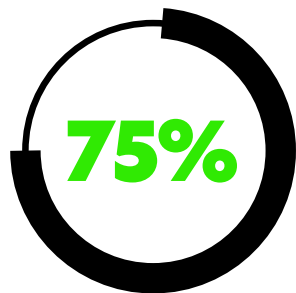


Impact of Covid-19 on oral health

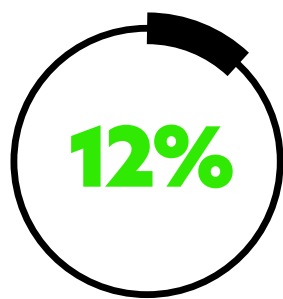


Dr. Courtney H. Chinn, DDS, MPH, NYU College of Dentistry, Associate Chair, Department of Pediatric Dentistry, Clinical Associate Professor, weighs in on the uneven impact of COVID-19 on the oral health of minority and underserved groups in the USA.

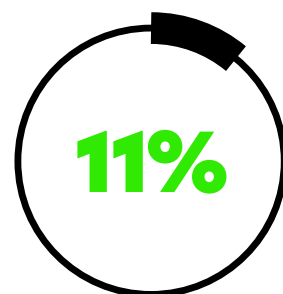




delayed their regular dental checkup



delayed care to address something that was bothering them



delayed care to get planned treatment

There was a personal moment recently when I realized COVID-19 might finally be behind us. I was riding the subway to the dental clinic where I worked when I suddenly realized that I could read everyone's facial expressions because nobody was wearing a mask. The more shocking thing to me was that the expressions I was seeing weren't nervous or agitated or concerned. They were bored. They were tired. They were normal. As things continue to get more normal, COVID-19 may begin to feel more and more like an unfortunate memory from the past; however, it is essential to remember that the global pandemic had a profound and lasting impact on the health of US populations, including oral health. While no specific dental conditions are directly associated,¹ COVID was particularly challenging for oral health, and created both tremendous challenges and tremendous opportunities for the profession of dentistry.

COVID-19 and the dental industry

One challenge that COVID presented was the inability to access dental care and the consequences that came as a result. At the height of the pandemic, obtaining health care services was a nationwide problem. Hospitals were overwhelmed, medically necessary services were limited, and many surgeries were either delayed or canceled. Dental offices were also severely impacted. Whether due to concerns about aerosol-generating procedures, illnesses that reduced the number of available dental workers, or an inability to obtain adequate personal protective equipment, dental practices across the country shut down overnight.

In March 2020, 76% of private dental offices reported being closed or only providing emergency services.² The result was a marked decrease in dental services, including routine preventative care. Among adults who reported delaying going to the dentist due to the pandemic, 75% reported delaying their regular dental check-up. Further, many patients delayed care despite having an existing dental issue. Data shows that 12% reported delaying care to address something that was bothering them, and 11% reported delaying care to get planned treatment found at an earlier visit.³

Dentists were extraordinarily quick to re-open, and, by September 2020, practically all dental offices reported seeing patients again.⁴ This recovery was so impressive that some began to look at dental practices as a barometer of national economic recovery.⁵ This achievement was not without a cost, however. Offices returned with significantly lower patient volumes. Many dentists were forced to furlough or fire auxiliary team members, and, for many dental professionals, COVID was the tipping point in their decision to either retire or leave the dental workforce.⁶ This shortage is most notable among dental hygienists; there was an estimated 8% reduction in dental hygienist employment, and more than half of hygienists who left their jobs during the pandemic did not return.⁶ The combination of a large backlog of patients paired with a reduced dental workforce led to higher reported levels of anxiety and depression.⁷

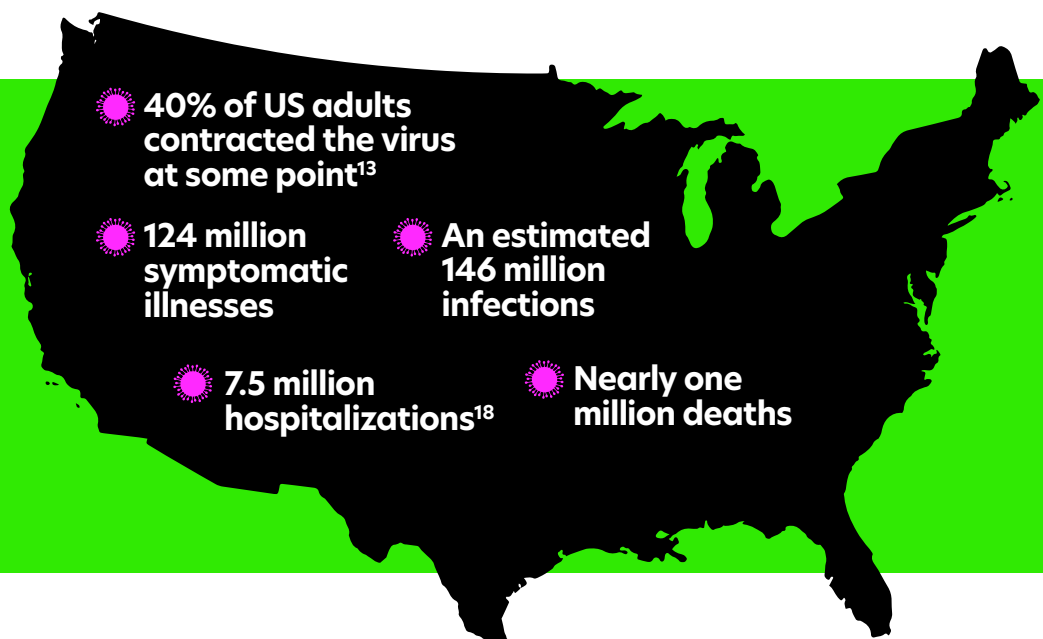
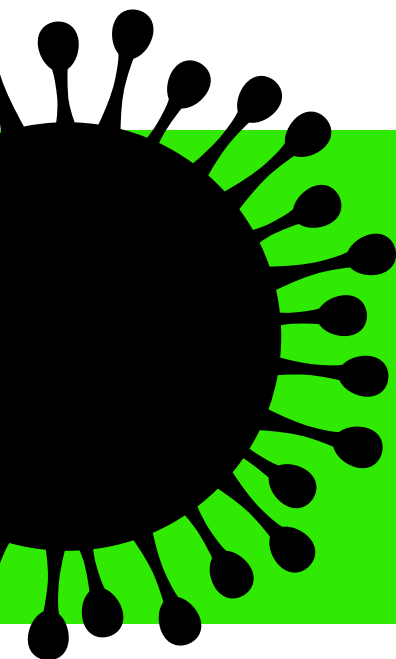
Another challenge COVID highlighted was attention to the social determinants of health. The social determinants of health (SDH) are the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems.⁸ As important as access to medical services are, COVID demonstrated that achieving optimal health involves much more than being able to visit the doctor. Our physical environment and daily behaviors contribute significantly more to our overall health. During COVID this was most easily seen from the results of required social

“
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”

distancing. The inability to exercise in gyms or to interact with others at churches, community centers, and other important social gathering points disrupted our established routines and broke many of our healthy lifestyle habits. Such upsetting changes had a dramatic impact on our overall quality of life and well-being, including oral health.

COVID demonstrated that school closures resulted in poorer student educational performance,⁹ altered socialization,¹⁰ language development concerns,¹¹ and increased food insecurity¹² for families who relied on the public school system for free and reduced lunch and breakfast programs. School closures also forced many to seek out emergency arrangements to secure childcare options during the work week. This threw family routines into disarray, and resulted in an increase in unhealthy snacking and cariogenic dietary habits. It also saw poorer self-care practices, including oral home care.¹³ When asked about eating practices, nearly a third of Americans reported poorer eating practices during the pandemic¹⁴ and almost two thirds of families reported an increase in the number of daily meals and snacks.¹⁵ In regard to toothbrushing, over 25% of families reported a decrease in their children brushing their teeth in the morning, evening, or both.¹⁵ In addition, research suggests a strong association between oral health conditions like erosion, caries, and periodontal disease with mood conditions like stress, anxiety, depression, and loneliness.¹⁶

COVID-19 also exacerbated the existing oral health disparities that were present before the pandemic. COVID impacted all Americans. Nationwide more than 40% of US adults contracted the virus at some point¹⁷ with an estimated 146 million infections, 124 million symptomatic illnesses, 7.5 million hospitalizations, and almost one million deaths.^{18,19} The data also showed, however, that certain populations and communities suffered disproportionately more. As the pandemic continued, it became obvious to see who was more at risk. COVID is a tragically perfect example of how the same disease can have a drastically different impact within a particular community or population. Race was a major predictor during COVID-19 with, higher prevalence and severity found in minority populations. Black, Hispanic, American Indian, Native Alaskan, Native Hawaiian and other Pacific Islanders experienced higher rates of COVID-19 cases, hospitalizations, and deaths compared to their white counterparts even when data are adjusted to account for differences in age.²⁰ When compared to white, ethnic minorities are 1.6 times more likely to catch COVID, 2.5 times more likely to be hospitalized, and 2 times more likely to experience a COVID related death.²⁰



Beyond race and ethnicity, other social vulnerabilities played a major role in determining health outcomes during COVID. Americans living in poorer or rural areas had higher rates of COVID deaths.^{21,22} The ability to socially distance, whether due to employment or incarceration, also played a factor.²³

Those individuals working in food service, agriculture, or manufacturing, such as cooks, packaging and filling machine operators, and farm workers were found to be at some of the highest risk of death from COVID.²³ The incidence and mortality for people in state and federal prisons from COVID-19 was estimated to be several times greater than for the average American.²⁴

Significant overlap exists between the populations that suffered disproportionately from COVID and those suffering from other chronic oral diseases and conditions including dental caries, periodontitis, and tooth loss.²⁵ While we all are eager to turn the page on COVID and to get back to “normal”, we have the unique opportunity to learn from this past season and take advantage of the changes that often only occur during adversity. We should remember that life before COVID still included a large gap in oral health care that left many Americans in need.²⁶

Before COVID, only 55% of seniors received a dental visit in a given year²⁷ and over a fifth of preschoolers experienced tooth decay before they entered the first grade.²⁸ Only 33% of dentists accept Medicaid to any significant degree, despite over half of persons with intellectual or developmental disability and a third of US children relying on public insurance.²⁹ COVID definitely heightened these situations, but these long-standing oral health disparities were impacting poor, ethnic minority, and immigrant communities long before 2020 and without increased intervention, they will continue to do so. For dental professionals, this is not a new lesson. The social predictors of oral health are well-established and the topics of health equity and health disparities are already mainstays in predoctoral dental education.²⁵ A gluttony of briefs, white papers, and calls to action have been produced over the last two decades. It is safe to say that dentists are well aware of this “silent epidemic” within oral health, and the persisting disparities despite well-intended efforts. They can see how those with the most need are so often also those with the least amount of access to care. It may be tempting for dentists to lift our hands in surrender in the face of these challenges, but the good news is that dentists’ response during COVID has been a powerful example of the capacity they have for change and innovation. When it was not safe for patients to sit in dental waiting rooms, dentists asked them to stay in their cars until their appointments. Organized dentistry sent their members care packages of face masks so they could continue to provide care safely. Within weeks of the outbreak dental practices had begun organizing and setting protocols for enhanced surface disinfection and air filtration in order to expedite effective quality oral health care delivery. Post COVID, dentists have a momentous opportunity to continue to find innovative solutions to improve the oral health of all Americans.

Prevention Centered Mindset

One opportunity taken by dentists during COVID was the strong pivot towards prevention. The majority of past innovations in the dental profession have focused on improving surgical abilities, ranging from chairside crowns and computer-assisted dental implants to soft tissue lasers.³⁰ Patients have been well-served by these achievements, and the dental profession has thrived both financially and reputationally. While COVID necessitated an undesired shift away from aerosol generating surgical techniques,²⁵ dentists quickly adapted to the widespread use of prevention-centric and disease-management approaches.

“ It may be tempting for dentists to lift our hands in surrender in the face of these challenges, but the good news is that dentists’ response during COVID has been a powerful example of the capacity they have for change and innovation. ”

“ During the course of the pandemic, demand for teledentistry increased 60-fold.³¹ ”

Now, after a long pause, dentistry is entering back into a period where surgical dental procedures can be safely done again. Rather than jumping back to the handpiece, dentists have a signature moment where they can choose to continue to invest and elevate prevention approaches that have proven themselves to be safe and effective.

Benefits of teledentistry

Teledentistry has been an established but not-well-utilized system before COVID-19. It was quickly popularized, however, with the temporary closure of in-person dental visits. Demand for teledentistry increased 60-fold³¹ and continues to demonstrate popularity post-pandemic. Continued use of teledentistry can have a profound impact for rural and other underserved areas where there are few dental providers. Set-up costs are relatively inexpensive and a pathway for billing is already in place in several states. Asynchronous teledentistry, where images are stored and forwarded, allows flexibility for dentists to view cases between in-person appointments, or even after clinical hours. Wider adoption of teledentistry can significantly increase access to regular dental examinations that will lead to not only early diagnosis of oral health issues but also assurance that valuable in-person chair appointments are utilized most effectively.

Utilization of Minimally Invasive Dentistry

Silver diamine fluoride (SDF) and interim therapeutic restorations (ITR) are other underutilized non-surgical techniques that saw significantly increased use during COVID. Both SDF application and glass ionomer ITR are minimally invasive approaches that can help arrest tooth decay without the use of anesthesia, aerosol generation or surgical reduction. It is doubtful that these techniques will ever fully replace dental surgery, but expanded use of these approaches can provide a simpler and more cost-effective alternative to traditional dental procedures for young children, homebound aging adults, and people with disabilities - all populations that are in strong need of increased access to dental care. Before COVID, these were viewed as a measure of last resort. Why have dentists not considered them a regular choice/option during everyday practice?



Focusing on community prevention

Finally, while most dentists are already excellent in promoting prevention with individual patients, there is large room for improvement at the community level, where an organized commitment to early diagnosis and risk reduction remains lacking. If dentists want to be serious about prevention, it will require us to look beyond caring for one patient at a time and seeing how we can improve the health of communities. If dentists are serious about prevention, then it will require us to advocate for the expansion of dental insurance as an essential health service for all Americans. Not just for some states, but for all fifty states. Not just for children but for adults and seniors too. If dentists want to be serious about prevention, then it will require us to accept increased accountability for the health outcomes of our patients. More than just ensuring successful dental procedures, dentists will need to be responsible and fairly compensated for the percentage of patients for whom they are successful in either reducing future disease risk or helping to keep disease-free.

An interprofessional approach to healthcare

Another opportunity that dentists embraced during COVID was an interprofessional approach to health care. Like many others during the pandemic, dentists were eager to help find solutions. Dentists knew they couldn't prevent COVID during routine dental care, but they nevertheless found other ways to help, such as donating their PPE to hospitals and frontline workers and signing up to provide COVID vaccinations.³² Such actions were inspirational during the pandemic. Can dentists extend this same creativity and enthusiasm for interprofessional collaboration to the chronic diseases in oral health? Given the growing literature on oral-systemic connections, I believe they undoubtedly can. Today's dentists are aware of the collaborative opportunities with other healthcare professionals and have a willingness to share health information and make appropriate referrals. Dentists, however, may still need additional encouragement to directly engage in the medical management of chronic diseases that reside outside of the mouth. Almost 90% of dental providers agree that it is important for medical and dental providers to work together for better management of diabetic patients. Only a quarter of the same providers, however,

“ Almost 90% of dental providers agree that it is important for medical and dental providers to work together for better management of diabetic patients. ”



indicated a willingness to engage in the medical management of diabetes, such as by conducting chair-side biological glycemc measure screenings.³³ Dental providers are interested in Human Papillomavirus training and patient education brochures as strategies, but they are less interested in administering the HPV vaccine.³⁴ Most recently, a 2022 American Dental Association Clinical Evaluators Panel survey³⁵ showed that while only 2% of dentists are currently administering vaccines in their practices, 55% would be willing to administer COVID-19 and influenza vaccines in the future. Most encouraging were the majority of respondents reporting that they had no didactic or clinical training and an unfamiliarity with which vaccines their state permits them to deliver.³⁵ This suggests that the major barriers may be overcome by ensuring proper training and support.

On the flip side of this collaboration coin, COVID also showed how essential it is for dentists to invite other appropriate professions to share in the burden of ensuring the oral health of Americans. Dental professionals have earned their trusted relationship with society but also recognize that they are not alone. In a survey of American Academy of Pediatric Dentistry and American Academy of Pediatrics members, 89% already agree that diet and nutritional counseling is a crucial aspect of dental care delivery.³⁶ As dieticians can already perform medically necessary nutritional therapy for patients diagnosed with diabetes or hypertension, why not engage with them in co-located practice and allow them to directly address the nutritional risk component of dental caries? Other healthcare professionals, such as pediatricians, family physicians, and nurses, can already apply fluoride to children's teeth as recommended by the US Preventive Services Task Force.³⁷ While vocal proponents within the dental profession already exist, dentists can still do better by leading the charge to ensure that every qualified health provider is willing, prepared, and fairly compensated to engage in dental screenings and provide preventative oral health care.

COVID has changed all of us to some degree, and, despite the number of challenges still before us, it's encouraging to know that dentists possess the resilience and capacity to adopt change in the most difficult of circumstances. I'm eager to see how dental professionals respond in the post-COVID era. **My hope is that COVID has changed dentistry to the point that we will no longer be satisfied with the old practice of surgically dominated treatment or siloed care**, and we will seek to achieve a "new normal" of dental practices that are equitable, prevention-focused, and collaborative. It will be impossible for dentists to predict the next pandemic, but we all understand that future change will inevitably come whether it presents as a new disease, an economic recession, or policy reform. If dentists can embrace the lessons this past COVID season has taught us, I'm confident in our ability to overcome it, whatever it may be.

We will seek to achieve a 'new normal' of dental practices that are equitable, prevention focused, and collaborative.



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