A Nurse-Led Employee Health Telehealth Clinic During the COVID-19 Pandemic

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Article

Abstract

Many concerns during the COVID-19 pandemic that began in 2020 related to healthcare personnel who provided direct patient care during the pandemic. In addition to exposure to infectious disease, these providers endured ongoing levels of high stress that placed them at risk for short-term and long-term mental health problems. To address these concerns, a large healthcare system based in Hawai'i developed and implemented a nurse-led employee health telehealth clinic. Registered nurses in employee health successfully led the use of telehealth visits to screen, assess, and schedule COVID-19 and influenza tests for healthcare personnel. Based on test results, the nurses provided isolation dates that followed the recommended guidelines and institutional policies. Follow-up telehealth visits by these nurses facilitated a safe return to work for healthcare employees. This article discusses the development, implementation, and outcomes of the nurse-led employee health telehealth clinic. Using this telehealth modality was efficient and convenient. The process also protected the telehealth clinic staff from exposure to ill providers during the COVID-19 pandemic and influenza seasons. Our discussion includes processes of the telehealth clinic for employees, analysis of outcomes between 2020-2023, lessons learned, and implications for practice and research in this time of ongoing COVID-19 concerns and local and national healthcare worker shortages.

Key Words: Access to care, healthcare worker safety, nursing leadership, telehealth, mobile and computer-based technology, employee health, interdisciplinary collaboration, coronavirus

The World Health Organization and the United States Secretary of Health and Human Services declared the outbreak of COVID-19 as a public health emergency of international concern in January 2020. (HI Proclamation, 2020) Recognizing the global impact of the COVID-19 pandemic already resulting in rapid wide-spread transmission and deaths, on March 4, 2020, the Governor of Hawai'i declared a state of emergency that included allocating funds to prioritize the health and wellbeing of the state's people (HI Proclamation, 2020).

The COVID-19 pandemic caused world-wide disruption of delivering acute and ambulatory care services (COVIDSurg Collaborative, 2020; Mattingly, et al., 2021). Public health services were stretched and disrupted. Evidence confirms that there were local and national pockets of underserved and minority communities that were at an increased risk for illness and death from COVID-19 (Seña, & Weber, 2021). Additional disruptions in acute care services included decreased patient emergency room (ER) visits; some patients with life threating illness may have avoided going to the ER due to fear of contracting COVID-19. There was also an increased need for additional services because of the isolation and fear of an unprecedented modern-day pandemic. Public awareness about telehealth options for COVID-19 assessment and screening may have avoided some of the disruption (Boserup, et al., 2020; Lange, et al., 2020).

The COVID-19 pandemic caused world-wide disruption of delivering acute and ambulatory care services

One concern was healthcare personnel (HCP) who provided direct patient care during the pandemic. Providers endured ongoing high levels of stress that placed them at risk for short-term and long-term mental health problems. There is evidence that the COVID-19 pandemic placed direct care providers at greater risk for mental health concerns that likely contributed to absenteeism and presenteeism during this time. For example, HCP reported problems with fear, anxiety, depression, difficulty sleeping, substance abuse, posttraumatic stress, suicidal ideation, burnout affecting work and social relationships, and economic stability (Giorgi et al., 2020; Pollock et al., 2020; Restauri & Sheridan, 2020; Shanafelt et al., 2020).

This article discusses the development, implementation, and outcomes of a nurse-led employee health (EH) telehealth clinic. Using this telehealth modality was efficient and convenient for HCP. The process also protected EH clinic staff from exposure to ill providers during the COVID-19 pandemic and influenza seasons.

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Literature Review

In the United States (U.S.), updated reports from February 12 to July 16, 2020, indicated the number of COVID-19 infected HCP had increased tenfold to over 100,000 cases (Hughes et al., 2020). While most COVID-19 positive HCP were not hospitalized, some suffered severe outcomes, including death. Regarding the greatest at-risk HCP groups, healthcare support workers (32.1%) and nurses (29.5%) represented the greatest number of COVID-19 infections (CDC *COVID-19 Response Team*, 2020; Hughes et al., 2020). Emergency management planning for disasters is required for departments of public health and healthcare agencies (Veenema, 2019). During the pandemic, those efforts were tested, offering evidence of outcome strengths and gaps. Of priority, access to safe and efficient healthcare service for HCP became an urgent necessity during the COVID-19 pandemic.

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Urgent implementation of an EH nurse-led telehealth clinic became an innovative solution to meet the needs of all QHS EEs. The concept of nurse-led clinics began emerging in the published literature in the 1980s, and there was a notable increase in nurse-led clinic publications in the 1990s (Hatchett, 2008). As described by Hatchett (2008):

> The aim of the nurse-led clinic is to monitor the condition and to maintain the patient in their optimal state of health. Increasingly, this has meant to move towards empowering the patient to identify the signs of deterioration themselves, and to take appropriate action. Such actions may include the use of more easily accessible specialist advice through the nurse-led clinic, a 'drop in service', or via a telephone helpline (p. 2).

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Driscoll et al. (2022) provided evidence that a nurse-led heart failure clinic can be effective and cost saving by reducing rehospitalization. Evidence also indicates that nurse-led clinics provide comparable or superior healthcare services and high levels of patient satisfaction (Connolly & Cotter, 2023).

Broadly defined, characteristics of nurse-led clinics may include nurses managing their own case load with the ability to admit to and discharge from the clinic and referring patients to a member of the interdisciplinary healthcare team if necessary. Serving as educator is an additional characteristic of what nurses can accomplish in nurse-led clinics by educating patients and family members about the illness (e.g., the course of the illness, when to seek assistance if symptoms worsen). Psychological support is also a common characteristic of the nurse's role in a nurse-led clinic. This includes actively listening to patient and family member concerns and fears, as well as understanding what they perceive to be indications of improvement. Nurses also monitor patients' conditions, informed by their health history and assessment. They then assign an appropriate level of intervention or possible referral (Hatchett, 2008).

Psychological support is also a common characteristic of the nurse role in a nurse-led clinic.

Nurse-led clinics are an avenue for equity and access to services across geographic regions and the healthcare continuum. According to the National Academies of Science, Engineering and Medicine ([NASEM], 2021), there is a known shortage of primary care physicians (PCPs), especially in rural U.S. regions. Delivery of primary care has traditionally relied upon single physician providers responsible for a wide range of complex care activities for a panel of patients, while also coordinating patient care across the healthcare systems. Solutions to ease provider burden while enhancing access to quality services should focus on a team-based approach with a wide-range of healthcare disciplines (Flinter et al., 2017; NASEM, 2021; Norful et al., 2017). Care provided in nurse-led clinics has

often targeted marginalized, underserved populations to include refugees, people experiencing poverty and homelessness, and those with challenging behaviors (Hatchett, 2008). Given current and projected shortages of PCPs, nurse-led clinics offer a great potential solution.

In ambulatory and primary care settings, there is a well-known need for registered nurses (RNs) to work at the full scope of practice given the work volume, healthcare provider shortage, and to advance the profession of nursing. For nurses to contribute as productive team members in ambulatory and primary care settings where they have the known ability to address care and communication gaps, barriers must be removed. For example, in some state boards of nursing there are provisions for RNs to independently order laboratory tests, refill medication prescriptions, and adjust medication dosage using standardized procedures authorized by physicians. (Bodenheimer et al., 2015; Bodenheimer & Bauer, 2016; Chan et al., 2018; Flinter et al., 2017; Norful et al., 2017). As described by Bodenheimer (2015) et al., "nurses are in a unique position to build on trusting patient relationships to fill these needs as health coaches, health educators, and chronic care managers of the future" (p. 3).

With access to healthcare services during COVID-19 surges as a priority, safety of patients and HCP were equally important. Telehealth improves safety by eliminating the risk of patient transmission of respiratory illnesses to others. As defined by the Centers for Medicare and Medicaid ([CMS], 2023):

> **Nurse-led clinics are an avenue for equity and access to services across geographic regions and the healthcare continuum.**

> Telehealth is the use of telecommunications and information technology to provide access to health assessment, diagnosis, intervention, consultation, supervision and information across distance… Telehealth seeks to improve a patient's health by permitting two-way, real-time interactive communication between the patient and the physician or practitioner at the distant site. This communication often requires the use of interactive telecommunications equipment that can include both audio and video components, but can also be conducted via audio-only, as states deem appropriate (p. 1).

Rapid implementation of a telehealth nurse-led clinic provided safe access to healthcare services to promote the emotional and physical well-being of direct healthcare providers and the entire employee (EE) population for the Queen's Health System (QHS) (Shanafelt et al., 2020). Employee perceptions that system leaders prioritize their safety, health, and well-being is associated with less turnover and greater job satisfaction. These EEs may also have a greater sense of identification with the organization and engagement in creating and sustaining a patient safety culture (Mohr et al., 2018).

The Queen's Health System

System Background

The QHS legacy of caring for the people of Hawai'i began in 1859 when Queen Emma and King Kamehameha IV founded The Queen's Hospital to protect the public from deadly infectious diseases. Today, spanning the State of Hawai'i to include Guam and Saipan, QHS has evolved to be a strategic collection of healthcare-related companies, comprised of four hospitals on three islands, including The Queen's Medical Center. The medical center is a 575-bed acute care facility that is the state's only Level I trauma center, with more than 8,500 employees (EEs). This health system includes The Queen's Medical Center West Oahu, North Hawai'i Community Hospital, Molokai' General Hospital, diagnostic laboratories across Hawai'i, Guam, Saipan, a homecare agency, ambulatory urgent care facilities, and affiliated physicians and providers in its statewide network.

The mission of QHS, consistent with the founders Queen Emma and King Kamehameha IV, is to provide in perpetuity quality healthcare services to Native Hawaiians and all the people of Hawai'i. The organizational vision is, "to be the preeminent health care system of the Pacific, providing superior patient care that is continually advanced though education and research (The Queen's Health System, 2023, para 4).

The Employee Health Telehealth Clinic Plan

Aligned with the National Institute for Occupational Safety and Health (NIOSH) five elements of Total Worker Safety, QHS leadership prioritized worker safety by implementing strategies to minimize employee health hazards and promote their well-being. The nurse-led Employee Health (EH) telehealth clinic was planned to serve EEs across this healthcare system. EH

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telehealth-based RNs screened, assessed, and scheduled COVID-19 testing using a password protected database separate from the institutional electronic medical record (EMR) to preserve employee confidentiality and privacy (NIOSH, 2016). Our aim was that QHS EEs would perceive

that QHS leadership did prioritize their safety, health, and well-being; this would hopefully lead to outcomes noted in the literature such as less turn-over, greater job satisfaction, a greater sense of identification with the organization, and engagement to create and sustain a patient safety culture (Mohr et al., 2018).

Processes of the Telehealth Clinic for Employees

Implementation

In March 2020, QHS developed and implemented a nurse-led telehealth COVID-19 Hotline for all EEs. The primary goal was to provide QHS EEs with a safe convenient means for screening, assessment, testing, follow-up, and return to work (RTW). Of equal importance, another goal was to reduce the risk of COVID-19 infection for QHS EH staff. Payment for testing was covered by QHS.

From the convenience of home, EEs called EH RNs at the QHS COVID-19 Hotline. They were immediately screened and assessed via a telehealth encounter. If the EE's symptoms warranted COVID-19 and/or influenza testing, and the EE was receptive to testing, the EH RN scheduled the test and wrote the order following an established protocol approved by the EH physician.

Each EE's EH information is a comprehensive, confidential health record separate from the institution's EMR.

The EE's symptoms, date of onset, COVID-19 and influenza vaccines, health status, potential for exposure, testing and test results were documented in an EH record that is a password protected database. Laboratory tests were ordered in the QHS password protected EMR. Each EE's EH information is a comprehensive, confidential health record separate from the institution's EMR. EH EEs are given access to the password protected separate database and the institution's EMR.

The telehealth encounter was an opportunity for EH RNs to provide health education, step-by-step instructions, and to clarify policy-driven expectations about quarantine or isolation dates. EEs were responsible for keeping their manager and primary care provider informed. To RTW following COVID-19 or other upper respiratory infections (URI), EH RNs emailed managers with a written health clearance, and copied the EE. This required the EEs to maintain contact with EH RN to review current symptoms at the end of the quarantine or isolation period.

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To provide data-based information and psychological support, the EH RN needed to actively listen to EEs questions and concerns. A common concern was the potential risk of spreading the infections to those in their homes, including infants, children, spouse, older family members, or visitors. Given the associated fear of hospitalization, severity of illness, and variability of symptom presentation with different SARS-CoV-2 variants, EH RNs provided valuable anticipatory guidance about the illness trajectory. This helped EEs to understand what symptoms warranted urgent follow-up as compared to symptoms that are considered normal and expected to resolve over time. During the initial phase of the COVID-19 pandemic, calls took longer given the confusion about institutional processes and potential seriousness of illness that could lead to hospitalization. Beyond this phase, and once EEs became more familiar with calling the COVID-19 Hotline, average calls required from three to eight minutes.

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Clinic Availability and Staffing

The nurse-led telehealth COVID-19 Hotline was initially open from 7 AM to 7 PM, seven days a week. Peak call volume did not occur during the evening, so hours of operation were adjusted to 7 AM to 5 PM, seven days a week. During surges, maximum staffing for Monday to Friday included 16 to 18 EH RNs and weekend staffing included 8 to 10 EH RNs. Staffing was composed of QHS RNs, including permanent and temporary staff, traditional duty, and contract agency RNs. Agency contracts spanned three months, offering flexibility with contracts that could be renewed or adjusted as needed. Nurses nearing retirement who were interested in a change from direct patient care could assume these telehealth RN roles; this enabled the organization to utilize their years of clinical knowledge and skill. These staffing models allowed us to expand and contract the number of RN staff contingent on current and projected call volume.

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Orientation for RNs hired to work at the telehealth COVID-19 Hotline was two days with an experienced EH RN who reviewed scientific clinical knowledge about the signs and symptoms of COVID-19 and other URIs. Orientation included information about documenting in the password protected database and ordering and scheduling laboratory tests in the EMR. Telehealth EH RNs also wrote the health clearance documentation when EEs symptoms had improved and noted when the quarantine or isolation period ended. As such, reviewing criteria for health clearances was essential for RNs new to this telehealth role. CDC guidelines and QHS policies frequently changed during the pandemic; therefore, time was

dedicated to review of current information. Typically, it required two weeks for RNs to become comfortable in a new telehealth role. Close EH RN supervision was provided during this transition time. Finally, the EH telehealth RNs were collaborative. Most cases had unique or unanticipated angles that warranted seeking guidance from experienced peers.

Testing Processes

Testing by swabbing for COVID-19 and influenza occurred at QHS hospitals, urgent care, or lab locations across the state, including Guam and Saipan. Most testing sites were at QHS drive-up outdoor locations and trained QHS EEs wore full personal protective equipment to reduce disease transmission risk.

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Telehealth EH RNs called each EE with a COVID-19 positive test result for contact tracing. Following CDC contact tracing guidance (CDC *Contact Tracing,* 2023), the goal was to ensure that any EE who had been exposed to a COVID-19 positive EE would be screened, assessed, and possibly tested to reduce the risk of further transmission. Based on COVID-19 symptom onset, physical distancing, duration of contact, and mask wearing, interviews focused on whether the COVID-19 positive EE had likely exposed other QHS EEs while they were infectious, to include two-days prior to symptom onset. Exposed EEs were then called for screening, assessment, and possible testing. The telehealth RN sent email to the EE's manager about EE exposures to ensure compliance with testing, quarantine, and isolation periods (CDC *Contact Tracing,* 2023).

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As the pandemic evolved, systems to complete daily monitoring of individual health status in work and school settings were needed to prevent disease transmission. Purchased by QHS, the LumiSight (LumiSight Health, 2024) application is available as a handheld mobile and computer-based technology designed to assist with monitoring EEs' health status on the days they were scheduled to work. To reduce the risk of spreading COVID-19 and other URIs to patients and staff, QHS policy required EEs to complete a daily health check prior to coming to work. QHS managers could then access and monitor their EEs' daily health checks that approved them as "cleared" to come to work. For any EE not in compliance with this requirement, managers sent notifications directing them to comply. Any EE not "cleared" was directed to contact the telehealth EH COVID-19 Hotline.

Due to the high volume of calls to the telehealth COVID-19 Hotline, LumiSight was expanded to include an algorithm that enabled EEs to complete a screening checklist of COVID-19 symptoms and date of onset. Based on an algorithm, if responses indicated the need for COVID-19 testing, LumiSight allowed the EE to schedule a test at an approved location. Telehealth EH RNs had access to all LumiSight entries and were responsible for reviewing individual EE's reports. If appropriate, the telehealth EH RN wrote the laboratory test order in the EMR and linked the order to the date/time the EE scheduled the test. The EE's submitted COVID-19 screening tool responses on LumiSight were then integrated into the EH record in the password protected database by the telehealth EH RN.

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Use of LumiSight made it easier for EEs to schedule a test, including hours when the COVID-19 Hotline was closed. This technology also saved time and added efficiencies for the telehealth EH RNs who, instead of responding to individual calls with each EE to discuss symptom presentation, now could focus on facilitating COVID-19 or influenza test orders and required documentation. If EEs were confused or uncertain about how to respond to questions, they could call the COVID-19 Hotline for clarification. When EEs did not complete steps to schedule a COVID-19 test, or if their LumiSight entry was ambiguous, telehealth EH RNs called them to assist or clarify the EE LumiSight entry.

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At this point, most EEs had a greater understanding about COVID-19 symptoms and other URIs. Also, over time this technology became increasingly efficient and effective such that the LumiSight algorithm decreased the need for EEs to speak directly with an EH RNs about their symptom presentation. Instead, with a confirmed test result, EH RNs provided the EE with isolation dates, appropriate health education, and emotional support as needed. EEs were also instructed about using LumiSight to request a RTW health clearance on the last day of their isolation. Telehealth EH RNs reviewed all LumiSight health clearance requests and called the EE to discuss current health status and RTW readiness.

Established policies were essential to guide healthcare delivery intended to mitigate costs associated with absenteeism and presenteeism were essential. For EEs who had stopped contact with the EH RNs and were not providing health updates or health clearance requests, the password protected database was programmed to generate data reports about all open, unresolved cases. EH RNs then followed-up with these EEs. Some EEs needed additional healthcare resources such as a referral to the EH physician or Advanced Practice Registered Nurse (APRN). A smaller percentage of EEs who had lost contact with EH RNs need manager involvement to RTW.

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Systemwide Communication

The development of QHS institutional policies were guided by the CDC and the Hawai'i State Department of Health who provided models projecting COVID-19 surges, numbers of current cases, and vaccination rates. QHS policy development required active engagement with clinical experts and leaders across the organization. A designated QHS leadership group monitored and consulted with national and local data and leaders and then disseminated information and directions for the organization. Reflecting the mission and vision, institutional policies were developed, revised, and communicated throughout the organization on an ongoing basis. Examples of QHS workplace related COVID-19 policies include guidance on physical distancing; mask wearing; obtaining COVID-19 vaccinations; applying for exemption from COVID-19 vaccine requirements; surveillance testing for unvaccinated EEs; symptomatic/asymptomatic COVID-19 testing, to include post-travel testing, quarantine and isolation time periods; and payment for time-off during COVID-19 illness. All policies were dated and made available on an internal website.

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All QHS EEs were kept informed through regular and well-attended synchronous Town Hall videoconferences. Sessions were recorded and posted to an internal QHS website. Town Halls featured updates about QHS policies and scientific information about COVID-19 and other URIs, including the impact on the patient population, EEs, and the local community. QHS experts from immunology and infectious disease routinely presented updates and responded to EE questions and concerns. Town Halls were designed to present policy updates, clarify rumors, and answer pre-submitted, institution-wide questions about daily operations and changes to policies. This was a valuable avenue to address unanticipated issues. Additionally, we held and recorded weekly videoconferences. A QHS administrator hosted these sessions to provide current updates about the numbers of new COVID-19 cases, statewide and in Hawai'i, and anticipated surges. Weekly sessions included interviews with members of QHS who highlighted topics relating to COVID-19 and how it was affecting the organization.

Focus on Collaboration

Interprofessional collaboration improves healthcare outcomes and professional practice (Reeves et al., 2017). Consistent with the Institute of Medicine (IOM) report (2011) second recommendation that healthcare organizations expand opportunities for nurses to lead and diffuse collaborative improvement efforts, this QHS EH nurse-led clinic offered ample opportunities for nurses to lead in collaboration with other healthcare disciplines (IOM, 2011; NASEM, 2016). Using a patient-centered model of care that promoted collaboration (Flinter et al., 2017), while this QHS EH nurse-led clinic offered ample opportunities for nurses to lead in collaboration with other healthcare disciplines an EH RN led the direct care of EEs, interprofessional collaboration was essential for the success of the COVID-19 Hotline. For example, primary care and occupational health physicians reviewed cases with EH RNs about EEs' RTW health clearance approvals. Concerned about spread, not all EH RNs were comfortable signing-off on health clearances for EEs with a persistent productive cough, even after the CDC recommended isolation period was completed. The primary care physician clarified that with common URIs, an occasional productive cough may persist beyond 14 days (CDC *Common Cold*, 2023). If an EE did not have other symptoms (e.g., fever), and the isolation period was completed, they were no longer infectious. Further, if the EE could perform work functions and wear a mask, it was appropriate to authorize a health clearance. In contrast, EEs who had an active productive cough throughout the telehealth call should not be given a health clearance (CDC *Interim Guidance*, 2022).

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> ...this QHS EH nurse-led clinic offered ample opportunities for nurses to lead in collaboration with other healthcare disciplines.

Infection prevention experts were available in-the-moment for frequent consultation about inconclusive/presumptive positive COVID-19 test results, contact tracing interview concerns, and managing surveillance on nursing units with COVID-19 outbreaks. In support of EH RN work safety, an occupational therapist (OT) was consulted for individualized ergonomic assessments and a general talk on sedentary workstation ergonomics. This ensured that adjustable ergonomic tasks chairs and telephone headsets were available for hotline RNs and used properly.

Other Concerns to Address

To counter nonstop hours of responding to stressful telehealth calls, EH telehealth RNs were educated about the importance of physical and emotional well-being. Specifically, guidance was provided about the value of microbreaks, standing, stretching, short periods of active movement, and brief walks away from telehealth workstations (Sharifi et al., 2022).

QHS also designated a telehealth Community COVID-19 Hotline for the public, or family and friends who lived with QHS EEs so they could be screened, assessed, and tested to reduce the spread of URIs. While this offered valuable local community support to mitigate the spread of COVID-19, it also addressed a source of anxiety for HCP about exposing family members to work-acquired COVID-19 (Shanafelt et al., 2020).

Outcome Analysis 2020-2023

From 2020 to 2023, there were eight surges, each spanning approximately two to five months. The CDC determined and graded COVID-19 community levels as low, medium, or high using three indicators: new COVID-19 hospital admissions, percent of staffed inpatient beds occupied by patients with confirmed COVID-19, and new COVID-19 cases. These indicators accounted for the number of cases over seven-days, per 100,000 population (CDC *COVID Data Tracker*, 2023). Later in the pandemic, wastewater surveillance became an innovative way for local jurisdictions to understand COVID-19 Community Levels (CDC *Wastewater Surveillance*, 2023).

With the onset of COVID-19 surges, demand for assessments and screening increased significantly. During peak surges, calls to the nurse-led EH telehealth COVID-19 Hotline reached 1,000 calls/day. At times it was not feasible to respond to all calls, given the demand: voicemails were responded to when EH RNs were available. The maximum number of COVID-19 tests ordered during surges were 300-310 per day for QHS EEs. Follow-up on EEs who had been tested for COVID-19 indicate that about 85 to 90% were given health clearances and RTW following the quarantine or isolation periods. Approximately 10 to 12% were referred to the EH physician or APRN for follow-up for additional assessment and possible treatment. Under 1% of cases had no justification for remaining out-of-work and therefore required manager involvement for additional follow-up. Of importance, by assessing and screening EEs for COVID-19 using telehealth, during the span of the pandemic there were no outbreaks of COVID-19 among EH clinic staff.

> With the onset of COVID-19 surges, demand for assessments and screening increased significantly

Summary Discussion

Evidence indicates this nurse-led telehealth clinic was successful in providing safe, efficient access to healthcare services, optimization of staffing during a pandemic, and implementation of technology for added efficiencies and even greater access to care. While not revenue generating, significant value was achieved by safely and efficiently returning 85 to 90% of EEs back to work following screening and testing protocols that supported staffing demands during the COVID-19 pandemic.

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Access to healthcare services is a key characteristic of nurse-led clinics (Hatchett, 2008). This initiative provided safe access to healthcare services for more than 8,500 EEs across Hawai'i, Guam, and Saipan. Safety of the EH clinic staff was sustained, as evidenced by no incidents of COVID-19 outbreaks among EH clinic staff. The telehealth EH RNs also assisted with reducing organizational costs related to the burden of EE absenteeism and presenteeism during a protracted pandemic. One can assume that patients were therefore safer with optimized numbers of QHS-hired staff back to work while reducing the risks of URI spread to vulnerable populations in ambulatory and acute settings. Over the two-phased process discussed above, use of LumiSight created greater efficiency and "at home" convenient access to healthcare services for EEs.

While this clinic was nurse-led, the importance of ongoing collaborating with an interprofessional team was essential (Hatchett, 2008). It was as valuable for EH telehealth RNs to learn from experts in the field as it was for these experts to hear from frontline, telehealth EH RNs about QHS EEs' health related needs. The support from the OT who ensured that the telehealth RNs had ergonomically correct equipment and strategies to support their health and safety enhanced their physical and emotional well-being.

Creative staffing models allowed for the expansion of telehealth EH services during surges and reduced EH staffing, and therefore operational costs, when call volumes subsided. The strategic use of temporary, contracted, and transitional duty RNs with sufficient orientation allowed them to learn about the organization from the lens of EH while also contributing to a high demand need for RN skills, knowledge, and expertise.

> Access to healthcare services is a key characteristic of nurse-led clinics.

Lessons Learned

Formal Communication

Formal channels of communication are essential to ensure that managers have a comprehensive understanding of current or revised policies and procedures. Managers are a critical component of EE support and policy enforcement. Often EEs contacted their managers to inform them they were ill, thinking they had allergy or cold symptoms. The manager would then direct the EE to contact the EH telehealth COVID-19 Hotline RN for URI screening and assessment, which may have led to COVID-19 positive test results. It was also important to empower managers to call the EH telehealth COVID-19 Hotline RNs to discuss scenarios and hypothetical situations to support their EEs. While confidentiality of a specific EE's health status

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is always important to preserve, managers value the availability for consultation. Similarly, when EH RNs were unable to reach EEs, alerting the EE's manager facilitates their re-engagement with telehealth EH RNs.

Sequenced Implementation

Implementation of LumiSight (LumiSight Health, 2024) in a stepwise approach was valuable. The initial implementation phase that focused on daily health checks allowed EEs to become comfortable with the technology. The second phase, when the technology included the added capacity to report symptoms, secure a test date, and later, request a RTW health clearance, was easier to implement. However, there were challenges with implementing this technology system-wide. For instance, despite manager support to ensure compliance, LumiSight daily health check-ins were not universally adopted by all EEs. Some EEs never used LumiSight, even when it was expanded. The language used on the LumiSight application led to confusion in some instances. "Clearance" from daily health check-ins got confused with the "health clearance" assigned by the EH RN following a confirmed COVID-19 positive episode and the completed prescribed isolation period. In some instances, EEs used the daily health check-in clearance to RTW, bypassing the telehealth EH RN. EEs reported to managers that LumiSight had "cleared" them despite the fact that no formal notification had been sent to the manager by the EH RN. If the daily health check-in had been labeled a "self-reported OK to work" it may have minimized confusion.

Collaboration

Collaboration for information sharing and support is critical (Hatchett, 2008). Collaborating with other experts provides professional development and active problem-solving opportunities for responding to complex cases. To reduce communication errors and enhance patient safety, weekly huddles with telehealth EH RNs would have helped to clarify confusion about newly established or revised policies. Empowering frontline RNs to identify problems, find solutions, and further build a culture of collaboration would have provided an avenue to discuss challenging scenarios and ensure that a more consistent approach was used by all EH RNs (Shaikh, 2020).

If the daily health check-in had been labeled a "self-reported OK to work" it may have minimized confusion.

There was a document on a password protected shared-drive that provided updates about changes in process and procedures that was valuable. Additionally, we learned that it is important to have an OT ergonomic specialist consult to design the physical environment of safe workstations, to include ergonomic task chairs, desks, telephone headsets, keyboard trays, footrests and either a room with windows or scenic visual enhancements. Related, this safety and health promotion content should also be included in orientation materials for new EEs (Sharifi et al., 2022).

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Implications for Practice and Research

With proper orientation, nurse-led services result in safe high-quality care (Chan et al., 2018) that is cost effective (Driscoll et al., 2022) and results in high levels of patient satisfaction (Connolly & Cotter, 2023). For this nurse-led telehealth clinic, the next step would be to define the return on investment for the full range of direct and indirect costs to determine the cost benefit analysis. Beyond the direct costs of hired EH COVID-19 Hotline RNs, mounting telehealth platforms, and health monitoring technologies, hidden costs should be identified for how lost time is calculated for employers and EEs when EEs are out of work during long periods of illness/injury. For example, hiring replacement workers is known to be costly (Bethel et al., 2019). According to Longyear (2023), at the peak of the COVID-19 pandemic, "...many facilities reported permanent nurses leaving for travel assignments paying as much as double or triple their full-time hourly compensation" (p. 2). During this post-pandemic era, there is ongoing concern about burnout rates for direct RN care providers causing a continued need for travel RNs (Longyear, 2023).

To minimize the lost time for EEs with a myriad of minor injuries/illnesses, the successes of this nurse-led clinic can be expanded to facilitate and expedite collecting health assessment and diagnostic data. EH RNs using a telehealth platform could complete an initial assessment and screening and if appropriate, order laboratory or diagnostic tests via physician approved protocols before the EE sees a provider (Bodenheimer et al., 2015; Bodenheimer & Bauer, 2016; Flinter et al., 2017; Norful et al., 2017). This would improve efficiency for the provider and reduce time lost from employment for EEs. Providers would have results from protocol driven, nurse ordered laboratory tests and radiology scans in addition to the EH RN's assessment to take next steps in the EE's care.

Also, telehealth EH RNs can assess and screen EEs who are recognized to be at risk for trauma, anxiety, or depression using evidence-based screening tools (e.g., Patient Health Questionnaire-4 and Patient Health Questionnaire-9) to identify those who would benefit from receiving mental health services (Kocalevent et al., 2014; Costantini et al., 2021). Telehealth EH RNs could then confidentially refer these EEs to mental health providers for targeted services. Beyond expanding services and strategies to assess financial soundness, other outcome measures may include patient satisfaction, nurse satisfaction, and data capturing how efficient these RTW strategies were for ill/injured EEs.

Conclusion

The COVID-19 pandemic highlighted how HCP were able to pivot and innovate during a period of multiple challenges. In service of the public, emergency management of disasters requires that hospitals/clinics, public health agencies, and local community partners work in collaboration during the four phases of mitigation, preparedness, response, and recovery (Veenema, 2019). While opportunities for change and adapting to new unanticipated circumstances were abundant, the need for courage, compassion, and self-care cannot be underestimated. Lessons learned from this unprecedented modern-day pandemic serve best to prepare for the future if disseminated, discussed, and used to inform thoughtful planning, action, and follow-up evaluation.

The COVID-19 pandemic highlighted how HCP were able to pivot and innovate during a period of multiple challenges.

Lessons that we have learned from the development and implementation of the QHS EH telehealth COVID-19 Hotline demonstrate that an EH telehealth modality is accepted, this idea can be expanded so that HCP are efficiently scheduled for diagnostic tests and screened for physical/mental health needs using protocols and evidence-based tools for referrals to healthcare providers. By actively assisting HCP to meet their healthcare needs, they can return to work more expeditiously. This alone is an important outcome, given ongoing COVID-19 concerns and local and national healthcare worker shortages.

This publication is dedicated to all Queen's Health System (QHS) employees who demonstrated remarkable courage, compassion, and commitment to provide outstanding care for the patients and families during the COVID-19 pandemic. In addition, it is essential to acknowledge the critical role all Queen's Medical Center Employee Health staff had in caring for QHS employees during these unprecedented times.

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