



AMERICAN ACADEMY
of NURSING

PUBLIC HEALTH PREPAREDNESS AND IT: LESSONS FROM THE FIELD

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PUBLIC HEALTH PREPAREDNESS AND IT LESSONS FROM THE FIELD

Hosted by the Informatics and Technology Expert Panel in Collaboration with the
Expert Panels on Environmental and Public Health; Health Equity; and
Building Health Care System Excellence

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INTRODUCTION

In August 2021, the Academy hosted “Public Health Preparedness and IT: Lessons from the Field,” a policy dialogue featuring experts on health informatics, technology, and global public health. The Academy’s Expert Panels on Informatics & Technology; Environmental & Public Health; Health Equity; and Building Health Care System Excellence convened this dialogue to address global infectious disease challenges (such as COVID-19), share best practices, and recommend public health and Information Technology (IT) infrastructure changes. Dr. Rosemary Kennedy, PhD, RN, MBA, FAAN, Chief Health Informatics Officer, Connect America, moderator and Chair of the Informatics & Technology Expert Panel, shared that the COVID-19 pandemic has shaped the conversation regarding the role of nursing in public health.

“There is greater recognition of the critical role that nurses play: caring for patients while protecting and promoting public health within the community. Nurses have taken on critical leadership roles, taken care of patients in hospitals and clinics using innovative technology and telehealth technology, also [worked towards] reducing disparities in healthcare access.”

Rosemary Kennedy
PhD, RN, MBA, FAAN

This report summarizes a discussion of the lessons learned in response to COVID-19 and proposes key recommendations to improve Health IT (HIT) infrastructure and reporting so that public health and infectious disease responses can be timely and efficient.

This document contains highlights of the event, including:

- Summaries of the main session and guest speaker content, as well as the three breakout discussion panels;
- Key takeaways; and
- Recommendations for future responses.

ABOUT THE AMERICAN ACADEMY OF NURSING

The American Academy of Nursing (Academy) serves the public by advancing health policy through the generation, synthesis, and dissemination of nursing knowledge. Academy Fellows are inducted into the organization for their extraordinary contributions to improve health locally and globally. With more than 2,900 Fellows, the Academy represents nursing’s most accomplished leaders in policy, research, administration, practice, and academia.

Expert panels are one of the major forces within the Academy for developing new knowledge, promoting collaboration, and shaping policy. Fellows leverage their expertise in developing outcomes that provide the critical knowledge, and analysis, summary, and integration for transforming health policy and practice. The Expert Panels advance evidence-based innovations in health care delivery to address health needs. The Academy’s Expert Panels host Policy Dialogues on leading healthcare topics to engage on policy proposals and their impact.



BACKGROUND INFORMATION

Global infectious disease threatens national security, the global economy, and impacts many aspects of life worldwide (National Academies Press, 2017, n.d.). They amplify the need for nursing leadership in public health preparedness and infrastructure response (Al Harthi et al., 2020; Veenema, 2016). Preparedness-related issues have been brought to light as we faced new challenges, each unique to their situation, including Ebola, Zika Virus, and, more recently, the COVID-19 pandemic. The health information technology (HIT) infrastructure has helped us better respond to the pandemic in some ways, such as telehealth use to support access to care (Wosik et al., 2020). However, infectious disease response for all three major events (Ebola, Zika, and COVID-19) revealed gaps in health equity, data standards, public health infrastructure, and a lack of preparedness which under-resourced communities intensely felt as a result of structural barriers created by oppressive policies (Assari, 2018; Williams & Cooper, 2020; Hoelscher & McBride, 2020; Quinn & Kumar, 2014 Sep-Oct; Veenema, 2016; Xue, Shu, Hayter, & Lee, 2020). The healthcare system is overdue for technology-driven surveillance and reporting infrastructures to respond effectively to public health emergencies (Sittig & Singh, 2020).

Public health nurses (PHNs) are on the frontline of response in the COVID-19 public health crisis. To better support PHNs, a reliable HIT infrastructure must be in place. A central feature of this movement hinges on the collaboration of PHNs within the broader nursing leadership community to undertake advocacy to modernize, develop, and maintain a public health infrastructure necessary to provide foundational public health services (Edmonds, Kneipp, & Campbell, 2020; Rowney & Barton, 2005). The COVID-19 pandemic presents unprecedented examples of nurses pivoting to address nursing workforce shortages that directly impacted staffed beds (Agency for Healthcare Research and Quality [AHRQ], 2005) and medical supplies (Al Thobaity & Alshammari, 2020), while also learning new electronic health record (EHR) documentation processes and uses of telehealth.



MAIN SESSION SUMMARY

Complex emergencies, including endemic pandemics, critically require the full spectrum of nursing and allied health professionals to be on board with a coordinated response. The response involves action at the point of service and many preparedness efforts, which focus on leadership and resource allocation. In any disaster response, particularly predictive analytics of a disaster, ensuring effective leadership is essential. Effective leadership is needed at the senior level and through all levels of response to understand the parameters necessary to triage patients and resources, including human resources.

It is critically important to understand how IT and infrastructure, such as informatics, distribution of resources, and communication, are critical to ensuring an appropriate recovery effort. All healthcare professionals have a role in understanding the IT systems vital to an effective response. Protocols and standards for using information are needed, and methods for validating the information collected are critical.



SPEAKERS



Annette Sobel
MD, MS, FAAFP, FASMA, FAAN
Major General, United States
Air Force Reserve (Retired)

Dr. Sobel is a former Major General in the Arizona Air National Guard, previously serving as a special advisor at the Pentagon and other defense agencies on civil-military disaster response. Dr. Sobel highlighted the importance of cross-disciplinary team practice and expansion of individual professional practice roles when there is a disaster, particularly related to leadership and resource allocation. She underscored that any response requires the full spectrum of nursing and all health professionals to be coordinated. Her presentation further discussed the role of information technology, information security, and standards for information exchange. Dr. Sobel emphasized that all health professionals should be equipped with the training and information they need to access and manage data. Additionally, she outlined the importance of the identification of vulnerable populations during a disaster, with a particular focus on women and employment, and the importance of public health education throughout all disciplines.

"In any emergency, ultimately, you [healthcare providers] are the source of healthcare in your community. You are the ones that people look up to for validation of the information and you are the ones who need to ask the relevant questions. You have to enable your local decision-makers to make the right decisions themselves."

Annette Sobel
MD, MS, FAAFP, FAsMA, FAAN



Captain James Dickens
DNP, RN, FAAN, FAANP
Captain, United States Public
Health Service and Manager,
Survey Operations Group
Centers for Medicare &
Medicaid Services

Captain Dickens serves in the U.S. Department of Health and Human Services with the Centers for Medicare and Medicaid Services (CMS) as the Manager of the Survey Branch and is a Commissioned Officer in the United States Public Health Service (USPHS) Commissioned Corps. In his presentation, Captain Dickens explored the US Department of Defense and military best practices that could be leveraged in the private sector. He highlighted SMS (Short Messaging Service) communication in response efforts as a powerful tool when other options become inaccessible. Like Dr. Sobel, Captain Dickens emphasized the importance of public health nursing leadership and integrating those scientific principles within all aspects of nursing: education, research, and practice.

Importantly, Captain Dickens discussed the structural determinants of health and disparities during a disaster. He shared that there is potential to narrow disparities in health by looking at chronic disease management and removing systemic barriers to practicing healthy behavior.

"One of the things we often talk about are the structural determinants of health: where you eat, live, sleep, and play, and how that affects your care. Those are questions we in the disaster space routinely ask ourselves: how do we get better in that space, using the data to inform our decision-making as we move forward."

Captain James Dickens
DNP, RN, FAAN, FAANP





David Bergman
MPA
Principal
Health Management Associates

Mr. Bergman has served in a wide range of government, private and non-profit sector roles as a HIT professional, now as the Principal of Health Management Associates. In his presentation, Mr. Bergman discussed the successes and challenges delivering services during the pandemic. Concerning the pandemic response around HIT and digital health services, Mr. Bergman shared that many aspects were successful. Very early on, in January 2020, the entire genome for COVID-19 was analyzed, and the PCR test protocol was developed. Many critical response pieces such as disease monitoring, information sharing, testing, and contact tracing were facilitated using information technology. In the context of the public health emergency, there were, at times, conflicting federal and state-level declarations that were executed. Those declarations impacted what kinds of services could be delivered through novel practices such as telehealth.

In addition, Mr. Bergman highlighted some of the existing limits to technology. For example, broadband is not equally distributed around the United States. When using these technologies to reach the population widely, it is not clear how different communities may be impacted. Additionally, challenges may impact communities differently based on access and acceptance of technology.

“Some of the lessons learned and challenges around COVID: for the most part, these are not technology problems. These are people problems. This comes in when we think about how you track and trace; whether or not you use a vaccine passport; and how you expand the availability of these services such as audio-only telehealth,” Mr. Bergman shared.

BREAKOUT SESSIONS

To facilitate open dialogue, participants joined three separate breakout panel discussions on different aspects of public health preparedness and IT. The discussions were centered on:

- Disaster Preparedness and Infectious Disease;
- Health Equity and Structural Determinants of Health; and
- Digital Technology and Policy.

DISASTER PREPAREDNESS AND INFECTIOUS DISEASE

This panel discussed infrastructure and coordination as critical components in disaster preparedness. Participants shared that there was a lack of consistent coordination, a need for resources such as personal protective equipment (PPE), and inconsistent policies across various jurisdictions. Participants also discussed the need for education across the nursing spectrum on disaster preparedness, a critical demand for expanding nursing roles in public health, and how nursing representation is essential in disaster preparedness decision-making. Finally, participants discussed inequities in disaster preparedness and the data needed to address these inequities through a discussion on the impacts to care through systematic barriers observed in current efforts.

HEALTH EQUITY AND STRUCTURAL DETERMINANTS OF HEALTH

Participants in this panel discussed the importance of providing culturally and linguistically sensitive health services. Many shared that resources could have been better leveraged at the beginning of the COVID-19 pandemic in underserved communities to meet people where they are and actively engage them in response efforts. Additionally, access to technology was explored as a key barrier to reaching underserved communities, in addition to differing health and technology literacy among various populations. Participants shared that an in-depth analysis of the current pandemic—successes and failures, particularly in allocating resources and reaching underserved communities—would help to prepare for future pandemics and address health equity.

An in-depth analysis of the current pandemic – successes and failures, particularly in allocating resources and reaching underserved communities – would help to prepare for future pandemics and address health equity.



DIGITAL TECHNOLOGY AND POLICY

Participants in this panel discussed digital technologies, fraudulent vs. authentic information, sharing of data elements, and standards in reporting data. Participants shared that technologies advanced quickly during the pandemic and many technologies have outpaced the ability of systems to integrate their data, which could be addressed in the field moving forward. A key question discussed was how to get important information, such as case counts, reported accurately across states and various jurisdictions, which may have used different standards in reporting data. Finally, participants discussed policies put into place during the pandemic and their interaction with the public health messaging put forth by government agencies and local governments.

KEY TAKEAWAYS

This Policy Dialogue highlighted the need for increased disaster preparedness and an integrated, uniform HIT infrastructure that will support response efforts.

Stronger Infrastructure and Coordination is Needed for Preparedness

A more robust infrastructure—including data and broadband—will help to bring information and resources to underserved communities that currently face challenges to accessibility and affordability.

Nurse Leaders Should be Engaged in Decision-Making

Nurse leaders can help address health equity and the lack of trust from the public by informing decisions that impact policy.

Public Health Education is Critical for Future Nurses

An investment in the public health nursing workforce at all levels is critically important in the field moving forward.

Culturally and Linguistically Sensitive Care Must be Incorporated into Emergency Response

Different populations are affected uniquely in a public health crisis, and resources must be expended to effectively engage these communities.

Standards Need to be Implemented in Data Reporting

To make data-informed decisions, standards must be adopted across states and jurisdictions to accurately measure case counts and other critical data.



RECOMMENDATIONS

1. Develop and test public health emergency preparedness (PHEP) & technology access (e.g., SMS, testing, broadband) and training plans (e.g., community members and stakeholders) across communities that include after-action reporting to capture lessons learned.
2. Leverage Department of Defense and military PHEP/Disaster Response best practices across sectors.
3. Implement IT cross-training, and backup plans to ensure data security and data access during an emergency.
4. Develop standards of using and validating information during an emergency (e.g., types, tracking, transparency).
5. Propose plans for persons and communities to reduce information overload and dis/misinformation to support overall well-being.
6. Foster cross-disciplinary teams for response readiness.
7. Integrate public health nursing principles, leadership, and policy in nursing education, research, and practice.



ACKNOWLEDGEMENTS

GUEST PANELISTS

Annette Sobel, MD, MS, FAAFP, FAsMA, FAAN
Captain James Dickens, DNP, RN, FAAN, FAANP
David Bergman, MPA

MODERATOR

Rosemary Kennedy, PhD, RN, MBA, FAAN*

BREAKOUT SESSION MODERATORS

Susan McBride, PhD, RN-BC, CPHIMS, FAAN*
Barbara Polivka, PhD, RN, FAAN*
Patricia K. Bradley, PhD, RN, FAAN*
Lisa Campbell, DNP, RN, PHNA-BC, FAAN*
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