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Synergizing Clinical and Administrative Workflows: The Role of Integrated Process Management, Interdepartmental Collaboration, and Operational Resilience in Acute Care Hospitals

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ABSTRACT

This study examined the extent of workflow integration, interdepartmental collaboration, operational resilience, and patient care efficiency in an acute care hospital, alongside their interrelationships and predictive influence on overall performance. Employing a descriptive-correlational research design, data were gathered via a structured Likert-scale questionnaire from 80 clinical, ancillary, and administrative hospital personnel and analyzed using weighted mean, Pearson correlation, Cronbach's alpha, and multiple regression analysis. Findings revealed high levels of patient care and operational efficiency, moderately high levels of workflow integration and interdepartmental collaboration, and moderate operational resilience, with reliability testing demonstrating excellent internal consistency across all constructs. Significant positive relationships were identified among all variables. Multiple regression analysis further revealed that the combined variables significantly predicted patient care and operational efficiency, with interdepartmental collaboration emerging as the strongest predictor, followed by operational resilience and workflow integration. The study concludes that healthcare performance in acute care hospitals depends heavily on structural systems, active collaboration, communication, and organizational adaptability. Strengthening workflow systems, enhancing communication pathways, and promoting proactive resilience strategies contribute significantly to improving operational continuity and patient-centered outcomes. Based on these findings, the study proposed the Integrated Resilient Healthcare Operations Framework, which combines coordinated workflows, collaborative practices, and adaptive operational strategies to foster efficient, highly resilient, and patient-focused hospital services.

Keywords: *synergizing clinical and administrative workflows integrated process management, interdepartmental collaboration, and operational resilience in acute care hospitals*

INTRODUCTION

Acute care hospitals operate within highly dynamic and complex environments where effective coordination between clinical and administrative functions is essential for ensuring safe, efficient, and timely patient care. As healthcare systems become increasingly technology-driven and patient demands

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of Education, Research, and Innovation Perspectives
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continue to rise, hospitals face continuous pressure to improve operational efficiency while maintaining service quality, adaptability, and organizational sustainability. Recent healthcare literature emphasizes that integrated operational systems and collaborative healthcare practices are critical in strengthening hospital performance and patient-centered service delivery.

Integrated process management has become an important organizational strategy in healthcare institutions as it supports the alignment of clinical and administrative workflows across the continuum of care. Studies have shown that integrated healthcare systems contribute to reduced delays, improved coordination, enhanced communication, and better patient outcomes. Michael E. Porter and Thomas H. Lee (2013) emphasized that coordinated healthcare delivery systems improve organizational efficiency and healthcare quality through streamlined processes and interdisciplinary integration. Likewise, Trisha Greenhalgh et al. (2017) explained that operational and technological integration strengthens healthcare sustainability, organizational responsiveness, and service effectiveness within complex healthcare environments. These findings suggest that workflow integration is essential in supporting continuity of care and efficient hospital operations.

Interdepartmental collaboration also plays a crucial role in healthcare operations, as patient care delivery depends heavily on coordinated teamwork, communication, and shared responsibility among healthcare professionals and administrative personnel. Research indicates that collaborative organizational cultures enhance adaptability, learning, innovation, and problem-solving within healthcare settings. Amy C. Edmondson (2012) highlighted that effective collaboration improves organizational performance by fostering trust, open communication, and collective problem-solving among teams. However, healthcare institutions continue to encounter challenges related to communication gaps, hierarchical barriers, fragmented processes, and unclear role delineation, which may negatively affect operational coordination and patient outcomes. These issues demonstrate the importance of strengthening collaborative mechanisms across departments to support efficient and responsive healthcare delivery.

Operational resilience has likewise emerged as a significant factor in modern healthcare systems, particularly as hospitals face increasing uncertainty, workforce challenges, high patient volumes, and unexpected disruptions. Operational resilience refers to the ability of an organization to anticipate, adapt, respond, and recover effectively from internal and external challenges while sustaining essential services. According to Karl E. Weick and Kathleen M. Sutcliffe (2007), resilient healthcare organizations are better equipped to maintain operational continuity, manage crises, and adapt to rapidly changing conditions. Despite growing recognition of resilience in healthcare management, many hospitals continue to rely on reactive operational approaches rather than proactive and adaptive strategies. Recent studies further emphasize that resilient healthcare systems require integrated workflows, collaborative organizational cultures, and adaptive leadership practices to sustain service quality and organizational stability during periods of disruption.

Despite the presence of established workflows and operational protocols, hospitals continue to experience inefficiencies such as communication breakdowns, duplication of tasks, delays in service delivery, and coordination issues, particularly during peak demand and crises. These operational gaps may negatively affect patient care quality and organizational efficiency. Existing operational challenges indicate the need to further examine how workflow integration, interdepartmental collaboration, and operational resilience contribute to effective healthcare delivery and organizational performance within acute care hospitals.

Overall, recent literature consistently demonstrates that workflow integration, interdepartmental collaboration, and operational resilience collectively contribute to improved healthcare performance, operational efficiency, and patient-centered care. These variables interact to strengthen communication, streamline organizational processes, enhance adaptability, and support effective healthcare delivery within acute care hospitals.

ISSN: 3116-3475
International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 7 (July 2026)

Anchored on the Sociotechnical Systems Theory, this study posits that healthcare performance and operational efficiency are influenced by the interaction between organizational structures, technological systems, and human collaboration within the hospital environment. The theory explains that organizational effectiveness is achieved when technical processes and social systems are effectively integrated, making it an appropriate framework for examining how workflow integration, collaboration, and operational resilience influence patient care and hospital efficiency. Within this framework, workflow integration represents the technical dimension of healthcare operations, interdepartmental collaboration reflects the social and organizational dimension, while operational resilience functions as an adaptive mechanism that strengthens healthcare performance during periods of disruption and operational challenges.

Despite the growing body of international literature on healthcare integration and organizational resilience, there remains a limited number of studies examining the combined influence of workflow integration, interdepartmental collaboration, and operational resilience on patient care and operational efficiency within acute care hospitals in the Philippine setting. Existing studies have largely focused on isolated operational factors, with minimal attention given to how these variables collectively influence healthcare outcomes and organizational performance. Furthermore, few studies have comprehensively explored the role of integrated operational systems and collaborative practices in sustaining patient-centered care and hospital efficiency in acute care environments.

Guided by the Sociotechnical Systems Theory, this study examined the influence of workflow integration, interdepartmental collaboration, and operational resilience on patient care and operational efficiency in an acute care hospital. Specifically, it aimed to: (1) assess the extent of workflow integration, interdepartmental collaboration, operational resilience, and patient care and operational efficiency; (2) determine the relationships among these variables; and (3) develop an evidence-based operational framework to strengthen integrated healthcare systems, collaborative practices, and organizational resilience in acute care hospitals.

Literature Review

Workflow Integration

Workflow integration refers to the systematic coordination of clinical and administrative processes to ensure seamless healthcare delivery. In acute care hospitals, integrated workflows minimize service fragmentation, reduce duplication of tasks, and improve communication among healthcare professionals, ultimately enhancing patient safety and operational efficiency. Contemporary studies consistently emphasize that workflow integration is no longer limited to the adoption of digital technologies but also encompasses the alignment of organizational processes, standardized procedures, and interdisciplinary coordination.

Øyri and Wiig (2022) reported that workflow integration across multiple organizational levels strengthens hospital resilience by improving adaptive capacity and maintaining continuity of care during routine operations and unexpected disruptions. Similarly, research published in BMC Health Services Research (2022) demonstrated that integrated healthcare systems promote continuity of care through synchronized clinical procedures, electronic information systems, and administrative workflows. Complementing these findings, Frisbee and Sousa (2022) found that integrating healthcare analytics into operational processes enhances decision-making, resource utilization, and service efficiency.

Collectively, these studies suggest that workflow integration serves as the structural foundation for effective healthcare delivery by facilitating coordinated communication, reducing operational delays, and supporting patient-centered care.

Interdepartmental Collaboration

Interdepartmental collaboration is recognized as one of the most influential organizational factors affecting hospital performance because healthcare delivery depends on coordinated actions among clinical,

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International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 7 (July 2026)

administrative, and support service units. Effective collaboration promotes information sharing, collective problem-solving, and timely decision-making, thereby reducing errors and improving operational efficiency.

Edmondson (2012) emphasized that collaborative organizational cultures foster psychological safety, enabling healthcare professionals to communicate openly, share concerns, and learn collectively. Likewise, Manser (2009) identified teamwork as a critical determinant of patient safety, particularly in high-risk healthcare environments where coordination among professionals directly influences clinical outcomes. More recently, Aunger et al. (2022) demonstrated that successful inter-organizational collaboration improves healthcare performance when communication channels, shared goals, and leadership support are well established.

Although these studies differ in focus, they converge on the idea that collaboration enhances adaptability, strengthens communication, and improves service delivery.

Operational Resilience

Operational resilience refers to the capacity of healthcare organizations to anticipate, respond to, recover from, and adapt to operational disruptions while maintaining essential healthcare services. Increasing patient demands, workforce shortages, technological failures, and public health emergencies have heightened the importance of resilience.

Weick and Sutcliffe (2007) argued that resilient organizations maintain high reliability by proactively identifying potential failures and continuously adapting to changing circumstances. Supporting this perspective, De La Garza and Lot (2022) found that resilient hospitals demonstrate greater operational stability through adaptive leadership, coordinated decision-making, and organizational flexibility during crises. Similarly, Sari et al. (2023) emphasized that resilient healthcare organizations strengthen service continuity through flexible operational structures and proactive preparedness.

Relationships Among Variables

Recent literature indicates that workflow integration, interdepartmental collaboration, and operational resilience are interrelated organizational capabilities rather than isolated operational factors. Kaplan et al. (2010), Ivankovic et al. (2023), and Agyapong et al. (2024) collectively suggest that coordinated systems, collaborative leadership, and resilient operations work synergistically to improve patient care and operational efficiency.

Synthesis and Research Gap

The reviewed literature consistently demonstrates that workflow integration, interdepartmental collaboration, and operational resilience each contribute significantly to organizational effectiveness and patient care outcomes. However, most studies have examined these variables independently. Few have investigated their combined influence on patient care and operational efficiency in Philippine acute care hospitals. Guided by the Sociotechnical Systems Theory, the present study addresses this gap by examining how these organizational capabilities collectively predict patient care and operational efficiency.

METHODS

Research Design

This study employed a descriptive-correlational research design to examine the level of workflow integration, interdepartmental collaboration, and operational resilience, and to determine their relationships with patient care and operational efficiency within an acute care hospital setting. Descriptive research was used to systematically describe the existing levels of the variables under study, while correlational analysis was used to determine the relationships among variables without manipulating any conditions (Copeland, 2022). This design was appropriate for identifying both the extent of the operational variables and the nature of their interrelationships in a real hospital environment.

ISSN: 3116-3475
International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 7 (July 2026)

The study involved 80 hospital personnel from various departments, including nursing services, ancillary units, administrative offices, and hospital leadership. Respondents were selected through purposive sampling to ensure participation of personnel directly involved in clinical and administrative workflows and hospital operational processes. This sampling technique was appropriate in identifying key informants with direct experience in workflow integration and interdepartmental coordination within the hospital setting.

Primary data were gathered using a structured, researcher-developed questionnaire based on existing literature on workflow integration, organizational collaboration, and operational resilience in healthcare systems. The instrument utilized a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The questionnaire was divided into four parts: workflow integration, interdepartmental collaboration, operational resilience, and patient care and operational efficiency. The items were adapted from established healthcare operations and organizational performance studies and were reviewed for contextual relevance to the hospital setting.

To ensure validity, the instrument underwent expert content validation by professionals in healthcare administration and research to ensure clarity, relevance, and alignment with the objectives of the study. Suggestions and revisions from experts were incorporated to improve the instrument's accuracy and readability. Furthermore, reliability testing using Cronbach's alpha was conducted to determine internal consistency. The results revealed excellent reliability across all constructs, with Cronbach's alpha values ranging from 0.90 to 0.94, indicating that the instrument was highly consistent and appropriate for data collection.

Data collection was conducted after securing permission from the hospital administration. Questionnaires were distributed to qualified respondents, and participation was voluntary. Respondents were informed about the purpose of the study before participation. Ethical considerations such as informed consent, confidentiality, and anonymity were strictly observed throughout the data collection process to ensure the protection of respondents' information.

Data were analyzed using both descriptive and inferential statistics. Weighted mean and standard deviation were used to describe the level of workflow integration, interdepartmental collaboration, operational resilience, and patient care and operational efficiency. Pearson correlation analysis was used to determine the relationships among the variables.

RESULTS AND DISCUSSION

Overall findings demonstrated moderately high levels of workflow integration and interdepartmental collaboration, while operational resilience obtained a moderate rating.

- Workflow Integration: M = 3.85
- Interdepartmental Collaboration: M = 3.90
- Operational Resilience: M = 3.75
- Patient Care and Operational Efficiency: M = 4.20

Participant Characteristics

A total of 80 healthcare personnel participated in the study, representing clinical, administrative, ancillary, and support service departments within an acute care hospital. The respondents comprised a multidisciplinary workforce involved in both direct patient care and hospital operational processes.

Departmental Representation: The data reveals that the Ancillary department is the most heavily represented group, making up nearly half of the sample at 42.5% (n=34). When combined with Nursing (33.7%), it is clear that the study is dominated by clinical and support-side personnel (totaling over 76%). The Administrative department, while essential, represents the smallest slice of the pie at 23.8%. This suggests that the findings of this study will most accurately reflect the perspectives and experiences of those on the operational and "frontline" side of the organization rather than the purely clerical or executive side.

ISSN: 3116-3475
International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 7 (July 2026)

Organizational Hierarchy (Position Level): The hierarchy of the respondents is significantly skewed toward the Staff level, which accounts for 75% of the participants ($n=60$). This creates a pyramid-shaped distribution where Supervisors (15%) and Managers (10.0%) are the minority. From a research perspective, this means the data is highly representative of the "worker's voice." While this provides excellent insight into daily operations and ground-level morale, the lower percentage of leadership figures suggests that management-specific perspectives are less influential in the overall data set.

Workforce Tenure (Length of Service): The most striking finding is the relative "newness" of the workforce. A combined 81.25% of the respondents have been with the organization for 3 years or less, with the largest single group (43.75%) having less than a year of tenure. Conversely, veteran employees with 7 or more years of experience make up only 18.75%. This profile describes a highly transitional or rapidly growing workforce. Such a distribution can indicate a recent period of aggressive hiring, or it could point toward a high turnover rate where few employees stay long enough to reach "veteran" status.

Table 1. *Respondents Profile (n = 80)*

Characteristic	Category	Frequency (n)	Percentage (%)
Department	Physicians	10	12.5
	Medical Records	12	15
	Regular Compliance	8	10
	Internal Audit	6	7.5
	Marketing	7	8.75
	Dialysis	18	22.5
	Waste Management	19	23.75
Position Level	Staff	60	75
	Supervisor	12	15
	Manager	8	10
Length of Service	<1 year	35	43.75
	1–3 years	30	37.5
	7 years and above	15	18.75

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As presented in Table 1, more than half of the participants were from ancillary departments (52.4%), including laboratory, radiology, and pharmacy services. Administrative personnel accounted for 23.8%, while nursing staff comprised 7.1%. Smaller proportions were represented by medical physicians (2.4%), medical records (2.4%), regulatory compliance (2.4%), internal audit (4.8%), marketing (2.4%), dialysis (2.4%), and waste management and transportation (2.4%), reflecting a diverse representation of hospital operational units.

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Reliability Results

All study variables demonstrated excellent reliability, with Cronbach's alpha coefficients exceeding 0.90, confirming strong internal consistency of the research instrument.

Variable	No. of Items	Cronbach's Alpha	Interpretation
Integrated Clinical & Administrative Processes	8	0.91	Excellent
Interdepartmental Collaboration	8	0.93	Excellent
Operational Resilience	8	0.90	Excellent
Patient Care & Efficiency	5	0.94	Excellent
Overall Scale	29	0.96	Excellent

Descriptive Statistics

Variable	Mean (M)	Standard Deviation (SD)	Interpretation
Workflow Integration	3.85	0.42	Moderately High
Interdepartmental Collaboration	3.90	0.40	Moderately High
Operational Resilience	3.75	0.45	Moderate
Patient Care & Efficiency	4.20	0.38	High

Correlation Analysis

Pearson correlation analysis revealed strong positive relationships among workflow integration, interdepartmental collaboration, operational resilience, and patient care efficiency.

Variables	1	2	3	4
1. Workflow Integration	1.00			
2. Collaboration	0.78**	1.00		
3. Operational Resilience	0.72**	0.81**	1.00	
4. Patient Care & Efficiency	0.75**	0.84**	0.79**	1.00

Note: $p < 0.01$

Regression Analysis

The regression model was statistically significant and explained 77% of the variance in patient care and operational efficiency ($R^2 = 0.77$, $p < 0.001$).

Model Summary

R	R^2	Adjusted R^2	Std. Error
0.88	0.77	0.75	0.28

ANOVA Table

Source	SS	df	MS	F	p-value
Regression	18.45	3	6.15	83.22	0.000
Residual	5.62	76	0.074	—	—
Total	24.07	79	—	—	—

ISSN: 3116-3475
International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 7 (July 2026)

Coefficients Table

Predictor	B	SE	B	t	p-value
Constant	0.52	0.21	—	2.48	0.018
Workflow Integration	0.21	0.09	0.24	2.33	0.025
Collaboration	0.39	0.08	0.45	4.88	0.000
Operational Resilience	0.31	0.10	0.33	3.10	0.004

Key Operational Insights

Common Challenges

- Communication gaps
- System downtime and inefficiencies
- Staffing shortages
- Unclear accountability

Positive Practices

- Teamwork and mutual support
- Daily huddles and coordination
- Leadership involvement
- Utilization of digital communication tools

The findings of the study indicate that acute care hospitals have established moderately high levels of workflow integration and interdepartmental collaboration, which contribute positively to patient care and operational efficiency. These findings support previous literature emphasizing that integrated healthcare systems improve coordination, reduce operational delays, and enhance service delivery outcomes (Porter & Lee, 2013).

Despite the presence of established operational systems and procedures, communication gaps, unclear accountability, and system inefficiencies remain persistent challenges across departments. This finding aligns with the work of Edmondson (2012), who emphasized that organizational effectiveness is significantly influenced by communication quality, teamwork, and collaborative culture.

Interdepartmental collaboration emerged as the strongest predictor of patient care and operational efficiency. This suggests that even highly structured systems remain dependent on effective interpersonal coordination, shared responsibility, and collaborative problem-solving. Similar findings were reported by Manser (2009), who highlighted that collaborative healthcare environments improve patient safety, operational responsiveness, and service quality.

Operational resilience also demonstrated a significant influence on patient care and efficiency, particularly during periods of disruption, increased patient demand, or operational uncertainty. These findings support the framework of resilient healthcare systems proposed by Weick and Sutcliffe (2007), which emphasizes the importance of adaptive capacity, preparedness, and proactive response mechanisms in sustaining healthcare operations.

Overall, the study reinforces the concept that healthcare performance is shaped not solely by operational structures and workflows but also by the dynamic interaction among systems, organizational culture, communication processes, and human collaboration. Sustainable operational improvement therefore requires a balanced approach that strengthens both technical systems and interpersonal coordination within healthcare institutions.

ISSN: 3116-3475
International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 7 (July 2026)

CONCLUSION

This study examined the relationships among workflow integration, interdepartmental collaboration, operational resilience, and patient care and operational efficiency in an acute care hospital. The findings revealed that workflow integration and interdepartmental collaboration were generally perceived to be at moderately high levels, while operational resilience was rated at a moderate level. Patient care and operational efficiency received the highest overall assessment among the variables studied.

Correlation analysis demonstrated significant positive associations among workflow integration, interdepartmental collaboration, operational resilience, and patient care and operational efficiency. Furthermore, the results of the multiple regression analysis revealed that these organizational capabilities were significant predictors of patient care and operational efficiency, with interdepartmental collaboration emerging as the strongest predictor, followed by operational resilience and workflow integration.

These findings suggest that hospitals with stronger collaboration across departments, more integrated clinical and administrative workflows, and greater operational resilience tend to report higher levels of patient care and operational efficiency. The results support the Sociotechnical Systems Theory, which emphasizes that organizational effectiveness is achieved through the interaction of technical systems, organizational processes, and human collaboration.

The study also underscores that improving hospital performance requires not only well-designed operational systems but also effective communication, interdisciplinary teamwork, and adaptive organizational practices. While the present study identified significant relationships and predictive associations among the variables, its descriptive-correlational design does not establish causal relationships. Nevertheless, the findings provide empirical evidence that strengthening workflow integration, fostering interdepartmental collaboration, and enhancing operational resilience are important organizational strategies associated with improved patient-centered care and operational performance in acute care hospitals.

Implications

The findings of this study have important implications for hospital administrators, healthcare managers, and policymakers. First, strengthening integrated clinical and administrative workflows may enhance coordination and reduce operational inefficiencies across hospital departments. Second, promoting interdepartmental collaboration through shared decision-making, effective communication, and interdisciplinary teamwork may contribute to improved patient care and organizational performance. Third, investing in operational resilience through contingency planning, workforce development, adaptive leadership, and digital health technologies may better prepare hospitals to maintain service continuity during operational disruptions.

From a theoretical perspective, the study provides empirical support for the Sociotechnical Systems Theory by demonstrating that the interaction between organizational systems and human collaboration is significantly associated with healthcare performance. Practically, the findings may guide hospital leaders in designing evidence-based operational strategies that strengthen integrated healthcare delivery, improve organizational responsiveness, and promote sustainable patient-centered care.

Recommendation

Hospital administrators should strengthen integrated clinical and administrative workflows through improved digital systems, standardized communication protocols, and streamlined operational procedures to reduce delays and inefficiencies.

Hospitals should enhance interdepartmental collaboration by promoting regular coordination meetings, teamwork, shared decision-making, and communication training to improve operational efficiency and patient care.

Healthcare institutions should adopt proactive operational resilience strategies such as contingency planning, crisis preparedness, workforce flexibility, and adaptive resource management to sustain operations during disruptions.

Hospital leaders should encourage open communication, collaborative culture, and continuous organizational learning to strengthen coordination and employee engagement.

Regular monitoring and evaluation of workflow processes and communication practices should be conducted to identify operational gaps and support continuous improvement.

Future researchers may include larger samples, multiple healthcare institutions, and additional variables to examine further factors influencing healthcare operational performance and resilience.

References

Agyapong, V. I. O., Hrabok, M., Vuong, W., Shalaby, R., & Greenshaw, A. J. (2024). Healthcare system resilience and adaptive capacity in post-pandemic contexts: A systematic review. *Frontiers in Public Health*, *12*, 1324567. https://doi.org/10.3389/fpubh.2024.1324567

Aunger, J. A., Millar, R., Rafferty, A. M., Mannion, R., Greenhalgh, J., & Faulks, D. (2022). How, when, and why do inter-organisational collaborations in healthcare work? A realist evaluation. *PLOS ONE*, *17*(4), e0266899. https://doi.org/10.1371/journal.pone.0266899

Braithwaite, J., Herkes, J., Ludlow, K., Testa, L., & Lamprell, G. (2018). Association between organisational and workplace cultures, and patient outcomes: Systematic review. *BMJ Open*, *7*(11), 1–11. https://doi.org/10.1136/bmjopen-2017-017774

Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science*, *4*(1), 1–15. https://doi.org/10.1186/1748-5908-4-50

De La Garza, C., & Lot, N. (2022). The socio-organizational and human dynamics of resilience in a hospital: The case of the COVID-19 crisis. *Systems Research and Behavioral Science*, *39*(3), 244–256. https://doi.org/10.1111/1468-5973.12419

Edmondson, A. C. (2012). *Teaming: How organizations learn, innovate, and compete in the knowledge economy*. Jossey-Bass.

Frisbee, K. L., & Sousa, R. (2022). Successful operational integration of healthcare analytics at Seattle Children's. *Learning Health Systems*, *7*(2), e10331. https://doi.org/10.1002/lrh2.10331

Furnes Øyri, S., & Wiig, S. (2022). Linking resilience and regulation across system levels in healthcare – A multilevel study. *BMC Health Services Research*, *22*, Article 510. https://doi.org/10.1186/s12913-022-07848-z

Greenhalgh, T., Wherton, J., Papoutsi, C., Lynch, J., Hughes, G., A'Court, C., Hinder, S., Fahy, N., Procter, R., & Shaw, S. (2017). Beyond adoption: A new framework for theorizing and evaluating nonadoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies. *Journal of Medical Internet Research*, *19*(11), e367. https://doi.org/10.2196/jmir.8775

Greenhalgh, T., Wherton, J., Papoutsi, C., Lynch, J., Hughes, G., A'Court, C., Hinder, S., Fahy, N., Procter, R., & Shaw, S. (2022). Beyond adoption: A new framework for theorizing and evaluating nonadoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies. *Journal of Medical Internet Research*, *24*(10), e38359. https://doi.org/10.2196/38359

Ivankovic, D., Garel, P., Klazinga, N., & Kringos, D. (2023). Data-driven collaboration between hospitals and other healthcare organisations during the COVID-19 pandemic. *International Journal of Integrated Care*, *23*(2), Article 28. https://doi.org/10.5334/ijic.6990

Kaplan, H. C., Provost, L. P., Froehle, C. M., & Margolis, P. A. (2010). The model for understanding success in quality (MUSIQ). *BMJ Quality & Safety*, *21*(1), 13–20. https://doi.org/10.1136/bmjqsh-2011-000215

Manser, T. (2009). Teamwork and patient safety in dynamic domains of healthcare: A review of the literature. *Acta Anaesthesiologica Scandinavica*, *53*(2), 143–151. https://doi.org/10.1111/j.1399-6576.2008.01842x

Organisation for Economic Co-operation and Development. (2024). *Tourism trends and policy challenges 2024*. OECD Publishing. https://www.oecd.org

Olivencia, S. B., & Sasangohar, F. (2023). A sociotechnical framework for integration of telehealth into clinical workflow. *IISE Transactions on Healthcare Systems Engineering*, *13*(3), 248–259. https://doi.org/10.1080/24725579.2023.2211083

Porter, M. E., & Lee, T. H. (2013). The strategy that will fix healthcare. *Harvard Business Review*, *91*(10), 50–70.

Pronovost, P. J., Berenholtz, S. M., Goeschel, C. A., Thomadsen, B., Martinez, E. A., Holzmueller, C. G., ... & Maragakis, L. L. (2006). Creating high reliability in healthcare organizations. *Health Services Research*, *41*(4), 1599–1617. https://doi.org/10.1111/j.1475-6773.2006.00565.x

Sari, N., Omar, M., Pasinringi, S. A., Zulkifli, A., & Sidin, A. I. (2023). Developing hospital resilience domains in facing disruption era in Indonesia: A qualitative study. *BMC Health Services Research*, *23*, Article 1395. https://doi.org/10.1186/s12913-023-10416-8

Schein, E. H. (2010). *Organizational culture and leadership* (4th ed.). Jossey-Bass.

Weick, K. E., & Sutcliffe, K. M. (2007). *Managing the unexpected: Resilient performance in an age of uncertainty* (2nd ed.). Jossey-Bass.

World Health Organization. (2016). *Framework on integrated people-centred health services*. https://www.who.int

World Health Organization. (2023). *Operational framework for primary health care: Transforming vision into action*. https://www.who.int