



Healthcare-Associated Infections Advisory Committee
March 9, 2022

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Speaker: Dennis, do you want to go ahead and get us started.

Next Speaker: Well, hi, this is **** advisory committee. So, I'd like to call this meeting to order. It's 1:02, and I see everybody is starting to join and trickle in. So, great. Thank you for joining with us today. We'll go to Rosa for a ***** update.

Next Speaker: I am muted. Thank you, Dennis. Um, so I am very excited to start off our logistics updates today by introducing two new committee members. Um, I believe we may have them on the line. I am seeing Pamela McAllister. So, Pamela, if you would like, feel free to start your video so we can see your face. Um, no pressure or if that's not in the cards for you today, we understand. So, um, I'd like to just introduce Kim as our new consumer advocate. Um, and she has been a patient advocate with the Pike Louis Foundation for the past 2 years. Um, she has been a member of their advocates council. Uh, she is a **** and substance survivor and has taken part in two of their virtual summits. Um, and helped to write, um, the C-DISC hair guide. And, uh, we are extremely excited to welcome her to our committee. So, hopefully, everyone can just give Pam McAllister a big, warm, friendly welcome. Yeah, thank you. Well, I'm very happy to have this role filled. Um, it's just a crucial, uh, um, voice to hear in our committee. So, thank you so much. Pam, do you want to say a few words.

Next Speaker: Um, no. I'm just super excited to be a member and, um, yeah, share my voice, and, um, give you guys a patient perspective.

Next Speaker: Thank you so much.

Next Speaker: Thank you.

Next Speaker: And then we have a new member who is likely to be a familiar name to many of you. So Trista Berry is the quality and patient safety manager infection prevention at Saint Alphonse Baker City here in Oregon. And she will be filling our role of a hospital administrator with an expertise in infection control at a facility with fewer than 100 beds. The title doesn't really roll off the tongue, but we are extremely happy to have those positions filled. Trista has been attending our advisory city meetings for about a year. Um, she brings representation from a world perspective and the critical access hospital perspective. And, um, has background in microbiology as well. Trista, would you like to say a few words to the rest of the group.

Next Speaker: I just wanna, uh, thank you for allowing me to join you and look forward to working with all of you in the future.

Next Speaker: Thank you so much. We're very excited to have both of you join us. Um, I think just having our, our roles filled just keeps us, you know, um, bringing together the different perspectives **** that make up the landscape of healthcare, of genealogy, infection prevention, and healthcare associated infection. So, welcome to both of you. Um, lastly by way of, um, logistics updates, sorry, bear with me here for a moment, I have, uh, pulled up at some point, let me pull it up again, our current vacancies, um, are, have been shared with you I believe, in your meeting materials but as always the call, the siren song of the health insurer representative remains a tough one for us to fill so if anyone on this call has some leads on a health insurer representative, someone who works, you know, in that space with that subject matter, um, we would love to know about it. We are also working to fill our vacancy for a representative of the Department of Human Services. Our previous representative has retired. And then finally our, um, physician who practices in an ambulatory surgery center with interest and involvement in infection control is also vacant. So, if anyone has some good physician contacts in an ASP, I'd love to hear about it. Um, that brings us to the end of the logistics update unless Laura, is there anything that you would like to share with the group today? Okay. Dennis, back to you.

Next Speaker: Great. ****. So, you guys have all received the minutes in your packet, and, um, hopefully you've had time to review those. ****. Um, so are there any corrections to the minutes as submitted? If there's no corrections to the minutes, um, they, they should stand approved. Um, do I have a motion to accept the minutes as they are.

Next Speaker: This is Pam Cortez. So moved.

Next Speaker: This is Jesse. I'll second.

Next Speaker: Okay. Minutes are approved. Um, let's see, what's the next item. The next item's a, I think we're ready. Kevin, maybe, let's jump into, is it too early or Kevin, can we, we can jump into the presentation now. We'll have your slides pulled up.

Next Speaker: Yeah. Sounds great. I will go ahead and start sharing and make a quick introduction as I do so. Uh, I dropped in the chat. Uh, thank you all for the opportunity to spend some time with you today on this important topic, and moreover, thanks for your really important work in our community. Um, it's something that I've come to by extension. I certainly didn't study architecture thinking that I would go into indoor infectious disease transmission. But when I came to Oregon 7 years ago, I started working with the biology, the Bilton **** Center, and that coupled on, that kinda built on top of my platform of previous work related to indoor air quality, indoor environmental quality, more broadly, and always an energy efficiency focus. And so, now I've merely been interesting in this sort of wrestling match between our goals for energy efficiency and climate change and mitigating climate change and then we're dealing with wildfire smoke, and so the outdoor air is a challenge for COVID, and then we're trying to figure out how to make indoor spaces safer to reduce disease transmission, um, whether it's COVID or influenza or other airborne disease transmission or other indoor mediated disease transmission. Um, and I know it's even a bit of a sensitive topic to decide where the boundaries of what's indoor mediated disease transmission versus contact-based transmission and I, and I'm not gonna delve into that too much today but I will say I've worked with partners at Oregon

Health and Science University, and I've gone into spaces and done microbial assessments of spaces that had C-diff patients in them, and had *Staphylococcus aureus*, quote, unquote, outbreaks. And I've learned a lot about mapping microbes in indoor environments, and that was all pre-COVID and then with the COVID pandemic, um, really just quickly pivoted the methods and started looking at those indoor environments and disease transmission risks with an emphasis on indoor, uh, indoor air. Um, and I'm gonna share a little bit with you about some of our specific work that we've conducted in collaboration with OHA and specifically looking at long-term care facilities. But a couple of quick intros before that. I'm representing University of Oregon and, uh, as part of University of Oregon, there's an institute for health and **** environment actually has partners all, it's not a U of O institute, it's a, it's a broader institute with partners at OHSU and Oregon State and Portland State, as well as other universities beyond our state borders. This is the talk that I'm gonna be giving today. Um, it's kind of a focus on HVAC and what I call aging infrastructure. A lot of people might refer to it as deferred maintenance. Um, basically, our buildings require more maintenance than we are ever able to afford to give them. So, whether we call it deferred maintenance or aging infrastructure, it's just a point of emphasis. But um, and then more specifically the long-term care facilities work I did, uh, we are teamed in with collaboration with OHA. I'll share a little bit about one of the site visits we went on to a long-term care facility. The goal was not to sort of condemn any facility or sort of explain why an outbreak might have happened at any sort of facility. Instead, it was let's learn what we can do to help facilities assess their current HVAC infrastructure. Um, look for opportunities to make low cost or no cost improvements, and then perhaps start to build a list of things that might require a little more investment, a little more horizon planning. That might require capital infrastructure. And then a little bit about the future, about code and above code programs for the future. And we'll hopefully have some time for Q and A. So, I'm gonna go really quick. This is a slide I'm required to share and the long disclaimer at the bottom is new to me. Uh, pre-pandemic I was a typical researcher and teacher at a university. During the pandemic I started to do some things that university thought maybe that's more private sector oriented. Um, it's about risk profiles as well as about way to work with industry. So, I serve as a science advisor to a company called EnviroTech. It's a surface swab sampling for COVID and other pathogens. Another one called Poppy that does air sampling. I serve as the advisor to a nonprofit called IBEC which is the Integrated Bioscience Built Environment Consortium. And then completely unrelated to my talk today, I do, I do some work on visual comfort. There's a spinoff company that has made a personal comfort solution for glare mitigation. And I'm required to disclose all these things any time I make a presentation. So, there we are. Um, this is way more than just my work. I want to share that. I feel really privileged to work with an amazing team of people and industry actually, so multiple universities, multiple industry members, and about 30 or 40 staff members and students at U of O. They're a professional research staff. So, all the kudos goes to them. And I have the pleasure of being a voice of their amazing work. All right. So moving on to HVAC toolkit assessment. I think one of the surprising things and challenging things about COVID has been that we're dealing with this invisible problem. Um, and that's nothing new to folks working in HAI, I realize. But it is pretty new in some ways. Uh, I would say that the, the slow process of making it explicit that this was a largely error-based problem didn't help us at all either. But nonetheless, it's the context that we're in. And one of the things that's emerged is we all need to get better at learning about how HVAC systems work and what the heck is an HVAC system. So, heating, ventilating, air conditioning, probably we've gathered that by now. But there's a lot to learn there. There's different types of systems that are for different types of facilities. And a

lot of facilities have multiple systems going on in one and long-term care is nothing, no different. It's very common for long-term care facilities to have these rooftop units or RTUs that supply heating, cooling, and ventilating air to the, the common areas. The hallways and the lobbies, and some of those shared spaces, and then have a completely different and disintegrated solution for the perimeter spaces where all the residents stay, and those might be packaged thermal units through the wall called PTAGs or what I'm showing here, like, like I'm showing here, or they might be mini-split heat pumps, like you might see here, and those do different things with regards to heating and ventilating versus or heating and cooling versus ventilating. And sometimes those are split systems. And it's not uncommon for resident rooms to have no mechanical ventilation other than a bathroom exhaust fan and maybe an operable window, uh, if, if we're lucky, and maybe those windows are safe enough and able to open. So, then kinda this dive into the inside of the building and try to map all of these things. What we did with OHA was try to put a toolkit together to give people the kind of vocabulary with these little pictures that explain well that's what a package terminal unit looks like, and okay, that has heating, cooling, and ventilating. And that, up on the wall, usually above a door, maybe it's what a mini-split heat pump looks like, okay, and that's not ventilating, it's just heating and cooling. And these in the hallways, oh, that's what a supply air looks like. That's where the fresh air is coming from. Okay. This is what a return air looks like. Okay. And then we need to recognize that not all rooftop units are equal and there's gonna be different ratios of outside air and different ratios of remixed, return air and different levels of filtration. It takes a little bit of a vocabulary and a little bit of like a map to understand how these things all work. So, that that's what these visual tools were meant to do is basically help facility owners and managers understand how to dissect the HVAC systems within their buildings. So, this is one example. Um, this is one site we went to. I'm just gonna call it Site 1 to maintain anonymity. It's a real floor plan but it's simplified, um, and what you're gonna see here is it's a combination of rooftop mounted supply for the second floor. I'm actually look at the first floor first and recognize there actually was relatively minimal fresh air going to the first floor. Uh, the fresh air was basically introduced through little cracks or doorways and then exhausted through fans at the ends of these two hallways. And those are the exhaust fans that you see here. And then the resident rooms that wrap the corridors they are heating and cooled with these little mini-split heat pumps which again means no fresh air, just moving air. Basically takes room air, puts it over a little heater, heating or cooling coil and then shoves that same room air back in out to the space. So, the only fresh air in those rooms would be coming from bathroom vents. Um, what we, what we noticed is that there were on the second floor, there was, sorry, I need to move some of my notes around here. Um, on the second floor, it was a different setup. We had supply air vents. Um, in green, and return air vents in red in the hallways. So, those hallways were managed in a similar way. They had those exhaust fans but they also had on-purpose rooftop units supplied fresh air. Whereas on the first floor, same spaces were just getting whatever infiltration was coming in from whatever cracks or windows or doors that might be available. Um, one of the things that we learned about on the second floor is that that rooftop unit is really being determined by calls for heating or calls for cooling. And it wasn't always supplying fresh air to those common areas in yellow. It was supplying fresh air anytime there was a request for heating or a request for cooling. So, on mild days when there was no call for heating or cooling there may actually be no fresh air being delivered in those common area spaces. And that's super common. Uh, it's not unusual. Um, so here are kinda the summary notes from this field visit. I see a chat, and I'm trying to manage that chat. Uh, okay. Rooftop units were not providing fresh air when there was not a call for heating

or cooling on the second floor. On the first floor there was no mechanically supplied fresh air, just mechanically exhausted air and then that first floor was relying on cracks in doors or windows, or around doors and windows to get fresh air into the first-floor common areas. The bathroom exhausts in all of the resident rooms was the only mechanical ventilation which is very common in ****. And those were on a timer to save energy. And so you couldn't leave the bathroom fans on constantly. You could turn the timer to 30 minutes and then it would turn back off. And so that limited the ability in a COVID surge to say we want to increase fresh air by having the timer, you know, disabled and having that bathroom fan just always on. Um, so that's a timer switch. It's not super expensive, but it, you know, it's a contractor coming in and it's a couple of dollars for every single one plus the half-hour of labor or whatever to switch those switches, to swap those switches. Um, windows are generally closed in these resident rooms because of concerns of security or more practically, concerns of comfort. Totally reasonable. Um, and so, you know, the question about well, can we actually open those windows. We'll get to that. Um, the shower rooms, which are in the hallways and I'll flip back one slide. The shower rooms are located here in the hallways. Those are shared shower areas and they had similar, a similar reality where you couldn't leave the fan on constantly in those shower rooms. They would come on with the light switch when it was turned on and there was actually an occupancy off, and so when people left the room after so many minutes the light would turn off, and so would the fan. Um, and again, it's an energy saving strategy. So, this, you know, it's kinda why I started that talk saying it's always gonna be this balancing act between energy efficiency goals, which are important, and air quality goals, which are also important and maybe more important now than ever before. And then I think the complexity is of course, there's gonna be moments in time when energy is the priority because COVID or other infection risks are low and then there's gonna be moments in time where risks are high and we need to operate our buildings differently. And to be perfectly honest, our buildings are just not, have not been designed to go in and out of these different modes of prioritization. Much less wildfire smoke when you have another set of concerns about outside fresh air. So, that begs another set of, you know, contingency plans like in-room HEPA filtration which can be great for managing wildfire smoke that leaks in as well as managing COVID. Um, and of course, we have concern for the shower rooms from a patient to patient or resident to resident transmission because you might bring one resident in shortly after the other. Well, that air hasn't been evacuated yet, or just the concern of resident to staff transmission. You know, of course, that's a concern in resident groups as well. So, where does that leave us. Like what are the lower hanging fruit or the more affordable solutions that we can do quickly while we're trying to manage all the challenges of operating a long-term care center during COVID. And all I can say is God bless them or bless their work more broadly because I can't imagine how challenging it has been. I only got to see little glimpses of it so they've done amazing work in these spaces and it's so hard. And resources are thin and always being stretched. So what are the easier things that are, what could be accomplished during a surge before, you know, maybe prepping for a surge or during a surge and then what could be accomplished in a longer arc to sort of plan for the future. So, that's what we tried to put together here. And we did this for a handful of facilities. And we did it for two reasons. One is to help out a facility but moreover it was to try to test this toolkit that we hope will have broader utility to more facilities in the future. So that's kinda where we're at right now. But just to give you some practicals, we, we talked about well, what could, you know, what are practical ways to reduce risks of security about keeping a window cracked so like putting bars in windows to get 2 inches of opening but not a fall hazard or a security hazard in terms of a, of a,

of an entry, an wanted entry, right. Could we override the package thermal unit so that they didn't just cycle with temperature but we had them, we controlled upgrade on them so that they would always provide a minimum amount of fresh air. Those were, those were more possible solutions. The bars on a window or the wood panel on a sliding window, that's one thing. It's a little more work to get a controlled solution for a PTAC. That's another. Um, then the next Level 2 here would be well, what could we do, um, to increase the ventilation that goes through that room, not just from a window **** but then drawing that air through the room. Well, could we leave the bathroom fans on and get those, those switch, the timer switched to on off or with an override. And then could we leave those bathroom doors open so that there was a more constant stream of fresh air and basically created these little air islands. And then finally to think about transmission concerns from room to room is, you know, this is a balancing act. Like I think doors open to the hallway is great for social benefits, but also a concern during a surge. And so maybe we have to have some different policies around hallway door closure during surges. And then finally, could those mini splits, if it's a mini split unit versus a package thermal unit, could those mini splits help override the window ventilation because of the heating and cooling challenges. So, yes, we'll spend more energy but we'll get more fresh air for this period of time. And then finally, you know, this is kind of like all this deferred maintenance. It's a reality. We ended up finding out that associated with one of the outbreaks perhaps, maybe not the reason why it happened, but it's perhaps associated as an explaining variable, is that some of those constant hallway exhaust fans had, um, the power, the breaker had been flipped or the fan motor had died, and so they weren't getting the fresh air from those exhausts that they thought they were. So, you know, this is just sort of, like, know your system. Basic maintenance, you know, let's start every quarter we're gonna check and make sure, or every month even, we're gonna check and make sure these things are working. I already talked about these bathroom fans, both the shower rooms as well as the resident rooms. Um, you know, there's not a perfect central solution that can be delivered like this, certainly not for cheap. It takes time, it takes money. So this notion of deployable HEPA filtration I think can be a great bridge to a longer-term solution or as a deployable solution during surges. You could put HEPA filters at shared staff areas. You could put HEPA filters into rooms with COVID positive individuals to reduce staff, you know, resident to staff transmission risk. Um, so these can be moved around. Um, you can have a handful of them that are ready to deploy and then move them, um, where needed. This is a bulkier solution but it's, you know, you might get a unit like this for a few hundred dollars, but it takes time to order them. Here, you can put this together for \$12.00. And it might get you through a surge until you could get a proper HEPA filter, super-effective solution. These are called Corsi boxes after one of my friends in college, Rich Corsi. Um, let me see. Uh, oh yeah, and then longer-term solutions about central systems like that rooftop unit that was only supplying fresh air when there was a call for heating or cooling. Perhaps we change that approach and say like we have to have the controls upgrade, so there's always a modest amount of fresh air. Um, is there an opportunity to increase the level of filtration without causing fan pressure challenges and those kind of things. I think would be in that longer-term arc. And then finally, we left them with this prioritization, which is more or less what I just went through but said if you can only do one thing here's the first thing. If you can do two, here's the second, and then three, four, and five, kind of going from lowest-hanging fruit to more capital cost and planning horizon intensive. So, with that, I want to thank you for your time and hopefully I reserved enough time for Q and A.

Next Speaker: I think you're right on target here.

Next Speaker: Good. That was really fast, so I apologize if it was just like too fast and hopefully we have some time to talk back a few things.

Next Speaker: Yeah. I think we can go ahead and do some Q and A for Kevin. So, folks on the line, unfortunately Kevin won't be able to join us for the full time so take advantage while we have him here. I have a question from Geneva Stange. So, she's at **** Regional. Have you seen any effectiveness studies on HEPA and UV treatment devices?

Next Speaker: Uh, effectiveness of HEPA and UV treatment. Um, I can, I can answer both of those. I've actually done research myself on HEPA and, um, I can talk about its effectiveness. It's incredibly effective at removing fine aerosols, you know the really small particles that tend to carry, uh, virus, and tend to float in the air longer. Um, by math, technically 99.97 percent effective at removing particles that are .3 microns or larger or if they're at .3 microns, and then even more effectiveness at ultrasmall and ultra, and bigger particles which might seem counterintuitive, but it has to do with a phrase called brownie in motion. It doesn't really matter. All is to say it's really effective. In practicality, the air that goes over the filter is that effective. And we've, we've tested it in rooms with COVID-positive patients and we've seen statistically significant reductions in rooms. We've measured the aerosol viral load in rooms without HEPA filters. Actually, a controlled trial that I could tell you more about sometime. Super fascinating work. Um, and we've measured a statistical difference in the aerosol viral load without HEPA filtration, and it's a meaningful difference. It's not a, you know, marginal difference. It's a meaningful reduction. The trick with HEPA filtration is that the deployable unit or even a central unit, you know, it's really really hard to upgrade central units to have the filtration level and it barely ever happens. Brady can talk about how rare it happens even in hospital environments. But, um, in-room HEPA filters like these deployable ones that I talked about, that's how effective it is for the air that gets over the filter. And then it's well, how well are we getting the air from the room to that filter. So, mixing the room air while filtering the room air is a really great strategy. It might feel counterintuitive to like mix the room air because oh, then we're gonna spread that virus around. But it actually dilutes the virus first of all and it gives a better chance for our HEPA filter that are in the room to clean all of the air because you're mixing the room air. Then, as far as UVGI goes, ultraviolet germicidal radiation, super effective. It's all about dwell time and intensity. And so you either ratchet up your intensity or you ratchet up your dwell time so that the exposure of the air or the surface has enough intensity from the UV radiation to eradicate viable berions. Um, there's a couple of caveats. One is I would say we would be, you know, this is my soapbox, and I'll apologize. This is my soapbox, but from a microbial resistance standpoint, we would never take an antibiotic as a preventive measure. It's a really bad practice. And so we have to be very careful with our use of UVGI. First, we have to be careful of, um, not exposing people's eyes or skin because that can cause serious damage. So, we have to think about that. But then we, just like we have to think about taking our full course of antibiotics, we gotta make sure we kill it so we have to really hit the dwell time and the intensity well and then we have to be careful not to just use that as our one size fits all solution because I fear in the long run we'll be dealing with a different set of problems. In a short-term COVID, and I mean short-term in the era of even a multiple yearlong event, sure. But

prophylactic or continuous use of UVGI for multiple years, I think is a serious concern. But it works. I see a bunch of new messages coming in, but I'm gonna let Rosa to –

Next Speaker: Dennis, are you, are you with us?

Next Speaker: Yeah, yeah, I'm with us. I don't, um, I see the comment on the great explanation. So, as that term is ****, it's been very informative. I don't see a question though.

Next Speaker: There was a follow-up from Geneva, um, HEPA filters.

Next Speaker: Oh yeah. So, statistically you have that filter, what are the treatment intervals of the UV increase the kill of pathogens?

Next Speaker: Yeah, so I don't have my, my crutch with me, which is to say my slide deck about UVGI. So, don't quote me on this, but I'm happy to follow up and share the information directly. Could add it to the slide deck later if Rebecca or Rosa request it, or Dennis. Um, the, uh, the, the story is there's a lot of publications about the intensity and the duration and the two knobs that you can turn. You can increase the intensity for shorter duration or you can increase the duration or the dwell time. The trick with that, Geneva, is that if you're talking about an upper room UVGI or a central system UVGI or above the ceiling plan on UVGI, um, each of those have different, um, dwell times. So, like the air that's running down a duct goes really, really fast. And so you need to have a much longer exposure zone to get dwell time, right? That means more UV lights along the longer run at duct line. Whereas, a ceiling or above ceiling or an even upper room GI which, 'cause UV doesn't reflect very much from different surfaces, these upper room solutions or the above the ceiling plan which is being even more careful about not risking exposure to human skin or eyes, um, the dwell time can be much longer. Um, and so the intensity can be less. But basically it's going to no matter what, it's gonna be multiple air passes to get full kill. And so, that might take two or three, and don't quote me on it, because it could hugely depend on the system. It might take two or three or even more air exchanges of the room air volume over the UVGI solution to eradicate UV or eradicate the viable virus. And I'll say this. If I were making an investment in HV, in HVAC, in-room HEPA filtration or UVGI, I wouldn't, that's a caveat, it would depend on the environment. It would depend, like is this a high-risk environment. Is this the bone marrow transplant ward of OHSU's, you know, tower or is this a senior care center where we could imagine, you know, while there's susceptible individuals in there, we don't imagine incredibly immunocompromised and susceptible individuals. So, my answer might differ. But I would say first try to get your HVAC system up to code. That would be like the number one thing. Even before that, just to make, do the, do the walkaround, make sure it's working. You know, make sure your exhaust fans are working if you think they're working. Make sure there's not a damper stuck. Like, that's number one. Number two would be try to get our HVAC system up to code or have the ability to sort of move into some above-code fresh air rates when you're in a surge situation. My next investment would be deploy of HEPA filtration, and if I'm in a surge, I might say, I can't get that HVAC work done so I want to get some deploy of the HEPA filtration quick. 'Cause that's a quick solution. And then I would say UVGI, but only for targeted applications, not a one size fits all everywhere and always solution.

Next Speaker: You know, Kevin, when you talk about portable HEPA filtration, um, you know what I've always wondered. Like in our institution, we put them into place in a few places and, um, see the desire from the folks was always to have it go out the exhaust. But my concern was that was, wouldn't that potentially throw off their locations on the floor and force air into other places that it shouldn't be. And so, you know, my rationale was always that in the room you don't wanna be doing that dilution that we talked about. Um, that you talked about earlier. But I just wanted to hear your take on that 'cause, like I was very, struggling with that.

Next Speaker: It's a good question. It's a hard question. It's really hard. So, I would just say that my attitude might, you could ask 10 aerosol scientists or 10 HVAC engineers and you might get 10 answers. And they're not, it's not like one of them is good and the other nine are bad. That's, there's, you know, I would say getting HEPA into the room is a win. No matter where you put it, it's a win. You're removing particles. It's a win. Then the next thing, well, where is it most effective. Do you want to put it near the exhaust air so that you're getting those particles where they're kind of swimming to and then you know kind of that, you're like bringing that, you're putting a filter into the room near the exhaust area. That's totally a reasonable solution, especially if you've got a high recirculation fraction. 'Cause guess what? That exhaust air is gonna go back through your rooftop unit and 20 percent of it's gonna kick, get kicked to the outside and 20 percent makeup air is gonna come in, and 80 percent is gonna be recirculated back into the zone. So, filtering it out there is great. I always say the particles don't care where they get filtered out, right. Um, and then I'm also a proponent of mixing. There's always gonna be a caveat to this, okay, but in general, you know, I've talked about this in, uh, okay, we're moving back in senior care, we're moving back to eating in common areas. Great. That's an important thing for social and quality of life. Let's think about mixing the air in the common area. It's a big volume. Let's use that big volume to our advantage. And the counterpoint to that is oh, well, we're gonna mix that air, we're gonna get everybody exposed. Yeah, everybody's gonna be exposed to a fraction of the dose. Whereas the five people that are sitting right next to the person who's infected and unaware of being infected, they're gonna get a, a dose that might cause disease transmission. So, mixing the room air in my opinion wins and then if you're mixing that room air and combining it with HEPA filtration, again it gives the HEPA filter the best chance to capture particles from the whole room volume.

Next Speaker: That's great. Thank you. Thank you very much.

Next Speaker: Yes, thank you so much Kevin.

Next Speaker: Well, thank you all. And I really appreciate the dialogue and Brady and Dennis, I'm sorry I can't stay to hear your talks but I've, I've heard some of Brady's before, and you're, you're in good hands.

Next Speaker: Okay. Thank you, thank you so much. Okay, let me pull up while I'm there real quick. Oh, answering my *****. Okay. *****. Let's go to, ***** time right. So, let's do the next guest. Let's do the next *****.

Next Speaker: Do the next one.

Next Speaker: Yeah, and then do the break after that. So, let me pull up all these things. So, we're gonna have Brady coming from OHSU. Brady, if you'd like to do a, a introduction of yourself, um, prior to starting your slides, we'll take a ***** right here shortly. Oh, there you go.

Next Speaker: Sure. Thank you. Good morning or good afternoon everybody. I am Brady Housen. I'm the healthcare facilities operations manager for OHSU. A brief history about me. I come from the construction industry, personal construction industry, then in healthcare almost 20 years now working in facilities and maintenance and projects. I've been at OHSU about 9 years and in my current role about 3. I'm gonna talk a little bit about how we used, or what we did with COVID and ventilation. Kinda what we did, what we're doing, and what we're looking for, and looking to do in the future. You'll notice some similarities between my talk and Kevin's talk 'cause Kevin's really smart and we've worked together on some issues in the past couple years with COVID and I tend to steal from smart people. So, if you note similarities it's all because Kevin's smart and I took his information and am applying it into our, our institution. So, we'll cover a little bit about what, what we're working with here at OHSU in case you're not familiar with our campus and our institution. What we did in response to COVID-19 for ventilation, what we're doing, and then what we wanna do in the future. So, a little base information about OHSU. We have a diagram here of our most common ***** which is what Kevin referred to as kind of a return, a rooftop terminal unit, rooftop unit. Our generally are on the roof there inside penthouses but the same manufacturer. We're pushing in outside air, mixing it with air that we pull from the building, and then pushing it through several filtration levels. So, we have prefilters, postfilters, final filters, and then most of our units have some UVGI in there as well. That air gets pushed through all that filtration level and then pushed out into the various spaces. So, this is our most common setup where we're mixing some of the air from inside the building and we do that for a couple of reasons. One, we mix air 'cause it helps, helps you condition it better and faster. So, if you're pulling in really cold or really hot outside air, you're mixing that with air that's already been conditioned. It allows you to spend less energy, be more energy-efficient, provide that condition, the ***** ventilation to the buildings quicker. We also do it because it's supposed to help, you know, do it, like I said, with energy efficiency in using, using less power and less surge. ***** as a whole, currently we have 576 adult pediatric licensed beds on our campus. We have 32 healthcare focused buildings that my team manages. There's 60-plus overall between our research and academic functions as well. So, the total of our campus is 8.7 million square feet of buildings on about 400 acres, so we have some large buildings. I will say our buildings range, at least the buildings I maintain, range from the 1920s construction to we just had a building open in 2020 right after the start of the pandemic. So, we have about a hundred years of infrastructure and building structure to combat and it has its own challenges. So, when COVID-19 popped up in early, in the early year of January February, we got pulled into discussions with our infection prevention team, and one of the things we did, the first things we did is immediate audit and verification of all our special airborne patient rooms. So, we typically use a ***** these ball on the wall devices. The red or pink shows a negative room and green shows a positive room. So, one of the things we did was check all these special airborne rooms. We checked 'em for the air changes per hour, ACPH, pressure relationships and signages to make sure that they matched what our inventory was, and then we sent that updated inventory to patient, to our patient ***** and make sure it matched what was in our medical record system and patient placement system. Now this is in addition to our normal PMs of these areas, preventive maintenance tasks which would be quarterly as well as through a third-party annual

survey. But we wanted to make sure that we had accurate records because we knew, um, an airborne disease or pandemic, well, hopefully not *****, but airborne disease was coming, and we wanted to make sure that we knew where we could put patients, where we definitely didn't want to put patients if we could avoid it. Another thing we did, this is kinda illustrated by our HVAC equipment over here, was adjusted our **** infrastructure **** area. So, we went through after we verified all our patient care, all our patient rooms, we looked at the air changes per hour and all our testing and treatment areas, we looked at where we could make spaces neutral or slightly negative as opposed to positive or slightly positive. And one of the things we looked at during this time was how to have COVID-positive, productive positive patients in our operating room, operating rooms. Operating rooms by code and design are positive areas. And so we didn't want to take an operating room and make it negative altogether. So, what we did was create, we chose one out of our, our operating room and created a large negative **** room that they were able to push a bed and patient through and that would collect all that air that was being pushed out of the operating room and run it through a portable HEPA filter, HEPA filtration system, then exhaust it safely out of that area. Another thing we did as part of our, uh, validation of our **** infrastructure was examine the MERV ratings on all our filters on all our system. So, this was campus-wide and helped the air in the healthcare buildings. So, we looked at if it was possible to increase our MERV rating. And we wanted to go as high as possible. The most, most commercial buildings are in the 8 to 12, 8 to 12 MERV rating range. Most hospitals are 14 or larger. So, what we did is examine all our systems to see if we could add high-rated MERV filter. The caveat with that is the more resistance you put in the filter, the more pressure you can put on the ductwork and on the system. And if it's not designed to handle that pressure, you could, first, that could cause problems, a worse problem down, down the line. So, we increased our MERV ratings where we could, and then we also maximized our outside air percentage. So looking at our, our previous diagram, we did mix some of our air. So, what we did was examine how we could mix less and add more outside air in. Now this at times was a daily or monthly struggle. Excuse me, I went too far. Because of temperature and other concerns, we want to make sure that we're providing the most outside air as possible. So, we increased that throughout our facilities and then we also did some preplanning for various things like anticipated surges and in patient cases. So, what we did is we actually built a temporary expansion of our emergency department below the surge space, took over an auditorium, and associated **** made it able to handle patients for treatment as well as triage. And there we actually installed a temporary HVAC system that made the whole area ****. So, we had that area available to shift incoming COVID patients or other patients to ****. We also examined our systems and our buildings to see if there were any units we could turn as a whole into a COVID unit where actually changing the air flow making the whole unit negative or blocks of rooms negative. We developed plans to do that in a couple of different units. They said our building infrastructure spans about a hundred years. So, it is challenging in some areas. And then we looked at the areas where they're doing, they were doing, starting to do the testing for COVID as well as later on the vaccinations. And we looked at how we could address the infrastructure and ventilation reach in those areas. Some of them we were able to address the building infrastructure, some of them we provided temporary HEPA filtration systems in areas to help clean the air, scrub the air a little more. So, our current state. What are we doing now to keep up with COVID-19? Well, we have modified some of the patient rooms. We have here a diagram of one of our pediatric units. Here we have rooms that are in orange that are designed as a neutral air flow rooms. Our rooms in red were designated as negative air flow rooms. The rooms in green were designed and

are operated as positive air flow rooms. So, what we've done in, in consultation with the clinical staff there and our infection control team is identified rooms that we could change and address the room pressure. So, the rooms here in our kinda bubbled area, the rooms that we went into the infrastructure for those rooms, and adjusted them from being a positive pressure to a neutral or slightly negative pressure room. Then this required a little bit of time and planning. We've done this in several adult and pediatric units. Currently, as of today, we have 14 total rooms that we've modified. These do get daily checks by my team to make sure that they're meeting the pressure because we did some manual adjustments in some cases. Some were programming on these systems. So, we want to make sure that they're maintaining the pressure that we think they are. And then if there's something out of whack or out of norm, then we can go in there and adjust it to get it back on, on track. We've also looked at the safety of our technicians who are working in these HVAC systems. So, we've increased our PP protection for those technicians and those contractors. They all have to wear fit-tested respirators, eye protection, gloves, disposal coveralls, who work in any system that serves an occupied area. And whether they're in the big system up in the penthouse or in a small duct or a system in a patient room, they do that to protect themselves. And that allows us, hopefully allows them to feel safe while they can do their work. Currently, we are, we have been able to increase our MERV rating to several systems across campus. We've gone up at, at least two, two steps in the MERV rating in several systems. You know, what that does is you can see kind of a, a blowout of a, of a filter here. It allows us to use filters that are better quality and that's what, you know, we're looking at for a MERV rating. The higher a MERV rating, the better quality the filter is. The more it can, it can collect and trap. As Kevin alluded to in his talk, it's not readily easy or, or easy to take a HEPA filter and reduce it into a, the normal HVAC system because it is such a compact filter and it does **** out so much air. Putting that HEPA filter in a normal system can increase that back pressure tremendously. It can cause duct seams to blow out and problems down the road. So one of the things we did was work through, with our, our on-staff engineers and look at how we could safely increase the MERV rating. So, we've done that like I said in several areas. We've also worked to maximize our outside air percentage so we've looked at adding in, adding outside air as much as possible. In some areas, it's up to over 50 percent of the air we provide is outside air. Sometimes and depending on the weather, we could crank that up to 70 percent. And there's just something that we look at on a daily basis and address through our HVAC program to provide the most, the most outside air because that's we're getting cleaner air. We're not recycling the air. We're pushing it through. We're getting that clean air to our patients and our staff. So, what about for the future? Well, as, as Kevin talked about in his presentation and as I think we've all realized through the pandemic, if we can avoid recycling air as much as possible, the better it is. The air from outside's gonna be cleaner than anything we can typically provide unless we're pushing air through, through a system designed for clean rooms. So, our recommendation, what we're specifying for our new buildings that we're building is outside air systems. We see that in this design here where we have basically a whole separate system that exhausts the air for the building. So, all the air is getting pulled out via the return ducts in patient rooms, corridors, bathrooms, everything's getting pushed and just exhausted directly outside of the, to the atmosphere. Then they were pulling in that outside air or running it through our filtration system. It's our prefilters, our postfilters, final filters, maybe UVGI, it's getting cleaned and scrubbed and then pushed through the ductwork down into that area. Now that doesn't come with all, all rainbows and kittens, as my grandma used to say. There are challenges with outside air systems. One is just the ****. Uh, we've had increased wildfire events over the last few

years and what we found 2 years ago with the wildfire event into the fall is that wildfire smoke can and will overwhelm outside air systems unless they're designed with some sort of smoke mitigation equipment in there. So, we can filter out the particulates but by just putting the outside air through the building, we're still gonna get that, that smell or sometimes even some of the particulates 'cause with a return air system, where we're mixing the air, we're able to dilute that wildfire smoke and smell even more. So, one of the things we're, we're specifying is smoke mitigation systems in our new outside air HVACs and the other issue with outside air is climate change, extreme. So, when the temperature gets above 100 degrees, we have a hard time conditioning that air. So, if we're pulling in 100 to 105, 110-degree air consistently through that system and not pumping in cooler air that we're pulling out of the building, we struggle with conditioning that air, then you get patient comfort and sometimes even humidity and temperatures used for storage. So, we're working with our engineers to design mitigations for that as well. That's typically, it's just increasing **** capacity or the cooling oils that we run through, through the systems to help condition that air even better. Then the other thing that we're looking at in the future is upping our MERV specifications for filters. So, we're specifying for just general use in all our new systems a MERV 16 filter. As we can kinda see here at our, our graph, MERV 14 to 20 filters out the majority of all these things. The higher MERV rating we get at 20 is just below the HEPA filter. So, we're specifying MERV 16 as the general filter in all our spaces, all our buildings, the medical office buildings and clinical spaces. We're also looking at the new ASHRAE guidance. ASHRAE is the American Society of Heating, Refrigeration and Ventilation, and they publish the guidance on ventilation and heating for pretty much any commercial or home or especially healthcare. So, they released new guidance this last year that specifies HEPA filter systems in critical areas such as ORs, radiology, pharmacy, imaging. So, we're following that new guidance when we building, we're building new systems. We're actually working with engineers now to see if we can retrofit that guidance into our current systems that we have so we can provide safer air. And then we're working with our clinical partners in designing these spaces to have either more structural airflow rooms or the ability to turn whole units or whole blocks of rooms negative temporarily. And that is a benefit of having an outside air system 'cause you got better control over the air you're pumping in as well as the air that you're exhausting out 'cause it's more of a dedicated system. You know, I will say that the key to, to ventilation in a pandemic I found was having a good understanding of the systems you have in place. Like Kevin mentioned in his talk, walking through, making sure you know what systems are working, what's not working, what systems you have is key to understanding how to mitigate the issues that you're finding. So, here, you know, at OHSU, we have several technicians. We work 24 hours a day, so we have people monitoring systems all the time. We have alerts set up so we know if something breaks down we can get it fixed, and we have redundancy. But even we found, uh, challenges in meeting the questions or the requests of our clinical staff because of the age of the buildings and infrastructure and the complexity of it. As Dennis mentioned in a comment, we pushed air in one system, it goes somewhere. So, what we found, especially when we were looking at modifying rooms and units, if you have a, a positive airflow room where you're pushing that tremendous amount of air through that room, if you want to make that negative, you have to put that air someplace else. So, we had to completely understand where it was going so we didn't end up making another space nearby that was designed to be negative or neutral positive. So, you want to completely understand your systems and work with what you have to make the changes. Any questions?

Next Speaker: Brady, thank you for that presentation. I think that was great. And thanks for reinforcing those facts at the end because, um, I definitely, I'll talk about that a little bit ****. Yeah, I definitely realize some of those things how little we knew about our system at one of our hospitals when we tried to implement our bank of rows going negative pressure. So, yeah, that's a really important point. Um, does anybody have any questions? Remember, you can always post them in the chat. Oh, we have a question already. So, from Pamela, great presentation, thank you. I am curious if you can comment on cost.

Next Speaker: Sure. I can make some brief comments. I don't have facts and figures in front of me. Um, so cost was, you know, what was a factor. I'll say we spent, you know, in the hundreds of thousands of dollars in, in constructing and designing our surge space that we, that we put in for the ED. Um, but we did that in about 10 days. So, we brought in contractors and our engineers and we had the mandate from our leadership to get this space up and rolling, and this is at, in February of, uh, February right before everything went out in March. So, we had it, we had that space ready to go. Um, it did, it did cost some money. We have seen a cost increase in our filter usage. So, one of the things I, I didn't mention, especially with the wildfires that we had, we ended up changing filters more often. So, um, and as we upgraded our MERV code, higher MERV rated, rated filters in the systems, we ended up, you know, basically throwing away brand-new filters that we had just installed. So, there, there is a cost. It is something to consider. Um, and along with that, there's the, the timelines. So, what we're seeing now is, I think like everyone's supply chain issues. So, we like to keep a stock of our HEPA filters for those systems on hand as well as all our filters, a stock on hand so we can readily change them and HEPA filters, some of the ones we ordered were 8 months out. So, we were, you know, waiting really without ones, um, and having to, to just hope that nothing failed while we were waiting for these ones to come. So, it's, it is important to know, and I think especially if you're working with a clinical or partnerships, or, or hospital leadership for them to understand, um, the cost and the timelines that are often out of the control of the facilities department. But that's a whole other presentation how to get hospital leadership to understand deferred maintenance and that facility stuff.

Next Speaker: ****.

Next Speaker: Now it looks like we have another question. Um, from Nora. Thank you for your presentation. Have you thought about ground heating, cooling exchange for the outside **** or is that, is that out of scope?

Next Speaker: You know, that is, that is a great question. Um, I, it, it's a little out of scope for where we are up on the hill and kind of the environment that we're in. But I know there is some exciting innovation in that area. I have a colleague in a hospital in the Midwest that they, they just put one in. Um, big, can't think of what it's called, but where they essentially, you dig a big hole, a big tunnel down a hundred feet or so and you pump your air there in the tunnel and it gets cooled by the earth and then you return it back and the same with the heat. Gets you nice constant temperature. Um, it's a little, I think it'd be pretty radical for the northwest. I like it though. I have a hard time selling it to my leadership, but I think it's a good, good solution.

Next Speaker: Nora did respond saying it'd be, uh, great for climate change. Any other questions that we have ****.

Next Speaker: I just wanted to say a huge thank you for speaking today. This is ****. That was great. And I think we're, the questions that we're hearing are, I think, showing us that this, this is an interesting topic for this group. So, appreciate you being willing to present to us today.

Next Speaker: Thank you. Any, any time. I appreciate you asking. And thank you everyone. I certainly appreciate all the hard work you do and it's a joy to see that there's people dedicated to combatting that, the hospital-acquired infections. So, thank you.

Next Speaker: What do you guys think about rather than **** trying to go next and finish it up before the break. 'Cause I think I can do it.

Next Speaker: Yeah. Looks like that's fine yeah. And Dennis, would you like for me to take a couple extra minutes. I think we can break 5 minutes later than we have planned.

Next Speaker: Oh yeah, yeah. If that, um, yeah. Let me, so, let me share my screen. Hold on. The, I'm trying to do both things. Okay. Oh, let me move the chat. Okay. ****. Okay. Sure. Okay. Can you guys all see my screen. It's a white slide. It should be normal.

Next Speaker: Yes. Looks good.

Next Speaker: Okay. So, again, I would like to preface this with saying I do not have a similar background as the previous presenter. But I did want to tell you guys what we're looking at at Kaiser Permanente, not necessarily in the northwest, but we're looking at across our region. Jean, you know, we have centers in Mid-Atlantic, Washington, Colorado, and then all of the California as well as Oregon. So, these are some of the things that we're looking at, and I'll try to answer in detail. Um, the original person I wanted to present actually has a booked Wednesday. So, maybe we can get him here at a later time. But he did offer me some of his slides so that I can show you what we're looking at at Kaiser. And I wanted to start with that story about how we were talking about really get to know your ****. You know, I think it's really important as an infection preventionist and people in disease prevention to know what their facilities have because you know I remember when I, when I started working at Sunnyside, I was an infection preventionist there, no longer the, I wasn't the director yet of the department, and, um, I had always heard that we had these units that had two banks of rooms, and you can turn the entire thing negative, and then that negative pressure of those rooms would be specific to that area, and you know, it would be always **** outside, and that was all good. And then we built our new hospital at Westside in 2015, and then that opened up, and we also had that function in two banks of rooms that could go completely negative. So, lo and behold, here comes COVID, and then we say let's turn on those functions. You know, let's try to make it the best place we can. We found out that one of the hospitals was true. You could make the rooms negative, which was great, so it was pulling it from the patient's room, sending it out. Um, but we didn't know that. When you did that at that one hospital, a room way down four floors down in labor and delivery on the room that was intended to be positive, an anesthesia work room, would pull negative. So, we didn't know that was happening and, um, we, at our other hospital where they said we have two

banks of rooms also that can do this, we found out it was the entire unit. So, it wasn't just the rooms. It included the waiting area space, so really, so I really get to know your HVAC systems and how they typically are designed to work. You know, I think it's important for us to ask those questions of our engineering department. Lo and behold, what we found out, you know, we had joint commission end up visiting, and they came by and they saw the anesthesia room had reversed, and so we actually got a citation on that. And we needed to figure out a way to reverse it, and so now we are balancing that trying to meet a joint commission guideline, um, while trying to maintain that room as negative. You know? So, it was a lot of, you know, the rooms don't necessarily have to be negative with COVID going on and it's a lot of talk. So, again, I preface that with get to know your HVAC systems. Um, so, what I'd like to talk about is, um, you know that, we knew that during COVID we had to reactivate a lot of medical office buildings. Um, we had anticipated a lot of people coming through being seen for infectious diseases. We wanted to evaluate the need for additional negative pressure rooms because, um, you know, across the enterprise, so what we did was they did a bunch of interviews with regional infection prevention leads. I remember I was interviewed for the northwest and then a lot of the operational leads to determine what we were gonna do about our existing buildings and then future buildings that were being built. Um, then, you know, we reviewed the, they reviewed infection control policies and guidelines with us, um, negative pressure rooms, and then, um, you know, what our current number was of rooms. Okay, an assessment was made, um, yeah, so, yeah, engineering was very happy to find out that, that symptomatic patients could be seen in standard rooms. You know, it was a preferred negative pressure. So, we were able to, they didn't feel like the need was, the need was immediate, so we didn't start building all these new things. Um, and then also, you know, as you all know, as infection control people, we used to say wait an hour, you know, wait an hour, but then it came down to what is the minimum time that you wait, you know. It's actually 46 minutes for those standard rooms and then for aerosol generating procedures we know that negative pressure rooms were 6 air exchanges in the most part for most rooms, anywhere from 4 to 6 and if it was dedicated maybe it was 12 ****. So, then we had this, this list that we all have been looking at and we **** really aerosol generating procedures. That question is coming up again right now, um, and, you know, I've told them, you know, as long as it is on this list that we're getting from our pulmonary society then I want to keep it on this list and we're gonna still continue to follow those protocols. And then, so these are the recommendations that came out of those interviews, those interviews across the region, interviews with nurse, operational leaders is that we could thwart our MOB, we could either look at portable HEPA scrubbing filters. That's why I did ask that question earlier about the portable filter because everyone was demanding from me that we have it. Go out the exhaust in the ceiling and I just felt that if we did that it would somehow come out in another location, you know. Um, 'cause the air has to go somewhere. It just doesn't magically disappear. Um, and then we looked at installing HEPA fan filters which I think is really interesting. So, this would be your, um, you could see on the grid on the right, we're looking at this for like it's an add-on to our MOB rooms. So, we add in a filter that would go there and then they put a HEPA filter in there so that it could come out into the hallway or common space or exhaust. There's also another diagram I didn't put, or exhaust out to the external environment. So, these are the two options that we were looking at in addition and then we're looking at, so right now I think with the current template we have two negative pressure rooms for every 26 exam rooms at Kaiser Permanente. And we really were pushing to get more, but they, I think at this time we're not gonna do it. Because there's still things that are in **** by the way. I just wanted to bring them

to you here. And so we looked at, you know, can we, these are the definitions that we took and then this is what I wanted to show you. So, our options were a ventilated headboard that one of our KP engineers created, um, which I'll show you pictures of that later, or adding those local HEPA fan filters. So, this is the headboard, I thought it was really good. Um, so you can see the HEPA fan is up there in the top of the unit, and then these are actually shower curtain slats. And then I really want the speaker that I wanted to come to show because he can show you all the graphs and stuff where we did testing and we found that at like 50 percent of fan speed it would catch about, you know, 75 percent of the particulates, but then when we cranked it up to like a hundred, **** cranked it out to like a hundred, um, you can actually catch all of the particulates that was exhausted, and we actually did testing with all this stuff. So, here's another, oh, no. So, and, then, here's a more detailed, um, diagram of how we were thinking about adding those HEPA units to each individual exam room. So, we're still looking into it and I really wanna move to have Kaiser have some ability to do something like this just in case we run into another, you know, pandemic situation, which we all know it's a, it's a when not if, you know, that will be coming. So, yeah, that, that's why I wanted to present there and show you that this is what Kaiser Permanente is looking at and see if you guys have any questions on this. You know, as, um, as more comes out, you know, I'd be happy to bring back this group like when we finalize what we're gonna do at Kaiser and everything. Do you guys have any questions for me?

Next Speaker: Dennis, we have one question from Becca who was wondering how much noise was produced with the headboard unit?

Next Speaker: Yeah, so we actually, um, I think it was quite difficult from what I heard **** talk to the people who were in the unit. But they, they experimented with different fans and they found one where you can actually, you were able to speak to the patient and be understood. Yeah, I thought it was really neat 'cause this, this was actually low-cost. Like the cost of this was very low, I remember them telling me, and I was like why couldn't we do this for like half of our patients you know. I mean it would be very hard if you had a ventilated patient though. I mean, you can imagine those cords coming out there and not being able to fit into them, or leaving an opening where there's potential of escape.

Next Speaker: And yes, we have another couple questions. So, Pam Cortez, are the headboard units portable? Can they be moved from room to room? And you know, of course, ****.

Next Speaker: Yes. So, they were portable and they could be moved from room to room. There's also another design that, I think they made it really pretty in this one, but there's actually like a plexiglass, it's not a plexiglass, a PVC pipe that's actually holding that thing up. And then they put that covering so it looked, you know, more approachable.

Next Speaker: Another question from Trista. Um, in your studies with the headboard units, did you include surface testing to determine reduction or contamination of surfaces in the room?

Next Speaker: Yeah, they actually put surface plates around that area to ensure, to make sure that those were reduced too. I really wanted them to share the presentation with you because they have all that data. And we found out that it was almost a hundred percent capture again if we cranked up that fan to like 75 percent.

Next Speaker: Thank you. Does anyone else have any questions? Feel free to unmute and say them or put them in the chat, and I will read them for Dennis. And just for my own, kind of curiosity, you know, um, I'd love to hear from folks if they are interested in revisiting this topic at a future meeting. Um, I think there's, it's a, it's a thing. It's a big one, and I think there's opportunities to kind of hear other perspectives, other facilities, um, I'm seeing Tristan, thank you so much. Dr. Schutte and if anyone wants to, Dennis jumped out, it's okay, ****, if anyone is kind of, um, opposed, if you have big feelings about this, if you know, there's things about this you want to hear more of, I'm kind of getting this **** if this one thing that we may want. We'll verify. So, um, feel free to email me as well any thoughts that you may have. Next, I'm seeing good response. Other questions, thoughts, for Dennis.

Next Speaker: Nothing in particular, but great job trying to troubleshoot and figure things out on the fly.

Next Speaker: Oh yeah.

Next Speaker: Yeah, it's been, it's been tough. It's supposed to be back putting those HEPA filters in those rooms was really, uh, challenging to show the, convince the critical care team trying to use that calculation where you calculate PFUs based on room volume. You know, and I was trying to get my engineering team to like help me do it and they were like but you're the bridge between engineering and the clinical team, and so I was really trying to be there and try to get confidence and viewed on both ends of the spectrum. So, it was quite challenging this past year.

Next Speaker: Well, options for long-term care. That would be really interesting to hear. I'd love, if anyone on the line has things they want to hear about related to this, or just of course, I mean we'll be revisiting this. We have our standing agenda item to talk about future meeting topics. Um, but, you know, this is, I think it makes sense to just hear now from the group and please send me emails if you have topics that you really want to hear about related to this or if you are willing to maybe present something to the group or share your facility's experience or your experience with those, with this topic from whatever perspective you're working on this from. That's not a sentence. So, thank you so much. Any final questions, Dennis? Anything to add?

Next Speaker: Really get to know your HVAC system. I still have a lot of learning to do, but go get to know your ****.

Next Speaker: Good advice. Well, I think we can go ahead and take our break at this point. So, right? We'll, it's, we'll take 5 minutes and we'll reconvene at –

Next Speaker: 2:25. Maybe we'll give it one more minute just to make sure people are back.

Next Speaker: Okay. It looks like it's 2:26. Um, I'd like to call it back from our recess. We are going to start with an influenza and RSV update from Andia O'Shea. Are you on the line?

Next Speaker: Hi. I am on the line.

Next Speaker: That's great. Fade away.

Next Speaker: Perfect. Let me share my screen and let me know can you see the slides?

Next Speaker: Now we can.

Next Speaker: Okay. And you see that.

Next Speaker: Yep. And you see those slides. Okay. Perfect.

Next Speaker: Yep.

Next Speaker: Okay. Perfect. All right. So, we will **** a review influenza like activity, flu and then also RSV. So, we'll start with influenza like activity. First graph shows the percent of ED visits for influenza like activity. We saw our highest ILI rates right here in January. Um, and the highest rate that we saw was 2.5 percent. And we are currently seeing the lowest rate we've seen for all season and that is at 0.6 percent. So, we're in a good place now. Also, this curve here kind of also shadowed Omicron a bit too. So, we're kind of seeing both ILI and Covid decrease at somewhat similar rates. Um, and then still for influenza like activity, this just kind of breaks down ILI visits by region. And so kind of looking at it from that perspective, the coast and the **** Valley has consistently seen the lowest rates in the state. Eastern Oregon experienced the highest percent of ED visits for ILI, um, at 5 percent. And that was in early January, which also kind of coincides with what we saw with general trends. Um, and then for influenza here, um, so, you know, influenza has been pretty low this season, but right now we are seeing an uptick in cases. And so we're keeping an eye on that but we are curious to see where things will go as the mask mandate is lifted. Um, during the, so, and then during the last week of February 20th, um, that's when we saw our highest percent positivity at 1.6 percent, which is right here, and then I actually just pulled the data for this week, and it's at 2.5 percent. So, it's, it's continuing to go up. So, we'll keep an eye on that and see where things go. Um, for hospitalizations we have been very lucky and we have only seen, um, seven hospitalizations this year, or this respiratory season. Um, that gap there, we did make it about 8 weeks without any hospitalizations at all, and then we saw two hospitalizations, um, about 2 weeks ago, and then this last week we had zero hospitalizations. So, overall, very good trends compared to what we've seen in the past. Um, and then for RSV, um, we saw our season high during the second week of December at a percent positivity of 16.7 percent. Um, since then, we've seen a steady decline, and the previous week's percent positivity was 2.5 percent. Um, and then I ran the RSV report for this week a couple hours ago, and we are officially in the off season as of today because we have gone two consecutive weeks of being below this threshold for both PCR and ****. So, great news in the world of RSV. Um, and then this graph here also breaks it down by region, and so we've seen, um, kind of the gorge area has consistently had the highest rates compared to other counties here. Um, but as you can see in all counties it's coming down. And then for RSV hospitalizations, we saw those highest, you know, those highest numbers of hospitalizations there in late December and early January. Um, we have seen a total of 190 hospitalizations so far this season with 49 percent of them being children under the age of 5. So,

it's been, been nice to see that coming down over a time. And then I do believe too in the last 2 weeks we've seen zero hospitalizations, um, with patients with RSV. So, also good news kind of as we come to the tail end of our respiratory season. Um, and that's all I have for you all. I do want to encourage you all to sign up for Flu Bites and the RSV weekly report. Flu Bites comes out every Friday. RSV report comes out every Thursday. I've added the links in both of those so if this is information that you would like to be kept up to date on, please sign up. If you have any questions or if you're looking for additional information, I'm always happy to pull data or have a chat about the data that we do publish and maybe why there's some information that isn't as easily available. So, just send me an email, and I'm happy to answer those questions. But end of report.

Next Speaker: Hi Andi. This is Trista. Um, first of all, just an observation. I saw that the influenza like illness visits are really low whereas incidents of influenza is actually increasing, and I'm wondering if you think that might have any correlation to the availability of at-home COVID testing, that maybe people aren't going into the E.R.s because they have home testing available.

Next Speaker: I think that, that's a good idea. So, influenza like illness is really tricky with COVID. So, unfortunately, with our data, we're not because we just have our **** that we're not able to actually pull apart how many of those ILI cases have or had COVID. So, it's completely possible that, you know, people are no longer going to the E.D. for these illnesses because they're testing at home like you said. It also could be possible that, um, you know, there's just less, there's just less sick people too as COVID cases are coming down. But I think that's a completely viable idea. We're just not able to pull apart that data as much as we would like. Any other COVID or RSV related questions? All right. Well, thanks for having me. I appreciate it as always.

Next Speaker: Thank you so much Andi.

Next Speaker: Yeah, thank you so much. So, now we'll move to the OHA update, um, with Rosa Hammer and Rebecca Pierce.

Next Speaker: Thanks Dennis. From Becca, please just jump in as you would like. Um, so, no slides for a bit. Oh, I will put ****. Um, so first, just wanting to highlight some of, kinda what's been going on. Of course, it's been since December since we last met, and of course, many things have happened since December. Um, but the first thing we wanted to just kind of, um, highlight, is that, you know, the singular masking rule here in Oregon has been lifted for community settings, but in healthcare settings, that masking is still in effect. And I'm just curious so just reiterating that. Um, and I'm just curious to know if anyone has kind of struggled with, you know, which settings this might apply to, have questions, concerns about this. Has anyone who kind of interacts with outpatient settings, um, had any kind of confusion or questions coming their way regarding whether or not this applies to those settings or seeing some healthcare settings kind of wanting to use the community guidance or believing the community guidance is maybe applicable to them? Great. Okay.

Next Speaker: You know, I can say we wanted to list it in our administrative only building. Like some of our **** office buildings, Kaiser Permanente, and there was a question that came in that, um, aren't we violating OSHA, Oregon OSHA regulations then if we were to do that, which that was not my understanding so I didn't know if somebody could comment on that. I thought that had ended so –

Next Speaker: So, um, this is Becca here. I'll jump in to note that, um, Oregon OSHA's workplace rules are still in effect though their language about masking is fairly specific, and I will note that, um, they have communicated that those rules are under review right now, so we don't know exactly where that kind of language will land and what the crossover will be with our healthcare worker masking rule. Um, and I, I'll also note that, you know, the healthcare masking rule is fairly specific about the settings it covered, so we are getting a lot of really good questions right now about some of the more ambiguous scenarios, some of the part administrative, part clinical buildings that can get a little bit confusing. We do have a central email where some of those questions can be filtered, and it is really helpful that it does tend to get back to program staff like us, but it does help us centralize those questions and update our FAQs, so I will put that in the chat box. Um, yeah, I, I think, I think that's all I have on that. But we'll continue to update on Oregon OSHA rules as they're coming in.

Next Speaker: Thank you, Becca. Um, okay. Well moving right along. Um, we also wanted to just kind of again reiterate probably everyone on this call is familiar, but CDC did, um, release new risk levels for community settings. Uh, a new framework rather to think about community COVID risk. Um, so this is based on cases as well as health care impact. Um, and the thing that we wanted to highlight here is that CDC has not updated health care and long-term care guidance at this time. So the community transmission levels, um, that were previously in place for health care, ya know, low, moderate, substantial and high, are still what we're using, um, where applicable for application of, uh, infection control measures such as universal PPE. Um, and so just wanting to kind of touch base with folks on the line to see, ya know, are people kind of familiar with that. Again, similar question, ya know, are you seeing kind of, uh, the push to apply the commu, or any confusion about, um, applying community guidance in health care settings. Anything along those lines or I mean we can have a brief conversation about, um, the new community risk levels, although I think there is lots of feelings about that. And I, it may be a bigger conversation than we could have here right now. But any thoughts, questions, concerns, experiences with this so far?

Next Speaker: So this is Trista again. And I'm sorry, I can't seem to post my questions to the group so I'm talking to all of you.

Next Speaker: We want to hear your voice, Trista.

Next Speaker: Um, so I know we actually have had some issues with this in, in our facility, even confusion amongst our providers, um, wanting to take people out of isolation after 5 days when that's still not the recommendation, ya know, for health care facilities. And, and so we're, as, as these changes are coming with the CDC guidelines and the masking mandate, we're anticipating more confusion and are just tryin' to be proactive in our signage and our messaging to the public of, ya know, while there is changes that does not apply to our facility, please continue to wear

your mask and, and all of that. So, um, we're anticipating it just because we've already seen some confusion, so.

Next Speaker: Trista, that's really, I think you bring up an important point regarding abbreviated quarantine periods or abbreviated isolation periods as well. I mean it's very similar I think in that, ya know, we've seen, um, listening I suppose of guidance for the community, but staying the course more or less in health care, um, and I think that kind of facilities being able to parse out all of the different recommendations from different agencies has been, ya know, complex, um, over the past couple of years.

Next Speaker: I think that's a nice segue into the last point I wanted to mention. And, Becca, please feel free to jump in. But I know that one of the things that we are considering is kind of pulling the Oregon specific infection control guidance knowing that at this point we largely align with CDC. I think there are maybe one or two exceptions. Um, I think our list of aerosol generating procedures is slightly different. But I'm curious to know if folks are heavily relying on OHA guidance at this point. Um, and Becca anything to add?

Next Speaker: Yeah. So, ya know, we're, we're in the process of streamlining a lot of our guidance documents, um, in this phase. And part of that process is asking how useful those guidance documents are for all of you. Uh, we don't wanna have a bunch of redundant documents that you then have to read on top of all the CDC guidance and other things. So when we largely aligned with CDC policies, we tend to try and retire documents that are somewhat repetitive. I think, um, one of the, the goals of our documents that have supplemented CDC guidance is when we really wanna dig into implementation or something, we wanted to provide context around how to do certain infection control strategies. Um, I gotta say that CDC builds up their guidance quite a bit so I'm not sure if that's as useful, but I think the question for all of you is if there are folks still relying specifically on the health care infection control guidance document that was introduced way back in 2020 and has been updated throughout, um, I do know that the one ask we've already gotten is the list of aerosol generating procedures at the very end of the document. It's a bit more definitive than CDC's. Um, uh, so that has been useful. So we've already been asked if we do retire that document to keep, uh, what is the new GP guidance document so facilities can refer to it. But I did wanna ask if there are any other use cases we should consider as we evaluate whether to keep that one.

Next Speaker: Becca, this is Kirsten. I can't, uh, think off my top of my head about some of the details, but I certainly can say I've found that document useful when there's some ambiguity in the CDC guidance or when they fail to update one part of their web site and the other guidance has already been updated. Um, so I've appreciated OHA's efforts in terms of having that available. It has helped us kind of navigate, um, ya know, between the state and the, the higher level national guidance at times. So not, not sure we need to keep it forever, but certainly, you know, it, I think it has definitely played a role especially when we don't seem to get much of a heads up about things that are coming down the pipeline. Um, and you guys have been pretty quick to respond to that and then also where necessary put in a little bit more nuance that sometimes is a bit unclear.

Next Speaker: But I'm wondering if we want to revisit this as a possible topic to, for June's meeting or if that might be too far out.

Next Speaker: I think that's okay. I don't think there's any kind of emergent need to readdress it. Um, it is just helpful to have that perspective going in. And I'll, I'll just float not again that we have to make any decisions today here on the call, but, um, one way that Minnesota has dealt with this, they tend to be a leader in guidance document development, um, is they have tackled exactly that issue giving more nuance to, to kind of niche topics by putting out specific guidance on those topics. So they'll put out, ya know, crisis staffing strategy addendums and AGP addendums and have them all kind of listed. And I, I do think that one piece of feedback we've heard is that our guidance document is very dense. It's like 34 pages of, of pretty intense infection control information so how much people are able to digest as they're reading through it is a bit of a question. So, uh, that's one thing that I, I'm kinda mulling over right now. So if you have any additional feedback, I'll, I'll put my email in the chat and please let me know.

Next Speaker: Yes. Also feel free to send that to me and I can send it to Becca. If there are folks on the line have OHA guidance that you refer to all the time, like you love the way it's set up, it's really adding to your, ya know, practice or we, any, any materials that we have that you'd hate to see go away or that are just set up in a way that you really enjoy or add a lot of clarity or nuance, um, that's valuable to you, I think we would love to know about that. And probably that will be the ask if we revisit this topic at the next meeting. Um, as well to hear from you as our advisory committee, ya know, what, um, ya know, how best we can, we can serve your needs, so.

Next Speaker: Anything else to add, Becca, on OHA updates, or?

Next Speaker: No, I don't think so.

Next Speaker: 'Kay. Dennis, I think you might be needed.

Next Speaker: Oh, yeah. I'm sorry. 2:45. So I think it's time to start our wrap up. And with that comes – I'm sorry, that's my alarm's going off – and with that comes, um, ya know, discussion topics for the future. So I think we have already talked about, ya know, the **** topic is very interesting to a lot of us. Um, but what other topics or reports do you as members wanna, wanna see in the future?

Next Speaker: Actually, uh, I am a plant today for, uh, someone who was with us earlier but had to jump off. Um, so I think there's some a, a question regarding, um, kind of how, um, how infection control recommendations developed prior to the pandemic, um, field to frontline staff. Um, so particularly related to quality improvement initiatives, um, and kind of a recentering on quality improvement. And forgive me because I am reading someone else's thoughts so I can't reflect them as, as nicely as they did but, um, the thought was that, ya know, the past 2 years have kind of shown that there are some fragile parts of our system, um, and that there are staffing issues, um, as well as a need for kind of accountability, um, and what are sort of some of the patient safety impacts that that's having. So this is a big topic, but I'm curious to know if folks are interested in exploring this more during a, an upcoming meeting. I'm seeing some nodding

heads. This is, um, from one of our colleagues at the Oregon patient Safety Commission who I think would be willing to kind of lead us in a discussion about the, the push and pull between initiatives developed pre-pandemic, quality improvement, accountability and also an overburdened workforce. So I will leave that with you to discuss. And any other topics as well that folks would like to hear about.

Next Speaker: I think, I think that's a great idea. Uh, the other thing that keeps coming to mind is obviously I don't think anybody necessarily has a crystal ball to say what the next pandemic is going to be. Um, but I keep thinking, ya know, back when we had our Ebola scare that we had, uh, a lot of work tryin' to figure out how we might be able to, um, respond to it should we end up having cases here. And there was a, a large group of nurses that were, uh, that did regularly weekly training, and I was part of that group, uh, back, way back when. It seems like forever ago now. Um, but we went and did, ya know, a lot of trainings and made sure that there was enough nurses should we get a patient with Ebola in Oregon. Um, that there would be a cadre of nurses who would be able to go and, um, switch out and make sure that there was care provided and that everybody was very knowledgeable about all of the particular PPE, um, considerations as well as the general care stuff. But mostly related to the PPE and the environment and, and how you might be able to navigate all of, all of that kind of stuff. So without a crystal ball, I don't know exactly what that would look like, but I think that would, it's also just a, always a thought in my head is how might we best prepare our health care workers across the coun, across the state to be able to anticipate that and be able to rapidly, um, tool up or rapidly skill up or rapidly be able to get to a place where they can treat whatever that coming pandemic might be. And, luckily, even though we did those trainings for like 3 months, there, we never have a patient to be able to, to do it on, so. Ya know? Good, but, um, it was, it was an interesting experience and I think all of the nurses and the physicians and the nurse practitioners that were there really enjoyed that experience.

Next Speaker: Thank you, Jessie. I think I'm hearing you kind of talking about sort of being able to just, again, rapidly scale up or rapidly deploy staff who are kind of getting continuous training or refreshers, right? Maybe. Um, so that they are kind of fully ready at any point to jump into the fray.

Next Speaker: Yep. And if you know what the next pandemic is, that would be wonderful so we can start getting prepared now.

Next Speaker: I'll email you.

Next Speaker: All right.

Next Speaker: I think there, I think this is really fa, fascinating to think about. So knowing what we know now, and, and I think acknowledging that we are still scaled up, right? I mean I think that the scale up is still, the, the scale is up, right? It's not drawn down completely yet. But, but what are the tools, what are the resources maybe needed, right, to make sure that we are gonna be able to maintain whatever capacity has been built over this past 2 years, right? Knowing that I mean pre Ebola, I think just the PPE, the understanding of the PPE or the transmission mechanisms themselves, right, there was suddenly a lot more I think understanding of that. And

I think there's a lot of capacity and knowledge that's been built over the last 2 years really due to COVID. So kind of what can we capitalize on and sort of translate into flexible pandemic preparedness going forward. Or maybe not even pandemic preparedness, but ya know even on a small scale those competency, that capacity might still be really important.

Next Speaker: It looks like maybe we have a question from Pam. Pamela, –

Next Speaker: Hi.

Next Speaker: – you have a question? Your hand is –

Next Speaker: Yeah. I just, I just, um, had two. I think in addition to what Rosa is saying, I think we've learned a lot about our emergency preparedness for whether it's a pandemic or a wildfire or other emergencies that hit health care facilities. And I'm wondering if we can, again, like you're saying, Rosa, capitalize on the learnings from COVID and update emergency preparedness in, in all areas not just a pandemic, but in other areas and what we learned about bringing people together to work on something like, ya know, another pandemic or a wildfire etc. But the other comment I wanted to make is, ya know, we've seen recent articles where HAIs in health care facilities, coddies, aclepses, those things have gone up during the pandemic. And I'm wondering how do we back down on those increases now. Um, staff is still tired. They're still short so how do we, how do we go back to at least the levels we were at pre-pandemic. And I think that would be interesting to hear about different facilities that are working on those HAI levels, um, and how to get them down. Um, that was just my comments. Thank you.

Next Speaker: Okay. Do we have any other comments? I, I do agree with you, uh, Pamela. I, I, I really would like, uh, yeah, us to share some of those things on how we're reducing HAIs because we've definitely seen an increase.

Next Speaker: And it's also making me wonder if, if, if anybody has good ideas or good experiences or expertise in, um, simulation to, to make sure that we're sharing those simulation skill sets, the knowledge base to make sure that we don't start to drop off on all of those things. Um, ya know, everybody, oftentimes simulation is done, ya know, however the person who happens to be running it does it. And we know there are best practices so that might be one way that we can try to stay ahead of any drop off of knowledge is to try to come up with some, some good guidelines for simulation to try to make sure that folks are, are up to day and staying on top of those things. Um, 'cause I think like you said, we are still pretty ramped up. I think the biggest concern I would have is the, some sort of a full drop off on all of those things to get back to someplace we were before where if we were like, wait a minute, how do you do that again?

Next Speaker: This is Geneva Bisser. I'm just gettin' joined by phone. Are you able to hear me?

Next Speaker: Yes, nice to hear you Jen.

Next Speaker: Hi. I love all these comments. I, I don't know if anyone was on the earlier public health call at noon, uh, but Dr. Jennifer Vines was calling for exactly such a group to compile lessons learned, uh, around, uh, I, it's something like in, in, uh, respiratory viruses and but I think

around COVID and the response, response. So that group, uh, which you know is infection prevention and I.D. docs, uh, is, ya know, gonna be working on something similar so just wanna let you know about that whether, ya know, combined forces or, ya know, be a part of that, have a representative be a part of the workgroup. If that's what they, I think they're going to do a workgroup or some brainstorming on that call.

Next Speaker: Pamela's giving you a thumbs up. So you know it looks like we're, we're reaching time, but I wanted to know if there's any, ya know, we have a space for public comments if there's any comments. Um, so are there any comments that are hear from anybody. Um, remember you can also post it in the chat. Um, if not, um, I don't think there's anything left on the agenda and, uh, may I please have a motion to adjourn the meeting.

Next Speaker: This is Trista Barry. I'll move to adjourn.

Next Speaker: I second.

Next Speaker: Thank you ****. Okay, motion to adjourn. Um, so thank you guys. Remember to join us on our next meeting and, um, review the minutes as they come out. Thank you.

Next Speaker: Yes. And please remember to review your vacancy announcements and if you have any good ideas for folks I can reach out to or harass a little bit to join our, our group, I just think this group is so great to work with. It's very active. I'm encouraged to hear that people are even looking forward to maintaining capacity. It's wonderful. And so, yeah, hopefully you will take a look at those vacancies and share them with your networks.

Next Speaker: Great. And with that, we're adjourned. Thank you.