

Optimizing Operational Workflow in the General Ward of a Level 2 Private Hospital in Arayat Pampanga: Strategies for Enhancing Quality Patient Care

Wendy H. Luriz^{1*} and Erwin M. Faller^{1,2}

¹Graduate Studies Department, St. Bernadette of Lourdes College, Quezon City, Philippines

*hernandezcandy28@gmail.com, ²erwinfaller1007@gmail.com

Date Submitted:

March 24, 2026

Date Accepted:

May 13, 2026

Date Published:

July 20, 2026

DOI:

10.5281/zenodo.21459850

ABSTRACT

This qualitative study explored operational workflow in the general ward of a Level 2 private hospital in Arayat, Pampanga, to identify workflow challenges, examine strategies for optimization, and understand healthcare professionals' perceptions of existing quality improvement frameworks. A descriptive qualitative design was used. Eleven healthcare professionals directly involved in general-ward care and operations were selected through purposive sampling. Data were gathered through semi-structured interviews lasting approximately 15–30 minutes, supported by field notes and member checking. The interview transcripts were examined using Braun and Clarke's six-phase thematic analysis. Three major themes emerged. First, workflow challenges included communication gaps during endorsements, workload imbalance, staffing shortages, clinical and

interdepartmental delays, documentation burden, admission and discharge delays, patient decision challenges, and resource and facility limitations. Second, participants identified adequate staffing, health information technology, interdepartmental collaboration, standardized communication, task and time management, workflow adaptation, and patient-flow management as strategies for optimization. Third, participants viewed hospital policies, staff training, workflow standardization, and quality initiatives as valuable, but noted inconsistent implementation, infection-control constraints, medication unavailability, and financial barriers. The study concluded that operational workflow was shaped by interconnected structural and process factors that influenced efficiency, continuity, and quality patient care. Strengthening staffing, communication, digital documentation, coordination, training, monitoring, and resource support may improve general-ward operations and patient-care delivery.

Keywords: *general ward, healthcare workflow, operational efficiency, quality improvement, quality patient care, workflow optimization*

INTRODUCTION

Operational workflow determines how effectively hospital personnel transform available staff, information, time, facilities, and clinical resources into safe and timely patient care. In a general ward, care depends on connected activities that include admission, assessment, medication administration, monitoring, documentation, referrals, diagnostic coordination, patient education, and discharge. When these processes are not synchronized, delays and duplication can increase staff burden and reduce the time available for direct care. Lean healthcare literature has therefore emphasized the importance of examining real work processes, removing non-value-adding steps, and protecting activities that directly contribute to patient outcomes (Mazzocato et al., 2010; Toussaint & Berry, 2013).

Communication and staffing are particularly important in ward operations. Incomplete handovers can interrupt continuity of care and create uncertainty regarding treatment plans, while inadequate staffing may force

personnel to manage competing clinical and administrative demands. Reviews of intrahospital handoffs have linked communication failures with delayed or incomplete information transfer (Ong & Coiera, 2011). Likewise, evidence on hospital nursing has shown that high workload and insufficient staffing are associated with burnout and poorer patient outcomes (Aiken et al., 2014). Teamwork, shared situational awareness, and clear role coordination are therefore essential in dynamic healthcare environments (Manser, 2009).

Workflow difficulties are rarely isolated. A delay in physician orders may affect medication administration; delayed laboratory or pharmacy responses may extend treatment; documentation requirements may postpone bedside tasks; and billing, room preparation, or family decisions may slow admission and discharge. Systems thinking explains these effects by viewing the hospital as an interdependent network in which changes in one unit influence the performance of other units (Bertalanffy, 1968; Checkland, 1999). The structure-process-outcome perspective similarly links staffing, facilities, and organizational systems with care processes and eventual quality outcomes (Donabedian, 1988).

Although workflow optimization is widely discussed in large and highly specialized hospitals, fewer studies have examined the everyday experiences of healthcare professionals in the general ward of a Level 2 private hospital. Smaller facilities may face distinct limitations in staffing, technology, specialized services, medication supply, and financial support. Understanding how personnel experience these conditions is necessary because locally workable solutions may differ from those used in tertiary institutions. The participants' perspectives can clarify where bottlenecks occur, how staff adapt, and which quality-improvement mechanisms are perceived as useful or difficult to implement.

Accordingly, this study explored and analyzed operational workflow in the general ward of a Level 2 private hospital in Arayat, Pampanga. It sought to identify workflow challenges experienced by healthcare professionals, describe the strategies they used or recommended to improve efficiency and quality patient care, and examine their perceptions of existing quality improvement frameworks. The findings were intended to support practical decisions on staffing, communication, documentation, coordination, patient flow, training, and organizational monitoring.

Literature Review

Workflow Challenges in General-Ward Operations

General-ward workflow depends on accurate communication, appropriate staffing, and coordinated clinical action. Handover failures may result in missing or unclear patient information and can delay decisions by the receiving shift (Ong & Coiera, 2011). In complex clinical environments, teamwork and communication support shared understanding and help personnel respond to changing patient conditions (Manser, 2009). Workload intensifies when the number or complexity of patients exceeds available staff, and international evidence has linked inadequate nurse staffing with poorer clinical outcomes (Aiken et al., 2014).

Administrative and interdepartmental processes also shape the amount of time available for care. Repetitive documentation, unclear responsibilities, and poorly sequenced tasks represent forms of operational waste that can lengthen patient waiting and increase staff frustration. Lean studies in healthcare have shown that workflow improvement requires direct examination of how work is performed rather than reliance on policies alone (Mazzocato et al., 2010). At the same time, improvement programs can encounter resistance when they are treated as technical projects without sufficient attention to professional practice, organizational culture, and staff participation (Waring & Bishop, 2010).

Admission, discharge, diagnostic coordination, medication access, patient decisions, and resource limitations are connected rather than separate concerns. Systems Theory suggests that a bottleneck in one department can propagate across the hospital because units exchange information, patients, supplies, and decisions (Bertalanffy, 1968; Checkland, 1999). This perspective is especially relevant to smaller hospitals, where limited redundancy means that delayed services or unavailable resources may have immediate effects on ward efficiency and continuity of care.

Strategies for Workflow Optimization

Workforce planning and task organization are central strategies for workflow optimization. Adequate staffing allows clinical responsibilities to be distributed more safely, while task prioritization and time management help personnel respond first to urgent needs and coordinate routine duties. Nursing management literature emphasizes clear delegation, scheduling, communication, and supervision as essential to maintaining safe and efficient operations (Marquis & Huston, 2017). These strategies are strengthened when teams support one another and adapt assignments during high patient volume or staff absence.

Process redesign and health information technology can reduce avoidable steps and improve access to patient information. Workflow Management Theory proposes simplifying processes, automating appropriate tasks, and measuring performance so that work is organized around desired outcomes (Hammer & Champy, 1993). Lean thinking similarly encourages staff to identify delays, duplication, unnecessary movement, and information gaps, then test practical changes that improve flow (Womack & Jones, 1996; Toussaint & Berry, 2013). Electronic documentation, standardized endorsement formats, and clearly defined interdepartmental channels may therefore improve both speed and reliability.

Patient-flow management requires coordination from admission through discharge. Early planning, timely physician decisions, pharmacy and diagnostic coordination, and clear communication with patients and families can reduce congestion and prevent avoidable waiting. However, Lean initiatives may not achieve sustained gains when they are implemented as isolated tools rather than embedded in organizational learning and staff engagement (Radnor et al., 2012). Workflow optimization consequently requires a combination of adequate resources, shared accountability, teamwork, technology, and continuous review.

Quality Improvement Frameworks and Theoretical Integration

Lean Healthcare Theory provides a process-oriented foundation for reducing delay and improving the value of care. Its principles include identifying waste, standardizing effective work, and pursuing continuous improvement through staff participation (Womack & Jones, 1996). Applied carefully, Lean can help hospitals shorten waiting, simplify documentation, clarify responsibilities, and improve patient flow; however, improvement must remain aligned with clinical judgment and patient needs rather than efficiency alone (Toussaint & Berry, 2013; Waring & Bishop, 2010).

Systems Theory and Donabedian's model complement this process perspective. Systems Theory emphasizes interconnectedness, feedback, and adaptation, explaining why staffing, pharmacy, laboratory, billing, and ward processes must be improved together (Bertalanffy, 1968; Meadows, 2008). Donabedian's framework organizes quality into structure, process, and outcome: staffing, facilities, and technology constitute structure; communication and clinical workflow constitute process; and safety, timeliness, continuity, and quality patient care constitute outcomes (Donabedian, 1988).

Quality frameworks depend on consistent implementation. Policies and standardized protocols require monitoring, reinforcement, and staff participation. Continuing education can improve professional practice when activities are relevant, interactive, and linked with implementation support (Forsetlund et al., 2009). Infection prevention also depends on adequate systems, supplies, training, surveillance, and leadership commitment (World Health Organization, 2022). These perspectives guided the study's examination of workflow challenges, optimization strategies, and staff perceptions of quality-improvement practices.

METHODS

Research Design

The study employed a descriptive qualitative research design to provide a clear account of healthcare professionals' experiences and perceptions of operational workflow in the general ward. Qualitative description was appropriate because the study focused on the practical characteristics of current ward processes, challenges, and improvement strategies without attempting to develop a formal theory or quantify causal effects (Sandelowski, 2000; Lambert & Lambert, 2012). The design enabled participants to describe routine work and organizational conditions in their own terms.

Research Locale

The study was conducted in the general ward of a Level 2 private hospital in Arayat, Pampanga. The ward was selected because it was a central inpatient unit in which personnel managed multiple patients and coordinated admission, assessment, treatment, monitoring, documentation, diagnostic services, medication, and discharge. The setting provided direct exposure to the operational processes examined in the study.

Participants and Sampling Technique

Eleven healthcare professionals who were directly involved in patient care and general-ward operations participated in the study. The group included charge nurses, staff nurses, nursing assistants, a ward clerk, a nurse supervisor, and an institutional worker, with experience ranging from two to 18 years. Participants were selected through purposive sampling because they possessed firsthand knowledge of the workflow under investigation (Etikan et al., 2016; Palinkas et al., 2015). Eligible participants were full-time personnel with at least one year of experience and direct involvement in ward care, operations, or workflow coordination. Newly hired staff, personnel assigned outside the general ward, staff without direct workflow involvement, and individuals who declined consent were excluded.

Table 1. *Profile of the Study Participants*

Participant Code	Position/Profession	Years of Experience	Primary Role
Nurse 1	Charge nurse	14	Ward supervision
Nurse 2	Staff nurse	2	Patient care
Nurse 3	Staff nurse	3	Medication administration
Nurse 4	Staff nurse	2	Patient monitoring
Nurse 5	Charge nurse	8	Patient documentation
Nurse 6	Staff nurse	10	Assistance to the healthcare team
Staff 1	Nursing assistant	9	Patient support
Staff 2	Nursing assistant	2	Monitoring vital signs
Staff 3	Ward clerk	10	Admission and records
Nurse Supervisor	Ward supervisor	15	Workflow coordination
Staff 4	Institutional worker	18	Environmental services

Research Instrument

A semi-structured interview guide served as the primary instrument. It contained a grand-tour question and probing questions addressing three areas: workflow challenges in the general ward, strategies for improving workflow efficiency and patient care, and perceptions of quality improvement frameworks. The guiding question asked participants to describe their usual tasks and responsibilities in the ward, after which follow-up questions clarified specific experiences. The guide was reviewed for clarity, relevance, and alignment with the objectives before administration.

Data Gathering Procedure

After securing institutional ethics approval and permission from the hospital, the researcher identified eligible participants according to the inclusion criteria and obtained written informed consent. Interviews were conducted in a quiet and private area within the hospital to minimize interruptions and protect confidentiality. Each session lasted approximately 15–30 minutes. With permission, interviews were audio-recorded, and field notes documented relevant observations and nonverbal cues. Recordings were transcribed and anonymized. Member checking was conducted when clarification or confirmation of summarized responses was needed.

Data Analysis

The interview data were examined through thematic analysis following Braun and Clarke's (2006) six-phase framework. The researcher transcribed the interviews, repeatedly read the transcripts and field notes, generated initial codes, grouped related codes into candidate themes, reviewed the themes against the data, defined and named each theme, and interpreted the findings in relation to the study objectives and theoretical foundations. The analysis emphasized recurring patterns while preserving representative participant statements.

Ethical Consideration

Participation was voluntary, and each participant received information about the study's purpose, procedures, possible inconvenience, benefits, confidentiality protections, and right to withdraw without penalty. Codes replaced personal names in transcripts and reports. Audio files, transcripts, and field notes were stored in password-protected files accessible only to the researcher, while printed materials were secured. Interviews were scheduled to avoid disrupting patient care, and the study followed principles of informed consent, privacy, non-maleficence, and responsible data disposal.

RESULTS AND DISCUSSION

Theme 1: Workflow Challenges in the General Ward

The first theme captured barriers that interrupted or slowed the delivery of care. Participants described communication gaps during endorsements, uneven workload, staffing shortages, clinical and interdepartmental delays, documentation burden, admission and discharge delays, patient decision challenges, and resource or facility limitations. These concerns were interrelated: missing information could delay action, inadequate staffing intensified documentation pressure, and delays outside the ward affected treatment and patient flow.

Table 2. *Workflow Challenges Identified by the Participants*

Subtheme	Manifestation in the Ward	Representative Participant Evidence
Communication gaps	Important updates were sometimes missed or unclear during endorsement and handover.	"Sometimes during endorsement, important updates are missed which cause delays in treatment." (Nurse 1)
Workload imbalance and staffing shortage	Available personnel managed many patients and additional duties, particularly during busy and night shifts.	"During busy shifts, the workload becomes overwhelming because the number of patients is higher than the available staff." (Nurse 4)
Clinical and interdepartmental delays	Delayed physician orders, laboratory or X-ray results, and pharmacy responses slowed treatment.	"There are times when laboratory, X-ray results or pharmacy response takes time which slows the workflow in the ward." (Nurse 6)
Administrative burden	Paper-based documentation consumed time that could have been used for direct patient care.	"Paperwork's and charting take a significant amount of time during the shift." (Nurse 5)
Admission, discharge, and patient decisions	Room preparation, billing clearance, final orders, financial concerns, and treatment refusal affected patient flow.	"Sometimes patients wait because rooms are not yet prepared. Discharge is delayed due to billing clearance and doctors' final diagnosis." (Staff 3)
Resource and facility limitations	Some patient conditions required equipment or specialized services beyond the hospital's available capacity.	"There are situations where the ward receives admissions involving conditions that exceed the hospital facilities or resources." (Nurse 5)

The findings show that communication was a foundational workflow issue. Endorsements serve as a transfer point between shifts, so missing or rushed information can affect subsequent decisions and continuity. This observation is consistent with the documented risks associated with incomplete intrahospital handoffs (Ong & Coiera, 2011). It also supports Manser's (2009) argument that teamwork and shared situational awareness are essential in dynamic healthcare settings.

Workload imbalance and staffing shortages magnified other problems. When fewer personnel covered a larger number of patients, staff had less time for documentation, monitoring, communication, and direct care. This pattern is consistent with evidence linking inadequate nurse staffing with poorer outcomes and workforce strain

(Aiken et al., 2014). The participants' narratives further indicate that staffing should be considered together with patient volume, shift conditions, and distribution of responsibilities.

Clinical, diagnostic, pharmacy, admission, discharge, and billing delays demonstrated the systemic nature of ward workflow. The ward depended on multiple departments and decisions, and delays outside the unit became delays in patient care. From a systems perspective, these bottlenecks reflect interdependence among hospital components (Checkland, 1999; Meadows, 2008). Resource limitations and patient decisions added further complexity, requiring staff to coordinate alternatives while respecting patient autonomy and institutional capacity.

Theme 2: Strategies for Workflow Optimization

The second theme reflected strategies that participants used or recommended to maintain efficient care despite operational constraints. They emphasized adequate staffing, health information technology, interdepartmental collaboration, standardized communication, task and time management, workflow adaptation, teamwork, and patient-flow management. These strategies addressed both structural needs and daily work practices.

Table 3. *Strategies for Optimizing General-Ward Workflow*

Strategy	Expected Workflow Contribution	Representative Participant Evidence
Adequate staffing	Reduced workload pressure and improved attention to patient needs.	"If there are enough nurses assigned during the shift, the workload becomes lighter and we can attend to patients more efficiently." (Nurse 4)
Health information technology	Faster documentation and easier access to patient information.	"Electronic documentation could make charting faster." (Nurse 1)
Interdepartmental collaboration	Fewer delays in laboratory, pharmacy, diagnostic, and treatment processes.	"Good coordination between the ward, laboratory, and pharmacy helps avoid delays in patient treatment." (Nurse 5)
Improved communication systems	Clearer and more complete transfer of patient information during handovers.	"A standardized endorsement format would help nurses communicate patient updates more clearly." (Nurse 3)
Task and time management	Prioritization of urgent care and organized completion of medication, monitoring, and documentation tasks.	"Nurses organize their tasks at the beginning of their shift including medication rounds, monitoring and documentation." (Nurse 2)
Workflow adaptation and patient-flow management	Flexible assignments, teamwork, early discharge planning, and better bed use during changing demand.	"During high patient volume or staff shortage, the nursing staff adjust patient assignments and support one another." (Nurse 1)

Adequate staffing was the most direct structural recommendation because it influenced workload distribution and the time available for care. Nevertheless, staffing alone would not resolve every bottleneck. Participants also relied on prioritization, scheduling, flexible task allocation, and teamwork. These practices are consistent with nursing management principles that emphasize delegation, coordination, and adaptive leadership (Marquis & Huston, 2017).

Digital documentation and standardized endorsements were viewed as practical ways to improve information flow. These strategies correspond with process-redesign approaches that remove repetitive steps, reduce ambiguity, and organize work around patient needs (Hammer & Champy, 1993). Lean thinking similarly supports the careful redesign of processes that generate delay or duplication (Mazzocato et al., 2010; Womack & Jones, 1996). Implementation would, however, require training, technical support, reliable infrastructure, and staff participation.

Interdepartmental collaboration and patient-flow management extended improvement beyond the ward. Early discharge planning, timely diagnostic and pharmacy coordination, and flexible response during high patient

volume could reduce congestion and avoid unnecessary waiting. The findings support the view that sustainable workflow improvement requires organization-wide learning rather than isolated tools (Radnor et al., 2012).

Theme 3: Perceptions of Existing Quality Improvement Frameworks

The third theme concerned how participants viewed the policies, training activities, standard procedures, and quality initiatives used by the hospital. Participants generally recognized their value but reported that workload, limited monitoring, staffing constraints, medication supply, infection-control demands, and financial barriers sometimes weakened implementation.

Table 4. *Perceptions of Quality Improvement Frameworks and Implementation Conditions*

Subtheme	Participant Perception	Representative Participant Evidence
Policy implementation	Policies guided practice but were not always followed consistently under workload pressure.	"Policies are available but sometimes not strictly followed due to workload." (Nurse 1)
Staff training	Regular training and meetings were seen as necessary for coordination and updated practice.	"Regular training and meetings can improve coordination among healthcare professionals." (Nurse Supervisor)
Workflow standardization	Clear guides helped personnel, particularly newer staff, follow correct procedures.	"Having a clear workflow guide in the ward can help new staff follow the correct procedures." (Nurse 5)
Monitoring of quality initiatives	Programs were considered useful for reducing errors but required continuous monitoring.	"Quality improvement programs help reduce errors but need better monitoring." (Nurse Supervisor)
Infection control and medication availability	Limited staff and unavailable medicines complicated compliance and timely treatment.	"There are instances when prescribed medicines are not immediately available in the hospital pharmacy." (Nurse 4)
Financial barriers	Billing limits and family financial concerns sometimes delayed treatment decisions and medication administration.	"Financial concerns sometimes affect the decisions of patients regarding their treatment." (Staff 1)

The participants distinguished between the existence of a framework and its consistent use. Policies, protocols, and quality programs provided direction, but adherence could weaken when staff were overloaded or monitoring was limited. This finding aligns with critiques showing that improvement initiatives can lose effectiveness when organizational conditions and professional engagement are not adequately addressed (Waring & Bishop, 2010).

Training and workflow standardization were viewed as mechanisms for translating policy into practice. Continuing education can support professional performance, particularly when it is interactive and connected with real implementation needs (Forsetlund et al., 2009). Standard guides may also reduce variation in endorsements, documentation, infection control, and patient-flow processes. However, standardization should remain flexible enough to accommodate clinical judgment and changing patient conditions.

Infection-control constraints, medication shortages, and financial barriers demonstrated that quality improvement also depends on structural support. Infection prevention requires adequate staffing, supplies, training, and monitoring (World Health Organization, 2022). Medication and financial systems similarly influence whether planned care can be delivered without interruption. Donabedian's (1988) model helps explain these relationships: structural limitations affect care processes, which then shape timeliness, safety, continuity, and quality patient care.

CONCLUSION

The study concluded that operational workflow in the general ward was shaped by multiple interconnected structural and process conditions. Communication gaps, workload imbalance, staffing shortages, clinical and interdepartmental delays, documentation burden, admission and discharge constraints, patient decisions, and

resource limitations affected the efficiency and continuity of care. Because these conditions interacted, isolated corrections were unlikely to produce sustained improvement.

Healthcare professionals identified adequate staffing, digital documentation, standardized communication, interdepartmental collaboration, task and time management, teamwork, workflow adaptation, and early patient-flow planning as practical strategies. Existing quality improvement frameworks were perceived as valuable, but their effectiveness depended on consistent implementation, monitoring, training, staffing, supplies, and organizational support. The study contributes a context-specific understanding of how general-ward personnel in a Level 2 private hospital experience workflow and how improvement efforts may be aligned with quality patient care.

Recommendation

Hospital administrators should review staffing allocation according to patient volume, shift demands, and complexity of care, while strengthening contingency plans for absences and peak periods. A standardized endorsement process should be adopted and monitored to ensure complete transfer of essential patient information. The hospital should also assess the feasibility of electronic documentation and integrated information systems that reduce repetitive charting and improve access to clinical data.

Interdepartmental service standards should clarify expected response times and escalation pathways for physician orders, laboratory and diagnostic results, pharmacy requests, billing concerns, room preparation, and discharge clearance. Early discharge planning and coordinated patient education may improve bed use and reduce avoidable delays. Medication inventory, infection-control supplies, equipment availability, and referral arrangements should be reviewed regularly to address resource limitations.

Continuous training, workflow drills, audits, and feedback sessions should be used to reinforce policies and standard procedures. Quality improvement activities should involve frontline staff so that proposed changes reflect actual work conditions. Future studies may include patient perspectives, examine other hospital departments, compare facilities with different service levels, or evaluate the effect of specific workflow interventions over time.

References

- Aiken, L. H., Sloane, D. M., Bruyneel, L., Van den Heede, K., Griffiths, P., Busse, R., Diomidous, M., Kinnunen, J., Kózka, M., Lesaffre, E., McHugh, M. D., Moreno-Casbas, M. T., Rafferty, A. M., Schwendimann, R., Scott, P. A., Tishelman, C., van Achterberg, T., & Sermeus, W. (2014). Nurse staffing and education and hospital mortality in nine European countries: A retrospective observational study. *The Lancet*, 383(9931), 1824–1830.
[https://doi.org/10.1016/S0140-6736\(13\)62631-8](https://doi.org/10.1016/S0140-6736(13)62631-8)
- Bertalanffy, L. von. (1968). *General system theory: Foundations, development, applications*. George Braziller.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
<https://doi.org/10.1191/1478088706qp063oa>
- Checkland, P. (1999). *Systems thinking, systems practice: Includes a 30-year retrospective*. Wiley.
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.
- Donabedian, A. (1988). The quality of care: How can it be assessed? *JAMA*, 260(12), 1743–1748.
<https://doi.org/10.1001/jama.1988.03410120089033>
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Forsetlund, L., Bjørndal, A., Rashidian, A., Jamtvedt, G., O'Brien, M. A., Wolf, F., Davis, D., Odgaard-Jensen, J., & Oxman, A. D. (2009). Continuing education meetings and workshops: Effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews*, (2), CD003030.
<https://doi.org/10.1002/14651858.CD003030.pub2>
- Hammer, M., & Champy, J. (1993). *Reengineering the corporation: A manifesto for business revolution*. HarperBusiness.
- Lambert, V. A., & Lambert, C. E. (2012). Qualitative descriptive research: An acceptable design. *Pacific Rim International Journal of Nursing Research*, 16(4), 255–256.

- 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.1399-6576.2008.01717.x>
- Marquis, B. L., & Huston, C. J. (2017). *Leadership roles and management functions in nursing: Theory and application* (9th ed.). Wolters Kluwer.
- Mazzocato, P., Savage, C., Brommels, M., Aronsson, H., & Thor, J. (2010). Lean thinking in healthcare: A realist review of the literature. *Quality & Safety in Health Care*, 19(5), 376–382. <https://doi.org/10.1136/qshc.2009.037986>
- Meadows, D. H. (2008). *Thinking in systems: A primer*. Chelsea Green Publishing.
- Ong, M.-S., & Coiera, E. (2011). A systematic review of failures in handoff communication during intrahospital transfers. *Joint Commission Journal on Quality and Patient Safety*, 37(6), 274–284. [https://doi.org/10.1016/S1553-7250\(11\)37035-3](https://doi.org/10.1016/S1553-7250(11)37035-3)
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>
- Radnor, Z. J., Holweg, M., & Waring, J. (2012). Lean in healthcare: The unfilled promise? *Social Science & Medicine*, 74(3), 364–371. <https://doi.org/10.1016/j.socscimed.2011.02.011>
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health*, 23(4), 334–340. [https://doi.org/10.1002/1098-240X\(200008\)23:4<334::AID-NUR9>3.0.CO;2-G](https://doi.org/10.1002/1098-240X(200008)23:4<334::AID-NUR9>3.0.CO;2-G)
- Toussaint, J. S., & Berry, L. L. (2013). The promise of Lean in health care. *Mayo Clinic Proceedings*, 88(1), 74–82. <https://doi.org/10.1016/j.mayocp.2012.07.025>
- Waring, J. J., & Bishop, S. (2010). Lean healthcare: Rhetoric, ritual and resistance. *Social Science & Medicine*, 71(7), 1332–1340. <https://doi.org/10.1016/j.socscimed.2010.06.028>
- World Health Organization. (2022). *Global report on infection prevention and control*. World Health Organization.
- Womack, J. P., & Jones, D. T. (1996). *Lean thinking: Banish waste and create wealth in your corporation*. Simon & Schuster.