



# Impact of COVID-19 on Dentistry

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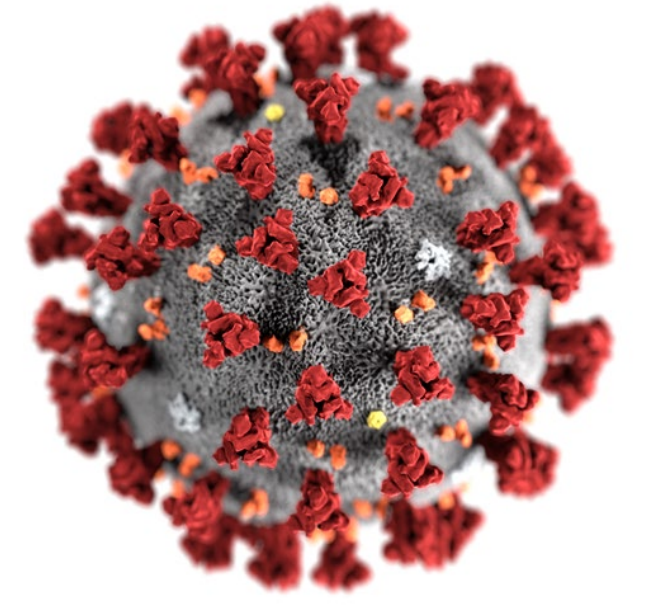
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## INTRODUCTION

The novel coronavirus outbreak, coronavirus disease 2019 (COVID-19), was declared as pandemic by the World Health Organization (WHO) on March 11, 2020. COVID-19 has infected over 200 million people and caused nearly 4.3 million fatalities across 220 countries.

The rapid spread of COVID-19 worldwide has threatened human health and public safety. Dentistry is one of the professions severely impacted by the onset of COVID-19 pandemic. On March 18, 2020 American Dental Association (ADA) provided its members and their patients detailed guidance on what to consider emergency and non-emergency dental care as part of an effort to curb the spread of the coronavirus disease, COVID-19, and alleviate the burden on hospital and emergency departments.



## SARS-CoV-2 Virus Transmission Pathways

Due to the unique characteristics of dental procedures where a large number of droplets and aerosols could be generated, the standard protective measures in daily clinical work are not as effective to prevent the spread of COVID-19, especially when patients are in the incubation period or are unaware of infection

### Possible Routes of Transmission of SARS-CoV-2 in a Dental Setting

- 1) Direct contact with blood, oral fluids, or other patient materials;
- 2) Indirect contact with contaminated objects (e.g. instruments, equipment or environmental surfaces);
- 3) Contact of conjunctival, nasal, or oral mucosa with droplets (e.g. spatter) containing microorganisms generated from an infected person and propelled a short distance (e.g. by coughing, sneezing, or talking);
- 4) Inhalation of airborne microorganisms that can remain suspended in air for long periods

## Impact of COVID-19 on Dental Offices

In March 2020, the ADA issued guidelines that dental practices postpone elective procedures and only provide emergency or urgent care.

- Urgent dental care included cases with extensive dental caries involving pain, uncontrolled oral bleeding, facial or dental trauma, tooth fractures and biopsies of abnormal tissues.
- The procedures that ADA recommended dentists to postpone included taking intraoral radiographs, avoiding ultrasonic for routine cleaning because of the risk of generation of aerosols, and performing aesthetic dental procedures.

As a result, **the dental industry suffered huge business impact due to COVID-19 pandemic**

- The study conducted by Nasseh and Vujicic (2020) showed that in the week of March 23, 2020, 79% dental practices were closed except for emergency patients, 19% were closed entirely, and 5% remained open at a reduced patient volume.
- The study further indicated a large shutdown of the dental care sector, with 69% of dentists reporting collections at less than 5% of what is typical.

## Impact on Dental Insurance and Utilization

Another major impact of COVID-19 has been on dental insurance and utilization

- As the rates of dental insurance are high, people often use Employer sponsored dental insurance (ESDI) for availing dental care on a routine basis. Several people lost ESDI as a result of unemployment.
- The number of dental related visits are expected to increase by 4% due to increases in Medicaid enrolled and uninsured populations. Procedures such as dental extractions will increase in number followed by sealants and restorations as these procedures are more frequently used by publicly insured and uninsured patients.
- Patients may experience more advanced oral diseases due to lack of access to dental care during the COVID-19 pandemic. The routine preventive procedures such as periodontal scaling, cleaning procedures, and the use of fluoride treatments will take a back seat due to the decline in the number of privately insured patients.

## Impact of COVID-19 on Pediatric Dentistry

Due to limited information available concerning the impact of COVID-19 on pediatric dentistry, the impact on pediatric patients remains a concern

- Delay in addressing tooth decay and orthodontic needs not being addressed on a timely manner could lead to more severe complications.
- Children from underserved communities who rely on school based dental clinics for their dental needs and preventive care could experience a bigger impact due to the shutdowns and remote operations
- The dental management of medically compromised children and children with special needs requires special consideration of their underlying health condition. Dental pain due to an active dental infection may have a serious impact on these children as the untreated dental infections can rapidly spread and lead to increased risk of complications.

## Measures Against COVID-19 in Dental Practice

Because the spread of SARS-CoV-2 is airborne, the CDC recommended using additional infection prevention and control practices in addition to the standard practices recommended as a part of routine dental health care delivery to all patients

### Pragmatic and Technical Recommendations for Dental Treatment during COVID-19 to avoid the risk of infection

- ✓ Prior to dental treatment - Patient triage, active screening of patients and dental staff, maintaining social distancing in the office, offering sanitation measures to the patients, use of facemasks, patient education, use of PPE by the dental team, delay of non-urgent dental care, spreading dental appointments
- ✓ During the dental procedure - Maintaining hand hygiene, offering a preoperative antimicrobial mouth rinse to patients, using rubber dams (to aid in containment and protection from oral fluids and reduce particles present in the aerosol by 70%), high-volume saliva ejectors, and extra-oral dental radiographs, using 4-handed dentistry, avoiding aerosol-generating procedures. High speed rotating instruments, such as the turbine and the contra-angle, must be equipped with an anti-retraction system, which prevents the release of debris and fluids
- ✓ After dental treatment - Cleaning and disinfecting reusable facial protective equipment, Managing the laundry and medical waste following routine procedures
- ✓ Emphasize the importance of four-handed dentistry to reduce the risk of spreading virus in the dental care unit, to manipulate the air-water syringe with extreme caution, and to use large-volume aspirators.
- ✓ Encourage the usage of FFP2 (or N95) and FFP3 respirators compared to surgical masks, to provide greater protection to health workers against viral respiratory infections



## CONCLUSION

The disruption caused by COVID-19 in the field of dentistry is evident. Though the CDC and ADA have recommended various best practices to navigate through this pandemic, it puts **great onus on dental professionals to lead their teams and organizations effectively through this challenging time.**

On the innovation front, new approaches such as **Tele-dentistry** could help dentists assess patients without adding the risk of cross infection. Tele-dentistry could provide a pragmatic approach to assess and record the oral health status post-operatively and help improve the overall delivery of oral care.

Organizations that are **resilient, adaptive and innovative** are the ones that have a better chance of surviving the pandemic.

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