

Coronavirus Disease 2019 (COVID-19): Impending Encounters for Dental Health Professionals in India

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Abstract

Originating in Wuhan, China, the epidemic of coronavirus disease 2019 (COVID-19) has become a major public health challenge for not only China but also countries around the world. The outbreaks of the novel coronavirus have constituted a public health emergency of international concern as announced by the World Health Organization (WHO). For dental care provision to active or suspected COVID-19 cases, no universal protocol or guideline is available till date. Major challenges to worldwide health systems will have far-reaching consequences on the global economy if the spread of the virus is not effectively controlled as a consequence of the COVID-19 outbreak. So, in a nutshell, there is no point in being cynical about the future of the dental profession.

Keywords: Challenges; coronavirus; COVID-19; infection; dentist.

Introduction

India's tally of Coronavirus disease 2019 (abbreviated "COVID-19") rises to 24,506, death toll at 775 as on 26th April 2020.¹ Caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, COVID-19 has become an emerging respiratory disease. The first COVID-19 case was reported to the WHO country office in China on 31 December 2019 which originated in Wuhan, China.² The Director-General of the World Health Organization (WHO) declared coronavirus disease 2019 (COVID-19) outbreak a pandemic at a media briefing on 11th March 2020.³ COVID-19 has been recognized in over 200

countries, areas and territories, with a total of over 23,14,621 confirmed cases and over 1,57,847 deaths, as of 20 April 2020.⁴ The monitoring of this infectious disease outbreak is done by International centers for disease control and prevention. Fever, cough, and acute respiratory disease, with severe cases leading to pneumonia, kidney failure, and even death is the symptoms of COVID-19 infection.⁵

Demand for urgent dental treatment decreased by only 38% despite the large-scale community transmission of COVID-19 in China during the epidemic.⁶ This reflects public need during this pandemic will always be essential for urgent dental care. Several dental institutes, regulatory and advisory bodies still do not have a clear vision about the worldwide impact this pandemic can have on dental services although it has been six weeks since COVID-19 outbreak was declared as a pandemic. From advising practitioners to close their practices in California, USA;⁷ to reducing the number of routine check-ups in the UK;⁸ to no advice at all from several dental associations around the world, there were varied responses and actions from dental associations around the world. The varying degree of COVID-19 outbreak in different countries owes to such unclarity.⁹

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However, this COVID-19 pandemic could last over 18 months according to the US Government COVID-19 response plan published by the US Department of Health and Human Services (HHS) on 13 March 2020.¹⁰ There will be increase in the suffering of the individuals in need of urgent dental care and it will also incense the burden on hospitals emergency departments, although closing dental practices during the pandemic can reduce the number of affected individuals. This article is an attempt to understand the current imminent of the pandemic and how it will impact the future outlook for the profession of dentistry. Taking into consideration the severity of the pandemic COVID-19, and in the light of the massive commitment of several dental associations we have used existing research, personal life experience, assumptions, and industry data to try to make some sense of all of this psychosis.

To curb the spread of the new virus, India has been under a nation-wide lockdown since Mar 24, 2020, which has now extended till 3rd May by the Government. Special challenges are posed by India for the country's disease containment strategy due to its grossly underfunded and patchy public health system, with huge variations between different states, despite India not being among the worst-hit countries. There have been several reported instances of patients trying to flee isolation wards in government hospitals and hide travel history over the past few weeks. Many tried to dodge the mandatory home quarantine even with exposure to suspected cases of COVID-19 and infected persons.

India's latest containment plan, a 20-page document which specifically talks about "non-pharmaceutical interventions" "Quarantine and isolation are important mainstay of 'cluster containment,'" states that the above mentioned are worrying developments in the backdrop of the plan. Quarantine refers "to separation of individuals who are not yet ill but have been exposed to COVID-19 and therefore have a potential to become ill". Isolation refers to "separation of individuals who are ill, suspected, or confirmed COVID-19 cases".

People escaping hospitals or quarantine in the past week have been certain repeated reports. "How can this impact the ongoing control measures for COVID 19? One key issue is the trust deficit in the public health system in many parts of the country. Other important

factors include fear of isolation and stigma attached to those who are being quarantined and isolated. It is difficult for people in India to understand the importance of isolation and quarantine, even though it is a response to a pandemic. The faith in the public health system cannot emerge immediately as a response to the pandemic".

"An overstretched public health care system forces millions of Indians to turn to the unregulated private health care sector. The Indian Government's consumption on health as a percentage of GDP still hovers around 1.5%, one of the lowest in the world. For around 52% of family units in urban areas, and 44% of families in rural areas, the private segment is the primary source of human services when they are debilitated, as per government data.¹¹ Trust in Government is a significant part in a crisis health response".

Current and upcoming dentistry: Dental specialists currently face a test they have not been set up for. None of the dental specialists would have imagined a circumstance like this one, where there is a drawn-out time of interference. It is hard to foresee what's on the horizon for dentistry. How about we consider the month government evacuates all limitations as month zero. Expect customer spending to return inside seven days of month zero. It is normal that consumers will spend on basics followed by a time of liquidity crunch where spending will diminish once more. For dentistry, this may imply that patients at first spotlight just on crisis strategies or the treatment that truly matters to them.

Patient administration: Practices are utilizing each conceivable strategy (mailers, voice messages, web-based life, and practice sites) to educate patients about the workplace terminations for ordinary dentistry. Patient screening conventions, should proceed significantly after the limitations are lifted (figure 1).

Patients are understanding and are not ready to face challenges themselves. Practices need to rehash the exacting Centers for Disease Control and Prevention (CDC) and Occupational Safety and Health Administration (OSHA) rules that are being executed.

Staff supervision: The most awful effect of works on being shut is on staff compensations. A considerable lot of the staff have less squirm room undoubtedly.

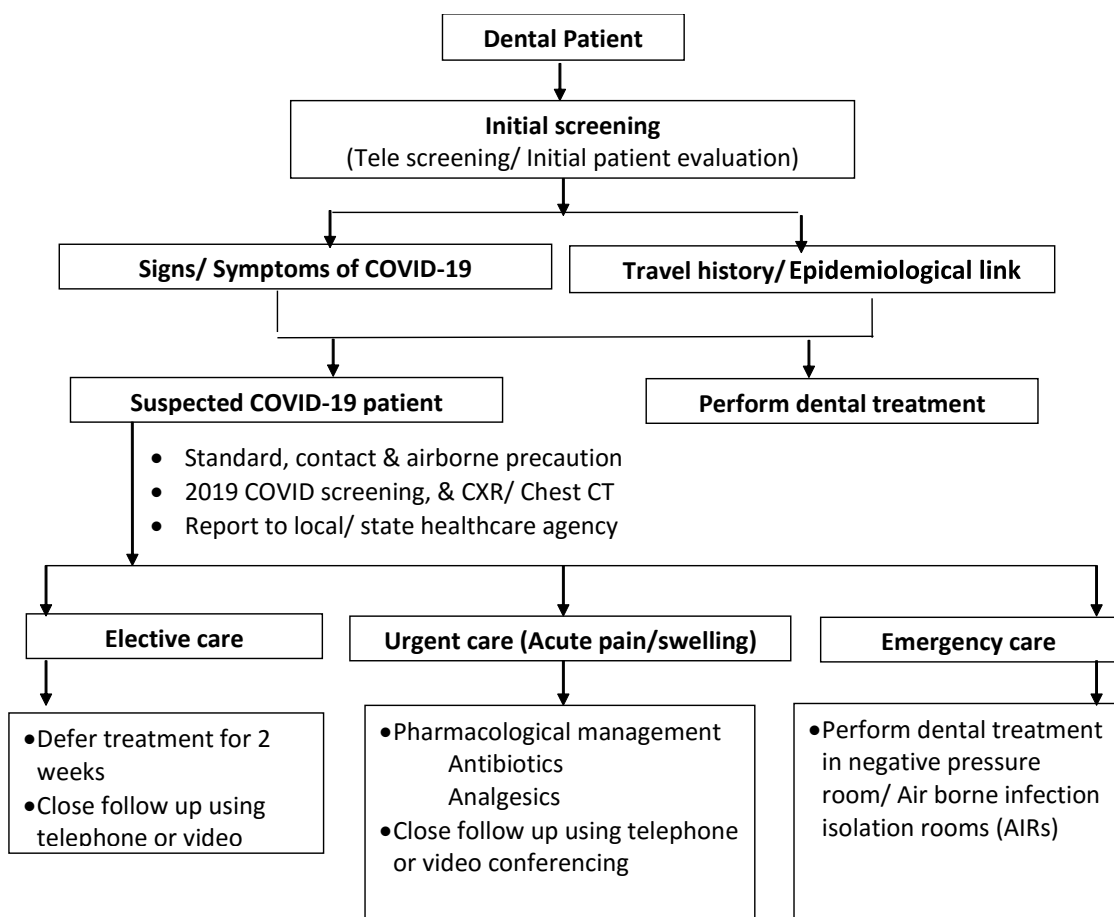


Figure 1. Patient Screening Protocols.

Employing partners and hygienists: There is a great deal of disarray among dental alumni in regards to recruiting associates because of this emergency. All things considered; dental specialists will hold on to perceive how patients are reacting. In the event that they rapidly recoup, at that point there will be an earnestness to recruit to make up for lost time. Professionals will probably react dependent on how their financiers, for example, banks, acclimate to the new reality. Some may at present grow their practices while others may concede the move for what’s to come. The circumstance may at first be somewhat harder for dental hygienists, however it will level soon.

Dental inventory organizations: Personal protective equipment (PPE, for example, gloves, outfits, goggles, and face masks, just as cleaning, diagnostic, surgical, and wound care items have been delivered fundamentally by huge providers in China. This reliance on China will most likely diminish and local creation will soar. This will mean the cost of expendable things

may go up later on. The stock calendar will be upset during the months to come and dental specialists will see a ton of delay purchases on numerous items.

Insurance: The insurance agencies are being immersed with calls about pandemic inclusion and they face an exceptional circumstance where they may need to remunerate the entirety of their policyholders. This will put them under huge tension. The insurance agencies will in general oppose the cases by pulling in all the lawful supports. There is likewise the probability that dental specialists will react with a joined supplication to the administration sooner rather than later.

Banks: It is sensible to anticipate that banks should give a go for a couple of months, in any event in regards to paying practice advance premiums.

“The most suggested rules show that dental specialists ought to maintain a strategic distance from the booking of any patient: just such pressing dental sicknesses can be considered during the COVID-19

episode. This activity will definitely restrain the relational contact, the holding up time of patients in dental cupboards and, when all is said in done, the conditions inclining patients to be contaminated. At the point when the dental specialists treat patients, they should intercept the possibly contaminated individual before they arrive at the working zones; for instance, those with a fever estimating $>37.5^{\circ}\text{C}$ and the offering of a couple of conversation starters about the patient's general wellbeing status over the most recent 7 days, and about the danger of having been in contact with other tainted people".

"Dental patients who cough, sneeze, or obtain dental treatment including the usage of a high-speed handpiece or ultrasonic instruments make their secretions, saliva, or blood aerosolize to the environment. Dental mechanical assembly could be defiled with different pathogenic microorganisms after use or get presented to a contaminated clinic condition. From that point, diseases can happen through the cut of sharp instruments or direct contact between mucous layers and tainted hands".¹²

"Because of the extraordinary qualities of dental methodology where an enormous number of droplets and aerosols concentrates could be created, the standard defensive measures in every day clinical work are not compelling enough to forestall the spread of COVID-19, particularly when patients are in the incubation time frame, are uninformed they are tainted, or decide to cover their contamination".

Efficacious Infection Control Protocols: "Hand cleanliness has been viewed as the most basic measure for diminishing the danger of transmitting microorganism to patients.¹³ SARS-CoV-2 can endure on surfaces for a couple of hours or as long as a few days, contingent upon the sort of surface, the temperature, or the stickiness of the environment.¹⁴ This fortifies the requirement for good hand cleanliness and the significance of intensive sanitization of all surfaces inside the dental center. The utilization of individual defensive gear, including masks, gloves, outfits, and goggles or face shields, is prescribed to shield skin and mucosa from (conceivably) tainted blood or emission. As respiratory droplets are the principle course of SARS-CoV-2 transmission, particulate respirators (e.g., N-95 masks validated by the National Institute for Occupational Safety and Health or FFP2-standard veils set by the European Union) are suggested for routine dental practice. The 4-handed method is advantageous for controlling

contamination. The utilization of salivation ejectors with low or high volume can diminish the creation of droplets and aerosols".^{12,15,16} Fumigation of the work environment should likewise be possible to free all the debasements from nature we work in. All biomedical waste relating to persistent consideration ought to be painstakingly arranged according to the Bio-Medical Waste (Management and Handling) Rules, 1998 revised periodically through an approved biomedical disposal organization by the State Pollution Control Board.

Appraisal of Patients: "During the flare-up of COVID-19, dental facilities are prescribed to set up precheck triages to quantify and record the temperature of each staff and patient as a standard technique. Precheck staff ought to ask patients inquiries about the wellbeing status and history of contact or travel.¹⁷ Patients and their accompanying people are given clinical masks and temperature estimation once they enter our emergency clinic. Patients with fever ought to be enlisted and alluded to assigned medical hospitals. On the off chance that a patient has been to pandemic areas inside the previous 14 days, quarantine for at least 14 days is proposed. In zones where COVID-19 spreads, nonemergency dental practices ought to be postponed.^{12,15,16} It was accounted for that dental practice ought to be deferred in any event multi month for convalescing patients with SARS.¹⁶ It is obscure yet whether a similar proposal ought to be suggested for patients with COVID-19".

Oral Examination: "Preoperative antimicrobial mouth wash could diminish the quantity of organisms in the oral cavity.^{12,18} Procedures that are probably going to initiate coughing ought to be maintained a strategic distance from (if conceivable) or performed cautiously.¹⁷ Aerosol-creating method, for example, the utilization of a 3-way syringe, ought to be limited however much as could be expected. Intraoral x-ray assessment is the most well-known radiographic method in dental imaging; be that as it may, it can invigorate saliva secretion and coughing.¹⁹ Therefore, extraoral dental radiographies, for example, panoramic radiography and cone beam CT, are proper options during the episode of COVID-19".

Handling of Emergency Cases: "Dental crises can happen and fuel in a brief period and consequently need prompt treatment. Rubber dams and high-volume salivation ejectors can help limit airborne or scatter in dental method. Besides, face shields and goggles are basic with utilization of high or low-speed drilling with water spray.²⁰ According to our clinical experience

during the flare-up, if a carious tooth is determined to have symptomatic irreversible pulpitis, pulp exposure could be made with chemo mechanical caries expulsion under rubber dam seclusion and a high-volume salivation ejector after local anesthesia; then, pulp devitalization can be performed to diminish the agony. The filling material can be supplanted delicately without a devitalizing operator later as per the maker's suggestion". After treatment, environmental cleaning and disinfection procedures were followed. "On the other hand, patients could be treated in a segregated and very much ventilated room or adversely compelled rooms if accessible for suspected cases with COVID-19. Perilous cases with oral and maxillofacial compound wounds ought to be admitted to the clinic quickly, and chest CT ought to be endorsed if accessible to avoid suspected contamination on the grounds that the RT-PCR test, other than tedious, needs a research facility with pan-coronavirus or explicit SARS-CoV-2 identification capacity".²¹

Dental Contemplations: "Bioaerosols are natural particles suspended in vaporous media.²² Subgingival scaling for treating periodontally undermined teeth with the guide of a ultrasonic scalers will create vaporizers containing blood.²³ An ongoing report demonstrated that the ultrasonic scalers and tips delivered altogether more airborne contrasted with a handheld curette, paying little attention to the scaler type employed.²⁴ The continuous and interminable presentation to bioaerosols produced during such dental systems notwithstanding the generally little molecule size of the bioaerosols add to an expanded danger of contamination among dental professionals.²⁵ It is as yet sketchy whether the security provided by surgical masks worn by dental experts go about as a defensive boundaries for such little particles notwithstanding the way that these covers may not fit consummately in clinical practice. Simultaneously, it is critical that the probability of distinguishing, detailing and reporting dental calling related diseases is generally less".²⁶

Conclusion

In all probabilities, the virus will stay with us. There will be changes in behavior such as less travel, reduced smoking, increased use of pneumococcal vaccines, higher online sales and food ordering, higher interest in online courses, social distancing, more movies about viral outbreaks - the list is endless. Albeit the vast majority of the public consideration is concentrating on the immediate causes and control proportions of

COVID-19, potential health moments coming about because of individuals' feelings of trepidation of it ought not be ignored. Understanding the current circumstance is useful as far as anticipating future dental needs. Numerous reasons do conjecture that individuals' prerequisites for dental administrations may develop explosively in the post-COVID-19 period.

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