

Global Health Starter Kit for Pre-Doctoral Dental Education

Module 7: COVID-19: Global Lessons for a Global Profession

The process of creating and designing this module took place in the following order:

Competencies Learning Objectives Evaluation Metric Content Pedagogy Evaluation Measure

Module	Themes	Related Competencies	Collaborating Author (with Brittany Seymour-project PI)
7	COVID-19's Impact on Oral Health and Dental Care: What Next?	<p>1.2.3. Identify and describe reciprocal links among oral diseases, systemic diseases, and general health.</p> <p>3.1.2. Recognize the different roles and responsibilities of medical and non-medical professionals in oral health promotion, disease prevention, and, if applicable, treatment, care, and referral.</p> <p>2.3.2. Identify and advocate to address specific oral health needs and reduce inequities and health care system deficits.</p>	<p><u>Bree Zhang</u> Brown University Pre-dental Society President DMD Candidate at Columbia School of Dental Medicine</p> <p><u>Tooka Zokaie</u> Tooka Zokaie, MPH, MAS Senior Health Policy Analyst California Dental Association</p>

Related competencies:

1.2.3. Identify and describe reciprocal links among oral diseases, systemic diseases, and general health.

3.1.2. Recognize the different roles and responsibilities of medical and non-medical professionals in oral health promotion, disease prevention, and, if applicable, treatment, care, and referral.

2.3.2. Identify and advocate to address specific oral health needs and reduce inequities and health care system deficits.

Learning Objectives:

- **Describe** the reciprocal links between oral health and COVID-19 risk and severity
- **Evaluate** the impacts of the pandemic on the dental workforce and global oral health in the syndemic context.

- **Identify** shortcomings within the oral healthcare system and opportunities for growth highlighted by COVID-19.

Module Content Themes: Oral systemic link, COVID-19's impact on provision of dental care, syndemics, teledentistry, restructuring oral healthcare systems.

Evaluation metric:

Pass:

- Students are able to identify at least 3 reasons poor oral health is a risk factor for COVID-19 and describe the major social determinants that lead to exacerbation of both diseases for vulnerable populations.
- Students are able to describe at least three synergistic epidemics (syndemics) that have impacted oral health in the context of COVID-19.
- Students are able to name at least 1 social, 1 economic, and 1 structural barrier that worsened oral health outcomes and describe how these barriers overlap or form a vicious cycle.
- Students are able to compare and contrast COVID-19 effects on the provision of care in different countries and name at least 2 similarities and differences between COVID-19 and HIV/AIDS impact on the dental workforce.
- Students are able to identify at least 3 opportunities highlighted by the pandemic/syndemic for the dental profession to grow and improve and describe how teledentistry can play a role in this paradigm shift.

Critical Error:

- Students are not able to identify at least 3 reasons poor oral health is a risk factor for COVID-19 and cannot describe the major social determinants that lead to exacerbation of both diseases for vulnerable populations.
- Students are able to describe at least three synergistic epidemics (syndemics) that impact oral health. Or students cannot identify that COVID-19 worsened population oral health.
- Students are not able to name at least 1 social, 1 economic, and 1 structural barrier that worsened oral health outcomes. Students cannot describe how these barriers overlap or form a vicious cycle.
- Students cannot name at least 1 social, 1 economic, and 1 structural impact from COVID-19 that affected population oral health.
- Students are not able to compare and contrast COVID-19 effects on the provision of care in different countries and cannot name at least 2 similarities and differences between COVID-19 and HIV/AIDS impact on the dental workforce.

Content: Oral systemic link, COVID-19's impact on provision of dental care, teledentistry, restructuring oral healthcare systems.

Pedagogy:

Lecture: Interactive Presentation

In-class activity: Venn Diagram

Pre-readings:

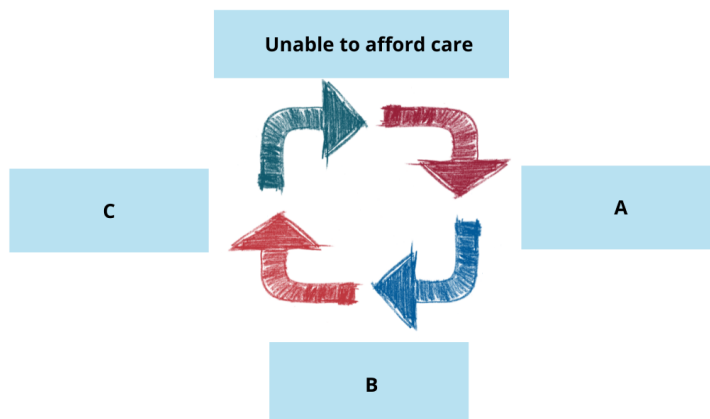
- Jiang CM, Duangthip D, Auychai P, et al. Changes in Oral Health Policies and Guidelines During the COVID-19 Pandemic. *Front Oral Heal.* 2021;2. <https://doi.org/10.3389/froh.2021.668444>
- Patton LL. Viral pandemics and oral health: Lessons learned from HIV to SARS-CoV-2. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 2021;131(2):149-153. <https://doi.org/10.1016/j.oooo.2020.10.022>
- Singh S. Public Oral Health Care During COVID-19: Time for Reflection and Action. *Front Med.* 2021;8. <https://doi.org/10.3389/fmed.2021.610450>
- Giraudeau N, Varenne B. Advocacy for a Digital Oral Health That Leaves No One Behind. *JDR Clinical & Translational Research.* 2022;7(1):25-28. <https://doi.org/10.1177/23800844211026610>

Optional Readings:

- Kamel, A., Basuoni, A., Salem, Z. et al. The impact of oral health status on COVID-19 severity, recovery period and C-reactive protein values. *Br Dent J* (2021). <https://doi.org/10.1038/s41415-021-2656-1>
- Luzzi, V.; Ierardo, G.; Bossù, M.; Polimeni, A. COVID-19: Pediatric Oral Health During and After the Pandemics. Preprints 2020, 2020040002. <https://doi.org/10.20944/preprints202004.0002.v1>
- Seneviratne CJ, Lau MWJ and Goh BT (2020) The Role of Dentists in COVID-19 Is Beyond Dentistry: Voluntary Medical Engagements and Future Preparedness. *Front. Med.* 7:566. <https://doi.org/10.3389/fmed.2020.00566>
- Daly J, Black EAM. The impact of COVID-19 on population oral health. *Community Dent Health.* 2020;37(4):236-238. Published 2020 Nov 30. https://doi.org/10.1922/CDH_Dec20editorialDalyBlack03
- Brian Z, Weintraub JA. Oral Health and COVID-19: Increasing the Need for Prevention and Access [published correction appears in *Prev Chronic Dis.* 2020 Aug 27;17:E93]. *Prev Chronic Dis.* 2020;17:E82. Published 2020 Aug 13. <https://doi.org/10.5888/pcd17.200266>
- Brondani M, Donnelly L. The HIV and SARS-CoV-2 Parallel in Dentistry from the Perspectives of the Oral Health Care Team. *JDR Clin Trans Res.* 2021;6(1):40-46. <https://doi.org/10.1177/2380084420961089>
- Kline, N. (2012), "There's Nowhere I Can Go to Get Help, and I Have Tooth Pain Right Now: The Oral Health Syndemic Among Migrant Farmworkers in Florida." *Annals of Anthropological Practice*, 36: 387-401. <https://doi.org/10.1111/napa.12010>
- Glick M, Wolff MS, Carrasco-Labra A. COVID-19 and scientific illiteracy, a syndemic. *J Am Dent Assoc.* 2021;152(12):967-968. <https://doi.org/10.1016/j.adaj.2021.09.013>
- Chi DL. Caregivers who refuse preventive care for their children: the relationship between immunization and topical fluoride refusal. *Am J Public Health.* 2014;104(7):1327-1333. <https://doi.org/10.2105/AJPH.2014.301927>

Evaluation method: This module can be effectively evaluated using short answer, essay, or multiple-choice questions. The evaluation metric may be used to inform short answer questions, the following questions may be used, or the instructor may wish to write the evaluation based on how the module was taught and what was covered.

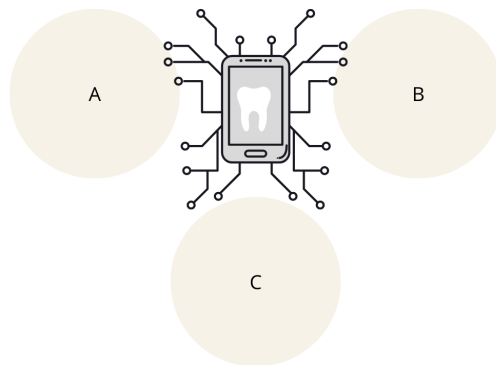
1. What is the main cause of mortality in COVID-19 patients that is **linked with oral health**?
 - a. Heart failure
 - b. Encephalitis
 - c. Pneumonia**
 - d. Fibrosis in the lungs
 - e. Bronchitis
2. Which of the following are the top 3 conditions associated with the most unfavorable COVID-19 outcomes, that are deeply rooted in socioeconomic circumstances?
 - a. Pneumonia, arthritis, heart disease
 - b. Cancer, diabetes, asthma
 - c. Hypertension, obesity, diabetes**
 - d. Obesity, HIV/AIDS, dementia
3. Which of the following is **not** a reason why population oral health worsened due to COVID-19?
 - a. COVID-19 caused policy-makers to pause routine preventative care
 - b. COVID-19 facilitated the spreading of cariogenic bacteria through aerosol transmission.**
 - c. COVID-19 increased oral health hesitancy and worsened dietary and oral hygiene habits.
 - d. COVID-19 reduced access to financial care due to increased dental costs and economic downturn.
4. Fill in the Blank for each box



- a. Delaying or neglecting care
- b. Progression of disease
- c. Increased cost of dental treatment

5. Beyond structural problems (segregated health systems, dental coverage policies, treatment-focused care) what are some other features that contribute to the COVID-19 and oral syndemic? Select all that apply.
 - a. Structural racism
 - b. Economic inequity
 - c. Infodemics and misinformation
 - d. Food insecurity
 - e. Substance use disorders
 - f. All of the Above**
6. Of the protocol implemented to reduce COVID-19 spread in dental settings, which feature was **the least shared** by countries?
 - a. Strict social distancing and infection control measures
 - b. Triage of patients
 - c. Improving HVAC ventilation systems**
 - d. Pre-appointment screening
 - e. Postponing non-emergency treatment

7. Fill in the Blank for each bubble:



- a. Interprofessional Integration
 - b. Prevention Focused Care
 - c. Oral Health Promotion
8. What is not a facet of Minimum Intervention Dentistry?
 - a. Recognition: early identification through lifestyle analysis and diagnostic tests.
 - b. Reduction: reducing risk factors by altering diet and lifestyle habits.
 - c. Regeneration: stopping or reversing caries through appropriate topical agents.
 - d. Reconstruction: fabricating prosthetics to mimic real tooth structure when cavitation is present and surgical intervention is required.**
9. Which is **not** a way dentists can play a role in future pandemic preparedness?
 - a. Act as a surveillance network by notifying public health authorities about unusual oral symptoms or clinical presentations.
 - b. Provide integrated health messages related to handwashing, cough etiquette, proper wearing of facial masks/coverings, and oral health related care.

- c. **Purchase CAD/CAM technologies for intra-oral scanning and in-house milling to increase more efficient restorations.**
 - d. Improve infection prevention education and training within their own practice, reinforcing health and safety measures, risk management.
 - e. Receive training on performing nasopharyngeal and oropharyngeal swabs and saliva sampling procedures.
10. Which of the following benefits of teledentistry leads to greater integration with primary care and the overall medical infrastructure?
- a. Early detection of oral problems, longitudinal care, and follow-up
 - b. Reduction of costs and wait times
 - c. **Linkage of different service providers across geographical locations**
 - d. Dissemination of oral health educational preventive messages
 - e. Delivery of care when travel is difficult or inaccessible.