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WE WERE EVERYWHERE

THE PANDEMIC RESPONSE FROM PUBLIC HEALTH NURSES

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North Carolina Public Health Nurses' Response to the COVID-19 Pandemic: From Policy to Patient Care, We Were Everywhere

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North Carolina's public health nurses (PHN) are leading in the COVID-19 pandemic at the local, state, and national levels through advocacy, policy, and practice. PHNs were the first nurses involved in COVID-19 response, well before the first case was diagnosed in our great state. Since the state Office of Public Health Nursing was established over a century ago, PHN nurse leaders have led in responses to public health threats, addressing population health, writing public health policy, and designing programs and services to meet the health needs of North Carolina's residents. Even while facing severe workforce shortages after years of declining investment in public health services in the state and across the nation, North Carolina's PHNs continue to demonstrate their indispensable expertise as specialists in population health, particularly in the face of the global pandemic.

First on the Scene

Public health nursing leaders were meeting with the state epidemiologist in January 2020, before most healthcare providers understood the threat of the pending global pandemic. The North Carolina Department of Health and Human Services Division of Public Health (NC DPH) communicable disease nurse consultants did what they always do when faced with a communicable disease threat; they relied on epidemiological principles and their keen public health nursing skills to provide scarce answers about the impending threat to the ever-increasing questions coming from health systems and community members.

As the threat grew into a worldwide pandemic, NC public health nursing increased its leadership in both the State of North Carolina's response activities and those occurring nationally.

The state's first COVID-19 provider call center was started and maintained by NCDPH school health, child health, women's health, and communicable disease nurse consultants, as well as the public health nurse specialists from the Office of the Chief Public Health Nurse.

These nurses worked with health system CEOs, medical directors, local public health and nursing directors, and school officials across the state to link them with current resources and evidence on how to conduct outbreak investigation and disease surveillance.

State and Local Collaboration for Impact

As state PHN leaders collaborated across disciplines, local health department (LHD) PHNs were assimilating guidance at the direction of federal and state levels. In a pandemic with a novel virus, much information is unknown and rapidly changes as science evolves. Locally, incident command structures were set up with public health leading, including PHNs. County/city officials, medical providers, businesses, and the general public were all looking for guidance, and PHNs, knowledgeable in nursing, social, and public health sciences, were prepared to lead these efforts. LHD PHNs used state policy and guidance to create local-level policy uniquely designed to meet the needs of their communities.



The Cumberland County Health Department hosted a drive-in vaccination event earlier this year, with 36 stations operating simultaneously. Each booth was staffed by a public health nurse and a registration person. Photo credit: NCDHHS

When COVID-19 testing finally became available, PHN specialists in the Office of the Chief Public Health Nurse worked with the state health director to write the statewide standing order for testing. Prior to having a standing order, individuals seeking COVID-19 testing were required to pay for a medical provider visit. The resulting standing order enables individuals to receive free COVID-19 testing by nurses without a medical provider visit. It also serves as the first step linking COVID-19 positive community members with care and community resources (e.g., food, transportation, housing) for support during their recovery.

LHD PHNs, utilizing the statewide standing order, were critical to the management, testing, and education at testing sites. These sites occurred in LHDs, pop-up testing sites throughout the community, and in people's homes who had no transportation. LHD PHNs also established nurse phone lines to answer the public's COVID-19 testing questions, investigated every positive case, gathered names of all close contacts to diagnosed cases, issued isolation and quarantine orders, and connected people to resources for any

Table 1

Workforce Type	Mean Number of Staff Involved in COVID Response Effort (Range)	Mean % of COVID Workforce Composition	Mean % COVID Response Effort (Range)
Existing LHD permanent PHN staff employed at pandemic's start	16.9 (1-60)	64%	73% (6-100%)
Additional paid nursing staff	3.4 (0-16)	13%	10.4% (0-55%)
Volunteer workforce	6.2 (0-81)	23%	10.1% (0-100%)

Identified social needs. LHD PHNs also provided personal guidance for long-term care facilities, medical providers, restaurants, childcare facilities, schools, universities, and other public and private businesses. Most, if not all, LHD PHNs were on call 24/7, working 12-14 hours days, 7 days a week.

Critical Workforce Shortage

As testing, investigation, and contact tracing were ramping up, North Carolina LHDs were suffering from a critical PHN staffing shortage due to years of chronic public health underfunding. In May 2021, 61 LHD PHN administrators from the 85 North Carolina LHDs responded to the COVID-19 Nursing Workforce Needs Retrospective Survey (2020-2021). PHN administrators reported the existing PHN workforce could not meet the toll of the COVID-19 response activities. They shared that since the beginning of the COVID-19 pandemic, their existing nursing workforce had to be increased by 58% with temporary nurses and volunteers. Even though this expanded the ancillary workforce, the PHNs who had been in LHDs at the pandemic onset still covered a hero's share of the response efforts (73%, Table 1).

PHNs have a unique skill and knowledge base. Their practice focuses on population health to promote health and wellness, prevent disease, disability, and premature death, and improve

neighborhood quality of life for the entire public. These population health priorities are addressed by identifying, implementing, and evaluating universal and targeted evidence-based programs and services that provide primary, secondary, and tertiary preventive interventions.

In North Carolina, PHNs are required to be Registered Nurses. The legal scope of practice, specialized skills, and knowledge were essential to managing the non-specialized ancillary workforce, requiring most PHNs to work overtime with few nights or weekends off as they led the response efforts and maintained their usual public health duties.

Advocacy and Academic-Public Health Partnerships

North Carolina PHNs were leading national efforts, as well, through the American Public Health Association's PHN Section. There is a long history of PHNs bearing witness to how the forces of inequity and a chronically underfunded public health workforce play out to leave vulnerable populations at risk during national crises, and COVID-19 was no exception. Collaborative efforts led by NC PHNs from within the PHN Section published a series of op-eds intended to serve as early warnings for and educate the public and other officials. These included pieces about how and why

COVID-19 would exacerbate existing health inequities that were a call to action for getting the personal protective equipment so desperately needed for nurses and other workers, foreshadowing what the PHN shortage would mean as the pandemic's trajectory continued and how nurses are pivotal in vaccine rollout. Other efforts to educate the broader nursing and policy community about the often-invisible role of PHNs included contributing a PHN perspective on and language to embed in policy advocacy initiatives of the American Nurses Association and the Nursing Community Coalition as a call to reinvest in the PHN workforce.

Our weakened public health workforce could not meet the case investigation and contact tracing needed to curb transmission early in the pandemic. In North Carolina and across the nation, nurse faculty and students from academic institutions collaborated with health departments to help fill the PHN workforce shortage -- taking on these roles as clinical experiences for students and faculty volunteering in addition to doing their clinical teaching when they could. These partnerships would be accelerated when vaccines were approved. As all of this was unfolding, the specter of having an insufficient number of people to vaccinate an entire population quickly enough to mitigate potentially more deadly Sars-Cov-2 virus strains circulating in the population was looming.

While there was a robust influx of public health workers that arrived with CARES Act funding and dedicated volunteers, there was a wide range of clinical experience and formal education among this ad hoc public health workforce. In North Carolina, the few experienced PHNs that remained in the public health workforce were leading the activities of these teams.

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Vaccine on the Horizon

North Carolina's PHNs continued to lead in the COVID-19 response as it progressed through the pandemic stages. In fall 2020, NC DPH nurse leaders were key writers of the NC State Vaccine Plan and crafted language for Executive Orders providing directives for immediate action in the pandemic response. When the first Emergency Use Authorization was approved for COVID-19 vaccines, the Chief Public Health Nurse and PHN specialists analyzed Federal and manufacturer vaccine resources for their feasibility of delivery via North Carolina's healthcare systems. They adapted the resources for real-world public, community health, and acute care settings and created



Dr. Jennifer Green, Cumberland County Health Director, and Krystle Vinson, DNP, MSN, RN, Cumberland County Public Health Nursing Director, discussing a vaccine recipient's paperwork at a drive-in vaccine clinic.

vaccine-specific toolkits of resource materials to support implementation. When the state's first COVID-19 vaccine doses were en route to the local public health departments, nursing and medical directors in all 100 North Carolina counties used the resources PHN specialists developed to create COVID-19 vaccination policy and plans, allowing the LHDs to start vaccinating quickly after receiving their community's first doses.

As LHD PHNs continued to provide policy guidance to local leaders, direction to the public, testing, case investigation, and surveillance, hope arrived for these weary nurses with the vaccine. LHD PHNs are no strangers to setting up and implementing mass vaccination clinics. With NC DPH policies and standing orders in hand, LHD PHNs were ideal leaders, managers, and vaccinators for these clinics as LHDs were one of the first organizations to have vaccines available to the public within the phased approach set forth by NCDHHS.

Governor Cooper's Executive Order No. 193[VIII], signed on February 9, 2021, ordered Health and Human Service flexibilities to increase the pool of

professional health care to administer COVID-19 vaccines. The Executive order allowed advanced-stage nursing students to provide COVID-19 related care, including administering COVID-19 vaccines.

Since nearly the beginning of vaccine administration in NC, nursing

students across the state have been a vital link in getting vaccines into arms. Nursing students involved in vaccine administration are able to experience public health's efforts in communicable disease control and response. This allowed students to understand the holistic care provided by PHNs as they vaccinated large groups of people, including the process from vaccine preparation to educating the public and linking to care. Of utmost importance to PHNs directing these

efforts was getting the vaccine out into the community with an equity and inclusion lens.

Reflections on The Future of North Carolina's Health

Public health nurses are the most well-positioned health professionals to lead in the next phases of the COVID-19 pandemic response. As we learn from the collateral damage that has occurred as too many North Carolinians have foregone regular preventative and chronic disease care as a result of shutdowns, loss of jobs and health care insurance, and other factors, PHNs are also well placed to lead in future healthcare policy and planning to meet the needs of all populations - including those who may suffer long-term sequelae from acute COVID infection. The Future of Nursing 2020-2030 report summarizes the critical role of nursing in the future of our nation's health, specifically pointing to PHNs leading future efforts by all nurses working in other settings as they design programs and processes that are designed to work for everyone and reduce health inequities.

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The opinions expressed in this article are the authors' own and do not necessarily reflect the view of the North Carolina Nurses Association or its board of directors. ■