Telemedicine Consultations and Follow-up of Patients With COVID-19

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The coronavirus disease 2019 (COVID-19) pandemic has created a need and opportunity for telemedicine consultations. The risk of disease transmission to patients without COVID-19 and to health care workers has stimulated health care institutions to identify new ways to track and follow-up individuals with potential or proven COVID-19. Herein, we describe systems used to provide care to patients in the Mayo Clinic Health System – Southeast Minnesota region.

EVALUATION OF PERSONS WITH COVID-19 SYMPTOMS

Mayo Clinic has instituted a centralized nurse hotline for screening all Mayo Clinic patients who call and describe possible COVID-19 symptoms to determine whether they meet current guidelines for a polymerase chain reaction test (via nasopharyngeal swab) for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). After this screening, which is offered across all Mayo sites, patients in the Southeast Minnesota region are offered a pilot program for a virtual appointment with a health care professional, via either telephone or videoconference, to address their active symptoms while they wait for their swab test results. Approximately one-third to one-half of patients elect a virtual provider evaluation. Video visits are conducted via the Patient Online Services portal, which allows patients to log into their video appointment from their calendar and connect with the provider through a highly secure interface.

Virtual appointments are divided into 2 categories. The first category comprises patients with simple acute concerns aged 18 months to 75 years, and the second category comprises patients with more complex or multiple concerns and patients outside that age range. The first group of patients is scheduled by using centralized virtual visit calendars for same-day appointments with advanced practice providers, predominantly drawn from providers previously assigned to Mayo Clinic Express Care clinics. The second group of patients, who have more complex or serious concerns, are scheduled for virtual visits on the calendar of their primary care provider, allowing them to benefit from the increased opportunity for continuity of care.

Video visits are preferred to telephone visits because they allow for better interaction and data gathering. In 75% of cases, the virtual provider is able to resolve the patient’s concerns; 25% of patients continue on to additional in-person appointments.

If imaging studies, laboratory testing, or in-person appointments are needed to complete the diagnostic evaluation, the patient is offered an appointment in local COVID-19 comprehensive care centers, which have been established with additional safety procedures and environmental protection to safely care for patients with possible COVID-19 who are awaiting test results and persons with active COVID-19 who require in-person care. From March 25, 2020, through May 1, 2020, 1759 virtual visits were performed for Mayo Clinic patients in the Southeast Minnesota region.

VIRTUAL CARE OF PATIENTS WITH COVID-19

Positive SARS-CoV-2 polymerase chain reaction results are reported via a group in-basket in electronic health records to the general internal medicine (GIM)/infectious diseases COVID-19 Frontline Care Team. A physician from the COVID-19 Frontline
Care Team initially contacts patients to assess their symptom severity and to determine their risk of developing severe COVID-19. This visit occurs virtually via either telephone or videoconference across all Mayo Clinic sites in the Midwest. Patients then receive remote monitoring from a GIM nursing team using both virtual visits and telephone calls for symptom updates. General internal medicine has also established processes to connect with staff in other specialties to optimize care delivery for patients actively infected with SARS-CoV-2.

The intensity of remote monitoring is driven mainly by the risk of a patient developing a serious case of COVID-19, with higher-risk patients being more intensively monitored. Mayo Clinic provides patients at highest risk with a cellular-enabled tablet telehealth system and monitors for blood pressure, heart rate, temperature, weight, and oxygen saturation, as well as 24-hour nursing support and nursing follow-up twice daily. Patients at lower risk are sent a thermometer and pulse oximeter by overnight mail and are encouraged to report their vital signs and symptoms twice daily via messages sent through their patient portal account, which are reviewed by the remote monitoring nursing teams. An alert is generated whenever vital signs or symptoms change beyond predefined thresholds. On the basis of these alerts, the nursing team can contact patients and escalate care, as necessary. By using remote monitoring, by June 10, 2020, we had kept 2000 symptomatic patients in the Midwest with positive COVID-19 test results at home under self-isolation while we provided remote medical care and monitoring of vital signs and symptoms to allow the early identification of decompensation. Decompensation often begins with hypoxia and hypotension, which are readily identified using the remote monitoring system. By triaging patients to the emergency department or a dedicated local COVID-19 comprehensive care center, we have been able to funnel these patients to areas that are appropriately equipped for patients with COVID-19, thereby decreasing the risk of disease transmission.

A similar process exists for patients with COVID-19 being discharged from the hospital. All inpatients with a diagnosis of COVID-19 are assessed by the infectious diseases team and risk stratified for remote patient monitoring after discharge. Within 48 hours of discharge, the team from GIM reassesses the patients and makes recommendations for duration of isolation.

During the COVID-19 pandemic, the GIM team has also assisted in the evaluation of patients being seen for nonurgent medical care who had symptoms concerning for possible COVID-19 infection. The GIM team conducts a virtual visit during which they review records, assess infection risk, and make recommendations regarding the need for testing. This effort helps minimize infection risk to staff by eliminating unnecessary in-person visits for patients who may have COVID-19.

CONCLUSION

Virtual care models have been highly successful in meeting the needs of persons with possible COVID-19 and those with positive COVID-19 test results. Virtual visits have been widely accepted by patients and represent a key component of providing timely and safe health care during this pandemic.

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