



## COVID-19 and dental emergencies: reflections on teledentistry

COVID-19 e emergências odontológicas: reflexões em teleodontologia

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### ABSTRACT

Early in 2020, the COVID-19 virus spread throughout the world. On March 11, 2020 the World Health Organization declared COVID-19 a pandemic due to the level of spread and the severity of the disease. In efforts to control the spread of COVID-19 and reduce the number of new infections and deaths, people around the world took steps that had not been taken in modern history. As countries and locales issued “shelter in place edicts” the economic and social impact on businesses and professions was dramatic. The field of dentistry was similarly affected as edicts were made by governmental officials that elective dental procedures be stopped. In the state of Iowa, Governor Kim Reynolds issued a proclamation mandating that effective March 27, 2020 all dentists and their staff refrain from performing “elective dental procedures and nonessential or elective surgeries”. With this turn of events, dental practices across the state were effectively shut down, only being allowed to treat emergency patients.

Prior to the COVID-19 pandemic, the Iowa Dental Board, Delta Dental of Iowa, and the University of Iowa College of Dentistry shared an interest in exploring telehealth as a means of improving access to dental care for vulnerable populations. While steady progress was being made prior to the Pandemic, once the practice of dentistry

### RESUMO

No início de 2020, o vírus da COVID-19 se espalhou pelo mundo. Em 11 de março de 2020, a Organização Mundial da Saúde declarou a COVID-19 uma pandemia devido ao nível de disseminação e à gravidade da doença. Em esforços para controlar a propagação do COVID-19 e reduzir o número de novas infecções e mortes, pessoas em todo o mundo tomaram medidas que nunca haviam sido tomadas na história moderna. Como países e localidades emitiram ordens para ficar em casa, o impacto econômico e social nas empresas e profissões foi dramático. O campo da Odontologia foi afetado da mesma forma, com decretos que interromperam os procedimentos odontológicos eletivos. No estado de Iowa, a governadora emitiu uma proclamação exigindo que, em 27 de março de 2020, todos os dentistas e sua equipe se abstivessem de realizar “procedimentos odontológicos eletivos e cirurgias não essenciais ou eletivas”. Com essa decisão, as práticas odontológicas em todo o estado foram efetivamente encerradas, sendo permitidas apenas o tratamento de pacientes emergenciais.

Antes da pandemia do COVID-19, o Conselho de Odontologia de Iowa, e a companhia de seguro Delta Dental de Iowa e a Faculdade de Odontologia da Universidade de Iowa compartilhavam o interesse de explorar a telessaúde como um meio de melhorar o acesso à assistência odontológica para populações vulneráveis. Enquanto um progresso constante estava sendo feito antes da pandemia, a partir do momento que a prática da Odontologia em Iowa se tornou restrita, o interesse pela telessaúde, ou “teleodontologia”, aumentou. Na Faculdade de Odontologia da Universidade de Iowa, foram implementados procedimentos para permitir que todos os pacientes de emergência fossem submetidos a uma triagem utilizando Teleodontologia antes de serem marcadas

in Iowa was restricted, the interest in telehealth, or “Teledentistry” soared. At the University Of Iowa College Of Dentistry, procedures were put in place to allow all emergency patients to be triaged through Teledentistry prior to being appointed in the Clinic. Using synchronous Teledentistry systems, “e-visits” prior to emergency care became the “new normal”. Patients calling in for an emergency appointment were offered a menu of options for these e-visits including: 1) phone call; 2) phone call and sharing of images; or 3) a ZOOM meeting. All e-visits were provided by Dental faculty members at the University of Iowa with experience overseeing patient care in the Dental Emergency Clinic ranging from three to ten years. Final decisions on appointing patients were made by the provider based on existing records (when available), subjective symptoms (pain), objective findings (visible swelling), patients distress level, expectations and availability. During the initial 8-weeks following closure of our dental clinics (March 16-May 15), a total of 491 patients were seen in our dental emergency clinics, all of whom had been triaged by phone calls or e-visits. Most Patients reported overall satisfaction about the procedure. Based on our experience, Teledentistry (e-visits) are a useful tool to help in prioritizing dental emergencies.

## KEYWORDS

Teledentistry; E-visits; Zoom visits.

consultas na Clínica. Utilizando sistemas síncronicos de Teleodontologia, as “visitas eletrônicas” antes do atendimento de emergência tornaram-se o “novo normal”. Os pacientes que ligavam para uma consulta de emergência receberam um menu de opções para essas visitas eletrônicas, incluindo: 1) telefonema; 2) telefonema e compartilhamento de imagens; ou 3) uma reunião pelo ZOOM. Todas as visitas eletrônicas foram realizadas por professores da Faculdade de Odontologia da Universidade de Iowa, com experiência de três a dez anos em supervisionar o atendimento a pacientes na Clínica de Emergência Odontológica. As decisões finais sobre a marcação de consultas para os pacientes foram tomadas pelo professores com base em prontuários (quando disponíveis), sintomas subjetivos (dor), achados objetivos (inchaço visível), nível de sofrimento dos pacientes, expectativas e disponibilidade do paciente e profissional. Durante as oito semanas iniciais após o fechamento de nossas clínicas odontológicas (16 de março a 15 de maio), um total de 491 pacientes foram atendidos em nossas clínicas de emergência odontológica, todos eles submetidos a triagem por telefonemas ou visitas eletrônicas. A maioria dos pacientes relatou satisfação geral com o procedimento. Com base em nossa experiência, a Teledentistry (visitas eletrônicas) é uma ferramenta útil para ajudar na priorização de emergências odontológicas.

## PALAVRAS-CHAVE

Teleodontologia; Consultas eletrônicas; Consultas pelo Zoom.

## CRITICAL REVIEW

Covid-19 is an aggressive viral infection that has been spreading across the world since October 2019. It is believed that the coronavirus commonly infects bats, and from there has infected humans possibly through an intermediate host [1]. Since the first infections in humans were noted in China, the virus rapidly transmitted to hundreds, thousands, eventually millions of people across the world, causing variable illnesses, or death

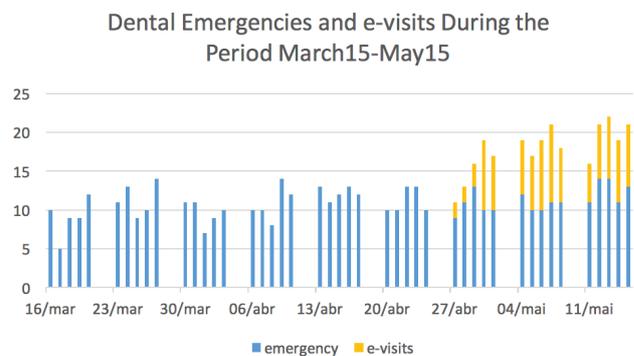
[2]. Not differently than other aspects of life, the impact on dentistry has been significant. Following the WHO definition of pandemics, the American Dental Association and Iowa Dental Board recommended all dental offices stop elective procedures on March 16, 2020 and allowed only dental emergency services [3]. Subsequent to these recommendations, guidelines and recommendations were updated on a frequent basis.

At the University of Iowa College Of

Dentistry, to maintain safety of patients and staff, patients with dental emergencies or urgencies were allowed in clinics in small numbers. To help manage dental emergencies and urgencies, it was decided to start a system of phone calls to triage patients (Teledentistry) and prioritize patients in the schedule. Historically, teledentistry has been utilized to increase dental care access in the army, and subsequently has been used in other areas of dentistry as well [4-8]. Initial triage was provided by phone calls alone. This was later replaced by e-visits: phone calls with shared images, or video-conferencing (Zoom) [9], depending on patient preference. We report here our experience the Admissions and Dental Emergency Clinics at the University of Iowa College of Dentistry.

Originally, all patients calling were screened by front desk staff for symptoms related to potential Coronavirus infection. Patients reporting symptoms related to coronavirus or recent contact with someone who tested positive were referred to the Hospital Dentistry at the University of Iowa Hospitals and Clinics for evaluation and treatment. If a patient reported “pain and swelling”, a phone call was scheduled with an attending faculty. Patients participating in a phone call with a faculty member were asked to forward images, or alternatively participate in a Zoom meeting to expand diagnostic options for the attending faculty (identify facial swelling; identify offending tooth; provide preliminary treatment recommendation). Thus, we were able to prioritize patients who needed to be seen within 24 hours (facial or intraoral swelling), patients who could wait a reasonable amount of time (patients with no swelling who could control pain with medication), patients who could wait because there was no immediate risk of worsening (lost crown) and patients who needed to wait because the necessary procedure was not emergent and involved aerosol (cracked teeth, cosmetic procedures). When patients had a visible facial swelling, but could not come

in within 24 hours, patients were prescribed antibiotics. No narcotic pain medications were prescribed. During the two months of the limited access to dental care (March 16 - May 15 2020), a total of 491 dental emergency patients were seen in the Admissions and Dental Emergency Clinics at the University of Iowa. Each patient had at least a phone call with a provider, and 99 patients had an e-visit (either a phone call with accompanying images, or a Zoom meeting). Figure 1 shows the daily report during the two-month period.



**Figure 1** - Daily report during the two month period of COVID-19 related closure (emergency appointments only).

The treatment provided to the emergency patients who were seen following triage included extractions, root canal treatment, sedative fillings, and crown cementation. In a few cases, sectioning of an existing fixed partial denture on a non-restorable, symptomatic tooth was completed in a closed operatory with dental team wearing proper Personal Protective Equipment. All other dental treatment was deferred. Overall, patients expressed gratitude and satisfaction to the providers who completed the e-visit and during their scheduled appointment in the clinics.

To address dental emergencies, we implemented the use of Teledentistry. This allowed multiple objectives to be accomplished at the same time. First and foremost, it helped contain Covid-19 cross-infection risks between patients, staff and providers.

Second, it allowed a “critical” screening of patients, thus recommending patients to be scheduled within 24 hours when in actual distress from pain and/or presence of visible facial swelling. Thirdly, it may have contained costs for both patient and provider by focusing on prospective treatment prior to scheduling the appointment. Lastly, it provided some reassurance to those patients who were deemed with “less urgent needs” that could safely wait to be seen at a later time. It has been said that COVID-19 “has changed the way we live and work” [10]. Teledentistry (e-visits) was effectively implemented to help dental emergency patients in a period when access to dental care was limited to protect staff and patient safety, and it will most likely remain an important part of tools we use to serve our patients in the future.

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