

## Harvard School of Dental Med. | CPE Today: COVID-19 Pandemic and Dental Professionals' Response as Offices Reopen

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Hello, everyone. Now it's at 3:00. Welcome to Harvard School of Dental Medicine's Continuing Professional Education, *CPE Today* Talk Number 2. My name is David Kim, and I'm the director of the Continuing Professional Education at Harvard School of Dental Medicine, and I'll be the co-moderator for today's talk.

Our topic today is COVID-19 Pandemic and Dental Professionals' Response as our Offices Reopen. We are happy to have you join us today from all over the world, and we will do our best to provide valuable information and suggested guidelines that can be implemented in your practice.

We are grateful to have three HSDM faculty members join us as speakers and co-moderator. Dr. John Tannyhill is the OMFS Residency Program Director at Massachusetts General Hospital. He received his DDS from UCLA and MD from Harvard Medical School, and has completed his oral and maxillofacial surgery residency at Massachusetts General Hospital.

Dr. Emilio Arguello is a lecturer at HSDM and currently has multispecialty practices in several states. He received his DMD, MS, periodontology training from Tufts University School of Dental Medicine, and was a full-time researcher staff at The Forsyth Institute.

Dr. Yong-Han Koo is a part-time instructor at HSDM and maintains a private practice limited to oral and maxillofacial surgery.

[INAUDIBLE]

He received his DDS from Columbia University College of Dental Medicine and completed his residency at Yale New Haven Hospital.

Dr. Tannyhill and Dr. Arguello will share their perspective from two different settings, Dr. Tannyhill as an oral surgeon working at a hospital-based practice, while Dr. Arguello as a periodontist in a multispecialty group practice. As we all gear up to reopen our offices--

[INAUDIBLE]

--we are very eager, but at the same time, we all have some level of anxiety about how we could provide the safest environment for our patients and team members.

I completely agree with you, David. As an oral surgeon in private practice, majority of the surgical procedures that we provide for our patients do generate aerosols. Also, we see many medically compromised patients, so I'm very

concerned about everyone's safety. So personally, I'm very excited about this learning opportunity to review some specific guidelines provided by the ADA, CDC, OSHA, and Massachusetts Dental Society. As a co-moderator, I'm going to do my best to think from our audience's perspective and also help make this session as relevant as possible.

Thank you, Yong. Now, I'm going to briefly go over our agenda. First, Dr. Tannyhill will go over his COVID-19 office protocol. Then, Dr. Arguello will go over his COVID-19 protocol, and lastly, we'll end with our session with Q&A. Without further ado, Dr. John Tannyhill, please.

It says that I can't share if you're sharing, so someone needs to come off. There we go-- great. OK, supers. Great. I'm excited to be with everyone today. I appreciate the opportunity to speak with you a little bit about what it looks like to go back to work in a hospital setting, in the setting of SARS-coronavirus.

Briefly, I have nothing to disclose, and so my objectives today are basically to talk about a phased approach to resumption of practice. What does this look like? How do we get back to work and to convey a sense of the differences in hospital practice versus private practice?

So first, I want to talk a little bit about preparing yourself and your staff to resume patient care, and then preparing your office to work within the new paradigm, and finally, the resumption of practice, which will be based on priorities in what our patients need and when they need it, which will be based on many criteria.

First would be Phase 1. It's preparing ourself and our office staff to reopen up the office. You know, up to this stage, we've only been seeing emergency patients in most states. And really, you think, what's an emergency?

At the Mass General, where I work, we were initially given very clear guidance. Basically, there needed to be a risk to life or limb. However, in dentistry, it has a slightly different meaning. Intractable pain or uncontrolled bleeding or fractures of teeth or bone can all be considered emergencies. But it could also be an ortho wire or a fractured tooth that's causing significant mucosal irritation or somebody with an intractable alveolitis or dry socket.

In our practice, we use guidance from national associations to fabricate our criteria as to what we defined as emergencies, as I'm sure you did well. And the associations were really helpful in coming up with that plan. This is going to change as we get back into practice, as we phase back in. And there are many things, perhaps, like aesthetic procedures or prophies that are going to be the last thing that we add back to our practices.

So how can we continue to practice dentistry using telemedicine or teledentistry? In our practice, we've spent a considerable amount of time deciding what consults and follow-ups can be done via Zoom, which now has Epic integration. And Epic is the Electronic Health Record, or EHR, that we use at the Mass General.

A clinical workflow has been created with an assistant rooming the patient, and then us coming into the room and seeing the patient, doing the consult, putting in all the orders, and then basically setting the patient up for our coordinator. At this time, really, our coordinators are just putting the patients on a list.

Of note in this whole workflow is that most payers will only cover video consultations. They won't cover audio consultations. So there are many things, like just a quick follow-up on a patient, that can be done by phone, but it's also important if you're doing-- excuse me-- if you're doing a consultation, to actually make sure that you're doing it by video so you can get paid for what you're doing.

PPE, do we have enough? How will we source it, and how will we maximize it? Prior to scheduling our patients, we need to look at our PPE inventory. Well, the supply that we have allow for planned visits. What we have available at Mass General may be different from what you have in your office. It may be better or worse.

We, for instance, with the problem within N95s, there was a sanitization unit set up at the Mass General specifically to prolong the life of N95s. And now there are third parties that also can do that outside of a hospital setting like ours.

We also thought a lot about the PPE plan for exams versus procedures. In our practice, they do differ, and we'll cover those in just a moment. And things such as the clinical reorganization of the workflow, we basically created a rotation of faculty, of residents, of mid-levels which we use in our practice, which are both physicians' assistants and nurse practitioners, as well as administrative staff, to allow for separate clinical and administrative teams, and therefore decrease everybody's risk of exposure and possible infection.

And we've set up the office where we have don-and-doff stations. We have closed doors to create isolation rooms. So we try to think through how we can do this best for the patient, but also to protect our staff.

And one thing you might want to think about right now in Phase 1 is obtaining out-of-state licensure for telemedicine. There's an allowance right now where there are many states of emergency in various states to allow for temporary licensure based on this emergency status.

And where we practice in New England, many of the states travel from out of state, if you will, from New Hampshire or from Rhode Island, to see us for consults and for follow-up. So that became very important. And just sort of, of note, that happens very quickly. Like, it's almost the same week that you send in the material, you'll get a temporary license.

So Phase 2 is preparing the office. We need to think about the flow through the office, from the first hello to the patient, to the last goodbye. When the patient arrives at the office, we need to rethink our waiting room and rethink the flow of patients through that waiting room and into the office.

The seating will likely need to be rearranged or completely removed to allow for social distancing. Smaller offices may consider asking patients to wait in cars and enter the office after receiving a text message. Patients should be prevented from bringing companions to their appointments, but there are instances where this can't be true.

For instance, a special-needs patient or a pediatric patient, they may need a companion to be with them. And as those patients are screened, which we'll talk about in a moment, for any symptoms of a COVID-19 infection, the companion should also be screened. And it's also important, especially in cases like a special-needs patients, as much as possible, to keep the companions out of the procedure rooms, especially if a procedure is being done.

Then also, basic things that we all know, like copious amounts of hand sanitizer, and masks, and disinfected surfaces, and clipboards. If you're a paper practice, single-use pens with your logo-- good way to get your logo in the hands of the patient. You might want to consider installation of barriers at check-in, like a transparent barrier at-- Plexiglas at the check-in window, back like they used to many years ago.

We'll also likely need to modify our clinical area. And like I said earlier, in our practice, this has evolved over the past several weeks. For instance, we always close doors now to create isolation rooms. One of our faculty had the great idea of setting up donning-and-doffing stations, not within the rooms where they usually are, but out in the hallways, so that we could basically get prepared as we walked into the room.

Finally, you need to think about how you're going to manage your staff's health and well-being. At Mass General, we use a day-pass app, and it looks kind of like this on your phone. It allows for confirmation of symptoms or no symptoms, and then provides a clear pass.

So on this one on the left, I hit the button, No Symptoms down near the bottom, and it immediately pops up on my phone that I have entry, and I'm cleared for work that day. It also sends an email, and then that can be showed to security as I come in the hospital. And then, there's somebody waiting for me to squirt hand sanitizer on my hands, and then we're given a mask as we walk in, and it's usually a level 1 mask. And that's sort of across the board for patients and staff.

A similar plan could be devised without an app. A staff member or a prep station can be set up in your office to provide hand sanitizer and hand out masks in the same fashion, and you may do things like take temperatures of your staff as they come in the door.

So finally, Phase 3, resumption of practice-- each day, you would start with a day-pass app scenario or, like, staff screening, like I just explained. You also would conduct a patient screening exam by phone. And you'd want to do this prior to the visit so that any symptoms that the patient's declaring can result in the rescheduling of that

appointment for the patient, to protect other patients and to protect your staff.

We also need to restrict our schedules to allow for appropriate patient flow over maintaining social-distancing suggestions as 6 feet or 2 meters. We need to decrease staff engagement in the rooms. In the operating rooms, there's always a person that we refer to as the circulator, and that's basically the person, they're not scrubbed, and they can grab things. They can grab suture material, an extra set of gloves, bone-graft material. Whatever we need, they're there to get it for us.

And that concept has been applied into our own practice, where there's always a circulator in the hallway that, if we need something, we can have them get it for us. This is especially important, where we don't want to be donning and doffing constantly, both to preserve PPE, but also to decrease the risk of exposure.

What is the appropriate room and patient preparation? Well, you always want your patients to wear masks. You want to obtain vitals when they go into the rooms. That would obviously include temperature. Someday, perhaps, we'll have the availability to do a rapid COVID-19 test in a room. Right now, that's not a possibility. We may have our patients rinse with different things like hydrogen peroxide or iodine.

Where we have aerosol-generating procedures, we want to do the maximum amount that we can, given that most of us don't have negative-pressure isolation rooms, which is really the gold standard when we're talking about AGPs. But most of us don't have that. You might want to consider delay into the entry of the room, kind of shut the door and let things sit for a few hours. Initially, that'll probably be possible, but, ultimately, that may not be.

Finally, how can we maintain the appropriate follow-up during the pandemic? So if you think about suture placement, we would always want to use dissolvable sutures so the patient doesn't have to come back in for suture removal. We might want to use teledentistry. That concept of every patient who's had a procedure during the day gets a follow-up phone call that evening and a few days later may mitigate the need for further follow-ups with a patient who's a little bit unsure of some of the things that they're experiencing.

Finally, it's very important to consider contacting patients five to seven days after their visit in your office to make sure that they don't have any symptoms of COVID-19 infection, given that it's usually-- from infection to presentation is about five days. So they may have been infected but asymptomatic the day that they were in your office, but now on follow-up, you find out that they are indeed positive.

So what differs in our office between exams and procedures as far as PPE? It's basically to prevent for the-- you know, you figure, in a procedure, you're going to have increased particulate matter and aerosols, and therefore increased risk to the care team. So we would always wear some form of a hat, a gown. We've decided to double-glove so that we have a clean pair of gloves when doffing. So you'd take out the outer pair and use your clean pair

to take off, like, your gown and your hat.

We'd wear eye protection. In a perfect world, that would be close-fitting goggles, a face shield. And then for an exam, we might use a level 1 surgical mask under the face shield, but during a procedure, we'd use, like, an N95 respirator covered by a surgical mask. We even have very nice cloth masks that were made by the aunt of one of our faculty that are reusable, but basically just to keep the lifespan of the N95.

And when you think-- we're talking about masks really briefly. There are different levels of masks. And when you go to buy these, you just need to think that a level 1 mask is a low barrier. It's basically for exams, ortho, cleaning the op. A level 2 mask is for things with moderate levels of aerosol, such as endo treatment or a very limited oral surgery without a drill, and then level 3 with a high barrier for things like implant placement or complex periodontal or oral surgery.

So in short, you know, the support from the national organizations has been really excellent. The ADA, the oral surgery societies for us, the hospital partners, now called Mass General Brigham, have all been massively helpful.

Open communication with my colleagues has been very helpful. I found that I've had many emails forwarded to me. I've forwarded many emails and have had many helpful discussions. So talk to your friends and your colleagues, and then when you talk to them, offer words of support and solidarity. We're going to get through this regardless, but it'll be much better if we are supporting one another throughout. So thank you very much, and I'll turn my time over now.

Thank you so much for your excellent presentation, Dr. Tannyhill.

My pleasure.

So we now have a big picture of our current landscape-- also, where we may be headed. We also appreciate the gold standard regarding infection control established at the hospital. As an oral surgeon myself, we are used to working in a hospital environment. And when we go to the OR in a sterile environment, we get to work with circulating nurses, who are constantly monitoring the quality of the infection control.

So my question to you, Dr. Tannyhill, is, do you think we can apply this concept to our dental office by designating one of our team members as a COVID-19 infection-control specialist or quality control?

Absolutely, I think that's a great idea. You basically could take the person who's already probably doing the-- your OSHA officer within the hospital, that already has a mindset geared toward that, and easily repurpose them for that very thing.

And it's also-- you bring up a great point-- it's really great to have somebody that's always being mindful from afar of what's happening. And so if they can kind of peek in and just sort of say, you know what? Your hat's not on right, or, you know, your face mask isn't right-- just any little thing that will help protect the other members of the team is really helpful. And I think, if we don't have that paradigm now, we need to adopt that pretty quickly.

Appreciate that. I think we're just about ready for Dr. Arguello's presentation. He's got great information for all of us. Now, Dr. Arguello is going to share his COVID-19 office protocol from a private-practice perspective. So without further ado, please take it away, Dr. Arguello.

--and what we have been doing. In our state, in Colorado, we have been open for about five days already, so I'm going to be sharing with you in the daily basis what we've been doing and how we've been performing. I have been answering some questions from offline, but I hope this-- you find this useful.

The very first thing I'm going to start with is the understanding of the hierarchy of the controls, and this is something that you will find everywhere, from the CDC, from the ADA, and other organizations around the world. So basically, this is something that we have to understand very well because you just see in the inverted pyramid, in the upper part, we have illumination. And we go all through our different topics and subjects, all the way down until we get to the PPE.

And the didactic portion of this is that, if we are able to control the environment before we can get to the bottom part of the pyramid, we will be probably more successful than relying only and solely on the PPE. And that's pretty much what we-- that these controls are geared towards.

There are two main links in here. In the left side, we have the link to the ADA website. There is a "Return to Work Interim Guidance Toolkit." A lot of what you see today is going to come from the step-by-step protocols that the ADA has given us, and these protocols actually are very well described. I'm not going in detail on each one of them, but this is a free resource for everybody in the world to be able to obtain this toolkit.

And the right side is the link for the CDC organization here in the United States for the coronavirus recommendations. A lot of the things that you see in both recommendations intermingle. So you will see one outlining the other one, so it's very, very similar. However, the ADA one seems to be more user-friendly.

Now, I'm going to outline a couple of the things that Dr. Tannyhill mentioned in his talk. Prescreening of staff and patients is crucial. On the right side of the screen, modified from the toolkit from the ADA guidelines that you will see that I mentioned to you, you'll see a questionnaire.

And that questionnaire is very important because you ask your office to ask these questions to the patients ahead of time. So in other words, you don't have to wait-- you don't have to wait until the patient comes back to decide

whether or not the patient is able to come to the office.

If the answer to those risk questions for COVID pandemic are negative, then you will approve for patient to come to the office. Then, at that time, you tell the patient ahead of time that patient should wear a mask or a face covering when they come to the office, and they will have to fill in the same questionnaire on site in the office.

Now, what happens if the-- any of those check marks, and, again, I'm assuming in these check marks right now, but, typically, a symptomatic patient-- patient has been exposed to someone or cared for someone that has been tested positive, if any of those questions is, answer is yes, then you do not approve the patient to come back to the office.

Have the patient contact their physician immediately, and if possible, the physician will determine whether or not they need to be tested. And until then, two weeks later, you could go ahead and have the patient reschedule that appointment.

Now, at the workplace, in the aspect of elimination, we have to have the staff coming in as a self-screening. Especially when we have smaller practices, we don't have a large amount of resources. So we'd have to trust in the staff that-- introduce a protocol-- they do a self-screening.

The same question now that patients are being asked, the patient-- the staff member comes through the door-- hopefully, a side door or a back door in the office-- has a question that they have to fill in, has a-- or you have a bucket of clean pens and used pens. Patient-- a staff takes its own temperature, and you're looking at a threshold of 100.4 degrees Fahrenheit. So that way, you could, if above that threshold, then the staff immediately goes back to their home and reports by phone to the supervisor.

So those are the important aspects, what we have to do when the patient-- when the staff comes home. I'm not going to spend too much in here, but, obviously, you will inform the patients that companions are only one companion per patient if they must be accompanied. And we're talking about companions that, you know, elderly population and handicapped population or minors.

However, if the companion comes into the office, they do have to recheck in with the desk, same as the patient. And the companion also will fill the same questionnaire, and if any positive answers of the companion appear in the questionnaire, the companion and the patient, we'll send home and reschedule the visit.

Now, this is an example of something that Dr. Tannyhill alluded to in the hospital. You provide a station with the hand sanitizer. If you cannot provide a separate station, then you do at check-in desk. Then you do it in the desk at the check-in-- very important to look at the Plexiglas barriers. If you're not able to provide a Plexiglas barrier for

any type of coughing, to prevent any type of a barrier, you could ask your front desk to have and wear a face shield. So at the--

Dr. Arguello?

Yes.

Sorry to interrupt.

No problem.

On your screen, bottom right, would you mind removing the build order that's blocking the view, if it's possible?

I'm sorry, but you know what? And you may see it in your screen, but I don't see it on mine, but thank you for asking.

OK.

I will--

Just the build order--

Just this?

--on the bottom right.

One second. Let's see here.

Yeah, bottom right. The build effects on the right? Yeah, that's what's shown.

You know what? I don't see it on my screen, and so I'm so sorry.

OK, continue.

Is it OK to continue?

Yep.

OK. So the important part in here-- let me just go back into my lecture here. In here is-- obviously, if you have a precheck-in station, then you can go ahead and have them proceed to the main check-in desk. Otherwise, direct the patient to the exit if there are positive answers where marked.

Now, obviously, in terms of systems and substitution, what we have to do differently means that, try to protect the elderly patients. Try to have the patients come in earlier in the morning or where there is less crowded environment to the-- in the office, so accommodate for that. Safety-- stand 6 feet apart. Wear a face shield when you are less than 6 feet apart or install-- they've got Plexiglas barriers.

As my scheduling, it's important to allocate 15 minutes more per appointment. We have started playing with different timelines, and we found that the sweet spot is going to be 15 minutes extra to the typical appointment. And that will allow the break in and out of the room and the new PPE allocation.

So also, you should stagger the breaks, so that way, if you and your office have a small lunch room, you have to make sure that not everybody goes into the lunch room at the same time. So you may have to have one or two members of the staff at a certain time and so on, support for the rest of your staff to do it in a different-- allocated times. And, obviously, have someone, typically the person at the front desk, to constantly disinfect the areas where the patient had to stand or have become in contact with those surfaces.

Now, in terms of the engineering controls, what we have done in the office, very easily to obtain, these stickers that are in-- online merchants, you can find. And those stickers, you can put them in the floor so the patient is able to understand where to stand.

Now, if you have a large office, you had a pretty good amount of them and space your seating, as Dr. Tannyhill mentioned. However, this is a very good visual aid. If you do not have the stickers, use tape to be able to mark down the areas where the patients have to sit or stand.

And Dr. Tannyhill alluded to this as well. If you have an office that is large enough that you have an ability to do a directional flow of your patients, this will be the best in the sense that you can avoid the direct contact with patients in the corridors. If you do not have this large office, then I invite you to think about checking in if somebody is coming through the office, and you have that-- through the corridor, and you have to wait until they have gone through to just have your patient exit the operatory.

In engineering controls as well, you're looking at different items. Right now, it's very hard to get the face shields, and because of that, we have gotten to the industrial face shields. Those are slightly easier to get. They are reusable, so don't hesitate to recommend these for your practice.

Now, the Plexiglas is important, as I mentioned to you before, and that Dr. Tannyhill mentioned that. And that's very inexpensive to do. Try not to go to-- sometimes the local hardware store is out of them. Try to locate through your search online in your local environment, what are the companies that fabricate and manufacture plastics. Contact them directly. Most likely, you will be lucky to find these Plexiglas sheets.

In engineering control, as we look in isolation, and this is very important because now we've started looking into the aerosol-producing devices, such as air-driven handpieces or even electric handpieces, and as well as Cavitrons. Now, what the new regulations tell you is that every single procedure that is going to have an aerosol generation, you have to use a high-volume evacuation.

So whereas before, hygienist used to just only do the saliva ejector, now you have to provide a device, or have them use a high-volume evacuator, which is typically common for us to use in the surgical setting. However, out there, there are some devices-- if you look into the bottom picture, there are some devices that have been very cleverly come out at very inexpensive cost to mitigate the aerosols.

So this is an example, that an external device that is clipping into a retractor that then is able to suction as much of the aerosol produced in procedures. There will be more elaborated products that you will see in the marketplace as well.

And is there a necessity? Well, the ADA and the CDC do not specifically mention anything about external devices that need to be in use. The high-volume evacuator is the only recommendation that they allocate to in dentistry. But, obviously, if you're within the possibility to acquiring a higher end device to do an external suction to be able to mitigate this aerosol, it's obviously good.

Obviously, one part of the isolation is very important, which is then, if whenever possible, limit the aerosol-generating procedures in a closed room. Hopefully, you have-- if you have a large practice, you have a circulator outside the room and limit the companions in the room. However, one of the regulations state that if a companion needs to be in the room, you need to provide a face mask and a face shield to that companion.

Now, someone asked about air systems. The only mention in air-control systems for the ADA and the CDC is that you have to make sure that the-- you can control the air flow with fans, regular fans, through your corridors, as long as the fans prevent the flow of the air towards the rest of the office.

So try to position the fans into a way that it goes through the structure system of your regular air condition in office, and not towards anywhere else. You don't have to really have-- do a very fancy arrangement of your rooms. That is something that they was asked before, and there is no regulations on that.

Now, something that's very important, and, actually, this is not a recommendation by the ADA or the CDC. However, there is a very strong research that has been done exclusively to the COVID-19 virus, which is using povidone-iodine, either the dilution of 1%, so very inexpensive in the marketplace.

You can buy a gallon of povidone-iodine for less than \$50 and do the dilution at nine-- this case, it's at 10%. You

dilute that by nine parts-- with parts of water, and you create it-- place them in dispensing pumps. Have the patient rinse for 30 seconds.

And those patients that are allergic to iodine, also, research is available for hydrogen peroxide, typically sold at 3% concentration ratio. You can dilute that about 50%, one part of hydrogen peroxide, one part of water, and that gives you 1.5% concentration, and rinsing for 30 seconds.

Another important part of-- in here is the solutions that are available. Now, it seems like a lot of the solutions are not readily available anymore. But you could look at the website that's in the link that is shown in the bottom part, which is the EPA.gov. You will have a list of substitutions of this type of cleaning devices or cleaning agents that allow you to-- very inexpensive approaches.

An example of that is in here. That gallon, if you dilute it, it will give you 160 gallons of an EPA-approved disinfectant for surfaces. So you don't have to worry about going to the manufacturer and all the time to pay prime for this.

Now, another guideline, which is important, is it says that you have to utilize barriers within 6 feet of a patient care, including computer, keyboards, monitors, et cetera. So that means that you have to cover your monitors if they're in close proximity to the patient, something that we didn't do before. A good way, inexpensive way, to do this is using the old Saran wrap, the plastic wrap.

So now, when we go to the administrative controls, we start looking at what is important for your staff to understand what conforms a lower level of exposure, a medium level, high level, or very high level? If you are able to review this through the OSHA.gov website, you'll be able to see that a lot of people in the office, in the administrative staff, are not necessarily need to be worried too much about the exposure.

Some patients, when we reopened our office-- some staff, when we reopened our office, did not come back because they were afraid of being exposed. So you have to educate your staff. Obviously, the high level of exposure comes when you are-- when there's a performing aerosol-generating procedures on well patients. And they're very high, which is typically not in our dental office, is when we are performing aerosol-generating procedures in known suspected COVID patients, or handle the specimens, and so on and so forth.

So now, a very important, when we come to the PPE, which is the last topic, is that what are the aerosol-generating procedures, and what is the required protection? Well, for any type of aerosol-generating procedure, you have to provide yourself and your staff with an N95 or KN95 respirator with a face shield. If a face shield is not available, goggles plus a level 3 mask over the top of N95, to allow for reuse.

There was a question out there, if you can use a cloth mask on top of your N95. Absolutely, you can. The only-- or

a level-- or if you aren't using a face shield-- however, the moment that that mask becomes soiled, you have to immediately wash it or put it in the laundry, so you take it home.

Now, it is required for you to wear a gown or a lab coat, or a protection-- we'll go more in detail-- and, again, the high-volume evacuation, and whenever possible, providing assistance to the clinicians that are using that. Now, when you're doing operative procedures, whenever possible, use a rubber dam to isolate this environment, and also provide a head and shoe coverings as needed.

Now, for non-aerosol-generating procedures, as Dr. Tannyhill has mentioned, he already explained the difference between level 1, level 2, or level 3 masks and face shield. But these are good references for you.

What is it that we're doing now that there's a lot of shortage of respirators? So [INAUDIBLE] in the left side shows you a clear example of N95 surgical respirator. However, this surgical respirator is impossible to find now on the market.

So industrial respirators like the two on the right side are actually available, and these are elastomeric surgical respirators. And if you see the filters that you see, either the ones on the-- in the center part of the picture, which is in the pink, those are P100, so this even higher level of protection than the N95. And the one on the right side is a full-face elastomeric surgical respirator.

Now, I would say to you that you'd see that respirator has a surgical light in there. And many times, you could use your loupes with these respirators. I've personally been able to do that, and today, in the daily basis, what-- this is what I look like when I'm going to be going to patients.

I wear my elastomeric full-face respirator, a P100. The filter is typically replaceable every three to six months, unless it gets very soiled. And because they are an [INAUDIBLE] out, there's no getting [INAUDIBLE] very soiled by the humidity of your respiration. However, these filters can be wiped with the same disinfectants that you use.

Use gloves that cover the rest whenever possible-- surgical gown with elastic cuffs, the scrubs, and disposable booties. Now, that is impossible nowadays to get, so what is the way around that? What we have done, we have gotten an alternative reusable gowns. And actually, the ADA and the CDC allows these to be used in practice.

So this is a raincoat, a raincoat on the right side that shows a hood with the drawstrings to tie it, the EVA material, which is actually a very resistant, plastic material that is sprayable, and elastic cuffs. So pretty much, this becomes the substitute what we typically do, and that is hard to get.

This is what I'm looking at, our practice in the office. So obviously, we try to, whenever possible, use devices to mitigate this aerosol-generating procedure, and, obviously, the face shields that are industrial grade.

Another important point that actually is very good, and this is the last slide, is short nails, no nail polish. Short nails means one quarter inch max. Safety barriers, we talked about it. The administrative staff-- the hair tied back, and what we recommend all our staff members each to buy these rubber sprayable shoes.

And whether it is the shoes or the scrubs or the clothing that you bring to the office, that either stays in the office, and if you don't have a laundry facility in the office, you're going to go ahead and take it home in a closed bag so you can launder those things at home.

With this, I'll switch back, and thank you very much for your time, and now we open a question-and-answer session.

So thank you, Dr. Arguello, for your excellent presentation, and also Dr. Tannyhill for your amazing presentation as well. We now have our two different protocols from two different environments.

We got a lot of questions, but due to time constraints, we're going to try to go over a question that we think are the most relevant to all of us. So first question is about COVID-19 testing options. As we understand, there are more than 150 testing options available, but it's very important for us to recognize there's only 10 of them have at least a temporary FDA approval.

So Dr. Tannyhill and Dr. Arguello, what is your recommendation? Would you go for an antigen test or a serum antibody tests also? What is your recommendation?

If I could take the lead on that answer, there are actually three types of tests, and perhaps people don't understand all the time. The swab test, which you did not ask that question, is to detect the presence of the virus. However, you're-- having exposed to the virus, you can use serology test or a blood test. We test these two main antibodies, the IgM and the IgG.

Now, for those two antibodies, if the IgM is present, that means that you are more likely to have been recently exposed with the virus, and you're in the process of creating these antibodies. When you have the IgG antibody present in your test, you will-- have already been pre-exposed and developed some level of immunity. So any of these tests will offer you that.

And even though there are more than 150 tests available in the market today, only four or five of them are actually gotten the approval by the FDA. The other ones have got-- been granted a temporary certificate in terms of the emergency situation. Dr. Tannyhill?

Yeah, I think right now, my opinion would be-- I think the gold standard for nucleic-acid testing, like the Abbot rapid

test for PCR, is basically quick, but very difficult to come by. And it's not something that we're going to have in our offices anytime soon. And that would basically check somebody who is actively infected.

One of the issues with this serology is that that requires you to have developed antibodies at some point, and those are less reliable, and you get more false negatives with those. There's a little bit of a concern over those. So if I had to choose one, it'd be wonderful to have, like, an Abbott rapid test in my office, but the likelihood, like I said, of that is very low. So I think right now, we're sort of stuck with dealing with symptoms and things like that.

The other piece that you're-- that we're dealing with now is, if you are a dentist, you're not allowed, that I'm aware of, at least in the State of Massachusetts, to write orders for a test. You have to do it through the primary care doctor, and that creates another level of bureaucracy for you in trying to get the patient treated.

Thank you for your recommendations.

You bet.

Now, the second question is about handling medically compromised patients, especially the ones with lung diseases and bleeding disorder. Obviously, we've got to treat them for their emergency, but would you recommend delaying treatment until the situation improves?

Yeah, I personally would. You think about patients that have other problems, like let's say somebody was treated for osteonecrosis, and you try to do the bare minimum that you can. You might take a tooth off at the gingival margin and do a root canal to buy them some time. In a context of osteonecrosis after, like, radiation, in this context I wouldn't view it too differently.

If somebody has, you know, a true abscess or has a big periapical lesion, then they probably need to be treated. But where somebody-- where you can buy yourself a little bit of time, I think that's probably right now what we'd want to do, and postpone the treatment as long as we can, being reasonable.

Got it. So we're going to go on to a next question. It's a technical question. It's for-- regarding nitrous oxide units between patients. How would you recommend to clean and manage the nitrous oxide units in between patients?

I mean, there's two options there. There's single-use, and then there is sterilizable, multi-use. At the hospital, we're only using single-use. I don't know about Dr. Arguello, what he's using.

Yeah, the guidelines on the ADA and CDC, they both recommend disposable use of masks, no longer the other ones, and the reason being is because they argued that it's very hard to control the cross-contamination of that mask as it's transferred to the sterilization, no different that the documents for the mask is more differently

because of an air situation of the COVID.

I agree completely.

So let's move on to the most popular questions. So we're all dealing with the shortage of PPE at this time. So how are you both handling the shortage of PPPs for your offices?

I think Emilio has more of an important insight than I do there.

Thank you, John. So basically, this, I'm going to give you some secrets in here. You all-- most of the people that are here-- they attended this seminar-- are clinicians, and many of them are doctors. So when you go into Amazon-- not that you do, but that's one of the online merchants-- you are prevented from ordering from Amazon if you look at a PPE, right?

So obviously, your supplier doesn't have it. So what you need to do in Amazon is create a business account first. And then, you have to be verified as a health-care provider, health-care worker, and, typically, they ask you for your license number or NPI number. And then, once you do that, you're able to order that-- you would be surprised in how many of the reusable respirator [AUDIO OUT]. loves it, and they still ask, who are you? Yes.

Yeah. So it's a few seconds, yeah?

Yes. This considers also alternatives, like the raincoats that I mentioned to you and things like that, or rain suits, you know?

Right. So we're going to go to the next questions, and this is about extraoral suction units and HEPA air purifiers, that we're trying to get more information about. So we know the main mode of COVID-19 transmission is via droplets. We know that, but there's a growing concern that it may also be airborne, where the virus can survive in the air for up to three hours and beyond. So are you planning on using these extraoral suction units, as well as the HEPA air purifiers for your offices?

We're--

In the private practice-- Dr. Tannyhill may have a different experience with the hospital. In the private practices, many of these devices, first of all, are not necessarily tested that-- to be 100% efficient. And the most important thing is to wear the PPE. And therefore, every patient, same as in the hospital, wears a mask for exactly the same situation of the airborne environment.

And now, filters, EPA filters, purifiers, well, there's a section in the OSHA.gov website, that leads you to industrial type of filtration, and at least of filters that are approved to that, if you want to go the extra mile. There are not as

specific guidelines on dental offices to use that one.

--at this point.

Dr. Tannyhill, you want to add anything to that?

No, I completely agree. I don't think there's a lot of data to support using them, probably not hurtful, but I don't know there's enough data to say that they're helpful yet. And, I mean, realistically, they're not terribly expensive. It probably wouldn't be money wasted, but at the same time, there's not a lot of data to support its use. And I think the fear is, it's giving you a false sense of security that maybe you can slack in other areas, like Dr. Arguello said with your PPE.

Yeah.

Well, we still have a lot of more questions, but, unfortunately, we're out of time. We do appreciate your questions and comments very much so. So I want to thank you, David, and also our panelists, Dr. Tannyhill and Dr. Arguello, for their invaluable information. And thank you all so much for joining our session today. We sincerely hope you got some useful information that can be implemented in your own practice.

Well, we have a lot of challenges ahead, but we're all in this together. We hope you all stay safe, and let's stay connected to continue to navigate through this unprecedented crisis together.

Final thoughts, David?

Yes. On behalf of the Harvard School of Dental Medicine Continuing Professional Education Committee, I would like to thank our presenters and co-moderator for enlightening us with valuable information as we are getting prepared to reopen our dental practices. For those of us who were not able to join the entire session, we will also try to upload the presentation after a little bit of the edit, so you have a chance to see the entire presentation.

And next Monday, which is the May 11, we will have our third *CPE Today* Talk Number 3, titled Endodontic Emergencies in a State of Emergency presented by our HSDM faculty members. Please visit our school's website, which is [www.hsdm.harvard.edu](http://www.hsdm.harvard.edu), and go to our CPE website to link, to register.

And once again, I'd like to thank our Dr. Arguello, Dr. Tannyhill, Dr. Koo for your wonderful presentation and also for being a great moderator, and wanted to thank everyone, that stay safe. Be healthy, safe, and then we'll try to see you next week. Thank you.

Thank you.

Thank you, everyone.

OK.

Appreciate it.

Stay well.

Bye bye, now.

Same to you.

Bye bye.

Bye now. I'll see you.

Bye bye.