COVID-19 INFECTION CONTROL AND PREVENTION IN OPHTHALMOLOGY OFFICES

PRE- APPROVED TEMPLATE

Title: Covid-19 response of Henry Ford Ophthalmology Department to Minimize Patient and staff Exposure to Corona Virus

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Project Description	1) Evaluate the use of SMS messaging in preventing COVID-19 or exposed suspects from entering the office. 2) Evaluate the effect of clinical volume reduction to allow social distancing in the waiting room. 3) Evaluate the utilization of newly adopted telemedicine technology during the epidemic. 4) Evaluate the effectiveness of various infection control measures in response to the outbreak.
Background Information	COVID-19 first appeared in the Seattle area in the US. Diplomate's practice is located in Kitsap County, Washington, across the Puget Sound from Seattle. The geographic isolation from the epicenter of this epidemic in the US may in part explain the relatively lower-case number in Kitsap County. At the time of this writing, there are 33 confirmed cases in this county with 850 negatives.
Project Setting	Solo Practice
Study Population	Diplomate's practice is roughly 70% pediatric ophthalmology and 30% general ophthalmology. Beginning on March 2, 2020, we began to use SMS messaging to advise scheduled patients to stay home and cancel appointments if they experience fever, cough, or sore throat. Text messages also advised patients that each minor patient can only be accompanied by one parent to reduce crowd size. On March 19, we all began triaging patients such that only urgent and emergent patients will be seen. Elective procedures are also cancelled. Blast emails were also sent out to all patients of the practice to inform them of the availability of Telemedicine service in a Zoom platform to address their eye concerns if needed during the epidemic. Multiple signs were posted throughout the building and in the clinic space to remind patients of COVID-19 symptoms. Doors were kept open to reduce unnecessary contacts. Chairs were rearranged in the waiting room to provide social distancing and wiped with Lysol disinfecting wipes after each use. All instruments and chairs were similarly wiped in the exam rooms after each use. To open with a disposable sleeve was used to check pressure. Extra-large face shield was added to all slit lamp to protect patients and providers.

Quality Measures	Evaluate the rate of compliance to SMS messages. Evaluate the overall daily reduction of clinical volume as well as peak volume reduction. We will report the number of patients who selected Telemedicine evaluation as well as any known infection contact to our office as reported by our public health authority.
Project Interventions and Improvement Period	Interventions already described as above. We will track the data for a period of 30 days (or longer if indicated) beginning on March 2.
Project Team	I am the lead on this improvement project. Office manager will help comply data on messaging and clinical volume. Front desk staff and techs will all participate in infection control measures.

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Section 2. Project Evaluation

PROJECT SUMMARY	Review the effect and adjustment of implementing the policy changes after a minimum of 30-days and in the following sections, please prepare a brief summary of the project highlighting the data collected, effectiveness of the measurement approach, interventions and the overall impact of the project.
BASELINE DATA	• From March 2 to April 30, a total of 910 SMS messages were sent to inquire if a scheduled patient was experiencing any COVID-19 related symptoms. If so, they were asked to call or text us back to cancel or postpone the appointment. When the stay-at-home order was in placed in Washington state on 3/25/2020, an additional 89 patients were sent SMS messages for them to cancel their non-urgent appointments. • In that period, a total of 1141 patients were scheduled for visits. There was no patient scheduled between April 3 to April 12 for a planned spring break. The average number of scheduled patients per regular clinic day was 37.2 • A total of 3618 emails were sent out to our patients informing them that we offer telemedicine visits to reduce or eliminate the need for in-person exam in order to avoid COVID exposure. • A total of 523 patients were seen during the period and the infectious control measures as described were uniformly applied to all those patients who visited us.
FOLLOW-UP DATA	1. After the SMS messages were sent out, 129 patients called us to cancel and another 100 patients texted us back to cancel. The response rate is therefore 25.16%. Additionally, 288 patients were cancelled by the office beginning on March 23 because of non-urgent nature of their eye condition 2. Overall, 523 patients were seen out of the 1141 that was originally scheduled. That was a reduction of 54.16%. We were able to maintain appropriate social distancing at all time. However, the reduction in clinical volume was far more significant beginning on 3/23 as we prepared for the lockdown. There were 5 days when all (100%) patients were cancelled. The median clinical volume reduction was 70%. After the lock down the highest number of patients we saw on any given day was 17 on 4/28. Many patients were trying to wait for the lockdown to be over (originally scheduled for May 4) before coming in for their problem. When it looked like it was to be extended, many wanted to come in. 3. Six (6) patients were evaluated by telemedicine out of the 3618 email notifications that we sent out to our patients on the availability of the service (0.17%). Of the six patients, two (2) had chalazion, two (2) had blepharitis, one (1) had subconjunctival hemorrhage, and one (1) had central retinal artery occlusion. One of the patients with chalazion eventually came in for an in-person follow up due to lack of complete resolution. The patient with central retinal artery occlusion also had to come in for an in-person exam for confirmation of the diagnosis and was further referred to the emergency room for a stroke work up. All six patients were adults. No parent requested telemedicine exam for their child's eye problem. 4. We are not aware of any patient contracted COVID-19 from our office. No

	case was traced to our office by our county health officials. As of 4/30/2020, there were a total of 150 confirmed cases with 2 deaths in Kitsap County.
PROJECT IMPACT	1) SMS messaging is a cost-effective way to disseminate urgent messages to patients. However, response rate can be low and follow-up phone calls are needed for confirmation. 2) A clinical volume reduction of at least 54% allowed for proper social distancing in our office set up. The minimum volume reduction to maintain social distancing remains to be determined. 3) Telemedicine eye visit on the Zoom platform can be sufficient for certain eye conditions in placed of in-person exam. The appeal of telemedicine to pediatric population was low in our experience perhaps due to lack of cooperation with the patients in front of a camera and that the perceived risk of COVID-19 infection in this population was low. 4) While the infectious control measures that we described can be followed with some impact to workflow, the effectiveness of such measures would be difficult to accurately determine due to the low incidence of COVID in our county and the lack of a control group in this study.
PROJECT REFLECTION	• **Do you feel that the project was worthwhile, effective?** Yes • **How might you have performed the project differently?** It is unclear if patients cancelled after receiving our SMS messages did so because they were actually having COVID related symptoms or the cancellation was done out of fear of contracting the virus by appearing at out clinic. A follow-up phone call or email survey will help elucidate the actual compliance with the recommended order through SMS messaging. • **Please offer suggestions for other ophthalmologists undertaking a similar project.** The relatively low utilization of our telemedicine service was disappointing. My suggestion is that every patient who called or texted us to cancel or was cancelled by the office should be offered a telemedicine visit. This may increase the adoption rate of this technology in general/pediatric ophthalmology practice.