

Swift Integration of Telemedicine for Pre-Operative Enhancement amidst the COVID-19 Crisis

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1. Abstract

1.1. Background: Although a lot of literature has been written about the COVID-19 epidemic, not much is known about telemedicine visits and the pre-surgical optimization procedure in a big healthcare system. Reporting on the application of an automated algorithm for patient triage into virtual visits as opposed to traditional in-person visits is the aim of this study.

1.2. Methods: An algorithm was created and integrated into our electronic health record (EHR) to prioritize suitable patients for a virtual PACC visit. The algorithm, known as the “PACC Triage Questionnaire,” considers both patient comorbidities and procedural risk. After the patient’s surgeon’s office completes this questionnaire within the patient’s electronic health record, an automatic recommended PACC visit type is generated. As a result, the patient is assigned to one of three visit types: PACC in-person, PACC virtual, or not required. By automating the triage process to a particular visit type, this “PACC Triage Questionnaire” maximized the utilization of our EHR technology and substituted a significantly more laborious PACC questionnaire.

1.3. Results: Overall, the triage tool’s preliminary findings suggested that 43% of patients receive a “No PACC visit,” 41% receive a “In Person PACC visit,” and 16% receive a “Virtual Visit PACC.” Acceptance by patients and caregivers has been quite high. About 33 percent of PACC

visits were conducted virtually in the four months before this questionnaire was put into use. During the four months following introduction, almost thirty percent of PACC appointments were conducted virtually. The method of distributing the PACC questionnaire accounts for a significant portion of the discrepancy between the actual number of virtual visits and the recommendations from the questionnaire. Use started out in a few departments and subsequently spread (though it’s still not widespread). Services that do not already use the questionnaire select the kind of appointment.

1.4. Conclusion: More patients were referred to virtual visits during a pandemic thanks to the algorithm that was implemented in the EHR and started in the surgeons’ offices. Questionnaire refinement will be possible as more patients are screened and triage recommendations are reevaluated over time. Future improvements will include adding the PACC Questionnaire to our patient portal online (such as “MyChart”) and automating the scheduling procedure even more. There was no specific grant awarded for this research by public, private, or nonprofit funding organizations.

Keywords:

Automated screening algorithm; Virtual visits and pre-anesthesia assessment; Telemedicine

2. INTRODUCTION

Although a lot of literature has been written about the COVID-19 epidemic, not much is known about telemedicine visits and pre-surgical optimization in a big healthcare system. Telemedicine consultations facilitate two-way audio-visual patient interactions via electronic devices and enhance access to the healthcare system in situations where patients’ and caregivers’ social distance is a concern. In 2016, we decided to expand the number of telemedicine consultations in our preoperative clinic system in order to better match with company goals. The first platform, created four years ago, combined wireless digital stethoscopes with video technologies at fixed, remote locations. The adoption of remote visits languished despite institutional backing and clinician acceptance for a number of reasons, including provider unfamiliarity and the lack of clear benefits (because patients still had to visit a location equipped with the technology). The current epidemic has brought to light the intrinsic necessity of telemedicine in numerous medical and surgical disciplines, as well as its inherent safety. The reasons telemedicine has achieved a “tipping point” in the acceptance of virtual visits for pre-anesthesia assessment have also been described by a number of authors [1, 2]. Patients from a range of geographic areas are served by tertiary healthcare systems, and patient experience is improved by patient-centered evaluation, which is

supported by new laws governing telehealth and telemedicine from the US Centers for Medicare and Medicaid Services (CMS) [2]. While there are numerous publications in the literature about the use of telemedicine visits for pre-anesthesia evaluation, none of them use an algorithm to automatically sort patients into virtual visits as opposed to traditional in-person consultations [3]. Numerous reports from both rural and urban settings may be found in the current literature [1,4,5]. The largest and most current study, number 1, emphasizes cost savings, patient happiness, and no adverse influence on procedure cancellation rates on the day of the surgery. However, in each of these instances, the type of visit—virtual or in-person—was either chosen at random or by the patient or surgeon. An automated and customized triage procedure to match patients with in-person or telemedicine appointments has not been documented in any published study. We will go over our early experiences in determining the level of appropriateness for PACC evaluation with an algorithm based on patient and procedure risk stratification in this brief paper.

3. METHODS

In light of the global pandemic, this project aimed to improve patient access and clinical practice quality. Therefore, no explicit patient permission was needed, nor was Institutional Review Board (IRB) oversight necessary. For PACC telemedicine sessions, our clinic system now uses Google Duo or Face Time due to COVID-19 regulations that went into effect in March 2020. Instead of needing to visit a specialized medical institution equipped with the necessary technology, patients might now use their current mobile platforms. Over the past six months, the integration of video technology into our EHR has improved these telemedicine encounters even further. If a video component of the outpatient PACC virtual visit cannot be finished due to technical issues, the visit is completed and recorded. The visit ends on the day of the procedure. The physical examination is then appended to the visit record. The coding and billing specialists at our Institute supplied the data needed for virtual visit billing in the early stages of the COVID-19 epidemic. The billing for the Public Health Emergency CMS regulations have made it impossible to deduct payment or worth-related value units (wRVUs) for telemedicine visits. This has made it more easier for people and healthcare institutions to implement these visits. The patient visit is coded as either new or established, just like in conventional evaluation and management (E and M) coding. Those who have not received any treatment from the Cleveland Clinic Anesthesiology Institute in the last three years are considered new patients. The CMS guidelines for video documentation visits are available on a Medicare fee for service.

4. RESULTS AND DISCUSSION

Since March 2020, when our clinic started providing virtual appointments, 12,941 patients have had virtual consultations. This amounts to about thirty percent of the patients our clinic saw in that time frame. The PACC survey went live on the internet in September 2020. For 43% of cases, the tool has suggested “No PACC visit.” patients, with 41% of patients receiving a “In Person PACC visit” and 16% receiving a “Virtual Visit.” About one-third of all PACC visits were conducted virtually in the four

months before this questionnaire was put into use. During the four months following introduction, almost thirty percent of PACC appointments were conducted virtually. The procedure of deploying the questionnaire can account for a significant portion of the discrepancy between the actual number of virtual visits and the recommendations from the questionnaire. real percentages to better conform to the questionnaire’s recommendation. Furthermore, the comparatively high the first rollout’s suggestion of “No PACC” probably resulted in a greater percentage of healthy individuals.

going through low-risk operations. As the questionnaire is used more often, the percentage of “No PACC” suggestions will probably decrease as more complicated individuals are included. Cleveland Clinic patient and caregiver acceptance of this PACC triage process has been high. The daily patient footprint at our PACC clinics has been able to decrease by moving a substantial portion of these patients to virtual visits, and this has facilitated our ability to maintain social distancing within our clinics. Similarly several other innovative pre-anesthesia clinics also document high patient and provider acceptance with no increase in same day cancelation rate for surgeries [4,5] In general, our experience has shown more enthusiasm from patients and providers to embrace virtual visits. This is in contrast to a recent, prospective study where patients were divided in their acceptance of virtual visits.

5. CONCLUSION

Our experience shows that evaluation of patients in the perioperative setting can be accomplished with success using telemedicine with an embedded screening algorithm. Our preoperative clinic physicians, nurse practitioners and physician assistants, would manually assign patients to virtual or in-person PACC sessions before utilizing the screening tool. Once the triage procedure is in place, the system’s repeatable, risk-centered logic is used to automatically make this decision. Given the risks associated with a pandemic, the widespread adoption of virtual visits thus constitutes a benefit to society as a whole.

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