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# Filling the Knowledge Gap for Nurse Leaders:

## *Next Steps Following COVID-19*



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The purpose of this article is to share gaps in knowledge and research related to pandemic management identified by nurse leaders during the COVID-19 pandemic. As part of a larger Delphi study, nurse leaders responded to an open-ended question about gaps in research they saw as important following the pandemic. Responses were analyzed using directed content analysis. Results are presented as 4 supercategories: Organizational leadership preparedness, adaptive leadership in crisis, innovations in care delivery, and health, well-being, and resilience.

**A**s documented in the Future of Nursing 2020-2030 report, the COVID-19 pandemic thoroughly tested the capabilities and capacities of every aspect of the health care delivery system, including supply chains, communication channels, information systems, physical infrastructure, organizations, leaders, and staff.<sup>1-5</sup> Nurse leaders faced the challenge of leading their teams and organizations through a time of rapid change and great uncertainty.<sup>6-8</sup> Their task's complexity was magnified by the scope, intensity, and duration of the pandemic, compounded by scarce resources.<sup>9,10</sup> Nurse leaders' central role in the COVID-19 response has

given them a unique perspective regarding weaknesses in the health care delivery system that require strengthening.<sup>11,12</sup>

The unprecedented nature of the pandemic uncovered a limited body of evidence to guide nursing leadership practice.<sup>13</sup> Nurse leaders and their teams created innovative solutions, many yet to be documented in the literature. Pausing to reflect and learn from nurse leaders' collective experiences during this pandemic is essential, not only to work through the current crises and better prepare for future pandemics/disasters, but also to improve daily operations in an increasingly complex, dynamic health care environment.<sup>12,14,15</sup>

While a national 3-phase Delphi survey was conducted to identify and prioritize the nursing administration and leadership science research priorities, the COVID-19 pandemic disrupted the planned data collection, creating an opportunity to add an additional question asking leaders to identify areas of research related to the pandemic they felt should be explored.<sup>13</sup> The purpose of this paper is to share nurse leaders' thoughts on newly identified knowledge and/or research gaps as a result of the COVID-19 pandemic. In prioritizing post-pandemic research needs, nurse leader engagement is imperative to ensure the findings address real issues, and offer practical solutions grounded in the realities of leadership practice. By drawing on nurse leaders' perspectives to identify post-pandemic research priorities, this paper helps

### KEY POINTS

- **It is crucial to identify gaps in knowledge and research related to the COVID-19 pandemic to facilitate the development of future leadership solutions.**
- **Nurse leaders identified 4 gaps in research: organizational leadership preparedness, adaptive leadership, innovations in care delivery; and health, well-being, and resiliency.**
- **These findings provide guidance for future practice/academic collaborative research opportunities in pandemic/disaster management.**

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chart a path by which nurse leaders and researchers can work hand-in-hand to build nursing administration and leadership science.

## SAMPLING AND METHODS

As part of a larger Delphi study, nurse leaders from the Association for Leadership Science in Nursing (ALSN) (n = 47), the American Organization for Nursing Leadership (AONL) (n = 107), and a panel of national experts (n = 21) participated in a survey reported in previous publications.<sup>16</sup> The AONL sample included AONL members registered for the AONL conference; the ALSN sample included ALSN members registered for the ALSN conference; and the national expert sample included national leaders in nursing administration and leadership selected to participate based on their expertise, diverse practice settings, and roles. Between the planned survey data collection from ALSN members (November, 2019) and AONL members (scheduled for March 2020, postponed and collected in August 2020), the COVID-19 pandemic occurred, providing the opportunity to add an additional open-ended question to the survey regarding the pandemic. Thus, the AONL respondents and national experts responded to the additional open-ended question: “Are there any new areas of research related to nursing leadership and administration that you believe should be explored following the COVID-19 pandemic?”

Four members of the research team analyzed the respondents’ responses using directed content analysis.<sup>17,18</sup> Initially, 3 researchers independently reviewed the data. Each proposed an initial set of themes, using participant quotes to validate their interpretations. These themes were reviewed for concordance then grouped them into supercategories. Then the fourth researcher participated to ensure concordance in light of the respondents’ responses. Finally, revisions to the themes and supercategories were made. Supportive quotes were aligned to respective supercategories until the researchers reached consensus that the findings were firmly grounded in the data.

## RESULTS

Four supercategories emerged from the analysis: organizational leadership preparedness, adaptive leadership in crisis, innovations in care delivery, and health, well-being, and resiliency. For this study, organizational leadership preparedness is defined as the ability of the leaders to anticipate and prepare their organizations and teams to lead in a crisis. Heifetz<sup>19</sup> (1994) defines adaptive leadership as the leader’s ability to “mobilize, organize, and motivate” teams to tackle insurmountable situations. Adaptive leadership is about being flexible and knowing when to pivot in challenging circumstances. Innovation in care delivery is focused on new or adaptive models of care that can

be executed by the health care team during a crisis. Health, well-being, and resiliency describes healthful practices that support, enhance, and care for the physical, emotional, and the mental health of nurses who work at the frontline (*Table 1*).

### Organizational Leadership Preparedness

Organizational preparedness was the first supercategory. The respondents expressed an overall lack of preparation for this pandemic including topics such as resiliency, trust, leader visibility, the role of the leader in disaster planning, and strategies for leading in crisis. From an organizational perspective, one respondent asked this question: “How do we better prepare and collaborate with our colleagues across the continuum to better manage our patients in all locations?” Reflecting on frontline staff, respondents offered this thoughtful question: “What should the role of direct care nurses be in oversight, decision-making related to supply chain, particularly that which directly impact nursing practices and patient care?” Respondents also discussed the need for policy development and the need for leaders’ “voices” in influencing these policies and asked, “What is the role of senior nursing leadership in serving as incident commander during a pandemic?” Lastly, respondents saw the need for future research related to the role of senior nursing leadership in restoring trust in the health care setting after COVID-19 surges.

### Adaptive Leadership in Crisis

Future research around adaptive leadership in crisis was identified as a second super category expressed in the questions “How do we lead in the midst of crisis?” and “How [can we] be proactive during reactive times?” Respondents expressed the need to innovate and implement strategies to respond in a crisis, particularly a crisis that lasts over an extended period of time, like COVID-19. One respondent explained, “We need to know how nurse leaders pivot as needed during a crisis and [how to] drive decision-making.” Another respondent described the importance being visible saying, “We need to know the how and why of being present.” At the organizational level, respondents discussed the changing roles and responsibilities of nurse leaders during an emergency and believed more research is needed around nursing leadership roles in emergency preparedness stating, “More could be done to educate nursing leaders about their unique role and contributions in a disaster situation.”

### Innovations in Care Delivery

Innovations in care delivery was a supercategory and includes 3 main themes: care delivery models, inclusive of telemedicine, telehealth/virtual health, tele-intensive care units; innovative staffing models that could be deployed during a pandemic; and the upskilling of

**Table 1.** Findings

Supercategories	Exemplary Quotes
<i>Organizational leadership preparedness</i>	<ul style="list-style-type: none"><li>• "Leadership visibility."</li><li>• "Role of nurse leaders in disaster planning."</li><li>• "How to lead in the midst of chaos."</li><li>• "How to deal with resiliency, both with the bedside nurse and the nurse leader."</li><li>• "How to support staff fears and anxiety, and not cave to their fears."</li><li>• "How can we better prepare and collaborate with our colleagues across the continuum to better manage patients in all of our locations?"</li><li>• "Influence of nurse leader on PPE choices and availability."</li><li>• "What should the role of direct care nurses be in the oversight, decision-making related to supply chain, particularly that which directly impacts nursing practice/patient care?"</li><li>• "Role of senior nursing leadership in restoring trust in health care settings after COVID-19 surges."</li><li>• "Role of senior nursing leadership in serving as incident commander during a pandemic."</li></ul>
<i>Adaptive leadership in crisis</i>	<ul style="list-style-type: none"><li>• "Ability to innovate and implement strategies in response to crises."</li><li>• "How to lead in the midst of chaos."</li><li>• "Leading in disaster situations."</li><li>• "How nurse leaders pivot as needed during a crisis and drive decision-making."</li><li>• "Nursing leadership's role in emergency preparedness."</li><li>• "Varied leadership work schedules and/or visibility and impact on staff."</li><li>• "Nursing leadership's role in public health during a transmission."</li></ul>
<i>Innovations in care delivery</i>	<ul style="list-style-type: none"><li>• "Virtual care processes and outcomes."</li><li>• "Telemedicine and tele-ICU."</li><li>• "Telehealth/virtual health."</li><li>• "Staffing models during a pandemic."</li><li>• "Staffing to support needs of surge in COVID."</li><li>• "Rapid upskilling of nurses to work in other specialty areas."</li><li>• "Evaluation of innovative staffing models."</li><li>• "Researching various staffing models that allow hospitals to adjust during times of crisis would be beneficial."</li><li>• "I believe we need to revisit care delivery models and how to best utilize interdisciplinary teams to provide care and allow nurses to practice to the highest extent of their licensure."</li></ul>

(continued on next page)

**Table 1.** (continued)

Supercategories	Exemplary Quotes
<i>Health, well-being and resiliency</i>	<ul style="list-style-type: none"> <li>• “More information is needed on work and life balance for nurses and leadership.”</li> <li>• “Study the long-term effect of practicing in a COVID unit on nurse well-being.”</li> <li>• “Nurse leaders’ ability to lead when serving in an expanded role of mothering school-aged children who need virtual education.”</li> <li>• “Long-term physical health issues of nurses related to COVID.”</li> <li>• “How are hospital and leaders supporting the mental health of nurses who are scared?”</li> <li>• “How are hospital and leaders supporting the mental health of nurses who are managing their life roles (homeschooling their own kids)?”</li> <li>• “How are hospital and leaders supporting the mental health of nurses who are not feeling safe at work?”</li> <li>• “How are hospital and leaders supporting the mental health of nurses by creating a team atmosphere where nurses feel they can vent and talk to coworkers who know what they’re going through. It would be great to hear success stories about how facilities have managed these stressful situations and then replicate the strategies in research.”</li> <li>• “PTSD of workforce working with the COVID population.”</li> <li>• “Best practices for self-care and mental well-being.”</li> </ul>

*ICU, intensive care unit; PPE, personal protective equipment; PTSD, post-traumatic stress disorder.*

nurses to work in other specialty areas. As one respondent shared, “I believe we need to revisit care delivery models and how to best utilize interdisciplinary teams to provide care and allow nurses to practice to the highest extent of their licensure.” Respondents expressed the benefits of research exploring various staffing models to provide needed evidence for crisis staffing models. Moreover, study respondents expressed the need for new evidence to support nurse training and deployment from one specialty area to another.

### Health, Well-Being, and Resiliency

The need for research about the health, well-being, and resiliency of hospital staff and leadership emerged as the fourth supercategory. Respondents shared the need to “study the long-term effects (post-traumatic stress disorder) of practicing in a COVID-19 unit on nurse well-being, inclusive of physical and mental health.” It would be helpful to have “best practices for self-care and mental well-being,” said a study respondent. Another respondent suggested a

deeper understanding of the impact of COVID-19 on the “nurse leaders’ ability to lead when serving in an expanded role of mothering school-aged children who need virtual education.” Several respondents expressed a need for “more research on work-life balance of nurses and nurse leaders, mental health support of nurses in multiple life roles who don’t feel safe at work, and creation of a team environment that allows for venting and talking with coworkers who know what they are going through.” One respondent expressed the desire to “hear success stories about how facilities have managed these stressful situations and then replicate the strategies in research.”

### DISCUSSION

The unprecedented COVID-19 pandemic required that leaders make frequent decisions, often with no research evidence to support impactful decisions.<sup>1</sup> The findings reported here are important stepping-stones toward building a new body of nursing knowledge to guide nurse leaders in the future. All 4 of the supercategories provide insights into areas of research,

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identified by nurse leaders as important following the COVID-19 pandemic.

### **Organizational Leadership Preparedness**

Nurse leaders identified the need for more evidence related to organizational leadership preparedness. This finding aligns with previous work explaining that leadership structure and roles differ during crises, which presented a significant challenge for many organizations and leaders during a pandemic.<sup>2-4</sup> Research dedicated to designing effective crisis leadership structures, with roles for nurse leaders that best leverage their unique strengths and perspectives. This study also validates the call from Veenema et al.<sup>2</sup> for better disaster planning, and Lefebvre et al.<sup>12</sup> for considering models of collaboration across the continuum of care (e.g., public health, long-term care, primary care, acute care), that will address the type of capacity and continuity of care issues.

### **Adaptive Leadership in Crisis**

Nurse leaders noted the need for more research on adaptive leadership in crisis. Even under the “most ordinary” circumstances, the nurse leader role is dynamic and complex, exhausting the leader’s prior preparation.<sup>5</sup> Researchers and practitioners should promote research and engage in preplanning activities for pandemic situations.<sup>1,2</sup> Thus, future research should consider how leadership styles work in general as well as pandemic situations. For example, Pearson described transformational leadership in the context of pursuing Magnet® designation, which requires a cultural shift, alteration of key priorities, and completion of crucial tasks to accomplish the goal.<sup>20</sup> Although not a pandemic situation, Pearson’s work is instructive because it describes leadership in a situation with more complexity than that of ordinary circumstances.<sup>20</sup> Similarly, there may be opportunities to retrospectively explore innovations leaders and organizations adopted during the pandemic to identify what we can learn from their experiences.

### **Innovations in Care Delivery**

Nurse leaders articulated the need to study innovations in care delivery, including new care models, staffing models, and cross-training practices. Developing and testing a variety of care delivery options targeted toward pandemic circumstances aligns with decades-long interest in care delivery models. Additionally, critical examination of the long-term value of care delivery models that emerged because of the pandemic are necessary. Similar to Lefebvre et al., our findings indicate the need to study opportunities to build our health infrastructure for future crises, as well as resolve persistent issues pertaining to health care access.<sup>12</sup> Even though staffing has been studied extensively, the

pandemic still revealed gaps in what we know about strategies for responding to surging care demands within particular parts of the hospital.<sup>1</sup>

### **Health, Well-Being, and Resiliency**

Respondents recognized the need to study strategies for sustaining the physical health, mental health, general well-being, and resiliency of leaders and staff alike, particularly during crises. Although there has been a growing focus on studying these topics in recent years, the pandemic brought their importance to the forefront. Additional research is needed on the pandemic’s long-term effects on nurses, as well as on strategies developed during this time for sustaining nurses’ health, wellness, and resiliency.<sup>8</sup>

### **Future Research**

Our findings indicate the need for additional research in several areas. First, greater attention must be paid to building and expanding research related to organizational leadership preparedness. Although some research exists in this area, it was not sufficient to meet nurse leaders’ needs during the pandemic. Additionally, further research on adaptive leadership is necessary to guide nurse leaders in developing the skills and competencies needed during a pandemic. Research on innovations in care delivery could include incorporation of technology into care delivery, as well as adaptive methods for staffing and training. Finally, expanded research on health, well-being, and resiliency that focuses on providing immediate support and assistance at the frontline should be explored and tested.

### **CONCLUSIONS**

Nursing leaders need valid, reliable research they can readily translate into practice. These findings align with the 6 priorities reported in the Delphi study: nurses’ health, well-being, resiliency, and safety in the workplace; developing and managing a nursing workforce to meet current and future health care needs; healthy work and practice environments for direct care nurses; healthy work and practice environments for nurse leaders; quantification of nursing’s value across the health care delivery system; and nurse leader development and essential competencies.<sup>13</sup> Additionally, these findings align with the research priorities of disaster preparedness and public health emergency response, nursing workforce, and nurse well-being outlined in the 2020-2030 Future of Nursing report.<sup>1</sup> These findings help validate and expand upon an emerging body of literature regarding the challenges nurse leaders experienced during the COVID-19 pandemic. Even in the absence of another pandemic, nurse leaders need high-quality evidence to guide their work in a dynamic, complex health care environment. We propose that academic and practice leaders

consider these priority areas and work collaboratively to develop and test interventions related to organizational leadership preparedness, adaptive leadership in crisis, innovations in care delivery, and health, well-being, and resiliency.

## REFERENCES

1. Institute of Medicine. *The Future of Nursing 2020-2030: Charting a Path to Achieve Health Equity*. Washington, DC: National Academies Press; 2021.
2. Veenema TG, Griffin A, Gable AR, et al. Nurse as leaders in disaster preparedness and response: a call to action. *J Nurs Scholarsh*. 2016;48(2):187-200.
3. Veenema TG, Deruggiero K, Losinski S, Barnett D. Hospital administration and nursing leadership in disasters: an exploratory study using concept mapping. *Nurs Adm Q*. 2017;41(2):151-163.
4. Cariaso-Sugay J, Hultgren M, Browder BA, Chen JL. Nurse leaders' knowledge and confidence managing disasters in the acute setting. *Nurs Adm Q*. 2021;45(2):142-151.
5. Wahlster S, Sharma M, Lewis AK, et al. The coronavirus disease 2019 pandemic's effect on critical care resources and health care providers: a global survey. *Chest*. 2021;159(2):619-633.
6. Freysteinson WM, Celia T., Gilroy H, Gonzalez K. The experience of nursing leadership in a crisis: a hermeneutic phenomenological study [e-pub ahead of print]. *J Nurs Manag*. <https://doi.org/10.1111/jonm.13310>. Accessed May 18, 2021.
7. Losty LS, Bailey KD. Leading through chaos: perspectives from nurse executives. *Nurs Adm Q*. 2021;45(2):118-125.
8. Zhao F, Ahmed F, Faraz NA. Caring for the caregiver during COVID-19 outbreak: does inclusive leadership improve psychological safety and curb psychological distress? A cross sectional study. *Int J Nurs Stud*. 2020;110:103725.
9. Auerbach A, O'Leary KJ, Greysen SR, et al. Hospital ward adaptation during the COVID-19 pandemic: a national survey of academic medical centers. *J Hosp Med*. 2019;15(8):483-488.
10. Loh TP, Horvath AR, Wang C, et al. Operational considerations and challenges of biochemistry laboratories during the COVID-19 outbreak: an IFCC global survey. *Clin Chem Lab Med*. 2020;58(9):1441-1449.
11. Raso R, Fitzpatrick JJ, Masick K, Giordano-Mulligan M, Sweeney CD. Perceptions of authentic nurse leadership and work environment and the pandemic impact for nurse leaders and clinical nurses. *J Nurs Adm*. 2021;51(5):257-263.
12. Lefebvre N, Sharkey S, Virani T, Fu K, Brown M, Ackerman ML. Lessons on COVID-19 from home and community: perspectives on nursing leaders and all levels. *Nurs Leadersh (Tor Ont)*. 2020;33(4):51-61.
13. Chipps EM, Joseph ML, Alexander C, et al. Setting the research agenda for nursing administration and leadership science: a Delphi study. *J Nurs Adm*. 2021;51(9):430-438.
14. Montoya L, Jonathan T, Mitchell A, et al. Enhancing nursing capacity to provide patient care in a pandemic. *Nurs Leadersh (Tor Ont)*. 2020;33(4):35-44.
15. Stamps DC, Foley SM, Gales J, et al. Nurse leaders advocate for nurses across a health care system COVID-19. *Nurse Leader*. 2021;19(2):159-164.
16. Majers JS, Warshawsky N. Evidence-based decision making for nurse leaders. *Nurse Leader*. 2020;18(5):471-475.
17. Assaroudi A, Nabavi FH, Armat MR, Ebadi A, Vaismoradi M. Directed qualitative content analysis: the description and elaboration of its underpinning, methods, and data analysis procedures. *J Res Nurs*. 2018;15(8):42-55.
18. Hsieh H, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res*. 2005;15(9):1277-1288.
19. Heifetz RA. *Leadership Without Easy Answers*. Cambridge, MA: Harvard University Press; 1994. Cited by Northouse PG. *Leadership Theory and Practice, 7th ed*. Thousand Oaks, CA: Sage Publications; 2016.
20. Pearson M. Transformational leadership and tactics for the nurse executive to shift nursing culture. *J Nurs Adm*. 2020;50(3):142-151.

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