Scenario V: Back to the Future: An optimal scenario for pandemic 2026 based on lessons from COVID-19

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1 | SCENARIO 5 HIGHLIGHTS

The year is 2026, and the world is once again entrenched in a pandemic. An airborne RNA virus, suspected to have originated from zoonotic spillover from bats in Brazil, has spread across the globe. The virus is transmitted from person to person through close interactions via respiratory droplets. The incubation period for the virus is seven days and may result in blood-clotting, fever, and severe respiratory symptoms. Dental-related symptoms may include periodontal abscesses and tooth loss.

Within a month of the first diagnosed case, effective tests including a blood test, a nasal swab, and a saliva test have been developed. Academic dental institutions are on the frontlines to administer these tests. A vaccine is also being tested using human trials but has not yet been released.

Since the 2020 pandemic, dental schools have hired research faculty with expertise in virology. Collaborations among dental schools, their parent universities, and the National Institutes of Health (NIH) have devised salivary and crevicular fluid testing platforms that are readily adaptable for viral infections. Significant changes to the modus operandi of oral health providers have occurred during recent years. One positive change resulting from the last pandemic was the increased collaboration of dentistry with other healthcare professions. It began with oral health professionals joining forces with hospitals to share personal protective equipment and culminated with co-administering COVID-19 testing and vaccine delivery for the general public. These successful efforts instigated further collaboration among the health professions, with oral health professionals becoming more actively involved in the diagnosis and referral for treatment of diseases such as hypertension, drug addiction, and diabetes. Dental schools are now prepared to be on the front lines of fighting the new pandemic. Vaccinations are being administered by dental faculty members during regular oral health appointments.

In this pandemic, academic dental institutions are listed as testing sites; oral health providers are collaborating as frontline workers in university hospitals; and dental school faculty and students are delivering off-site oral healthcare, particularly to populations at higher risk. Diversity, equity, and inclusion efforts have increased academic dental institutions’ capacity to treat vulnerable populations. This increased equity has led to greater trust between
vulnerable populations, including patients with special needs, and their healthcare providers. Dental providers can now effectively educate historically hesitant populations about the benefits of new vaccines.

Many changes made during the 2020 COVID-19 pandemic have remained. The educational model is now hybrid, with didactic content delivered remotely. Preclinical education is mainly in-person with some courses delivered through novel platforms. Clinical education and patient care are performed with no changes in clinic capacity. Resources, particularly for didactic content, are shared between schools and across universities. All vital signs obtained at dental appointments and automatically logged into Epic have dramatically increased the ability to monitor both low- and high-risk patients.

Advocacy has led to increased screening for a variety of other diseases. Government officials recognize the tremendous value of routine health screenings being conducted in dental schools. State governments have passed laws that have increased the scope of practice of all oral health professionals.

2 | LIFE IN THIS SCENARIO

Val Flanders, dental school dean at the University of Springfield Health Science Center, glanced over her notes once more before answering the scheduled phone call from USHSC President Elizabeth Burns. As a state institution, USHSC had been declared a 2026 pandemic control center by the governor, and the president was calling the deans of each school to discuss their pandemic management plans.

“As you know, Val,” Elizabeth got straight to the point, “we’re calling for voluntary support from professionals with healthcare backgrounds to manage this pandemic. How can your school help?”

Val began by emphasizing that dental faculty and students, with their knowledge of patient care, biomedical sciences, and sterile surgical techniques, are an invaluable resource. “Not only can they administer diagnostic tests,” she explained, “but since the last pandemic, we’ve been training students and faculty to perform nasopharyngeal and oropharyngeal swabs, as well as saliva and crevicular fluid testing procedures. As such, we’re prepared to facilitate early detection of new viral cases. Plus, our faculty and D3 and D4 students can provide immunizations.”

“Fantastic!” Elizabeth responded. “There’s been some pushback on using those swabs due to their highly invasive nature, but I know your researchers have been working to develop better screening methods. How are they progressing?”

Again, feeling proud of her school’s progress, Val explained, “Collaborating with the biomedical engineering department allowed us to make great progress in saliva and crevicular fluid testing platforms. The test is now ready to be adapted for any viral infection. I firmly believe that we’ll have an effective non-invasive screening method within the next 2 weeks.”

The president next asked if the dental faculty could assist their medical counterparts in the in-patient setting. “Oh, yes,” Val assured her. “Dentists are fully capable of administering local anesthesia and suturing, and oral surgeons and dentist anesthesiologists are competent in performing deep sedation and general anesthesia services. Our faculty manage the oral health issues of medically compromised patients on a regular basis and are well trained and prepared to manage medical emergencies. They’re fully competent to assist in in-patient settings.”

“That’s wonderful news,” said Elizabeth. “With an increase in hospitalizations, we’ll count on dental faculty to work in the intensive care units and emergency rooms. Just one more question. How else can you help?”

“We’ve been thinking about that,” Val responded. “One thing is that the stress associated with the pandemic may lead to poor oral health. We’ve developed online platforms to provide information on oral hygiene and oral health maintenance in an accessible and affordable manner. In addition, clinical engineering in dentistry has progressed far ahead of medicine. Infection control policies in dentistry have always been stringent as dental treatments can often generate large amounts of aerosols. In addition to negative pressure rooms and high-volume evacuation, we engineered airflow and virus tracking systems as seen in operating rooms. We can help to augment the screening and treatment capacity of the pandemic patients.”

Overall, although Val knew the 2026 pandemic would present many challenges, she was able to report that academic dentistry, and her school in particular, had made use of lessons from the COVID-19 pandemic to prepare dentists and dental students to be on the front lines in meeting the nation’s healthcare needs this time around.

3 | SCENARIO 5 DETAILS

In 2026, the second coronavirus pandemic of the century has come at a time when the world, and particularly academia, has finally started to see signs of recovery from the devastating effects of the 2020-2021 pandemic. Structural improvements to many academic institutions are currently underway, and the workforce loss from 5 years ago is gradually being replenished. The changes in lifestyle that took place during the last pandemic are still fresh in everyone’s memory, and mental health concerns associated with the likelihood of stay-at-home orders and associated enforced reclusion are of great concern. Seven critical
strategic areas of academic dentistry are directly related to this pandemic.

The first area is faculty recruitment, retention, and development. Following the previous pandemic, years were required before the hiring freeze at dental schools could be lifted. It was not until very recently that they were able to fill many pending faculty positions. Most of these new positions have a fixed term and are renewed yearly, providing schools with flexibility during these still-uncertain times. Some faculty members have multiple faculty appointments and teach preclinical courses via Zoom.

Changes in the operations of school clinics have been minimal considering protocols and processes in effect since the COVID-19 pandemic. Pre- and postdoctoral students, faculty, and allied oral health professionals continue to care for the population in a regular fashion. A reduction in operations, which was noticeable early in the pandemic and credited to patients’ concerns about clinics’ safety, was addressed with communications and clarifications to patients. In addition, the current involvement of dentistry in overall health and the expansion of the number of procedures performed, including many diagnostic tests, make some of the clinics attractive as an alternative to busy medical centers. Any reduction in clinical operations at school is due to relocation of providers to collaborate with other health professionals in the fight against the pandemic. Clinic income is such that employee recruitment, retention, and development are not affected.

Research and Scholarship is the second area. Some academic dental institutions with a history and reputation as top research institutions have recently lost some of their key research faculty members, which resulted in those schools’ dropping several positions in NIH ranking. Rebuilding of those research programs began during the COVID-19 pandemic when researchers refocused their work following funding opportunities available at the time. In addition, recruitment of researchers with expertise in virology after the 2020-2021 pandemic is about to pay off. Salivary and crevicular fluid testing platforms were developed by dental faculty in collaboration with researchers at other health professions schools, and the test is now ready to be adopted for any viral infection, which will be key to maintaining a healthy research program. Collaboration with industry has elevated and boosted the research programs at several dental schools. The result has been recognition from not only the research community but also from the university, alumni, the state, and other stakeholders.

Scholarship in educational research, the development of mobile applications and websites for education of the population, and other areas have also been expanded. The need for alternative means to excel in scholarship and the opportunities sparked by the COVID-19 pandemic are now flourishing, with technology playing a larger role in scholarship.

In the third area, interprofessional education and collaborative practice, significant changes to the modus operandi of oral health providers have occurred in the last five years. One of the positive changes resulting from the prior pandemic was an increased collaboration of dentistry with other health professions. It began with oral health professionals joining forces with hospitals to share personal protective equipment and culminated with oral health professionals becoming involved with administering COVID-19 testing and vaccine delivery for the general public. These collaborative efforts instigated further collaboration among the various health professions, with oral health professionals being more actively involved in diagnosis and referral for treatment of a variety of diseases such as hypertension, drug addiction, and diabetes. This process has become a two-way street, with oral health becoming more integrated into cancer treatments, care for transplant patients, and pediatric well-child visits. The change of the electronic patient record system to one that is integrated with most hospitals in the country has further facilitated the collaboration. As a result, the education of dental students, somewhat incentivized by the Integrated National Board Dental Examination, has begun to reorient its focus accordingly, despite cultural change resistance from some.

Dental schools have joined forces with their fellow health professions schools to be in the front line of this pandemic. Vaccination during regular oral health appointments is planned for when the vaccine is available. In addition, dental schools are participating as the country’s testing sites; dental providers are collaborating as frontline workers in university hospitals; and off-site delivery of oral healthcare, particularly to populations at higher risk, is being completed by dental faculty and students. Telehealth consultations for patient triage, medical history completion, treatment plan discussions, and use of the new electronic patient record system are significantly improving interprofessional collaboration. Dental schools’ presence in satellite clinics, medical clinics, and facilities that care for older adults has expanded the outreach of academic dentistry.

Accreditation, the fourth area, needed to change due to the previous pandemic. Changes made included increased flexibility that schools needed to adjust to the changing times after that pandemic. Now, the accreditation standards in 2026 include virtual site visits, which allow for cost savings to academic dental institutions.

Accreditation standards, though more comprehensive than before, allow for greater variation in which institutions meet the requirements. The use of virtual learning and clinical simulations have allowed for academic dental institutions to adopt more robust courses and
interdisciplinary collaborations into their standard curricula. Accreditation site visits now are conducted every ten years, which is another cost savings for the schools. This extension of time between site visits is now acceptable due to the increased sharing of resources between schools.

In the fifth area, diversity, equity, and inclusion efforts have dramatically increased the ability of academic dental institutions to treat vulnerable populations that typically receive care at on-campus and community clinics. This increase in equity has also expanded trust between these vulnerable populations and their healthcare providers. This increased trust has enabled dental providers to educate historically hesitant populations about the benefits of new vaccines.

Diversity, equity, and inclusion have been incorporated into all aspects of academic dental institutions. Racially and ethnically diverse students, staff, and faculty allow for equitable care for an increasing number of patients with intellectual and developmental disabilities. Dentistry has typically been one of the most unmet needs for populations with intellectual and developmental disabilities and other vulnerabilities. The renewed focus on diversity, equity, and inclusion has strengthened academic dental institutions’ standing within the healthcare professions.

The sixth area is policy and advocacy. The 2021 US Surgeon General’s Report along with constant grassroots advocacy at all levels of academic dental institutions increased the federal government’s understanding of the importance of oral health in relation to overall health. This process also led to an increase in understanding the ability of dental schools to function outside of their typical domains.

As a result, state governments have passed laws that increased the scope of practice of oral health professionals, enabling them to become, for example, routine flu vaccinators. Advocacy has also led to an increase in screening for other diseases. Government officials have recognized the valuable routine screenings that occur in dental school clinics. The routine vital signs obtained at appointments are automatically incorporated into the electronic patient record system and automatically shared across professions. This expansion has dramatically increased the data points that can be followed for high-risk patients.

In the final area, academic dental institutions’ increased interprofessional collaborations have also led to an increase in standing within their parent institutions. These collaborations have led to more interprofessional course design and lecture series across health professions schools. The graduates of all health professions schools within a university are now well prepared to address the challenges not only of the 2026 pandemic, but also the still-growing aging population. These relationships have spread throughout entire universities—not just the health professions schools, but also the undergraduate schools. The dental school’s prosthodontics department, for example, made tremendous strides in dental materials research when its faculty collaborated with the undergraduate engineering department.

These collaborations across all areas of U.S. universities have elevated dental school deans’ standing with their university presidents and provosts, further bolstering the position of academic dental institutions as a leading part of higher education and the entire university environment.

**DISCLAIMERS**
None

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