Open Peer Review on Qeios

Public Health Care Leadership Competencies Through the Lens of the COVID-19 Pandemic: A Review of What Matters in Managing Global Health Crisis

Simbarashe Mhaka

Funding: No specific funding was received for this work.

Potential competing interests: No potential competing interests to declare.

Abstract

The COVID-19 pandemic, although it caused a severe negative impact on health, economic, and environmental progress, underlined many gaps and opportunities, especially in health care leadership. Despite the challenging period faced during the pandemic, it was a test of leadership competencies possessed by health care leaders. As such, this article is a crisis post-mortem examination of effective leadership competencies designed to formulate crisis evidence-based traits using a scoping literature review method with a particular reference to the COVID-19 pandemic. Existing literature depicts that crisis leadership requires an amalgamation of six characteristic traits: communication, partnering/collaborations, emotional intelligence, teamwork, innovation, and accountability. Leadership can be taught and learned; as such, healthcare leaders should undergo continuous training and retraining to equip them with such skills that are mandatory during managing a crisis.

Simbarashe Mhaka[*]

[*]Email: smhaka78@gmail.com

Keywords: Health care leadership, Crisis leadership, COVID-19, Scoping literature review.

JEL Classification: M540, M53, I1.

1. Introduction

Global crises tend to be inescapable; however, the intensity of consequences varies across countries. The impact of these disasters is also dependent on the nature of leadership, skills, and competencies employed in managing a crisis. If not managed effectively, these natural disasters pose a threat to socio-economic, political, and environmental stability. Low-income countries suffer the most during and after a disaster, resulting in a longer recovery lag due to various factors,

including but not limited to poor leadership styles employed. To date, previous disasters have taken a toll on human lives, contributing to a high death rate in different countries. Ritchie, Rosado, and Roser (2022) confirm that natural disasters killed on average about 45,000 people per year globally (0.1% of total deaths) over the past decade. The most common global disasters that have resulted in massive deaths span from earthquakes, hurricanes, cyclones, pandemics, and wildfires. While countries are heading towards the ambitious 2030 goals, the occurrence of crises like the recent COVID-19 pandemic had a negative impact on the achievement of a better and more sustainable future for all.

The COVID-19 pandemic has been seen as the most dreadful crisis that has occurred over the past decade, globally. It has, however, demonstrated the interconnectedness of the global economy through the instant flow of information between countries. It has also stressed the importance of increasing economic links and international collaborations towards creating peace and prosperity for the people and the planet. The impact of the pandemic varied, with rising infections and deaths in many parts of the world. However, the occurrence was faced with several customised responses, while some countries lagged in terms of their response towards this pandemic because of poor policing and ineffective leadership skills (Nuzzo, Bell, Cameroon (2020), Colenda, Reynolds, Applegate, Sloane, Zimmerman, Newman, Meeks, and Ouslander (2020), Ouslander and Grabowski (2020)). The pandemic challenged everyone's thinking, leading to the development and adoption of new disease control strategies.

This global crisis evaluated and assessed the effectiveness of healthcare leadership across many countries. Just like Geerts, Kinnair, Taheri, Abraham, Ahn, Atun, Barberia, Best, Dandona, Dhahri, and Emilsson (2021) articulated, the COVID-19 pandemic became the greatest global test of health leadership of our generation. Although it was a challenging period, a lot of lessons were learned, specifically crisis leadership competencies. A combination of old and new leadership attributes was employed, as in some cases, it was a matter of life-or-death decisions in the health sector. Kalina (2020) also added that during these unprecedented times, traditional leadership styles and strategies taught at school did not address the ambiguity and rapid-fire changes but were augmented by new ways of leading. Tracie (2021) highlighted that although there were extreme challenges, healthcare leaders stepped up, innovated, and worked with healthcare, emergency management, supply chain, and other partners in unprecedented ways.

Health care leaders used various leadership models, theories, and traits, but not all were deemed to be successful for managing a crisis. A lot of researchers have published their work stipulating various lessons learned on health care leadership during a crisis. There is still a gap in the literature as they fail to examine effective crisis health care leadership competencies with specific reference to the recent COVID-19 pandemic. Therefore, this article provides a leadership post-mortem employing a scoping literature review to formulate effective evidence-based crisis leadership competency using the case of the COVID-19 pandemic.

The rest of this article is organised as follows: literature review, methodology, results discussion, and conclusion.

2. Literature Review

2.1. Effective Crisis Leadership Frameworks

In a health care crisis, effective leadership is essential in ensuring continuity of operations based on quality decision making. Kalina (2020) suggested that during times of tremendous volatility, healthcare leaders can help shape what the landscape will look like, rather than simply adapting to it. They can help their organization move forward beyond the task of just recovering and regaining the status quo. Various leadership frameworks were executed by health care leaders in the fight against the pandemic. In this section, we discuss Kotter's eight stages of leading change, the Fusion cell approach, and the LEADS framework.

2.1.1. Kotter's Eight Stages of Leading Change

According to Kotter (2007), to give your transformation effort the best chance of succeeding in novel situations, just like the recent COVID-19 pandemic, organizations must perform the following eight actions: establish a sense of urgency, form a powerful guiding coalition, create a vision, communicate the vision, empower others to act on the vision, plan for and create short-term wins, consolidate improvements and produce more change, and institutionalize new approaches.

The West Virginia University Hospitals and Health System (WVUHS) has followed Kotter's eight stages of leading change in an organisation and prospered in managing the pandemic. Crain, Bush, Hayanga, Boyle, Unger, Ellison, and Ellison (2021) interviewed fifteen core leaders of WVUHS. Their research employs a qualitative thematic analysis of the interviews to evaluate key aspects of leadership dynamics and system-wide changes in healthcare policies and protocols to contain the pandemic. Based on their results, the leadership team radically and rapidly revamped all healthcare policies, procedures, and protocols for their hospitals and clinics, and launched a Hospital Incident Command System. The effective leadership team and strategic plan made by WVUHS assisted in handling and containing the COVID-19 cases, deaths, and vaccination rates. The leadership response by the teams resulted in West Virginia being an early frontrunner in COVID-19 vaccination rates as well as lower death rates. The healthcare leaders used daily, real-time, transparent, bilateral communication channels across all levels of healthcare management to make significant revisions and implementation based on lessons learned, rapid scientific and medical developments. As mentioned in a study by Kerrissey and Edmondson (2020), effective leadership during a crisis entails several key attributes, which include transparent but compassionate communication, agile action, and change of course as needed. These are also types of attributes displayed by West Virginia Health care leaders and assisted in reducing deaths and infections.

On the other hand, Mburu (2020) evaluated the effectiveness of the Kenyan government's handling of the COVID-19 crisis with reference to various change management theories, including Kotter's eight steps to leading change. Although the government did not fully execute all eight steps, it managed to complete some of the steps outlined in Kotter's theory. In alignment with Kotter's eight steps of leading change, the Kenyan Government implemented the first step by creating a sense of urgency. They clearly communicated the imminent dangers of ignoring precautions and directives issued, shared statistics on the impact of the disease from other countries, and clearly demonstrated the urgent need for a concerted response to the crisis. The Kenyan government created a guiding coalition as outlined in Kotter's theory, which was a multi-sectoral team or a cross-functional team to lead and guide the change. The President was the Chief Sponsor, the

Cabinet Secretary for Health was the Chief Champion, and various sector or ministry heads served as Change Agents or Co-Champions. This aligns well with Kotter's second step of creating a powerful guiding coalition. Lastly, in alignment with the sixth step in Kotter's model, the Kenyan government identified and communicated gains. An example is the announcement of those who have been fully cured of the disease, showing there is hope for others. This is an example of creating short-term wins.

2.1.2. Fusion Cell Approach

Fusion cells are used for effective information sharing and decision-making, which can transform health care leadership. Founded by the U.S. military to build a network response to terrorism, these fusion cells connect organizations to enhance information flow. COVID-19 has shown the need for effective communication and decision-making, and as such, it should be a key attribute of every leader. As attributed by Beilstein, Lehmann, Braun, Urman, Luedi, and Stüber (2021), at the core of a crisis, leadership is decision-making. Leaders must make the right decisions at the right time and be able to convince their workforce that they have done so, even if the decision is unpopular and associated with major restrictions. The goals set must be supported by optimal communication and followed through with progress in the planned direction. Timely decisions made in a state of uncertainty are risky but potentially offer the only chance at a window of opportunity (Beilstein, et al. 2021). Khullar, Darien, and Ness (2020); Fussell, Hough, and Pedersen (2009); Fussel, McDonald, and Pellegrini (2021) also add that the fusion cell approach is the best tool to use in creating effective communication and decision-making. Every health care organisation and health leader can make use of this useful tool in communication and decision-making. Fussel, et. al (2021) explained that a fusion cell can connect key organizations to share information and co-develop decision support for health leaders. Connecting these fusion cells into a national network can create a nervous system for information flow that is unhampered by bureaucracy or state boundaries, and able to keep pace with the network spread of COVID-19. Rather than put more pressure on a leader to make decisions faster, these cells are meant to distribute context, thinking, and analysis across a competent network of people in a real-time learning system (Lobdell, Hariharan, Smith, Rose, Ferguson, Fussell, 2020). Lobdell, et al. (2020) further added that shifting to this information-sharing mindset of the fusion cell is crucial if we are going to take full advantage of the world's brightest and most committed minds.

2.1.3. LEADS Framework

Another outstanding leadership framework from the literature that has been recommended during times of a crisis is the LEADS framework. The LEADS Collaborative was originally a partnership between the Canadian College of Health Leaders, the Canadian Health Leadership Network (CHLNet), and Royal Roads University (Dickson and Tholl, 2011). According to the Canadian College of Health Leaders (n.d.), the LEADS framework is a leadership capabilities framework representing an innovative and integrated investment in the future of health leadership. It provides a comprehensive approach to leadership development for the health sector, including leadership within the whole system, within health organizations, and within individual leaders. The framework was founded by the Community Health Nurses of Canada, in partnership with the Canadian Institute of Public Health Inspectors and the Manitoba Public Health Managers Network,

who received funding from the Public Health Agency of Canada for a three-year project to develop a set of interdisciplinary leadership competencies—essential knowledge, skills, and attitudes necessary for seven public health disciplines (Strudsholm and Vollman, 2021). The Leadership Competencies for Public Health Practice in Canada project comprised a multimethod research approach that included a scoping literature review, an online survey, webinar-based focus groups, and a modified Delphi process. Strudsholm and Vollman (2021) demonstrate how the LEADS framework competencies have been enacted by public health leaders in Canada during the COVID-19.

The 49 leadership competencies for public health practice were organized according to the LEADS Canada capabilities:

Table 1. LEADS Frameworks

Category of Leadership competencies	**Leader's Characteristics**
Lead self	Self-motivated leaders. • Are self-aware • Manage themselves • Develop themselves • Demonstrate character
Engage others	Engaging leaders. • Foster development of others • Communicate effectively • Contribute to the creation of healthy organisations • Build teams
Achieve results	Goal-oriented leaders. • Set direction • Take action to implement decisions • Strategically align decisions with vision, values, and evidence • Assess and evaluate
Develop coalitions	Collaborative leaders. • Purposefully build partnerships and networks to create results • Mobilise knowledge • Demonstrate a commitment to customers and service • Navigate socio-political environments
Systems transformation	Successful leaders. • Demonstrate systems/critical thinking • Orient themselves strategically to the future • Encourage and support innovation • Champion and orchestrate change

3. Methodology

To achieve our objectives, a scoping literature review of scholarly literature was undertaken to identify evidence and theories relevant to crisis leadership competencies. To keep our review of the literature concise and 'tunnel-focused,' we conducted targeted journal hand searches focussing exclusively on effective leadership competencies during the Coronavirus disease. Following an extensive keyword search on 'Google Scholar' for articles with keywords such as "health care leadership," "public health care leadership," "effective health care competencies," and "crisis leadership competencies."

A total of 31 studies were identified for final inclusion in this review. In these studies, 21 core leadership competencies were identified and are organised into five leadership levels: managing self, managing projects, managing people, managing programmes, and leading organisations. The managing self-competencies identified in the literature include Integrity/Ethics, Interpersonal skills/Emotional intelligence, Continuous learning, Communication, Problem-solving, and Flexibility. Managing projects competencies identified include Teamwork, People/Clients centred, Decision-making, Influencing, and Accountability. Managing people involves Diversity/Inclusiveness, Self-service, and Training and developing others. Managing programmes includes Technology management, financial management, Creativity/Innovation, and Partnering/Collaborations. Lastly is the leading organisation level, which entails Awareness, vision, and Strategic thinking.

The majority of the studies reviewed are qualitative studies. Over 90% of studies reviewed employ qualitative methods, while only 10% employ mixed research methods (Quantitative and Qualitative). In terms of information or data collection, the majority of studies use a mixture of scoping literature review, interviews, surveys, questionnaires, and observational work. The majority of studies reviewing the effective competency during COVID-19 were done in developed countries. Countries include Indonesia, Norway, USA, Australia, Pacific region, China, Thailand, Canada, and others. In contrast, African countries studied include South Africa, Ethiopia, Ghana, Liberia, and Rwanda.

The existing literature reviewed involved leaders from a hospital, clinical, or medical setting. These include executive leadership, mid-level managers, health care experts, head of nurses, physicians, clinical management, and clinicians from hospitals. The second-highest investigated leadership category is government or political leaders. This consists of all levels of government (national, provincial, and local), politicians, state officials, and politically appointed civil servants. The least investigated are representatives from non-governmental organisation and global organisation leaders.

4. Results and Discussion

In trying to reduce the repercussions of COVID-19, health care leaders have adopted various 'best practice' models and leadership strategies tailored to best fit their situations. While no absolute set of characteristics is necessary in all situations, certain traits, skills, and competencies tend to be repeatedly critical in crisis management. The literature done on health care leadership relating to COVID-19 makes it clear that effective leadership requires an amalgamation of six

characteristic traits: communication, partnering/collaborations, emotional intelligence, teamwork, innovation, and accountability. A summary of dominating effective crisis leadership competencies in the literature is shown in the figure below.

4.1. Communication

A large part of the reviewed studies demonstrated a preference for effective communication competency during a crisis. Health care leaders in different countries across the globe utilised various channels to communicate their vision, strategies, and even updates on their action plan to all stakeholders. According to Reddy and Gupta (2020), any communication in COVID-19 was crucial, whether it was from the government to people, from media to people, people to people, doctor to patient, within families, and so on. Effective communication emphasizes the importance of content, accuracy, comprehensive signs, symbols, language, culture, and semiotic rules. Effective communication, if ignored, would have created gaps for vulnerable populations and resulted in added difficulty in combating the COVID-19 pandemic. Ataguba and Ataguba (2020) added that during the pandemic, effective crisis and risk communication was crucial in many developing countries, even for those with fewer confirmed coronavirus cases. Although many countries adopted different communication strategies during the COVID-19 crisis, effective crisis and risk communication boost trust, credibility, honesty, transparency, and accountability. Meanwhile, Nicola, Sohrabi, Mathew, Kerwan, Al-Jabir, Griffin, Agha, and Agha (2020) underlined that the most efficient and best strategies may be rendered ineffective by inadequate or ineffective communication, or communication that fails to be integrated successfully into the community. In fact, poor communication may exacerbate the existing threat.

The effective leadership frameworks during a pandemic also highlight the need for communication in a crisis. Stage 4 of Kotter’s eight stages of leading Change entails communicating the vision effectively, while the “engage others” in the LEADS framework involves communicating effectively. Although effective communication is an essential competency to adopt during a crisis, finding the best tool to ensure information flow is also of utmost importance. Since effective communication has been emphasized as the most critical crisis competency, it is, therefore, important to consider the use of the Fusion cell approach as the best tool in creating effective communication, as previously indicated by Khullar, Darien, and Ness (2020).

4.2. Partnering/Collaborations

Partnering or collaborations in a crisis have been established as the second most critical competency in the literature reviewed. Over half of the reviewed studies speak of the momentousness of leadership collaborations in plummeting the effect of a crisis in various countries. Kotter’s eight stages of leading change entail forming a powerful guiding coalition in the second stage, which aligns with effective collaboration competency in managing a crisis. The “engage others” in the LEADS framework reflects on leadership collaborations.

The emergent nature of COVID-19 required strong collaboration that may not have been possible previously due to competition for patients, market share, and other resource constraints. Collaborations, as mentioned by Stefan and

Nazarov (2020), were one of the best leadership practices implemented for managing the Coronavirus disease in Romania. In the case of Japan, Hauseman, Darazsi, and Kent (2020), express how the partnership between local government, the military, and major health care organizations was essential for logistical and medical resource support. In California, Sadiq, Kapucu, and Hu (2020) indicate that four governors of State collaborated with state and local governments, private entities, and non-profits to address COVID-19. According to Belarmino, Rodrigues, Anjos, and Ferreira (2020), collaborative actions, cooperation, and effective communication among the nursing and medical teams contribute to the management of mild and complex cases of COVID-19, in the city of Fortaleza, State of Ceará. Meanwhile, in China, health care workers continuously streamlined workflow through communication and met patients' individual needs through multidisciplinary collaboration during the coronavirus disease (Wang, Liu, Zhu, Chen, Tang, and Bai, 2021).

The South Korean public health system's battle against COVID-19 is a great example of collaborative governance. Actors that participated in collaborative governance of South Korea in response to COVID-19 are the national government, local government, private sector companies, civil society, and medical facilities (Choi, 2020). The success of the South Korean governmental policies relies on the coordination and cooperation with the quarantined, their workplaces, their neighbours, local governments, public and private medical facilities, businesses, civil society organizations, and the public. In the city of Daegu, the number of confirmed cases escalated quickly, and the local government officials and local health system leaders supported by the national government mobilized "a regional reorganization of the health system along with several hospital-level interventions" to ease the shortage of medical resources and to protect both medical staff and patients. Companies and other private entities took prompt action against the disease and actively cooperated with the public sector in South Korea.

Besides collaborations within a country, coordination amongst countries is likely to achieve better outcomes during a crisis, individually and collectively, than each country independently pursuing its own self-interest (Jit, Ananthakrishnan, McKee, Wouters, Beutels, and Teerawattananon, 2021). With the global peak of the COVID-19 pandemic impending, international collaborations were necessary more than ever. China's prescient initiative to support Italy by providing experienced health care professionals, ventilators, masks, protective equipment, and test kits sets an example of international collaborations in the fight against the disease (Vervoort, Ma, and Luc, 2021). Furthermore, non-governmental organisations have collaborated well in mitigating the outbreak. The Bill & Melinda Gates Foundation collaborated with financial support to KU Leuven in Belgium to test the efficacy of pharmacological substances against SARS-CoV-2 (Vervoort et al., 2021). Additionally, the Jack Ma Foundation collaborated by donating one million masks and 500,000 testing kits to the USA.

4.3. Emotional Intelligence (EI)

Almost 35% of the articles reviewed found that EI competencies are crucial during the time of a crisis. Valz Gris, Gualano, Osti, Villani, Corona, D'Ambrosio, Lomazzi, Collaborating Group Leadership Coalition, Cascini, Favaretti, and Ricciardi (2022) indicate that EI is considered essential to build trust in the population and ensure cooperation with working groups during the COVID-19 pandemic. On the other hand, Dirani, Abadi, Alizadeh, Barhate, Garza, Gunasekara, Ibrahim, and

Majzun (2020) added that during this pandemic, organizations flourished under a leader who prioritizes employees' emotional stability.

4.4. Innovation

At least 29% of the reviewed studies advocate for innovation during a crisis. Although there isn't much literature that speaks about the effectiveness of innovation in managing COVID-19, the majority of leaders took advantage and utilised various technologies in the fight against the virus, including contact tracing, case/death reporting, and other communication innovations. Systems transformation of the LEADS framework supports that successful leaders demonstrate systems thinking and encourage and support innovation. The Fusion cell approach is an innovative approach to implement.

In Norway, according to a study by Lyng, Ree, Wibe, and Wiig (2021), nursing and home care leaders used innovative solutions to maintain appropriate care for infected and non-infected patients at their sites. Healthcare leaders in nursing homes and home care services used innovative solutions to handle the COVID-19 pandemic in a Norwegian municipality through a combined resilience and innovation perspective.

Based on a case study by Rispel, Marshall, Matiwane, and Tenza (2021), health care leaders in Gauteng province of South Africa developed an innovative, multi-sectoral, and comprehensive provincial COVID-19 response that aimed to address the dual challenge of saving lives and the economy.

Crain et al. (2021) added that innovative revolutionary preparations for the COVID-19 pandemic by West Virginia University Hospitals and Health System (WVUHS) management led directly to evolutionary transformations, which have been effective in limiting the spread and impact of COVID-19 throughout WVUHS and across West Virginia.

The usage of information and communication technologies expanded during the pandemic. As alluded to by Beilstein, Lehmann, Braun, Urman, Luedi, and Stüber (2021), the COVID-19 pandemic is the first global event that we have been able to observe and react to in real-time from everywhere, through global high-speed data networks, television, social media, and interpersonal contact. During COVID-19, health care leaders unceasingly innovated to address pandemic-related challenges, safeguarding infrastructure, staff, and patients while maintaining their institutions' mission and values.

4.5. Teamwork

Teamwork has also been established as a critical competency during a crisis. During challenging times, leaders must inspire and foster team commitment, spirit, pride, and trust and facilitate cooperation and motivate team members to accomplish group goals. According to Czabanowska and Kuhlmann (2021), the WHO-ASPHER Competency Framework for Public Health Workforce advocates for team motivation as a critical competency needed for disruptive situations in health care systems and beyond. The LEADS framework supports this competency as it involves engaging others and building teams during a crisis.

5. Conclusions

The outbreak of the pandemic resulted in many health effects with more harm skewed towards the older population and those with chronic diseases. Effective communication in a crisis is found to be the most critical competency; however, leaders should not do it at the expense of quality and correct information. The World Health Organisation (2022) expressed concerns during the pandemic as there were many communication conditions that enabled an infodemic. The rapid use of technology, although should not bring too much false information. As articulated by Beilstein, Lehmann, Braun, Urman, Luedi, and Stüber (2021), the infodemic was triggered by a rise in the use of digital technologies such as the spiking use of social media platforms such as Facebook, WhatsApp, and Twitter. Health leaders should invest in info-surveillance and, when needed, implement educational and mentoring interventions (Lawhorne and Swedlund (2021).

Investing in disaster preparedness skills makes it easier for health care leaders to react to any crisis that may arise, whether anticipated or not. To effectively manage crises, health care leaders, need to be proactive in preparation, as well as in preventing and minimizing the impact of the crisis. These skills can reduce the impact of a crisis. Training and refresher courses by health care leaders to equip them with essential crisis competencies and effective leadership framework approaches. Innovation was also found to be another effective competency adopted in managing the pandemic. There are several existing leadership competency models, but it is important to continuously broaden them and incorporate new aspects based on COVID-19 crisis management. Health care leaders should make use of low-tech and process-based innovations. Additionally, health care organizations must actively adopt and/or improve leadership assessments, coaching, and professional development programs that build resilience, foster innovation, and allow health leaders to share best practices and learn from each other.

Besides the key competencies outlined in this research, health care leaders must go beyond this and prioritise vital leadership areas which include understanding the social determinants of health, systematic ageism, promotion of national and healthcare trust, bidirectional communication, and process-based innovations. These social determinants of health issues include gun violence, loneliness, environmental toxins, domestic violence, depression, drug and alcohol abuse, education levels, economic instabilities, community context, and many others.

References

- Ataguba, O. A., & Ataguba, J. E. (2020). Social determinants of health: The role of effective communication in the COVID-19 pandemic in developing countries. *Global Health Action, 13*(1), 1788263.
- Agusven, T., Hong, H. T. S., & Bello, K. B. (2022). Healthcare leadership competence during Covid-19 crisis in Tanjung Pinang, Riau Archipelago. *Asia Proceedings of Social Sciences, 10*(1), 23-26.
- Beilstein, C. M., Lehmann, L. E., Braun, M., Urman, R. D., Luedi, M. M., & Stüber, F. (2021). Leadership in a time of crisis: Lessons learned from a pandemic. *Best Practice & Research Clinical Anaesthesiology, 35*(3), 405-414.
- Belarmino, A. D. C., Rodrigues, M. E. N. G., Anjos, S. D. J. S. B. D., & Ferreira, A. R. (2020). Collaborative practices from health care teams to face the covid-19 pandemic. *Revista Brasileira de Enfermagem, 73*(suppl 2), e20200470.

- Colenda, C. C., Reynolds, C. F., Applegate, W. B., Sloane, P. D., Zimmerman, S., Newman, A. B., Meeks, S., & Ouslander, J. G. (2020). COVID-19 pandemic and ageism: A call for humanitarian care. *The Journals of Gerontology: Series A, 75*(9), 1786-1787.
- Czabanowska, K., & Kuhlmann, E. (2021). Public health competences through the lens of the COVID-19 pandemic: What matters for health workforce preparedness for global health emergencies. *The International Journal of Health Planning and Management, 36*(S1), 14-19.
- Crain, M. A., Bush, A. L., Hayanga, H., Boyle, A., Unger, M., Ellison, M., & Ellison, P. (2021). Healthcare leadership in the COVID-19 pandemic: From innovative preparation to evolutionary transformation. *Journal of Healthcare Leadership, 13*, 199.
- Caringal-Go, J. F., Teng-Calleja, M., Franco, E. P., Manaois, J. O., & Zantua, R. M. S. (2021). Crisis leadership from the perspective of employees during the COVID-19 pandemic. *Leadership & Organization Development Journal*.
- Choi, Y. J. (2020). The power of collaborative governance: The case of South Korea responding to COVID-19 pandemic. *World Medical & Health Policy, 12*(4), 430-442.
- Dirani, K. M., Abadi, M., Alizadeh, A., Barhate, B., Garza, R. C., Gunasekara, N., Ibrahim, G., & Majzun, Z. (2020). Leadership competencies and the essential role of human resource development in times of crisis: A response to Covid-19 pandemic. *Human Resource Development International, 23*(4), 380-394.
- Dickson, G., & Tholl, B. (2011). The LEADS in a Caring Environment Capabilities Framework. Ottawa, Ontario: Canadian College of Health Leaders.
- Fussell, C. L., Hough, T. W., & Pedersen, M. D. (2009). *What makes fusion cells effective?* Naval Postgraduate School Monterey CA.
- Fussel, C., Mcdonald, J. K., & Pellegrini. K. (2021). Making the case for Fusion cells. Retrieved from https://www.mcchrystalgroup.com/insights/making-case-fusion-cells/ [Accessed on 30 August 2022].
- Fernando, N., Jayasinghe, N., Amaratunga, D., Haigh, R., Siriwardana, C., Herath, H., Ranaweera, P., Ariyasinghe, U., & Jayaweera, S. (2021). Settling the Ripples: An examination of Sri Lanka's approach to addressing cascading impacts of the COVID-19 pandemic. In *COVID 19: Impact, Mitigation, Opportunities and Building Resilience: From Adversity to Serendipity* (pp. 554-569). National Science Foundation of Sri Lanka.
- Geerts, J. M., Kinnair, D., Taheri, P., Abraham, A., Ahn, J., Atun, R., Barberia, L., Best, N. J., Dandona, R., Dhahri, A. A., & Emilsson, L. (2021). Guidance for health care leaders during the recovery stage of the COVID-19 pandemic: a consensus statement. *JAMA Network Open, 4*(7), e2120295-e2120295.
- Ritchie, H., Rosado, P., & Roser, M. (2022). Natural Disasters. OurWorldInData.org. Retrieved from https://ourworldindata.org/natural-disasters
- Hauseman, C., Darazsi, S., & Kent, S. (2020). Collaboration, Communication and Wellness: Response to the COVID-19 Pandemic in Manitoba Schools. *International Studies in Educational Administration (Commonwealth Council for Educational Administration & Management (CCEAM)), 48*(2).
- Joniaková, Z., Jankelová, N., Blštáková, J., & Némethová, I. (2021, March). Cognitive diversity as the quality of leadership in crisis: Team performance in health service during the COVID-19 pandemic. In *Healthcare* (Vol. 9, No. 3, p. 313). MDPI.

- Jankelová, N., Joniaková, Z., Blštáková, J., Skorková, Z., & Procházková, K. (2021). Leading employees through the crises: Key competences of crises management in healthcare facilities in coronavirus pandemic. *Risk Management and Healthcare Policy, 14*, p.561.
- Jit, M., Ananthakrishnan, A., McKee, M., Wouters, O.J., Beutels, P., & Teerawattananon, Y. (2021). Multi-country collaboration in responding to global infectious disease threats: lessons for Europe from the COVID-19 pandemic. *The Lancet Regional Health-Europe, 9*, p.100221.
- Kalina, P. (2020). Resilient and inclusive healthcare leadership: black swans, COVID-19, and beyond.*The International Journal of Health Planning and Management*.
- Kotter, J.P. (2007). Leading change: Why transformation efforts fail. In*Museum Management and Marketing* (pp. 20-29). Routledge.
- Khullar, D., Darien, G., & Ness, D.L. (2020). Patient consumerism, healing relationships, and rebuilding trust in health care. *JAMA, 324*(23), pp.2359-2360.
- Kerrissey, M.J. & Edmondson, A.C. (2020). What good leadership looks like during this pandemic? Harvard Business Review. Retrieved from https://hbr.org/2020/04/what-good-leadership-looks-like-during-this-pandemic
- Kim, D.K.D. & Kreps, G.L. (2020). An analysis of government communication in the United States during the COVID-19 pandemic: Recommendations for effective governmental crisis communication. *Journal of Health Communication, 25*(10), pp.799-803.
- Lobdell, K. W., Hariharan, S., Smith, W., Rose, G. A., Ferguson, B., & Fussell, C. (2020). Improving health care leadership in the COVID-19 era. *NEJM Catalyst Innovations in Care Delivery*.
- Lawhorne, L., & Swedlund, S. (2021). The infodemic within the pandemic.*Journal of the American Medical Directors Association, 22*(3), 517-518.
- Mburu, A. (2020). Change Management Lessons from Government's Handling of Covid-19 Crisis. Retrieved December 28, 2022, from https://cedarafricagroup.com/change-management-lessons-from-governments-handling-of-covid-19-crisis/
- Nazir, A. (2021). Healthcare leadership lessons from COVID-19.*Journal of the American Geriatrics Society*.
- Nuzzo, J. B., Bell, J. A., & Cameron, E. E. (2020). Suboptimal US response to COVID-19 despite robust capabilities and resources. Retrieved August 29, 2022, from https://jamanetwork.com/journals/jama/fullarticle/2770891
- Nicola, M., Sohrabi, C., Mathew, G., Kerwan, A., Al-Jabir, A., Griffin, M., Agha, M., & Agha, R. (2020). Health policy and leadership models during the COVID-19 pandemic: A review. *International Journal of Surgery, 81*, 122-129.
- Ouslander, J. G., & Grabowski, D. C. (2020). COVID-19 in nursing homes: calming the perfect storm*Journal of the American Geriatrics Society, 68*(10), 2153-2162.
- Phillips, G., Kendino, M., Brolan, C. E., Mitchell, R., Herron, L. M., Kõrver, S., Sharma, D., O'Reilly, G., Poloniati, P., Kafoa, B., & Cox, M. (2022). Lessons from the frontline: leadership and governance experiences in the COVID-19 pandemic response across the Pacific region. *The Lancet Regional Health-Western Pacific, 25*, 100518.
- Reddy, B. V., & Gupta, A. (2020). Importance of effective communication during COVID-19 infodemic.*Journal of Family Medicine and Primary Care, 9*(8), 3793.
- Strudsholm, T., & Vollman, A. R. (2021). Public health leadership: Competencies to guide practice.*Healthcare*

Management Forum, 34(6), 340-345.

- Tracie. (2021). Covid 19: Concerns and Opportunities for Healthcare leadership. Retrieved September 1, 2022, from https://files.asprtracie.hhs.gov/documents/covid-19-concerns-and-opportunities-for-healthcare-leadership.pdf
- Sriharan, A., Hertelendy, A. J., Banaszak-Holl, J., Fleig-Palmer, M. M., Mitchell, C., & Nigam,
- Gutberg, J. A., Rapp, D. J., & Singer, S. J. (2022). Public health and health sector crisis leadership during pandemics: a review of the medical and business literature. *Medical Care Research and Review, 79*(4), 475-486.
- Vrontis, D., El Chaarani, H., El Abiad, Z., El Nemar, S., & Haddad, A. Y. (2021). Managerial innovative capabilities, competitive advantage, and performance of healthcare sector during Covid-19 pandemic period. *Foresight*.
- Leach, L., Hastings, B., Schwarz, G., Watson, B., Bouckenooghe, D., Seoane, L., & Hewett, D. (2021). Distributed leadership in healthcare: leadership dyads and the promise of improved hospital outcomes. *Leadership in Health Services*.
- Lyng, H. B., Ree, E., Wibe, T., & Wiig, S. (2021). Healthcare leaders' use of innovative solutions to ensure resilience in healthcare during the Covid-19 pandemic: a qualitative study in Norwegian nursing homes and home care services. *BMC Health Services Research, 21*(1), 1-11.
- Rispel, L. C., Marshall, C., Matiwane, B., & Tenza, I. S. (2021). Innovations, contestations and fragilities of the health system response to COVID-19 in the Gauteng Province of South Africa. *PloS one, 16*(12), e0261339.
- Sadiq, A. A., Kapucu, N., & Hu, Q. (2020). Crisis leadership during COVID-19: The role of governors in the United States. *International Journal of Public Leadership*.
- Stefan, T., & Nazarov, A. D. (2020, November). Challenges and competencies of leadership in Covid-19 Pandemic. In *Research technologies of pandemic coronavirus impact (RTCOV 2020)*, 518-524. Atlantis Press.
- Valz Gris, A., Gualano, M. R., Osti, T., Villani, L., Corona, V. F., D'Ambrosio, F., Lomazzi, M., Collaborating Group Leadership Coalition, Cascini, F., Favaretti, F., & Ricciardi, W. (2022). Leadership in public health crisis: a review to summarize lessons learned from COVID-19 pandemic: Angelica Valz Gris. *European Journal of Public Health, 32*(Supplement_3), ckac129-544.
- Vervoort, D., Ma, X., & Luc, J. G. (2021). COVID-19 pandemic: a time for collaboration and a unified global health front. *International Journal for Quality in Health Care, 33*(1), mzaa065.
- World Health Organisation. (2022). Infodemic. Retrieved August 30, 2022, from https://www.who.int/health-topics/infodemic#tab=tab_1
- Winkler, H. (2022). Evaluating Healthcare Leaders: A Competency Assessment of Rural Healthcare Management within the Midwest.
- Wisittigars, B., & Siengthai, S. (2019). Crisis leadership competencies: the facility management sector in Thailand. *Facilities*.
- Wang, A., Liu, L., Zhu, J., Chen, X., Tang, S., & Bai, X. (2021). The experiences of cooperation among healthcare workers who participated in COVID-19 aid mission in China: A qualitative study. *Journal of clinical nursing, 30*(17-18), 2696-2707.