaledi-Paveh, B. (2020). Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: A systematic review and meta-analysis. *Globalization and Health*, 16(1), 57. <https://doi.org/10.1186/s12992-020-00589-w>
- Ulep, V. G. T., Dela Cruz, N. A. O., & Magtibay, J. D. (2018). Primary care in the Philippines. *Journal of Ambulatory Care Management*, 41(Suppl 2), S57–S65