

COVID-19 & DENTISTRY

Cases on the Rise, Promising Early Vaccine Results & the Impacts of Persistent Mask-Wearing



David Reznik, DDS

Director of the Oral Health Center of Grady Health System's Infectious Disease Program



Gary Severance, DDS

Executive Leader of Professional Relations, Henry Schein Dental

Disclaimer

The webinar and materials that you will view were prepared for general information purposes only by the presenter and are not intended to be a substitute for professional advice, nor purported to be comprehensive. Henry Schein does not guarantee the accuracy or reliability of the information provided herein and does not undertake any obligation to update or revise any statements contained herein, or correct inaccuracies whether as a result of new information, future events, or otherwise. Any reliance upon any such information is solely and exclusively at your own risk. Dental and medical professionals must make their own business decisions and may wish to seek professional advice before acting with regard to the subjects mentioned herein. Nothing contained herein should be treated as legal, business, accounting, international, insurance, tax, financial or other professional advice. Henry Schein shall not be held responsible for any consequences of reliance upon any opinion or statement contained here, or any omission. The opinions expressed in these materials are not necessarily the opinions of the presenter, Henry Schein, or any of their affiliates, directors, officers or employees.



Cumulative cases

U.S. Sets Record for Daily Infections

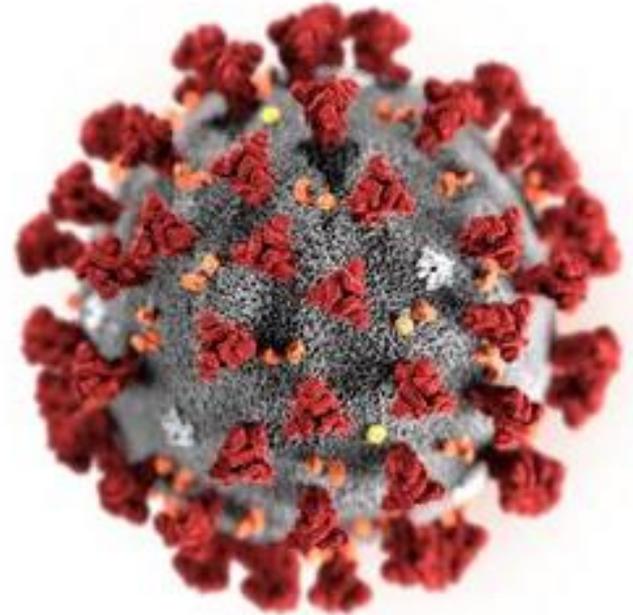
Over 10 million; Deaths > 241,182 deaths

States with Most Confirmed Cases:

- TX: 1,010,364 confirmed cases; 19,337 deaths
- CA: 958,878 confirmed cases; 17,864 deaths
- FL: 827,380 confirmed cases; 16,964 deaths
- NY: 555,710 confirmed cases; 33,770 deaths
- IL: 453,750 confirmed cases; 10,313 deaths

30 States Have Hit Record High Cases since November

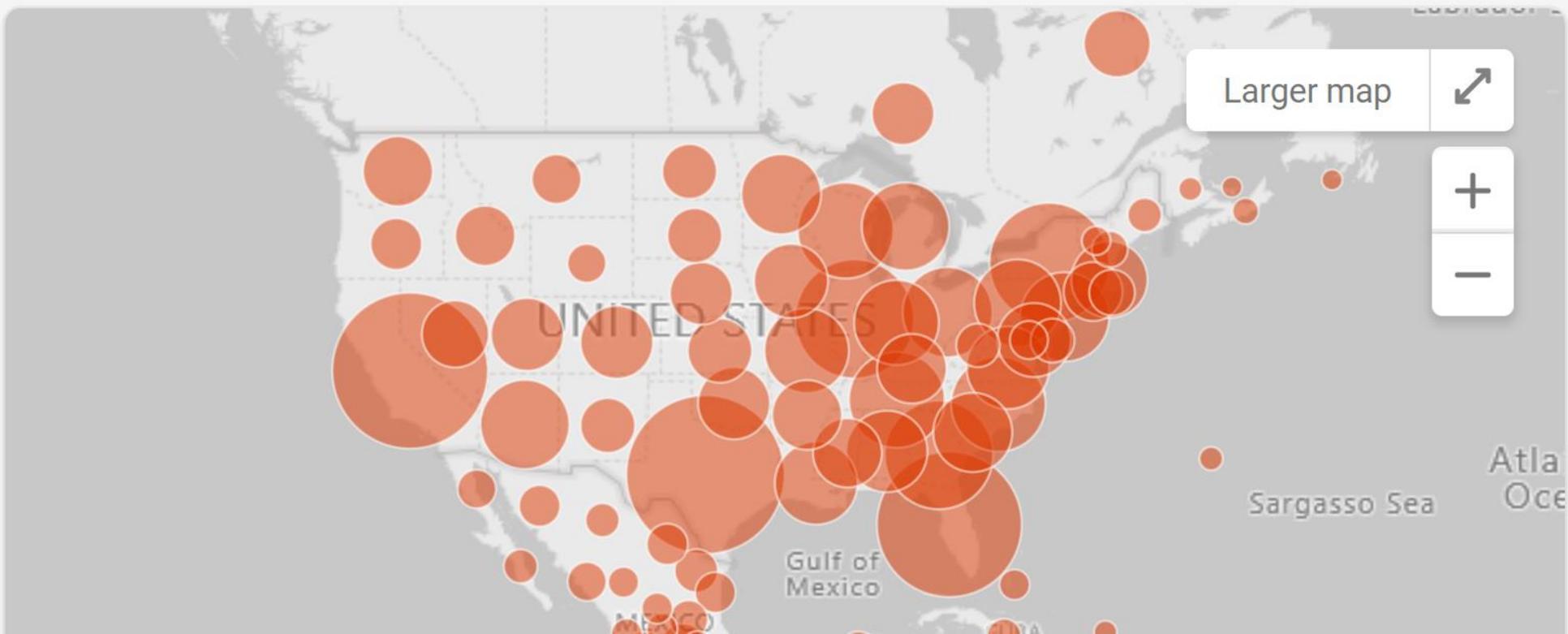
❖ <https://www.docwirenews.com/coronavirus/>



Coronavirus (COVID-19) statistics



Confirmed cases



Patient Volume Levels – ADA's Health Policy Institute

- Patient volume had been holding steady at ~80% of pre-COVID-19 levels but results from the most recent survey showed a drop to 78%
- The number of practices reporting "business as usual," has slipped from about 48% in early September to about 39% in late October
- "The latest data suggest that we are firmly in a 'new normal' or maybe even that economic activity in dental offices might be starting to slow," said Chelsea Fosse, a senior health policy analyst at HPI

Location, Location, Location

Location Matters!

- Dentists practicing in the 20 largest cities reported lower patient volume numbers
 - ❖ On average, patient volume in cities is at 75% of pre-COVID-19 levels
- Patient volume is slightly above the national average in rural and smaller urban areas
- Nonurban areas are experiencing patient volume at 83% of pre-COVID-19 levels
- Smaller urban areas are at 80%, according to the results

Dental Offices Add 11k Jobs in October

But Recovery Remains Sluggish

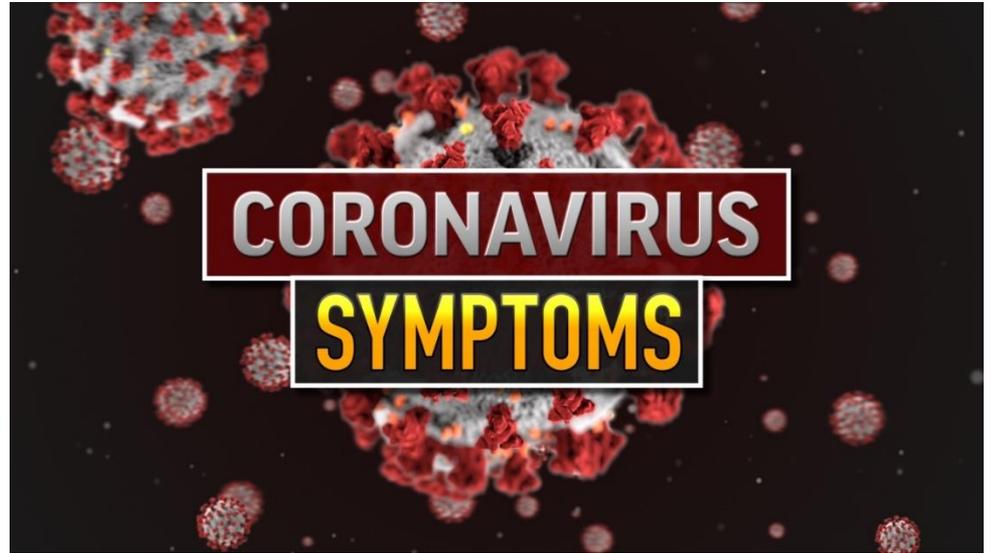
- The report showed dental offices gained 11,000 new jobs last month; it also “found job increases for hospitals of 16,000 new jobs and 14,000 new positions for physician offices.”
- The health care industry was hit hard at the onset of the pandemic in March when hospitals and healthcare providers needed to cancel or postpone nonemergency procedures
- In April, “health care jobs declined by 1.4 million,” with dental offices “leading the way with job losses of 503,000”
- While the industry saw job gains in May and June, since then “health care employment has cooled off”
 - ❖ FierceHealthcare accessed 11/9/20

COVID-19 2020 Interim Case Definition

Clinical Criteria

In the absence of a more likely diagnosis **at least two** of the following symptoms:

- fever (measured or subjective)
- chills
- rigors
- myalgia
- headache
- sore throat
- nausea or vomiting
- diarrhea
- fatigue
- congestion or runny nose

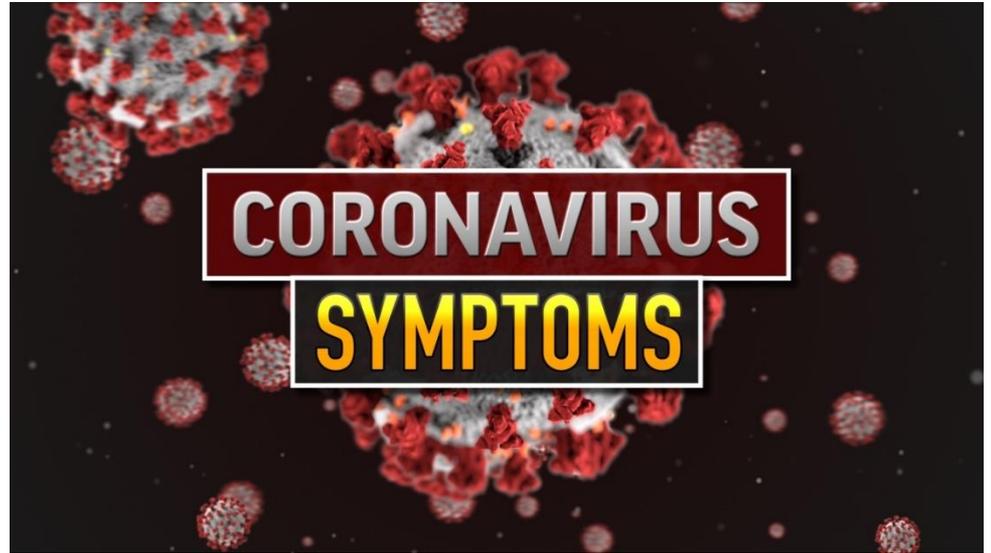


COVID-19 2020 Interim Case Definition

Clinical Criteria

OR, **any one of the following** symptoms:

- cough,
- shortness of breath
- difficulty breathing
- new olfactory disorder
- new taste disorder



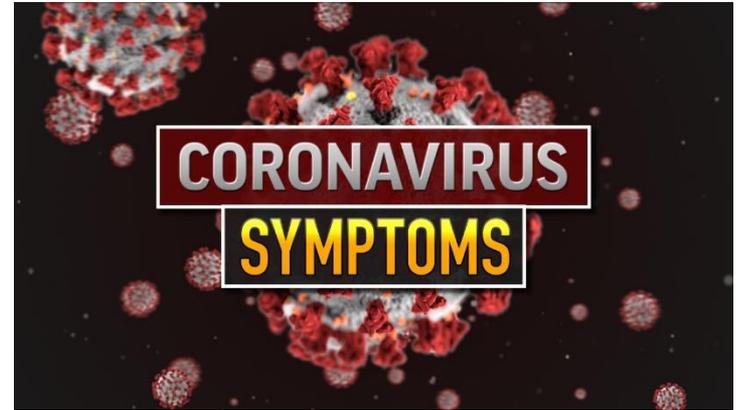
COVID-19 2020 Interim Case Definition

Clinical Criteria

OR, **severe respiratory illness** with at least one of the following:

- Clinical or radiographic evidence of pneumonia
- Acute respiratory distress syndrome (ARDS)

<https://wwwn.cdc.gov/nndss/conditions/coronavirus-disease-2019-covid-19/case-definition/2020/08/05/>



COVID-19 2020 Interim Case Definition

Clinical Criteria

Laboratory evidence using a method approved or authorized by the FDA or designated authority:

- **Confirmatory*** laboratory evidence:
 - ❖ Detection of severe acute respiratory syndrome coronavirus 2 ribonucleic acid (SARS-CoV-2 RNA) in a clinical or autopsy specimen using a molecular amplification test
- **Presumptive*** laboratory evidence:
 - ❖ Detection of SARS-CoV-2 by antigen test in a respiratory specimen
- **Supportive*** laboratory evidence:
 - ❖ Detection of specific antibody in serum, plasma, or whole blood
 - ❖ Detection of specific antigen by immunocytochemistry in an autopsy specimen

*The terms confirmatory, presumptive, and supportive are categorical labels used here to standardize case classifications for public health surveillance. The terms should not be used to interpret the utility or validity of any laboratory test methodology.

COVID-19 2020 Interim Case Definition

Epidemiological Criteria

One or more of the following exposures in the prior 14 days:

- Close contact** with a confirmed or probable case of COVID-19 disease
- Member of a risk cohort as defined by public health authorities during an outbreak

**Close contact is generally defined as being within 6 feet for at least 15 minutes over a period of 24 hours. However, it depends on the exposure level and setting; for example, in the setting of an aerosol-generating procedure in healthcare settings without proper personal protective equipment (PPE), this may be defined as any duration. Data are insufficient to precisely define the duration of exposure that constitutes prolonged exposure and thus a close contact.

Criteria to Distinguishing a New Case From an Existing Case

- A repeat positive test for SARS-CoV-2 RNA using a molecular amplification detection test within 3 months of the initial report should not be enumerated as a new case for surveillance purposes
- To date, there has been minimal evidence of re-infection among persons with a prior confirmed COVID-19 infection and growing evidence that repeat positive RNA tests do not correlate with active infection when viral culture is performed
- Similarly the experience with other coronaviruses is that reinfection is rare within the first year
 - ❖ **NOTE:** The time period of 3 months will be extended further when more data becomes available to show risk of reinfection remains low within one year of the initial report

Case Classification

- **Suspect**

- Meets supportive laboratory evidence*** with no prior history of being a confirmed or probable case
 - ❖ *** For suspect cases (positive serology only), jurisdictions may opt to place them in a registry for other epidemiological analyses or investigate to determine probable or confirmed status

- **Probable**

- Meets clinical criteria AND epidemiologic linkage with no confirmatory laboratory testing performed for SARS-CoV-2
- Meets presumptive laboratory evidence
- Meets vital records criteria with no confirmatory lab evidence for SARS-CoV-2

- **Confirmed**

- Meets confirmatory laboratory evidence

References for CDC Case Definitions

1. The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team. The Epidemiological Characteristics of an Outbreak of 2019 Novel Coronavirus Diseases (COVID-19) in China. Zhonghua Liu Xing Bing Xue Za Zhi. 2020;41(2):145–151. DOI:10.3760/cma.j.issn.0254-6450.2020.02.003.
2. Hiroshi Nishiura, Natalie M. Linton, Andrei R. Akhmetzhanov. Serial interval of novel coronavirus (COVID-19) infections. PII: S1201-9712(20)30119-3 DOI: <https://doi.org/10.1016/j.ijid.2020.02.060> Reference: IJID 4006 To appear in: International Journal of Infectious Diseases, Accepted Date: 27 February 2020.
3. Wei WE, Li Z, Chiew CJ, Yong SE, Toh MP, Lee VJ. Presymptomatic Transmission of SARS-CoV-2 — Singapore, January 23–March 16, 2020. MMWR Morb Mortal Wkly Rep 2020;69:411–415. DOI: <http://dx.doi.org/10.15585/mmwr.mm6914e1>.
4. FDA Emergency Use Authorizations <https://www.fda.gov/medical-devices/emergency-situations-medical-devices/emergency-use-authorizations> and <https://www.fda.gov/medical-devices/emergency-situations-medical-devices/faqs-testing-sars-cov-2#nolonger>.
5. Korean “Re-Positives” Assessed as Not Infectious. https://www.cdc.go.kr/board/board.es?mid=a30402000000&bid=0030&act=view&list_no=367267&nPage=1 accessed July 10, 2020.
6. COVID-19: Ongoing viral detection and repeat positives. <https://www.publichealthontario.ca/-/media/documents/ncov/main/2020/06/covid-19-ongoing-viral-detection-repeat-positives.pdf?la=en> accessed July 13, 2020.

Interview with Dr. Fauci and the AMA

Chronic COVID?

“We do know for absolutely certain that there is a post COVID-19 syndrome—referred to sometimes as 'long COVID,' 'chronic COVID,' 'long haulers.' It's got different names,” per Dr. Fauci.

There is a program in Bethesda, where the National Institutes of Health is based—“in which we're looking at a large cohort of post-COVID survivors. And we're seeing variable percentages in anywhere from 25 to 35% or more have lingering symptoms. Well beyond what you'd expect post any viral syndrome like influenza and others.”

Interview with Dr. Fauci and the AMA - MedicalXpress

Chronic COVID?

“One study of 143 people with COVID-19 discharged from a hospital in Rome found that 53% had reported fatigue and 43% had shortness of breath an average of 2 months after their symptoms started,” reports Nature.

“A study of patients in China showed that 25% had abnormal lung function after 3 months, and that 16% were still fatigued.”

“Besides the well-described symptoms of fever, cough, and loss of smell are other effects, including fatigue, rash, headache, abdominal pain, and diarrhea,” reports MedicalXpress. “People who develop more severe forms of the disease also report confusion, severe muscle pains, cough and shortness of breath.”

COVID-19 is a complex illness that **might require ongoing clinical care** even after being discharged from the hospital

1 in 11

patients hospitalized for COVID-19 were readmitted to the same hospital within 2 months

Premier Healthcare Database includes data from 865 nongovernmental, community, and teaching hospitals that contributed data during the study period

Patients who were readmitted were more likely to:



Be 65 years of age or older



Have a chronic medical condition



Have been hospitalized within the 3 months preceding the first COVID-19 hospitalization



Have been discharged to a skilled nursing facility or with home health care

Navigating “the COVID Literature Tsunami”

- We have now learned enough about COVID-19 to provide effective supportive care for most patients with severe illness, provided that health care systems are not overwhelmed
- In the **sickest** patients, we have learned that it is an **overly exuberant inflammatory response, not direct actions of the virus**, that is causing the most damage; this tells us what we need to do to prevent further harm
 - ❖ https://www.healio.com/news/infectious-disease/20201029/qa-navigating-the-covid-literature-tsunami?utm_medium=social&utm_source=twitter&utm_campaign=sociallinks
Accessed 11.11.2020

What Areas of COVID-19 Research Have Evolved The Most Rapidly?

During the Pandemic

- COVID-19 **diagnostics** have evolved rapidly, although there continues to be issues with supply chains that are preventing more widespread implementation of testing at some locations
- Regarding **therapeutics**, we have learned that large centrally coordinated clinical trials such as the RECOVERY trial in the United Kingdom tend to be more valuable than retrospective observational studies and multiple fragmented small trials
 - ❖ Thanks to RECOVERY, we now know that dexamethasone is beneficial in critically ill patients requiring ventilatory support

What Areas of COVID-19 Research Have Evolved The Most Rapidly?

During the Pandemic

- Novel adaptive trial designs can quickly evaluate multiple agents and combinations of agents, as has been demonstrated in the NIH-sponsored ACTIV studies
- Vaccine development has progressed remarkably quickly!

Areas in Need of More Research

- What is the influence of prior exposure to endemic seasonal coronaviruses?
 - ❖ There is evidence that prior exposure may be associated with milder illness, but other observations suggest the potential for detrimental cross-reactive immune responses
- Another important issue to understand is the impact of viral inoculum on clinical outcomes
 - ❖ Could it be that more recent cases of COVID-19 are less likely to be fatal because people are being infected by lower doses of virus as a result of social distancing and face masks?

Transmission of SARS-CoV-2 Infections in Households

Tennessee and Wisconsin, April – September 2020 Weekly / November 6, 2020 / 69(44);1631-1634

- What is already known about this topic?
 - ❖ Transmission of SARS-CoV-2 occurs within households; however, transmission estimates vary widely and the data on transmission from children are limited
- What is added by this report?
 - ❖ Findings from a prospective household study with intensive daily observation for ≥ 7 consecutive days indicate that transmission of SARS-CoV-2 among household members was frequent from either children or adults
- What are the implications for public health practice?
 - ❖ Household transmission of SARS-CoV-2 is common and occurs early after illness onset
 - ❖ Persons should self-isolate immediately at the onset of COVID-like symptoms, at the time of testing as a result of a high-risk exposure, or at time of a positive test result, whichever comes first
 - ❖ All household members, including the index case, should wear masks within shared spaces in the household

Birth and Infant Outcomes Following Laboratory-Confirmed SARS-CoV-2

Infection in Pregnancy

- What is already known about this topic?
 - ❖ Pregnant women with SARS-CoV-2 infection are at increased risk for severe illness compared with nonpregnant women
 - ❖ Adverse pregnancy outcomes such as preterm birth and pregnancy loss have been reported
- What is added by this report?
 - ❖ Among 3,912 infants with known gestational age born to women with SARS-CoV-2 infection, 12.9% were preterm (<37 weeks), higher than a national estimate of 10.2%
 - ❖ Among 610 (21.3%) infants with testing results, 2.6% had positive SARS-CoV-2 results, primarily those born to women with infection at delivery
- What are the implications for public health practice?
 - ❖ These findings can inform clinical practice, public health practice, and policy
 - ❖ It is important that providers counsel pregnant women on measures to prevent SARS-CoV-2 infection

CDC MMWR – References

Transmission of SARS-COV-2 Infections in Households — Tennessee and Wisconsin, April–September 2020 Weekly / November 6, 2020 / 69(44);1631–1634

- ❖ https://www.cdc.gov/mmwr/volumes/69/wr/mm6944e1.htm?s_cid=mm6944e1_e&ACSTrackingID=USCDC_921-DM41992&ACSTrackingLabel=This%20Week%20in%20MMWR%20-%20Vol.%2069%2C%20November%206%2C%202020&deliveryName=USCDC_921-DM41992

Birth and Infant Outcomes Following Laboratory-Confirmed SARS-CoV-2 Infection in Pregnancy — SET-NET, 16 Jurisdictions, March 29–October 14, 2020 Weekly / November 6, 2020 / 69(44);1635–1640

- ❖ https://www.cdc.gov/mmwr/volumes/69/wr/mm6944e2.htm?s_cid=mm6944e2_e&ACSTrackingID=USCDC_921-DM41992&ACSTrackingLabel=This%20Week%20in%20MMWR%20-%20Vol.%2069%2C%20November%206%2C%202020&deliveryName=USCDC_921-DM41992

Exploring Lessons Learned on Applying Safety & Quality Skills

4 Lessons to Help Clinicians Lead Their Organizations to Success

- Lesson 1 — Establish a formal, continuous improvement process to drive change
- Lesson 2 — Concentrate on the immediate and highest priority concerns and use data and informatics to inform decisions (infection control)
 - ❖ “During a crisis, high-impact leaders are adept at listening to the front line to identify issues that are most important and urgent to tackle, and then using data and informatics to evaluate impact of changes.”
 - Source: Harvard School of Medicine - https://postgraduateeducation.hms.harvard.edu/thought-leadership/exploring-lessons-learned-applying-safety-quality-skills-covid-19?utm_source=SFMC&utm_medium=Email&utm_campaign=pgme_category11_3_20%20

Exploring Lessons Learned on Applying Safety & Quality Skills

4 Lessons to Help Clinicians Lead Their Organizations to Success

- Lesson 3 — Translate the research into meaningful action and disseminate findings rapidly across organizations—and across countries
 - ❖ To illustrate this concept in action, she shares another example of a learning health system in action from hard-hit Italy, whose number of COVID-19 cases overwhelmed its hospital systems at the pandemic's peak.
 - ❖ “Clinicians in Italy discovered that moving COVID-19 patients experiencing respiratory distress into the prone position, or lying on their stomachs, improved their lung function and led to better outcomes. This approach was rapidly shared and adopted by all hospitals,” she says. “We now know that it is crucial to create proning teams to put patients in the best position for full recovery.” – Dr. Santos

Exploring Lessons Learned on Applying Safety & Quality Skills

4 Lessons to Help Clinicians Lead Their Organizations to Success

- Lesson 4 — Remember to always keep the patient and family at the center of your efforts (involving them in the improvement process)
 - ❖ “Regardless of the conditions and challenges we face, it is important that we always go back to thinking about how our work affects the patient,” Santos says. “We not only need to be safe, but we also need to value the benefits of patient-centered care.”
 - Katherine Santos, MBA, who serves as Vice President of Strategy and Operational Excellence for Legacy Lifecare in Massachusetts. Santos is also a Co-Director of Harvard Medical School's postgraduate certificate program Safety, Quality, Informatics & Leadership.

Daily Mask Wearing is Hard on Skin

What To Do for “Maskne” and Facial Bruises

“Maskne” is the new term that was coined during the pandemic to describe acne under facial masks. It is at an all-time high with the general public and healthcare providers.

- This type of acne is called acne mechanica
- “This term refers to skin irritation from excess pressure, heat and rubbing against the skin caused by a mask,” says Cleveland Clinic dermatologist Shilpi Khetarpal, MD. “When the skin is constantly rubbed it becomes rough and forms acne-like bumps. Masks can worsen existing skin problems or cause new ones. Additionally, hot, humid weather can create the perfect storm for bacteria, causing acne to grow on the skin.”

Daily Mask Wearing is Hard on Skin

What To Do for “Maskne” and Facial Bruises

- Dr. Khetarpal recommends these simple steps to improve skin health under your mask:
 - 1) Wash your face with a gentle, mild soap-free cleanser; this will remove excess dirt and oil that clogs the pores and causes breakouts
 - 2) Apply a fragrance-free moisturizer to keep the skin hydrated, which will act as a barrier between your skin and the mask and reduce friction; look for ingredients like ceramides and hyaluronic acid, which can provide additional protection
 - 3) Avoid wearing makeup under the mask as this can contribute to clogged pores and leave residue on the mask
 - 4) If wearing a cloth mask, wash it daily; for medical masks, ensure that they are changed daily
 - ❖ Sweat, bacteria and oil accumulate on masks; if you have the option for a cloth mask, choose 100% cotton, which allows the skin to breathe and are less likely to cause breakouts when compared to blended or synthetic materials

Daily Mask Wearing is Hard on Skin

What To Do for “Maskne” and Facial Bruises

Dr. Khetarpal says **contact dermatitis** is another mask issue. This is an allergic reaction to any of the components of a mask, such as dyes, rubber, and fabrics. This presents as a rash and can be very itchy. If this occurs, using a mild topical steroid like hydrocortisone can be helpful. Rosacea also can be flared by the heat and humidity under the mask.

If your skin issues persist despite trying these steps, it is important to seek medical attention of a dermatologist for additional treatment options.

Pfizer + BioNTech Report Very Promising Results

COVID-19 Vaccine

- The drug maker Pfizer announced on Monday that an early analysis of its coronavirus vaccine trial suggested the vaccine was robustly effective in preventing COVID-19
- Pfizer, which developed the vaccine with the German drug maker BioNTech, released only sparse details from its clinical trial, based on the first formal review of the data by an outside panel of experts
- The analysis found that the vaccine was more than **90 percent effective** in preventing the disease among trial volunteers who had no evidence of prior coronavirus infection
- If the results hold up, that level of protection would put it on par with highly effective childhood vaccines for diseases such as measles; no serious safety concerns have been observed

Efficacy Comparisons Per CDC.gov

Putting in context with Pfizer & BioNTech's 90% efficacy:

Measles 2 doses	97% efficacy
Smallpox	95% efficacy
Chickenpox	92% efficacy
Seasonal flu	40 – 60% efficacy

Pfizer + BioNTech Report Very Promising Results

COVID-19 Vaccine

- Pfizer plans to ask the Food and Drug Administration (FDA) for emergency authorization of the two-dose vaccine later this month, after it has collected the recommended two months of safety data
- By the end of the year, it will have manufactured enough doses to immunize 15 - 20 million people, company executives have said
- Independent scientists have cautioned against hyping early results before long-term safety and efficacy data has been collected
- No one knows how long the vaccine's protection might last

FDA Authorizes Monoclonal Antibody for Treatment of COVID-19

U.S. Food and Drug Administration issued an emergency use authorization (EUA) for the investigational monoclonal antibody therapy [Bamlanivimab](#) for the treatment of mild-to-moderate COVID-19 in adult and pediatric patients.

[Bamlanivimab](#) is authorized for patients with positive results of direct SARS-CoV-2 viral testing who are 12 years of age and older weighing at least 40 kilograms (about 88 pounds), and who are at high risk for progressing to severe COVID-19 and/or hospitalization. This includes those who are 65 years of age or older, or who have certain chronic medical conditions.

❖ FDA press release 11/10/2020

FDA Authorizes Monoclonal Antibody for Treatment of COVID-19

Monoclonal antibodies are laboratory-made proteins that mimic the immune system's ability to fight off harmful antigens such as viruses.

Bamlanivimab is a monoclonal antibody that is specifically directed against the spike protein of SARS-CoV-2, designed to block the virus' attachment and entry into human cells.

FDA Authorizes Monoclonal Antibody for Treatment of COVID-19

While the safety and effectiveness of this investigational therapy continues to be evaluated, [Bamlanivimab](#) was shown in clinical trials to reduce COVID-19-related hospitalization or emergency room visits in patients at high risk for disease progression within 28 days after treatment when compared to placebo.

[Bamlanivimab](#) is not authorized for patients who are hospitalized due to COVID-19 or require oxygen therapy due to COVID-19.

A benefit of [Bamlanivimab](#) treatment has not been shown in patients hospitalized due to COVID-19. Monoclonal antibodies, such as [Bamlanivimab](#), may be associated with worse clinical outcomes when administered to hospitalized patients with COVID-19 requiring high flow oxygen or mechanical ventilation.



Happy
Thanksgiving

Thank You!

Have topics you'd like us to cover in the next webinar on COVID-19 & Dentistry?

- **Email:** webinars@henryschein.com
- **Subscribe on YouTube!**
- **Complete post-webinar survey**

Next Session: Friday, December 11, 2 PM ET