



The Implementation of a Centralized COVID-19 PCR Results Management Process During a Nation- Wide Healthcare Crisis

ORIGINAL PROJECT

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ABSTRACT

The COVID-19 pandemic altered the way healthcare organizes and delivers care. Healthcare teams were required to demonstrate agility and resilience amidst a novel and sudden worldwide crisis, which many care providers had never experienced. Teamwork has always been a hallmark of nursing care; however, the magnitude of this crisis stretched the concept beyond its normal application. This paper describes a nurse-led collaborative effort to manage COVID-19 PCR results in a New York City-based healthcare organization.

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Covid; teamwork; resilience; innovation; agility; crisis management; remote team; IT

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BACKGROUND

There have been over eighty million confirmed COVID-19 cases in the United States as of April 2022 (CDC, 2022). New York City accounts for over two million of those cases, with the first case diagnosed in early March of 2020 (CDC, 2022). By late March 2020, the number of laboratory confirmed cases had risen to nearly five thousand as test availability increased and testing criteria expanded (NYSDOH, 2021). Cases continued to soar throughout the city reaching over two hundred thousand cases by May of 2020 (NYSDOH, 2021). This pandemic presented with chaos and created multiple complex challenges for which there were no established best practices for healthcare organizations (Cathcart, 2020; Berkow et al., 2020). This required healthcare organizations to become agile and work efficiently while moving at record speed (Cathcart, 2020; Berkow et al., 2020; Aquila et al., 2020; Healthcare Advisory Board, 2020). Hospitals nationwide reallocated both human and material resources to areas with the most critical needs to accommodate the influx of sick COVID-19-positive patients (Cathcart, 2020; Berkow et al., 2020). The inpatient units and emergency departments served as the hub for a majority of the COVID-19-related patient care activities, as the ambulatory arena experienced a pause in elective procedures and routine in-office visits curtailed (Cathcart, 2020; Berkow et al., 2020). Hospital networks found themselves at the epicenter of this rapidly evolving pandemic. There was tremendous pressure to adapt to rapidly evolving testing protocols, and create structures and processes for the management and follow up of the ever-growing pool of COVID-19 PCR results. Patients needed to understand their test results and how to care for themselves and their loved ones to prevent the spread of the virus (CDC, 2021). In managing the response to the challenges posed by this health crisis, it was necessary to realign the structure and function of teams and team members (Brodrick et al., 2020). Nurses have experienced many changes during this pandemic including redeployment to tasks they were previously not primarily responsible for (Rosa et al., 2020; Joslin & Joslin, 2020; Healthcare Advisory Board, 2020). The ability of nurses to transition to different responsibilities demonstrates resilience, an attribute necessary amidst a crisis (Ling et al., 2017).

PURPOSE

This article describes how ambulatory nursing leadership and staff led a collaborative approach to build a streamlined process for the management of patient COVID-19 PCR results in a New York City hospital network comprised of seven hospitals, many ambulatory clinics, and urgent care centers.

APPROACH

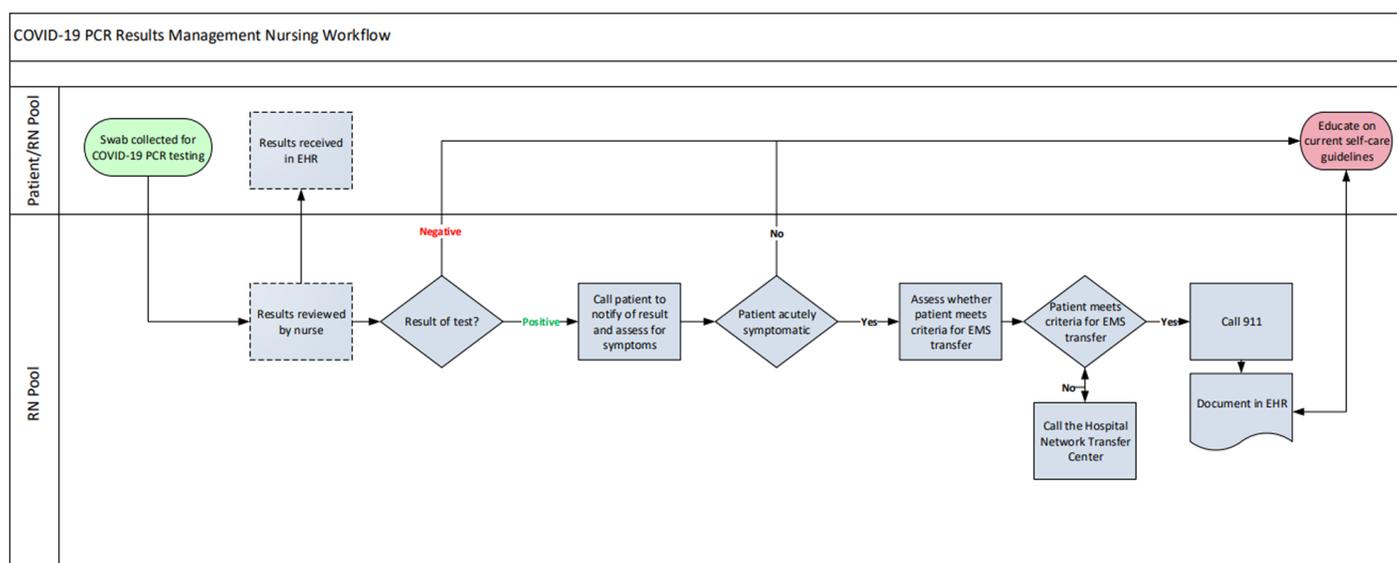
A multi-specialty ambulatory nursing team managed well over forty-five thousand COVID-19 PCR patient results over a period of five months (March to July 2020) while the hospitals experienced an influx of critically ill patients during the first surge of the COVID-19 pandemic. Ambulatory nursing leadership led this effort in collaboration with the Chief of Ambulatory Care and a multi-disciplinary team. The transition of patient COVID-19 PCR results follow-ups to a centralized nursing team freed up the emergency departments and urgent care centers to focus on the care of sick patients who accessed our hospitals for care amidst the pandemic. This project managed the results for all members of the hospital network including patients, employees, and their families. Institutional Review Board approval was not required for this project.

Electronic Health Record (EHR) Optimization: Nursing leadership collaborated with the information technology (IT) team to create a streamlined process to identify patients who received a COVID-19 PCR test and required results follow-up. A COVID-19 PCR patient results spreadsheet was created in the EHR. Once a COVID-19 PCR test was ordered, the results flowed into the patient's individualized EHR and into the COVID-19 PCR tracking spreadsheet. In the patient's EHR, the nurses documented each call attempt to the same patient as either "1st attempt," "2nd attempt," or "3rd attempt" on a COVID-19 flowsheet. The flowsheet had four status options, "reached patient," "did not reach patient, left callback info," "mailed certified letter," and "deceased, did not contact." The status from the flowsheet populated directly under the "Follow Up Status" column of the COVID-19 PCR tracking spreadsheet. In this way, the tracking spreadsheet captured the outcome of each outreach

attempt preventing duplication of effort and building workflow efficiencies. Smartphrases were created to standardize nursing documentation of the calls, patient education, and quarantine or isolation instructions (Appendix 1).

Staff Education: The nurses received ongoing education on proper COVID-19 self-care, quarantine, and isolation requirements based on current Centers for Disease Control and Prevention (CDC) and New York State Department of Health (NYSDOH) COVID-19 guidelines. Scripted training tools to support the education of the nurses were created. The scripts were frequently updated to match the rapidly changing CDC guidelines. Since the guidelines were constantly changing, nursing leadership collaborated closely with the infection prevention team to ensure practice remained aligned with the most current guidelines so patients received the right information during the nursing touchpoints. Ongoing communication within teams is always important, but takes on added urgency during a crisis (Brodrick et al., 2020; Joslin & Joslin, 2020). Nursing education included proper escalation processes should a patient need transfer to a higher level of care. Transfers were accomplished either by calling Emergency Medical Response (EMS) via 911 or by the nurse accessing the hospital network transfer center. The nurses received education on the clinical signs that would require an EMS call versus the transfer center (Appendix 2). The staff nurses were trained either in person or virtually through Zoom. The training included results reporting workflow, documentation process, smartphrase use, and patient care escalation protocol (Figure 1).

Figure 1 COVID-19 PCR Results Management Nursing Workflow.



Nursing Pool: Nurses from a variety of ambulatory sub-specialty practices were involved in telephonic outreach to the patients. A total of thirty-three nurses worked on this project under the supervision of the ambulatory nursing leadership team. Since this was a multi-specialty group, some of the nurses had never utilized the ambulatory EHR. While some were familiar, the view in use differed substantially from their regular view. It was necessary for the nurses to complete an abbreviated EHR training organized by the IT team before being granted access to the electronic record and the required views. Ambulatory nursing leadership utilized the COVID-19 PCR results tracking spreadsheet to assign daily call assignments to the nurses. The tracking spreadsheet was filtered by new patient results (results populated overnight) to identify patients who still required a call. Nursing call assignments were created using the first letter of patient last names. For example, "nurse A" had an assignment of patient last names that began from "F to H." The COVID-19 average results turn-around time was between 48 to 72 hours. A maximum of three call attempts was made for each patient. For those who tested positive and were not reached after the third attempt, a final outreach attempt was made via certified mail to the patient's home address on file with the results of their COVID-19 PCR tests and self-care instructions based on current guidelines.

Project Timeline: By the end of July 2020, the test positivity rate in New York State for COVID-19 PCRs had declined significantly and ambulatory practices resumed routine patient care visits. Due to these changes, the centralized nursing results follow-up pool was dissolved and the responsibility

to follow-up on COVID-19 PCR results was transitioned back to the teams who ordered the testing. The hospital network maintained the documentation smartphrase that was created in the EHR to facilitate standardization of documentation.

FINDINGS

This project demonstrated flexibility and resilience of a team of nurses who were dedicated to ensuring that the spread of the COVID-19 virus was curtailed by early communication of COVID-19 PCR results. It also allowed the emergency departments and urgent care centers to focus their time and resources on managing the health of acutely ill patients. The nursing touchpoints with the patients served as an opportunity to stress the need to maintain quarantine and identify patients in need of escalation to a higher level of care. As clinical operations in the ambulatory setting slowly resumed and nurses who had been trained to the process had to return to their primary departments, there was a need to train newly identified nurses to join the COVID-19 PCR results management team. This did not impact operations as most ambulatory care facilities remained closed during the first COVID-19 pandemic surge, leaving an ample pool of nurses to support the project.

CHALLENGES

The project like any other had its set of challenges. The rapid influx of COVID-19 PCR testing created delays with specimen processing in the lab, which in turn created delays in results reporting into the EHR. This fueled delays in nurse-initiated telephonic outreach to the patients to discuss COVID-19 PCR results within 48 to 72 hours of testing. This delay may have led to an increase in patient anxiety and required the nurses to sometimes make multiple calls to the same patient apologizing for the delay and explaining the reason for it in an effort to assuage anxiety and fear. In certain instances, patient contact information in the EHR was inaccurate, so the team spent an ample amount of time trying to identify ways of contacting the patients with their results. Patients that tested in the ambulatory setting were sometimes undomiciled or later admitted to the hospital, making it difficult to contact them. Some of the nurses bore the emotional burden of reaching some patients' family members via phone only to learn that the patient was deceased from COVID-19-related illness. Staff were frequently encouraged to take advantage of available psychosocial resources within the hospital network such as the Employee Assistance Program and Chaplain Services. Creating the nurse call assignments was challenging as nursing leadership needed to ensure an equitable distribution of an ever-mounting volume of new patient results. On a daily basis the nursing team struggled with keeping up with the new patient results while continuing outreach to patients who needed a second or third attempt. The need to train nurses who were unfamiliar with ambulatory EHR was time consuming for IT and nursing leadership who provided ongoing support.

CONCLUSION/IMPLICATIONS FOR PRACTICE

Although the COVID-19 pandemic is unprecedented, participating in this project has better prepared us as a team on how to respond to future pandemics or health crises of this magnitude. Nurses are at the frontline of the response to the COVID-19 pandemic and will most likely be for future health crises. A playbook that documents processes and lessons learned during the height of the pandemic within our hospital network would be invaluable in informing a future response. Lastly, this project and the pandemic as a whole highlighted the value of teamwork and the agility and resilience of our teams.

ADDITIONAL FILE

The additional file for this article can be found as follows:

- **Appendices.** Appendix 1 and 2. DOI: <https://doi.org/10.29024/pins.28.s1>

COMPETING INTERESTS

The authors have no competing interests to declare.

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