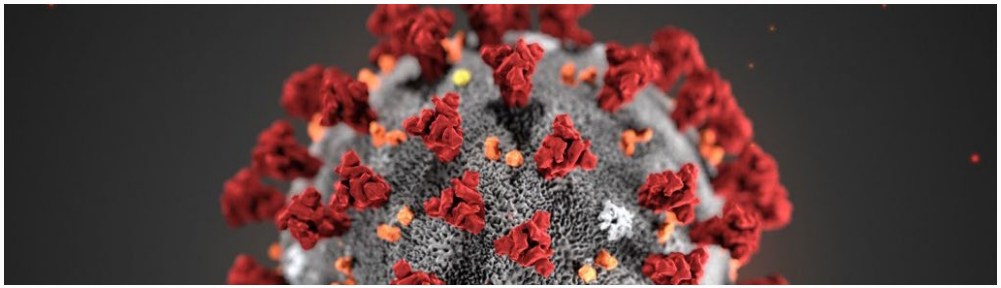
AETC AIDS Education & Training Center Program Southeast



HIV and Oral Health the Era of COVID-19

Mark Schweizer, DDS MPH
Director of Infection Prevention Programs , Associate Professor
Nova Southeastern University College of Dental Medicine
Dental Director Southeast AIDS Education and Training Center

Disclosure

- No financial relationships with commercial entities to disclose
- This slide set has been peer-reviewed to ensure that there are no conflicts of interest represented in the presentation

HIV Continuum of Care

Center for Disease Control and Prevention: https://www.aids.gov/federal-resources/policies/care-continuum/

Learning Objectives

By the end of this module, the learner will be able to:

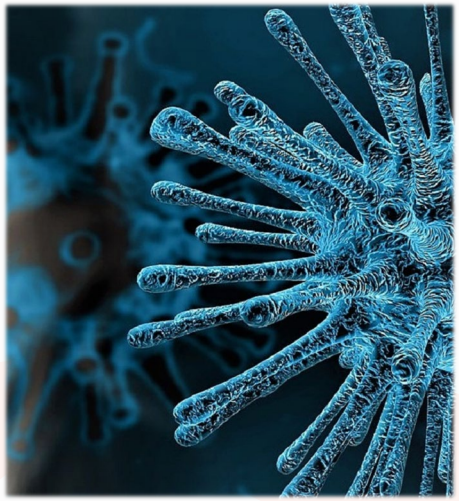
- Discuss the current demographics of COVID-19
- Define COVID-19 and describe the most common symptoms
- Describe testing regiments and their significance
- Analyze the relationship between COVID-19 and HIV
- Explain the link between oral health and severity of COVID-19
- Describe emergency vaccination usages currently approved
- Understand current myths about COVID-19 vaccination

Objective of Significance

- Each PLWH in care should be linked and retained in oral health care
- Comprehensive Oral Exam Yearly
- Six-month follow-ups

What is COVID-19?

- COVID-19, 'CO' stands for 'corona,' 'VI' for 'virus,' and 'D' for disease.
- A cluster of pneumonia of unknown origin was identified in Wuhan, China, in December 2019. On January 12, 2020, Chinese authorities shared the sequence of a novel coronavirus termed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) isolated from some clustered cases.
- The first laboratory-confirmed case of COVID-19 in the United States was confirmed on January 20, 2020.
- Jan. 27, 2020: The National Microbiology Lab in Winnipeg confirms that a man in quarantine in Sunnybrook Hospital is Canada's first documented case of the new coronavirus.



Symptoms of COVID-19

COVID-19 affects different people in different ways. Infected people have had a wide range of symptoms reported – from mild symptoms to severe illness.

Symptoms may appear 2-14 days after exposure to the virus.

- COMMON
  - **ASYMPTOMATIC**
  - Fever or chills
  - Cough
  - Shortness of breath or difficulty breathing
  - Fatigue
  - Muscle or body aches
  - Headache
  - New loss of taste or smell
  - Sore throat
  - Congestion or runny nose
- LESS COMMON
  - Nausea or vomiting
  - Diarrhea

Recovery/death rates

- Most people (about 80%) recover from the disease without needing special treatment, and for the majority – especially for children and young adults – illness due to COVID-19 is generally minor. However, for some people it can cause serious illness.
  Around 1 in every 5 people who are infected with COVID-19 develop difficulty in breathing and require hospital care. People who are aged over 60 years, and people who have underlying medical conditions such as diabetes, heart disease, respiratory disease or hypertension are among those who are at greater risk.

- Two new peer-reviewed studies are showing a sharp drop in mortality among hospitalized COVID-19 patients. The drop is seen in all groups, including older patients and those with underlying conditions, suggesting that physicians are getting better at helping patients survive their illness.
- The study, finds that mortality has dropped among hospitalized patients by 18 percentage points since the pandemic began. Patients in the study had a 25.6% chance of dying at the start of the pandemic; they now have a 7.6% chance.

Modes of transmission

Direct Contact Transmission

- Direct contact transmission may occur through direct contact with virus-contaminated objects or surfaces and infecting people through the mouth, nose, or eyes. Healthcare providers attending COVID-19 patients are especially at risk of being infected via this mode of disease transmission one reason there are numerous nosocomial infections.

Aerosol Transmission

- The aerosols from expired air coughs, and sneezes that contaminate the immediate environment are among media for virus spread. Aerosol transmission is not just from people with symptoms of the disease, even asymptomatic COVID-19-positive people can be the source of infection. In close environments, the virus-containing aerosol may persist in the air for long periods and at high concentrations, further increasing the rate of transmission. The virus remains viable for at least 3 h in aerosols and 48–72 h on stainless steel and plastic surfaces.

Modes of transmission

Droplet Transmission

- Respiratory air normally contains an abundance of droplets of sizes less than 5 μm in diameter. Coughing and sneezing cause increased expulsion of droplets from the oral cavity and respiratory tract. In COVID-19 patients these droplets contain a virus that if inhaled or ingested or landing on the mucous membranes will cause disease in people.

Fecal-oral transmission

- The role of feces in the transmission of COVID-19 is unclear. There have been suggestions that the gastrointestinal system is a critical route for the spread of this virus. It seems, that using immunofluorescent staining, the ACE2-positive cells are rarely detected in esophageal mucosa. This is probably of the predominance of esophageal squamous epithelial cells that express less ACE2 than glandular epithelial cells.

Viral load and shedding

The pathophysiological characteristics of COVID-19 have not been determined and there is much uncertainty regarding the mechanism of shedding and spread of the virus. Recent estimates suggested that COVID-19 has a median incubation period of 3 days (range: 0–24 days) with potential asymptomatic transmission. Epidemiological evidence showed the virus can be transmitted during the incubation period , especially during the late stages.

COVID testing

COVID testing

Diagnostic tests/Molecular Test

- Nasopharyngeal (the part of the throat behind the nose), nasal or throat swab (most tests)
- Saliva (a few tests)
- Same day (some locations) or up to a week (longer in some locations with many tests)
- This test is typically highly accurate and usually does not need to be repeated.
- Diagnoses active coronavirus infection

Diagnostic tests/Antigen/Rapid Test

- Nasal or nasopharyngeal swab (most tests)
- Some may be very fast (15 - 30 minutes), depending on the test
- Positive results are usually highly accurate, but false positives can happen, especially in areas where very few people have the virus. Negative results may need to be confirmed with a molecular test.
- Antigen tests are more likely to miss an active COVID-19 infection compared to molecular tests. Your health care provider may order a molecular test if your antigen test shows a negative result, but you have symptoms of COVID-19.

COVID testing

Antibody Test

- Serological test, serology, blood test, serology test.
- Finger stick or blood draw.
- Same day (many locations) or 1-3 days
- Sometimes a second antibody test is needed for accurate results.
- Shows if you've been infected by coronavirus in the past.
- **Does not diagnose COVID-19 at the time of the test or show that you do not have COVID-19**

We do not know how long antibodies stay in the body following infection with the virus that causes COVID-19. We do not know if antibodies give you protective immunity against the virus, so results from a serology test should not be used to find out if you have immunity from the virus. The FDA cautions patients against using the results from any serology test as an indication that they can stop taking steps to protect themselves and others, such as stopping social distancing or discontinuing wearing masks.

How to prevent the spread of COVID-19 in the community

- **Wash your hands often**
- Wash your hands often with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, or sneezing.
- If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands and rub them together until they feel dry.
- Avoid touching your eyes, nose, and mouth with unwashed hands.
- Avoid close contact
- **Inside your home:** Avoid close contact with people who are sick**.**
  - If possible, maintain 6 feet between the person who is sick and other household members.
- **Outside your home:** Put 6 feet of distance between yourself and people who don't live in your household.
  - Remember that some people without symptoms may be able to spread virus.
  - Stay at least 6 feet (about 2 arms' length) from other people.
  - Everyone should wear a mask in public settings and when around people who don't live in your household, especially when other social distancing measures are difficult to maintain.
  - Continue to keep about 6 feet between yourself and others. The mask is not a substitute for social distancing.

HIV and COVID-19

- We are still learning about COVID-19 and how it affects people with HIV. Based on limited data, we believe people with HIV who are on effective HIV treatment have the same risk for COVID-19 as people who do not have HIV.
- **Older adults** and **people of any age who have serious underlying medical conditions** might be at increased risk for severe illness. This includes people who have weakened immune systems. The risk for people with HIV getting very sick is greatest in
- People with a low CD4 cell count, and
- People not on effective HIV treatment (antiretroviral therapy or ART).

HIV and COVID-19

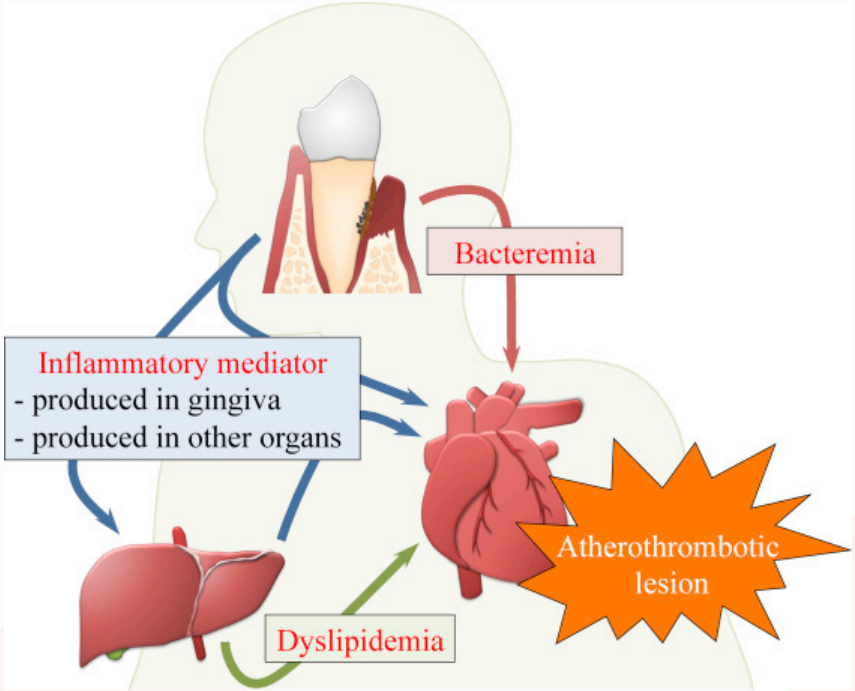
- Nearly half of people in the United States with diagnosed HIV are aged 50 years and older. People with HIV also have higher rates of certain underlying health conditions. Older age and these conditions can increase their risk for more severe illness if people with HIV get COVID-19, especially people with advanced HIV.
- Steps that people with HIV can take to prepare in addition to what is recommended for everybody:
- Make sure you have at least a 30- to 90-day supply of your HIV medicine and any other medications or medical supplies you need for managing HIV. Ask your health care provider about receiving your medicine by mail.
- Talk to your health care provider and make sure all your vaccinations are up-to-date, including vaccinations against seasonal influenza (flu) and bacterial pneumonia. These vaccine-preventable diseases disproportionally affect people with HIV.

HIV and COVID-19

- Establish and maintain a plan for remote clinical care. Try to establish a telemedicine link through your HIV care provider's online portal. If telemedicine is not available to you, make sure you can communicate with your provider by phone or text. You can update your remote clinical care plan every year, or any time you have a change in your health or HIV treatment.
- If your HIV is undetectable (or virally suppressed), talk to your health care provider about delaying your routine medical and lab visits.
- Make sure you can maintain a social network remotely, such as online, by phone, or by video chat. This can help you stay socially connected and mentally healthy, which is especially important for people with HIV.
- People with HIV can sometimes be more likely than others to need extra help from friends, family, neighbors, community health workers, and others. If you become sick, make sure you stay in touch by phone or email with people who can help you.

Relationship between Oral Health and COVID-19

- 32-46% of PLWH will have at least one major HIV-related oral health problem
- 58-68% PLWH do not receive regular health care
- The relationship between oral health and overall health is well established



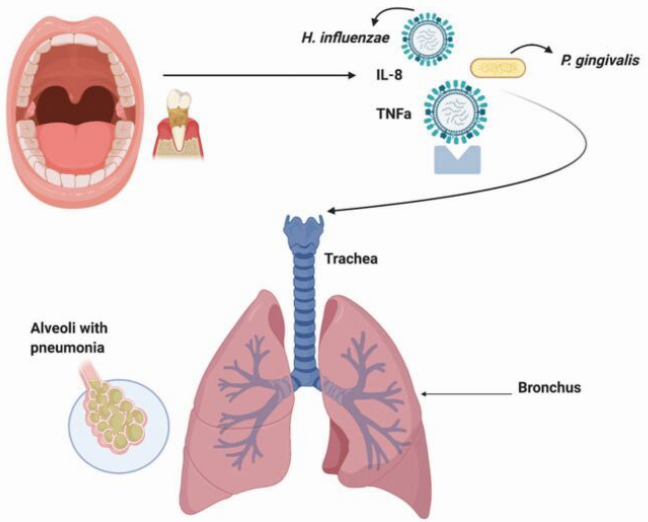
Relationship between Oral Health and COVID-19

- There is a potential link between SARS-CoV-2 and bacterial load, questioning whether bacteria may play a role in bacterial superinfections and complications such as pneumonia, acute respiratory distress syndrome and sepsis.

- Bacteria that colonize the mouth are shed into the saliva. The pathogenic bacteria within the saliva can then be aspirated into the lower respiratory tract and cause or aggravate an infection.

- Comorbidities at highest risk of COVID-19 complications also cause imbalances in the oral microbiome and increase the risk of periodontal disease.

- In addition, high bacterial load in the mouth and post-viral complications, and how improving oral health may reduce the risk of complications from COVID-19.



COVID-19 Vaccines

- On December 11, 2020, the U.S. Food and Drug Administration issued the first emergency use authorization (EUA) for a vaccine for the prevention of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in individuals 16 years of age and older. The emergency use authorization allows the Pfizer-BioNTech COVID-19 Vaccine to be distributed in the U.S.
- The most commonly reported side effects, which typically lasted several days, were pain at the injection site, tiredness, headache, muscle pain, chills, joint pain, and fever. Of note, more people experienced these side effects after the second dose than after the first dose, so it is important for vaccination providers and recipients to expect that there may be some side effects after either dose, but even more so after the second dose.

- You should receive a vaccination card or printout that tells you what COVID-19 vaccine you received, the date you received it, and where you received it.
- You should receive a paper or electronic version of a fact sheet that tells you more about the specific COVID-19 vaccine you are being offered. Each authorized COVID-19 vaccine has its own fact sheet that contains information to help you understand the risks and benefits of receiving that specific vaccine.
- With most COVID-19 vaccines, you will need two shots in order for them to work. Get the second shot even if you have side effects after the first one, unless a vaccination provider or your doctor tells you not to get a second shot.

Myths about the COVID-19 Vaccine

- **Myth #1: If you've had COVID-19 already, you don't need to get vaccinated.**

The verdict is still out when it comes to how long you are protected from COVID-19 after a previous infection — what's referred to as natural immunity. In fact, “early evidence suggests natural immunity from COVID-19 may not last very long,” the Centers for Disease Control and Prevention (CDC) explains. Because of this, “people may be advised to get a COVID-19 vaccine even if they have been sick with COVID-19 before,” the agency states.

- **Myth #2: Once you receive the coronavirus vaccine, you're immune for life.**

It's also unknown how long immunity from a coronavirus vaccine will last and whether it will need to be administered more than once, or even on a regular basis, like the flu shot.

- **Myth #3: You can ditch your mask after you get vaccinated**.

The vaccine is one tool that can help slow the spread of the coronavirus, but others will be needed to bring the pandemic to an end. These include mask wearing, social distancing, handwashing and testing.

It will l take months to get the majority of Americans who want a coronavirus vaccine vaccinated, health officials predict. And until a substantial portion of the population develops resistance to COVID-19 and so-called herd immunity is reached, the virus will continue to spread and sicken people.

Protection isn't instantaneous. “It typically takes a few weeks” for the body to develop memory cells for the virus after vaccination, which means “it is possible that a person could be infected” with the coronavirus just after receiving the vaccine and then get sick with COVID-19 “because the vaccine did not have enough time to provide protection,”. In this case, face masks, social distancing and other recommended efforts can help prevent an infection while the body builds up immunity.

While the leading vaccines have proven effective at preventing COVID-19, it’s not yet clear whether they can block virus transmission. Masks, however, have demonstrated their effectiveness at stopping virus particles from infecting others.

Myths about the COVID-19 Vaccine

- **Myth #4 You don't need both doses of the two-dose vaccines.**

All but one of the vaccines in late-stage development require two doses that are given a few weeks apart. And because health experts are not sure whether one dose will be effective enough to prevent COVID-19 or a severe case of the illness, skipping the second shot is not a good idea. As the CDC explains: The first shot starts building protection; the second shot boosts that protection and "is needed to get the most protection the vaccine has to offer."

- "**Myth #5: If you got the flu shot this year, you don't need a coronavirus vaccine.**

While the flu and COVID-19 share a similar list of symptoms, they are two different illnesses, caused by two different viruses.

- **Myth #6 The vaccines use a live version of the coronavirus.**

None of the vaccines in late-stage development in the U.S. use the live virus that causes COVID-19, the CDC confirms. Instead, the leading vaccine candidates use scientific techniques to train the human body to recognize and fight the coronavirus by either introducing a harmless piece of the virus (not the entire germ) to the body or by giving the body instructions to make its own coronavirus-like protein. The body then recognizes these proteins shouldn't be there and produces antibodies to fight them off. Then, the immune system establishes memory to protect against future infections.

References

S Bagcchi - **Stigma** during the **COVID**-19 pandemic, Lancet Infect Dis. 2020 Jul; 20(7): 782

Beeching Nick J, Fletcher Tom E, Beadsworth Mike B J. Covid-19: testing times *BMJ* 2020; 369 :m1403

Brian, Z., & Weintraub, J. A. (2020). Oral Health and COVID-19: Increasing the Need for Prevention and Access. *Preventing chronic disease*, *17*, E82. https://doi.org/10.5888/pcd17.200266

Botros, N., Iyer, P., & Ojcius, D. M. (2020). Is there an association between oral health and severity of COVID-19 complications?. *Biomedical journal*, *43*(4), 325–327. https://doi.org/10.1016/j.bj.2020.05.016

https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/testing.html

https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/hiv.html

https://www.cdc.gov/vaccines/covid-19/index.html

References

Karia, R., Gupta, I., Khandait, H., Yadav, A., & Yadav, A. (2020). COVID-19 and its Modes of Transmission. *SN comprehensive clinical medicine*, 1–4. Advance online publication. https://doi.org/10.1007/s42399-020-00498-4

Etienne, N., Karmochkine, M., Slama, L., Pavie, J., Batisse, D., Usubillaga, R., Letembet, V. A., Brazille, P., Canouï, E., Slama, D., Joumaa, H., Canoui-Poitrine, F., Segaux, L., Weiss, L., Viard, J. P., Salmon, D., & COVID-19 ID Team (2020). HIV infection and COVID-19: risk factors for severe disease. *AIDS (London, England)*, *34*(12), 1771–1774. https://doi.org/10.1097/QAD.0000000000002651

Sampson, V., Kamona, N. & Sampson, A. Could there be a link between oral hygiene and the severity of SARS-CoV-2 infections?. *Br Dent J* **228,** 971–975 (2020). https://doi.org/10.1038/s41415-020-1747-8

thank you!