DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION
National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion

Healthcare Infection Control Practices Advisory Committee

November 3, 2022

Atlanta, Georgia

Record of the Proceedings

Contents

Attendees

HICPAC Members
Lisa Maragakis, MD, MPH, Co-Chair
Nicholas Daniels, MD, MPH
Mohamad Fakih, MD, MPH
Judy Guzman-Cottrill, DO
Colleen Kraft, MD, MSc
Michael Lin, MD, MPH
JoAnne Reifsnyder, PhD, MBA, MSN
Sharon Wright, MD, MPH

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Executive Summary

The United States (US) Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC) National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) Division of Healthcare Quality Promotion (DHQP) convened a virtual meeting of the Healthcare Infection Control Practices Advisory Committee (HICPAC) on November 3, 2022 via Zoom for Government. The meeting was called to order at 12:00 PM Eastern Time (ET). The presence of a quorum of HICPAC voting members and *Ex Officio* members was confirmed, which was maintained throughout the meeting.

Dr. Michael Bell shared DHQP's excitement about HICPAC assisting them with codifying the lessons learned from the COVID-19 outbreaks experienced during the pandemic. He shared that while the monkeypox (MPOX) outbreak has been trending downward and there has been good uptake of MPOX vaccine amongst the target populations, the news is not as positive about the Ugandan Ebola outbreak. At least 150 Ebola cases have been identified to date, and over 1,000 people are being tracked. Given that the Ugandan population is mobile, DHQP is working with the Ugandan government and surrounding Ministries of Health (MoH) to lend support along with the World Health Organization (WHO) and Médecins Sans Frontières (MSF). DHQP also has engaged in outreach in the US to numerous partner organizations and healthcare systems to remind everyone about the importance of recognizing potentially infectious individuals before they enter a facility. No Ebola cases have been identified in the US, but it is important to be prepared.

Drs. Michael Lin and Sharon Wright presented an update on behalf of the Isolation Precautions Guideline Workgroup (WG) that included a discussion of the goals of updating the 2007 guideline to be concise and available on a mobile device and a description of the new framework for assessing transmission pathways that categorizes pathogen transmission into the 2 broad categories of touch and air. They presented preliminary data from the Evidence Review Team's findings on questions posed by the WG related to: 1) effectiveness of medical/surgical masks compared with N95 respirators in preventing infection among healthcare personnel (HCP) caring for patients with respiratory infections; and 2) the effectiveness of adding eye protection compared to no eye protection in preventing infection among HCP caring for patients with respiratory infections. With the findings for masking and eye protection in mind, the WG discussed how the evidence would inform the new guidance the WG envisions.

Drs. Kallen and Schaefer presented an update on the pending CDC adoption of the *Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings–Recommendations of the HICPAC*. CDC intends to adopt and clear the Core Practices and repost them as *CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings*. This will clarify that this is considered to be CDC guidance and not just HICPAC recommendations, which will have implications for reference and enforcement by accreditation organizations and regulatory entities across the spectrum of healthcare.

Dr. Kraft provided an update on the Healthcare Personnel (HCP) Guideline WG's progress, which is continuing its work to update the 1998 document with organism- and pathogen-specific recommendations, several of which have already been published. Rabies has received final clearance and will soon be published. The WG will soon be restarting Cytomegalovirus, Parvovirus, and Conjunctivitis. On deck are Scabies/Pediculosis, Hepatitis A, Bloodborne Pathogens (Hepatitis B, Hepatitis C, HIV), Herpes, Tuberculosis (TB), and Gastroenteritis (GI). During this meeting, the WG proposed updated draft recommendations for Section 2: Varicella, Measles, Mumps, Rubella, and Pregnant Healthcare Personnel. HICPAC voted unanimously to approve each of these recommendations.

Dr. Guzman-Cottrill presented an update from the Neonatal Intensive Care Unit (NICU) Guideline WG, reporting that the final draft of the *Systematic Review for Prevention of Respiratory Viral Infections in the NICU* document is near completion. The Society for Healthcare Epidemiology of America's (SHEA) Pediatric Respiratory Infection WG is writing a companion White Paper to summarize best practices and expert guidance, which is moving in tandem with the HICPAC WG document. These documents are anticipated to be released simultaneously in a couple of months.

Dr. Neuburger described plans to update *CDC's Guidelines for Infection Control in Dental Health-Care Settings — 2003* and the *Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care* released in 2016. She described in detail the first priority topic of dental unit waterlines (DUWL), particularly concerning gaps in the current guidelines. On behalf of the Division of Oral Health, she requested that HICPAC create an Oral Health Workgroup (OHW) to be tasked with providing updated guidelines on infection control in dental healthcare settings.

The presentations were followed by 3 public comments, no federal entity comments were provided, and HICPAC stood adjourned at 2:27 PM ET.

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Healthcare Infection Control Practices Advisory Committee (HICPAC)

November 3, 2022
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Minutes of the Meeting

The United States (US) Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC) National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) Division of Healthcare Quality Promotion (DHQP) convened a remote meeting of the Healthcare Infection Control Practices Advisory Committee (HICPAC) on November 3, 2022.

Call to Order / Roll Call / Announcements

Sydnee Byrd, MPA, Program Analyst
Division of Healthcare Quality Promotion
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention

Lisa Maragakis, MD, MPH
HICPAC Chair

Michael Bell, MD
HICPAC Designated Federal Officer

Ms. Byrd called to order the November 3, 2022 HICPAC meeting at 12:00 PM Eastern Time (ET), welcomed everyone, and called the roll, establishing that a quorum was present. Quorum was maintained throughout the meeting. HICPAC members disclosed the following conflicts of interest (COIs):

- Dr. Judy Guzman-Cottrill is a consultant for Oregon Health Authority's Healthcare-Associated Infections (HAI) Program.
- Dr. Colleen Kraft is a scientific advisor for Seres Therapeutics and Rebiotix Inc., a Ferring Company
- Dr. Michael Lin receives research support in the form of contributed products from OpGen, LLC and Sage Products, which is now a part of Stryker Corporation. He previously received an investigator-initiated grant from CareFusion Foundation, which is now part of BD.
- Dr. Lisa Maragakis receives research funding from the Clorox Company.

Ms. Byrd indicated that public comment was scheduled following the presentations. She explained public comments would be limited to 3 minutes each and that commenters should state their names and organization for the record before speaking. She reminded everyone that the public comment period is not a question and answer (Q&A) session.

Dr. Maragakis welcomed and thanked everyone for attending and helping to continue the great work of HICPAC. She lamented that this was a bittersweet moment for her as this would be her last meeting and stressed what a privilege it had been to serve with everyone on the committee. She also announced that HICPAC must bid farewell to Drs. Nicholas Daniels and Deverick Anderson, who have reached the end of their 4-year terms, and that a replacement is pending for an *Ex Officio* member from Centers for Medicare and Medicaid Services (CMS).

On behalf of DHQP, Dr. Bell thanked Drs. Maragakis, Daniels, and Anderson. He emphasized that while Dr. Maragakis has been HICPAC's fearless leader for the past 4 years as Co-Chair, her tenure extends back to December 2014, when she first joined HICPAC. There are things that are taken happily for granted now that happened in part because of Dr. Maragakis's hard work, such as the basic categorization scheme, the endoscope reprocessing guidance that is now a standard of care, and her work on the National Healthcare Safety Network (NHSN) Advisory Working Group. As the HICPAC Co-Chair, she has helped steer the committee's work and support its members. Dr. Maragakis has been the face of HICPAC on multiple occasions, such as the Board of Scientific Counselors (BSC) at CDC and the Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria (PACCARB).

Division of Healthcare Quality Promotion (DHQP) Update

Dr. Bell provided a brief DHQP update. The DHQP is extremely excited about the work HICPAC is assisting them with related to codifying all of the lessons learned from the COVID-19 outbreaks experienced during the pandemic. There has been a great deal of valuable learning, and DHQP is excited to drive guideline production that will carry that forward into the next generation of recommendations. The monkeypox (MPOX) outbreak has been trending downward. There has been good uptake of MPOX vaccine amongst the target populations, with most people having received their second dose at this point. The remaining question regards whether pre-exposure prophylaxis (PrEP) will become a standard for MPOX. Less happy is the news out of Uganda in terms of the Ebola outbreak. At least 150 cases have been identified to date, and over 1,000 people are being tracked. Given that the population is mobile, there is concern among neighboring regions about the potential for imported cases. DHQP is working closely with the Ugandan government and the surrounding Ministries of Health (MoH) to lend support along with the World Health Organization (WHO) and Médecins Sans Frontières (MSF). DHQP also has conducted outreach in the US to numerous partner organizations and healthcare systems to remind everyone about the importance of recognizing potentially infectious individuals before they enter a facility. The importance of understanding potential travel exposures cannot be understated. It is as important now as it was at the beginning of COVID-19. Flights out of Uganda have been routed to 5 primary airports. DHQP has worked with those jurisdictions and the health systems around them along with its partners in Administration for Strategic Preparedness and Response (ASPR), which helps maintain the National Emerging Special Pathogens Training and Education Center (NETEC) systems. In addition, DHQP is working with its colleagues in the Division of Global Migration and Quarantine (DGMQ), which arranged for the routing of air flights and has been tracking where people ultimately go. The focus is on locations that are relevant to the Ugandan diaspora and the surrounding health systems. At this time, there was no indication of an Ebola case in the US, but it is important for everyone to be prepared.

Isolation Precautions Guideline Workgroup Update

Sharon Wright, MD, MPH
Michael Lin, MD, MPH
HICPAC Isolation Precautions Guideline WG Co-Chairs

Dr. Wright pointed out that the findings and conclusions presented during this session were in draft format, have not been formally disseminated by the CDC, and should not be construed to represent any agency determination or policy. As a reminder, the goal of the Isolation Precautions Guideline WG is to update the *Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007).*[1] That guideline is currently 206 pages long. The intent of the update is to make the guideline more concise and suitable for mobile devices with a range of 10 to 15 pages, provide an updated scientific foundation for how pathogens spread in the healthcare setting, and recommend new categories of transmission-based precautions. Importantly, this is intended to be applicable to all healthcare settings. Rather than having separate guidance, this will focus on acute care and will incorporate other settings (e.g., nursing homes, pediatrics, behavioral health, et cetera) into the guidance.

Rather than having 4 separate parts for the topics of Scientific Data, Fundamental Elements, Precautions, Recommendations, and an Appendix as in the 2007 version, the proposed outline structure is to have 2 parts. Part 1 would include a combination of Scientific Data, Fundamental Elements, Precautions, and Recommendations, and Part 2 would consist of the Appendix. As a reminder, the WG spent time during previous HICPAC meetings sharing the thinking behind the framework. They have continued to meet every 2 weeks to move the discussions forward. During this session, the WG shared their thinking on the 2007 Part III (Precautions) regarding the data they have reviewed, a summary of their discussions, and questions to solicit HICPAC's opinion and help the WG finalize some decisions, particularly where data are limited.

In terms of the new framework for looking at transmission pathways, pathogen transmission can be grouped into the 2 broad categories of touch and air. Organisms are usually spread by 1 major pathway, but other minor pathways may contribute. For instance, there may be 1 or more routes within air or 1 from touch and 1 from air. In addition to standard precautions, the 2007 framework had the 3 major areas of droplet, airborne, and contact transmission. The new framework has 2 broad categories of transmission by air and transmission by touch, with the old categories of droplet and airborne mapping to air and contact precautions mapping to touch. Transmission by air may be most efficient through inhalation, but it also includes transmission through splash or spray and can include transmission along the entire respiratory tract. The focus during this session was transmission by air as the WG thinks that will have the most updates, particularly with lessons learned over the past 3 years during the pandemic.

Dr. Lin reviewed the data from the impressive work done by Erin Stone and her Evidence Review Team from CDC, emphasizing that these data are preliminary and that the team continues to refine the evidence review as they identify further studies to complement what has already been found. In terms of transmission by air with respect to masking, the WG asked the Evidence Review Team to review the question, "For healthcare personnel caring for patients with respiratory infections, what is the effectiveness of medical/surgical masks compared with N95 respirators in preventing infection?" For this question, the Evidence Review Team has summarized 10 published studies to date, some of which counted for more than one category. For the infection outcome of all laboratory-confirmed viral illnesses, there are 4 randomized

[1] https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html

controlled trials (RCTs) and 6 observational studies with an aggregate total of 19,564 subjects. The overall finding is that there is no difference in medical/surgical masks compared to N95 respirators in preventing infection. The threat to validity for this infection outcome is moderate. For the infection outcome of laboratory-confirmed influenza, there are 3 RCTs and 1 observational study with an aggregate total of 5,927 subjects. The finding for this outcome is that there is no difference in medical/surgical masks compared to N95 respirators in preventing infection, and the threat to validity is low. For the infection outcome of SARS-CoV-2, there are no RCTs and 5 observational studies with an aggregate total of 13,191 subjects. The finding for this outcome is that the N95 respiratory mask is favored over medical/surgical masks, and the threat to validity is moderate.

In contrast to the masking evidence review, less information was available for eye protection. The WG asked the Evidence Review Team to review the question, "For healthcare personnel caring for patients with respiratory infections, what is the effectiveness of adding eye protection, compared to no eye protection, in preventing infection?" For this question, the Evidence Review Team has summarized 6 published studies. No studies have been identified for the infection outcomes of all laboratory-confirmed viral illnesses or laboratory-confirmed influenza. For the infection outcome of SARS-CoV-2, there are no RCTs and 6 observational studies with an aggregate total of 11,051 subjects. The finding for this outcome is that eye protection is favored over no eye protection, and the threat to validity is high.

Of note, typical threats to validity, especially in observational studies, might include aspects such as pre/post observational studies in which it may not be possible to determine inference; unknown confounders or known confounders that were not incorporated into the analysis; and/or secular trends related to observational studies. RCTs have some limitations related to the types of patients or HCP who are studied but generally tend to be more robust with respect to threats to validity.

With the findings for masking and eye protection in mind, the WG discussed the various aspects of isolation precautions for pathogens that transmit by air and developed the proposed precautions, the labels for which have not yet been named:

Label	PPE	Eye Protection	Negative Pressure Isolation	Example Pathogen
TBD - I	Medical/Surgical Facemask	?	No	Seasonal coronavirus; Seasonal influenza
TBD - II	N95 Respirator	Yes	No	Pandemic-phase or novel respiratory virus (e.g., pandemic-phase influenza; pandemic-phase SARS-CoV-2)
TBD - III	N95 Respirator	No	Yes	Tuberculosis; Measles

In terms of next steps, the text is drafted and under review by the WG for Section A (Scientific Data Regarding Transmission). For Section B (Fundamental Elements Needed to Prevent Transmission), the outline has been drafted and reviewed by the WG, and writing is in process. For Section C (Precautions to Prevent Transmission), transmission by touch is to be reviewed next by the WG.

Dr. Wright reviewed the WG's discussion and questions pertaining to transmission via air for HICPAC's consideration and input:

1) *At what point does SARS-CoV-2 move from pandemic-phase to seasonal phase?*

The WG acknowledges that this is likely a public health/CDC decision on the medical ending of the pandemic versus the social one that largely has been declared already. The WG's initial discussions have stressed differences between public and healthcare guidance that have existed throughout the pandemic. Many of the WG members feel that they are not quite ready to switch phases, but are curious as to what the full HICPAC thinks. As a reminder, it was recommended during H1N1 that N95 respirators be worn but was then brought back for a recommendation to wear a surgical mask with the availability of vaccine and less morbidity and mortality.

2) *What is the role of eye protection for care of patients with seasonal respiratory viruses?*

The WG discussed the utility of this addition of PPE with source-control masking being recommended. Admittedly, patients often do not mask as in-patients or during examination. In addition, the WG discussed issues related to implementation that would be easier if this was done for all respiratory viruses rather than just some of them. Another option the WG discussed was not requiring eye protection to be used unless there is an increase in cases, and then potentially for all patients with respiratory symptoms or just for all patient care. The WG also discussed including specific viruses in Appendix A, such as those with ocular tropism.

3) *How to optimally label and communicate the different isolation precaution approaches in the transmission by air categories?*

Dr. Wright did not share the WG's initial ideas so as not to bias the full HICPAC's responses.

Discussion Points

Dr. Maragakis observed that the evidence review appeared to focus mostly on the evidence around masking, masks versus N95, and eye protection. However, the proposed precautions table also references negative pressure air flow. She wondered whether an evidence review was conducted about negative pressure air flow, or if that was an expert opinion decision.

Dr. Wright indicated that the WG did not request a specific review on negative pressure isolation and debated whether to include it in this presentation because, in some respects, it is not protecting the HCP or the particular patient the HCP is examining and in the room with, but rather protects those outside the room. The WG felt it would be important to include in the initial precautions, so it is expert opinion at this point.

AAKP asked what specific guidance CDC is going to put forward to medical professionals and the public in regard to severely immunocompromised and immunosuppressed patients, such as solid organ transplant recipients and dialysis patients. This has not been clear at each juncture when there has been a new announcement by CDC. In anticipating this guideline and perhaps the terrain for the environment in which some of these guidelines might come out 30 to 90 days from now with another strain is very important to AAKP. Each time it is not clear, AAKP takes it upon itself as the largest kidney patient organization to do a tremendous amount of public messaging to add clarity due to the confusion that results.

Dr. Bell emphasized that this is a very general set of guidance. These guidelines are intended to be the basis of thinking about transmission as opposed to practices that are implemented in specific locations or special populations. First, they must come to agreement on how to describe the transmission of infections. He fully expects that additional products will be produced from

this initial thrust, just as there has been throughout the entire COVID-19 experience for various populations. In addition to these questions, there is a future question regarding how to manage the arrival of the Workplace Performance and Workplace Performance Plus masks. The WG has discussed holding off on that and returning to the framework to figure out how these best fit as a product option once they become more readily available and particularly once the FDA process becomes clearer in terms of medical utilization.

Regarding Question #2, APIC emphasized that it is difficult to get HCP to comply with eye protection use. For instance, many pediatric patients cannot be masked and have poor hygiene practices, such as sneezing and coughing in HCPs' faces. It would be helpful to see more evidence and data behind eye protection if this is something that HICPAC can pursue to help with the decision-making, given that there is so much lacking in the literature in general.

Dr. Wright indicated that more studies are being pulled, and there has been discussion about making the focus broader and cutting the analyses in different ways. Part of the issue is that most of the data is on SARS-CoV-2 and is from different stages of the pandemic with different levels of immunity, different variants, and different PPE guidance. This makes the data difficult to interpret.

Dr. Lin added that even the data that are going to be pulled tend to address pathogens that are pandemic or in a pandemic phase. There are some papers related to Middle East Respiratory Syndrome (MERS)-CoV and the original SARS-CoV-1, but they still do not quite answer the question about seasonal coronavirus or seasonal influenza. It is not clear that evidence will be available in time to be able to make a recommendation.

Dr. Maragakis commented that HICPAC strives to have an evidence base for all of the guidance documents, but there are some lines of evidence that may fall in a concentric circle outside of the specific question for respiratory viruses. One thing that comes to mind is the work done in biocontainment and self-contamination with high-consequence pathogens such as Ebola, scrutinizing HCP behavior in terms of how frequently they touch their faces, eyes, et cetera. Related to that is the type of eye protection that is available and the role that plays in HCP's willingness to put it on. This has been a huge barrier for standard precautions and transmission-based precautions.

Dr. Bell said he thought whether it is the SARS-Cov-2 pandemic or the role of eye protection amongst seasonal respiratory viruses and other pathogens, all of that is tied to the perception of risk. There is a value judgement with which HICPAC will need to consider and at least describe in the extreme of Ebola, where the individual HCP feels personal risk of dying if they are exposed and for which people are very willing to use PPE, and the stark contrast with behaviors seen during routine respiratory infection seasons. Therein, there is a need to decide as a group what will be recommended as the characteristic of an infectious disease that warrants the use of either a respirator or a Performance Plus device instead of something less protective and when to add eye protection to that. This really is about the perception of risk to the individual as opposed to some of what is recommended in the precautionary guidance with a pandemic pathogen for which community and societal factors are built in. There is more than one way of parsing this. It could be the severity of an infection to an individual, the impact of absenteeism during a busy influenza season on the ability of a facility to continue working well, and/or who is being taken care of in terms of HCP putting a population at risk such as nursing home patients. A variety of health systems across the country are choosing to maintain source control for everyone in the facility, not because of COVID but as a routine tool that can be implemented for other things like Respiratory Syncytial Virus (RSV) and influenza. This is exactly what they

should be thinking about—using the tools available to protect people from all sorts of infectious hazards. The focus should be on the utility of using infection control practices based on seasonal threats and based on whether threats are considered to be enough of a risk to do the extra thing, such as eye protection or a higher-level mask.

Dr. Lin indicated that the appendix includes a list of the papers that have been incorporated into the slides that were presented on the masking and eye protection reviews.

HICPAC emphasized that they all think about precautions a lot of the time—all of the on/off ramps. The bottom line is that the vast majority of people who work in healthcare just want to be told what to do, and it has to be very simplified. This WG has a challenging task. One of the take-home messages of the COVID-19 pandemic thus far is that transmission-based precautions are highly complex. At the end of this work, it is important to come up with something that makes sense to everyone. As a result of the pandemic, it is not just HCP. It is the general public and everyone who is looking at guidance that is put forth and scrutinizing it. Representation and input are critical from so many liaison representatives who serve on HICPAC who represent the various sub-populations that this will affect.

Dr. Maragakis agreed with the complexity and the need for clarity. Risk varies by pathogen as well as individual. Perhaps this is a place in which HICPAC needs to use a risk communication strategy of acknowledging what is known, what is not known, and laying out a continuum to allow some choice. That gets away from simplicity, but it feels like this is where the public and healthcare is moving in terms of setting minimum requirements and giving some latitude based on levels of risk based on immunosuppression, et cetera. People's circumstances differ, facilities' staffing models are different, and maybe there are different levels of tolerance.

AHA asked how staffing situations would be addressed in which there is a shortage of clinicians, PPE, et cetera. Those converging factors with a recommendation may create a set of issues in which facilities minimize the number of people going into rooms because negative pressure is not being used, but an N95 is recommended. On the clinical side, when there is a staff shortage, staff cannot always get in to do the cleaning. Even with compelling evidence and desire to know what to do, it is still going to be a challenge. Perhaps the risk assessment approach is a way to solve the problem from an operational perspective.

NIH underscored that it is not only the patient per se but also the patient in the hospital setting that makes a difference. For instance, 65% to 75% of patients may be immunocompromised in some hospitals either congenitally or as the result of something that has been done to them. They tend to look at the recommendations that come out of these kinds of guidelines as being the basement for the minimum that should be done. Any guidance that HICPAC develops should emphasize that consideration should be given to one's own personal context in terms of the basement and then building on top of that whatever unique guidance is needed that meets the unique needs of an institution and its patient population.

AORN asked whether the literature review looked at respiratory transmission via aerosol-generating procedures as well as high-risk surgeries.
Dr. Lin indicated that the WG discussed a potential question for the contribution of aerosol-generating procedures to transmission. At this point, there is a sense from the scoping review that there will not be very much evidence at this point to help make a recommendation. It is an important question because it is something that has been risk-stratified throughout the pandemic and before in terms of when to use higher-level PPE. In the evidence review, there was not a distinction between an aerosol-generating procedure encounter with the patient or

not. These were basically trials in which there was a randomization to one type of mask versus another. If they go down the path of a patient who is coughing, breathing, and potentially generating aerosols, the assumption is that any encounter potentially is an aerosol event. Medical/surgical masks do provide disease protection, at least from the standpoint of the outcome of whether HCP are getting sick. That is a different viewpoint potentially from what traditionally has been thought of for use of medical/surgical face masks and respirators.

AAKP asked whether, once approved and rolled out, the guideline will have plain and obvious language that explains this is a baseline recommendation that programs can enhance based on their own patients and settings.

Dr. Bell indicated that they could definitely incorporate language of that sort. A challenge he foresees is that this is likely to yield many implementation questions about what the exact enhancements should be and when. In terms of aerosol-generating procedures, many things that used to be thought of as aerosol-generating are not. They are in the process of looking specifically at not only which procedures generate an aerosol, but also what the aerosol contains (e.g., material from a patient, medication, et cetera). Hopefully, data will be available in time to be included in this guideline.

PSAN noted that there did not seem to be a lot of responses to the first question, although when to draw the line between the SARS-CoV-2 pandemic-phase and seasonal phase seems very important. Going through another season may be necessary, given that so much is still unknown about what is going to happen next. It seems like there needs to be a period of time with a consistent pattern of cases.

Dr. Lin pointed out that even if there is a medical end to the pandemic from a public point of view, the healthcare setting has to be much more conservative in terms of standing down because of the vulnerability of patients. This would be a decision made at the highest public health levels, not a decision of the WG or HICPAC.

Dr. Bell emphasized that it is probably safe to say that they are not dealing with a single pandemic that started and will stop. There has been a series of pandemics that happened because of related strains of coronavirus, and 300 to 400 people a day are still dying. The need to continue to take this seriously is not going to go away in a matter of a week or in some uniform moment in time and instead is likely to evolve gradually. Therefore, he does not foresee a sudden “all clear” type of approach. Continuing to maintain what has been used for COVID-19 to reduce the impact of RSV and influenza is exactly the type of approach that is needed.

Dr. Maragakis put in another plug for ventilation and airflow being part of the consideration for this guideline and/or addressed separately if it is too large of a topic. One thing that may differ going forward is how facilities think about new construction and how ventilation and airflow can be improved.

Healthcare Personnel (HCP) Guideline Workgroup Update

Colleen Kraft, MD, Chair
Infection Control in Healthcare Personnel Workgroup

Dr. Kraft provided an update on the *Guideline for Infection Control in Healthcare Personnel, 1998*. The findings and conclusions presented during this session were drafts, have not been formally disseminated by the CDC, and should not be construed to represent any agency

determination or policy. As a reminder, the original guideline was published in 1998. The HCP WG's goal is to provide updated information on issues for Infection Control in Healthcare Personnel (HCP), Section 2. The WG's charge is to focus on pathogen-specific issues for infection control in HCP. Where information is out of date, the WG makes updates using evidence-based methods where evidence is available.

In terms of the status report, **Section 1: Infrastructure and Routine Practices for Occupational Infection Prevention and Control Services** was published in October 2019.[2] Regarding **Section 2: Epidemiology and Control of Selected Infections Transmitted Among HCP and Patients,** Diphtheria, Group A *Streptococcus*, Meningococcal Disease, and Pertussis were published on the CDC website in November 2021.[3] HICPAC already approved the following sections: Measles (August 2018); Mumps, Rubella (May 2018); Varicella (August 2019); Parvo, Cytomegalovirus (November 2019); and Rabies (August 2021). The Rabies section has completed final clearance, is with the web team, and should be published by the end of November. In progress are Varicella, Measles, Mumps, Rubella, and Pregnant HCP draft recommendations to be presented and voted on during this meeting. Pending approval, these will go into clearance. *S. aureus* will be updated once the literature review is complete. The WG will soon be restarting Cytomegalovirus, Parvovirus, and Conjunctivitis. On deck are Scabies/Pediculosis, Hepatitis A, Bloodborne Pathogens (Hepatitis B, Hepatitis C, HIV), Herpes, Tuberculosis (TB), and Gastroenteritis.

The WG has proposed updated draft recommendations for Section 2: Varicella, Measles, Mumps, Rubella, and Pregnant Healthcare Personnel. The narrative sections to support the draft recommendations are in progress, and CDC Subject Matter Experts (SMEs) have provided initial input on the draft narrative. As a reminder, Dr. Kraft first showed the 1998 recommendations and 2011 Advisory Committee on Immunization Practices (ACIP) immunization recommendations prior to reviewing the following proposed recommendations for discussion and votes:

Varicella DRAFT Recommendations

1. For healthcare personnel ***with*** evidence of immunity to varicella who have an exposure to varicella or disseminated or localized herpes zoster:
   a. Postexposure prophylaxis is not necessary.
   b. Work restrictions are not necessary.
   c. Implement daily monitoring for signs and symptoms of varicella infection from the 8th day after the first exposure through the 21st day after the last exposure.
2. For healthcare personnel ***without*** evidence of immunity to varicella who have an exposure to varicella (chickenpox) or disseminated or localized herpes zoster:
   a. Administer postexposure prophylaxis in accordance with CDC and ACIP recommendations (https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/varicella.html).
   b. Exclude from work from the 8th day after the first exposure through the 21st day after the last exposure.
   a. Work restrictions are not necessary for healthcare personnel who previously received one dose of the varicella vaccine and received the second dose of vaccine within 5 days after exposure.

[2] https://www.cdc.gov/infectioncontrol/guidelines/healthcare-personnel/infrastructure.html
[3] https://www.cdc.gov/infectioncontrol/guidelines/healthcare-personnel/selected-infections/index.html

   b. If varicella-zoster immune globulin is administered as postexposure prophylaxis, exclude from work from the 8th day after the first exposure through the 28th day after the last exposure.
3. For healthcare personnel with varicella (chickenpox), exclude from work until all lesions have dried and crusted; or, for those who only have non-vesicular lesions that do not crust, exclude from work until no new lesions appear within a 24-hour period.
4. For healthcare personnel with disseminated herpes zoster or for immunocompromised healthcare personnel with localized herpes zoster until disseminated disease has been ruled out, exclude from work until all lesions have dried and crusted.
5. For immunocompetent healthcare personnel who have localized herpes zoster, including vaccine-strain herpes zoster, and for immunocompromised healthcare personnel who have localized herpes zoster and have had disseminated disease ruled out:
   a. Cover all lesions and exclude from direct care of patients at increased risk for complications from varicella disease until all lesions are dried and crusted.
   b. If lesions cannot be covered (e.g., on the hands or face), exclude from work until all lesions have dried and crusted.

Measles DRAFT Recommendations

1. For healthcare personnel with presumptive evidence of immunity to measles who have an exposure to measles:
   a. Postexposure prophylaxis is not necessary.
   b. Work restrictions are not necessary.
   c. Implement daily monitoring for signs and symptoms of measles infection for 21 days after their last exposure.
2. For healthcare personnel without presumptive evidence of immunity to measles who have an exposure to measles:
   a. Administer postexposure prophylaxis in accordance with CDC and ACIP recommendations (https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mmr.html).
   b. Exclude from work from the 5th day after their first exposure until the 21st day after their last exposure, regardless of receipt of postexposure prophylaxis.
   c. HCP who received the first dose of MMR vaccine prior to exposure may remain at work, but should receive their second dose (at least 28 days after their first dose), and be monitored for signs and symptoms of measles infection for 21 days after their last exposure.
3. For healthcare personnel with known or suspected measles, exclude from work for 4 days after the rash appears.
4. For immunosuppressed healthcare personnel with known or suspected measles, exclude from work for the duration of their illness.
5. During a measles outbreak, administer measles vaccine to healthcare personnel in accordance with CDC and ACIP recommendations.

Mumps DRAFT Recommendations

1. For asymptomatic healthcare personnel with presumptive evidence of immunity to mumps who have an exposure to mumps:
   a. Work restrictions are not necessary.
   b. Implement daily monitoring for signs and symptoms of mumps for 25 days after their last exposure.
2. For healthcare personnel without presumptive evidence of immunity to mumps who have an exposure to mumps, exclude from work from the 10th day after their first exposure through the 25th day after their last exposure.

a. Healthcare personnel who received the first dose of MMR vaccine prior to exposure may remain at work, but should receive their second dose (at least 28 days after their first dose), and be monitored for signs and symptoms of mumps infection for 25 days after their last exposure.
3. For healthcare personnel with known or suspected mumps, exclude from work for 5 days after the onset of parotitis.
4. For healthcare personnel with known or suspected mumps, but without parotitis, exclude from work for 5 days after onset of their first symptom.
5. During a mumps outbreak, administer mumps vaccine to healthcare personnel in accordance with CDC and ACIP recommendations.

Rubella DRAFT Recommendations

1. For asymptomatic healthcare personnel with presumptive evidence of immunity to rubella who have an exposure to rubella:
   a. Work restrictions are not necessary.
   b. Implement daily monitoring for signs and symptoms of rubella infection for 23 days after their last exposure.
2. For healthcare personnel without presumptive evidence of immunity to rubella who have an exposure to rubella, exclude from work from the 7th day after their first exposure through the 23rd day after their last exposure.
3. For healthcare personnel with known or suspected rubella, exclude from work for 7 days after the rash appears.

Pregnant Healthcare Personnel DRAFT Recommendations

1. Do not routinely exclude healthcare personnel only on the basis of their pregnancy or intent to be pregnant from the care of patients with infections that have potential to harm the fetus (e.g., CMV, HIV, viral hepatitis, herpes simplex, parvovirus, rubella, varicella).

Discussion Points

ASN asked whether “exposure” will be defined or if there will be links to existing definitions of “exposure” in terms of all of the pathogens.

Dr. Kraft responded that “exposures” have been defined elsewhere, so there should be a link within the document.

Dr. Kuhar added that to define “exposure” for healthcare workers, a paragraph will be included in every section to define “exposure” for each pathogen. The challenge is that the evidence available for each pathogen differs in terms of how long someone has to be exposed, et cetera. Therefore, the details provided are different and are very pathogen-specific.

DVA emphasized the importance of clearly defining “presumptive measles immunity” in terms of whether it is antibody-based or history-based. In addition, the immunization charts should align with the recommendations. If not, there likely will be differing implementation throughout the country.

A WG member pointed out that ACIP standards would be used to define “presumptive immunity.” In the interest of not being redundant, the WG referred to ACIP a few times. There was a hyperlink in one recommendation shown, which was not included in another. However, the intent is for the hyperlinks to be included.

HICPAC inquired as to how the WG was thinking about implementation of 5a in the draft varicella recommendations in terms of whether the intent is to focus on wards that tend to have a lot of this type of patients (e.g., cancer wards) or if this also includes medicine wards where perhaps there is a mix of patients, some of whom may be on immunosuppressants and at risk.

Dr. Kraft acknowledged the pragmatic differences in those who are and are not yet known to be immunocompromised, so the WG will try to clarify this.

Prior to each vote, Ms. Byrd re-read the proposed recommendation language.

Vote #1: Varicella
A vote was placed on the floor for approval of the proposed Varicella DRAFT Recommendations. HICPAC voted unanimously to approve the recommendations, with no opposition and no abstentions. The disposition of the vote was as follows:

- 8 Favored: Daniels, Fakih, Guzman-Cottrill, Kraft, Lin, Maragakis, Reifsnyder, Wright
- 0 Opposed
- 0 Abstained

Vote #2: Measles
A vote was placed on the floor for approval of the proposed Measles DRAFT Recommendations. HICPAC voted unanimously to approve the recommendations, with no opposition and no abstentions. The disposition of the vote was as follows:

- 8 Favored: Daniels, Fakih, Guzman-Cottrill, Kraft, Lin, Maragakis, Reifsnyder, Wright
- 0 Opposed
- 0 Abstained

Vote #3: Mumps
A vote was placed on the floor for approval of the proposed Mumps DRAFT Recommendations. HICPAC voted unanimously to approve the recommendations, with no opposition and no abstentions. The disposition of the vote was as follows:

- 8 Favored: Daniels, Fakih, Guzman-Cottrill, Kraft, Lin, Maragakis, Reifsnyder, Wright
- 0 Opposed
- 0 Abstained

Vote #4: Rubella
A vote was placed on the floor for approval of the proposed Rubella DRAFT Recommendations. HICPAC voted unanimously to approve the recommendations, with no opposition and no abstentions. The disposition of the vote was as follows:

- 8 Favored: Daniels, Fakih, Guzman-Cottrill, Kraft, Lin, Maragakis, Reifsnyder, Wright
- 0 Opposed
- 0 Abstained

Vote #5: Pregnant Healthcare Personnel
A vote was placed on the floor for approval of the proposed Pregnant Healthcare Personnel DRAFT Recommendations. HICPAC voted unanimously to approve the recommendations, with no opposition and no abstentions. The disposition of the vote was as follows:

- 8 Favored: Daniels, Fakih, Guzman-Cottrill, Kraft, Lin, Maragakis, Reifsnyder, Wright
- 0 Opposed
- 0 Abstained

Update to Core Practices

Melissa Schaefer, MD
Alexander J. Kallen, MD, MPH
Centers for Disease Control and Prevention

Dr. Schaefer presented a brief update about the pending CDC adoption of the *Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings – Recommendations of the HICPAC*.[4] Several years ago, HICPAC established a Core Practices Working Group. The charge of that group was to review all of the CDC healthcare infection control guidelines and the myriad of recommendations in those guidelines and select from among them those that are intended to serve as a standard reference or standard of care that likely would not be affected, updated, or changed based on additional research or evidence coming forward. The Core Practices were intended to serve as standard references and reduce the need to repeatedly evaluate practices that are considered basic and accepted medical standards of care. Essentially, these were intended to be a core set of infection prevention and control practices that are required in all healthcare settings, regardless of the type of healthcare provided. These recommendations were finalized and posted on the HICPAC website Summer 2014. The Core Practices are organized into the following 8 general sections:

1. Leadership Support
2. Education and Training of Healthcare Personnel on Infection Prevention
3. Patient, Family and Caregiver Education
4. Performance Monitoring and Feedback
5. Standard Precautions
   5a. Hand Hygiene
   5b. Environmental Cleaning and Disinfection
   5c. Injection and Medication Safety
   5d. Risk Assessment and Appropriate Use of PPE
   5e. Minimizing Potential Exposures
   5f. Reprocessing of Reusable Medical Equipment
6. Transmission-Based Precautions
7. Temporary Invasive Medical Devices for Clinical Management
8. Occupational Health

These have been HICPAC recommendations, but CDC is planning to adopt and clear the Core Practices and repost them as *CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings*. This will clarify that this is considered CDC guidance and not just HICPAC recommendations, which will have implications for reference and enforcement by accreditation organizations and regulatory entities across the spectrum of healthcare. CDC always has intended this to be a living document to be updated as new guidelines are developed and/or additional core practices are identified.

The process of getting this ready to go into clearance included having SMEs within DHQP review the document for gaps or recommendations that were no longer pertinent. The HICPAC did a phenomenal job of truly identifying the Core Practices that are still the core practices. There were a couple of areas based on lessons learned from COVID-19 or other outbreaks that prompted the desire to make some additions to the Core Practices. In Section 5c. Injection and Medication Safety, there already was a recommendation about using aseptic technique when

[4] https://www.cdc.gov/hicpac/recommendations/core-practices.html

preparing medications. Aseptic technique encompasses a lot, including preparing medications in a clean area. CDC felt that this needed to be stated explicitly, so a recommendation was pulled in from injection safety materials to specifically call out preparing medications in designated clean areas that are not adjacent to potential sources of contamination, like sinks or other water sources.

In Section 5e., Minimizing Potential Exposures, the language included by the WG was focused on respiratory hygiene cough etiquette and minimizing potential exposures of respiratory pathogens. However, these are not the only pathogens of concern or syndromes coming into healthcare. Therefore, CDC is discussing the addition of a new recommendation from the current Isolation Guidelines that broadens this minimizing potential exposure section beyond respiratory viruses that reads, "1. Develop and implement systems for early detection and management (e.g., use of appropriate infection control measures, including isolation precautions, PPE) of potentially infectious persons at initial points of patient encounter in outpatient settings (e.g., triage areas, emergency departments, outpatient clinics, physician offices) and at the time of admission to hospitals and long-term care facilities (LTCF)." CDC also has been discussing the addition in the comment column of Section 5e that reads, "During periods of higher levels of community respiratory virus transmission*, facilities should consider having everyone mask upon entry to the facility to ensure better adherence to respiratory hygiene and cough etiquette for those who might be infectious. Such an approach could be implemented facility-wide or targeted toward higher risk areas (e.g., emergency departments, urgent care, units experiencing an outbreak) based on a facility risk assessment." Examples of potential metrics will be included, but these will be based on local determinations.

Discussion Points

Dr. Bell said it would be helpful to hear whether HICPAC agrees with the addition of the new segments.

HICPAC strongly supported the additions in Section 5e, especially the universal masking approach during respiratory viral season. That would be nice to have in writing moving forward for patients and HCP to prevent transmission.

APIC and PIDS were pleased to see the comment added for source control in Section 5e, but pointed out that healthcare facilities may struggle with implementation in terms of the trigger point. Therefore, additional guidance support would be beneficial, such as "when influenza is 10% or 20%." There is likely to be pushback since this is a hot-button issue for some people. While influenza is tracked pretty well in the US, a lot of other respiratory viruses are not tracked particularly well.

An Infection Prevention & Control Program Manager expressed appreciation for the recommendations but noted that a lot of the hospitals that were built long ago have a sink and a counter in their medication room. This raised concern about how big a problem this potentially will be given the current focus by regulatory agencies on infection control surveillance.

Dr. Schaefer said that while she could not comment on how regulators might enforce, even with challenges in facility design, there are still actions facilities can take to mitigate risk of contamination of medications with water, such as installing splash guards.

FDA invited CDC to reach out to them for input when working on Sections 5f and 7 with regard to medical equipment and medical devices.

Neonatal Intensive Care Unit (NICU) Guideline Workgroup Update

Judith Guzman-Cottrill, DO
NICU Workgroup Chair

Dr. Guzman-Cottrill reported that since the last HICPAC meeting, there were no significant updates on the NICU Guideline WG's final draft of the *Systematic Review for Prevention of Respiratory Viral Infections in the NICU* other than to say that this document is very near completion. The Society for Healthcare Epidemiology of America's (SHEA's) Pediatric Respiratory Infection WG is continuing its work writing a companion White Paper to summarize best practices and expert guidance. This project is moving along nicely in tandem with the HICPAC WG document. Currently, it appears that both documents will be ready for simultaneous release in a couple of months.

Dental Unit Waterlines Guideline Update

Michele Neuburger, DDS, MPH
Division of Oral Health
Centers for Disease Control and Prevention

Dr. Neuburger began with a brief history of CDC dental guidelines. CDC's *Guidelines for Infection Control in Dental Health-Care Settings — 2003*[5] were created over 20 years ago and are in need of updating. This was a comprehensive guideline document specific to dental settings. In 2016, CDC released the *Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care*[6] that reaffirmed standard precautions. This was a user-friendly, plain language summary of infection control recommendations that focused primarily on standard precautions and drew heavily from the 2003 guidelines. The summary was developed to help increase understanding of and adherence to CDC recommendations. Many of the recommendations in the 2003 guidelines represent core infection control practices and are not expected to change. More updated recommendations can be found in places like HICPAC's *Core Practices* document or other more updated guidelines from CDC.

CDC recognizes that the 2003 guidelines were created almost 20 years ago and that there are some areas where the science has changed, and new recommendations may be needed. Reaffirming, updating, and creating new guidelines is a priority for the Division of Oral Health. The plan is to update the recommendations using a topic- or chapter-based approach similar to other guideline development efforts at CDC. The goal is to focus on topics that are specific to dental settings instead of creating another large encyclopedia-like document that contains duplicative information that may be found in other CDC documents. To begin that work, the Division of Oral Health reviewed the *2003 Guidelines* document to determine what sections need to be reaffirmed, linked to more current guidance, updated, and/or to have new recommendations. The topics were then prioritized. In addition, they are also working with the Organization for Safety, Asepsis and Prevention (OSAP) to create a Core Infection Prevention Practices document for dentistry that will reaffirm the Core Practices document and focus on some topics that may be unique to dental settings.

The first priority topic is Dental Unit Waterlines (DUWL). Water use is very important to the practice of dentistry. It is used in most dental procedures as a coolant and irrigant. The term

[5] https://courses.cdc.train.org/CDC_DOH_IPC_SCORM/portal/content/courses/CDC_WFEP/resources/rr5217.pdf
[6] https://www.cdc.gov/oralhealth/infectioncontrol/pdf/safe-care2.pdf

DUWL refers to the tubing contained inside and outside the dental chair that carries water to equipment like high-speed handpieces, air/water syringes, and ultrasonic scalers. Biofilm occurs in these lines because of factors that promote bacterial growth, such as system design, low flow rates, frequent periods of stagnation, stops/starts, and the potential for the retraction of oral fluids. As a result, high numbers of common bacteria can be found in dental unit water systems with disease-causing microorganisms like *Legionella*, *Pseudomonas aeruginosa*, and non-tuberculous *Mycobacterium*. Portable dental units can be particularly at risk for biofilm formation because they may be used and then stored for long periods of time before the next use. All systems are unique, and it can be a challenge for dental providers to understand how to properly and consistently maintain their equipment. Due to all of these factors, untreated dental units cannot reliably produce water that meets drinking water standards of fewer than 500 CFU/mL of water of heterotrophic water bacteria. Even using source water containing less than or equal to 500 CFU/mL of bacteria (e.g., tap, distilled, or sterile water) in a self-contained system will not eliminate bacterial contamination if biofilms in the water system are not controlled. Removal or inactivation of dental waterline biofilms requires the use of chemical germicides. Chunks of biofilm have the potential to dislodge and exit the dental equipment into patients' mouths if not treated properly.

CDC's *Guidelines for Infection Control in Dental Health-Care Settings – 2003* and the *Summary of Infection Prevention Practices in Dental Settings, Basic Expectations for Safe Care*[7] provide the following recommendations for DUWL:

- Use water that meets US Environmental Protection Agency (EPA) regulatory standards for drinking water (i.e., <500 CFU/mL of heterotrophic water bacteria) for routine dental treatment output water).
- Consult with the dental unit manufacturer for appropriate methods and equipment to maintain the recommended quality of dental water.
- Follow recommendations for monitoring water quality provided by the manufacturer of the unit or waterline treatment product.
- Discharge water and air for a minimum of 20 to 30 seconds after each patient, from any device connected to the dental water system that enters the patient's mouth.
- Consult with the dental unit manufacturer on the need for periodic maintenance of antiretraction mechanisms.
- Use sterile saline or sterile water as a coolant or irrigant when performing surgical procedures.

Additional Available Guidance:

- US Food and Drug Administration, Dental Unit Waterlines, https://www.fda.gov/medical-devices/dental-devices/dental-unit-waterlines
- Organization for Safety, Asepsis and Prevention, Dental Unit Water Quality: Organization For Safety, Asepsis and Prevention, White Paper and Recommendations – 2018, https://www.osap.org/assets/docs/resources/toolkits-topics/dental-unit-water-quality-organization-for-safety-asepsis-and-prevention-white-paper-and-recommendations-2018.pdf
- American Dental Association, https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/dental-unit-waterlines
- American Academy of Pediatric Dentistry, https://www.aapd.org/research/oral-health-policies-- recommendations/infection-control/

[7] https://www.cdc.gov/mmwr/PDF/rr/rr5217.pdf; https://www.cdc.gov/ORALHEALTH/INFECTIONCONTROL/GUIDELINES/INDEX.HTM

In terms of what the average dental clinic does, water used for oral surgical procedures is provided by bottled sterile water with bulb delivery or a sterilizable tubing/delivery system. Water for standard dental operatory units is supplied by direct plumbing into municipal water, an independent water bottle system, or a combination of the two. Most dental offices use independent water bottle systems. Water bottles can be filled with municipal water or distilled water. Available treatment products to ensure water quality include shocking systems; tablets; cartridges and straws; and centralized systems that filter, condition, and place germicides in the water. All dental practices should be testing their water as recommended by the equipment manufacturers to ensure that the treatments are working effectively and that the water they are using meets state safety standards. Maintaining and monitoring these practices relies strictly on compliance with recommended methods to work properly. Dr. Neuburger shared a few examples of disease transmission associated with dental unit water.

With respect to lessons learned from disease transmissions, the largest outbreaks have occurred in pediatric dental clinics among children who had pulpotomy treatments. All have been linked to contamination of dental unit waterlines. All have demonstrated lapses in compliance with maintaining water quality. Dental practices should follow manufacturer instructions to disinfect DUWL and monitor water quality, use methods like chemical germicides and filters to maintain water quality, and eliminate dead ends in plumbing which could enable biofilm formation. All healthcare providers should know how to report suspected outbreaks to public health authorities. The outbreaks called into question whether updated guidelines are needed for dental waterlines.

There are special considerations for pediatric pulpal therapy, such as pulpotomies.[8] Pulpotomies are sometimes called “baby root canals.” Pediatric pulpotomy procedures expose the pulp chamber of a tooth, which contains the nerve and blood supply. Because pulpotomies are not considered to be surgical procedures, sterile water is not routinely used. However, exposing the pulp chamber can provide a route of infection to surrounding tissues. The American Academy of Pediatric Dentistry (AAPD) provides some guidance on pulpotomy procedures and states, “When a pulp exposure occurs and pulp therapy is indicated, irrigants for pulpal therapy should not come from dental unit waterlines. A single use disposable syringe should be used to dispense irrigants for pulpal therapy.” However, there is a lack of standardized procedures for pulpotomies, and dentists may still continue to expose the dental pulp to dental unit water during the procedure. While the outbreaks occurred in practices that were using water from dental unit waterlines to irrigate the teeth during pulpotomies, this calls into question whether more conservative guidance is needed.

Regarding gaps in the current guidelines, all current CDC recommendations for DUWL are considered core practices and are not expected to change. However, there are limited data on standard practices and provider compliance with existing DUWL recommendations. There also is a lack of standardized training and resources. Examples of gaps in current guidelines include the fact that dental personnel should follow the manufacturer’s Instructions for Use (IFU) for the maintenance of equipment and monitoring of water quality; however, the IFUs can be confusing or deficient in information. There is no recommended standard frequency for monitoring water quality. CDC recommends use of sterile water for oral surgical procedures but provides no recommendation for use of water during pulpal or endodontic procedures.

[8] HTTPS://WWW.AAPD.ORG/MEDIA/POLICIES_GUIDELINES/BP_PULPTHERAPY.PDF

CDC believes there are potential research questions that could find data to answer the questions and help to inform the development of new guidelines for DUWL. Some examples include the following:

- Should sterile water or antimicrobial solutions be used for all endodontic procedures, including pulpotomies/primary teeth?
- Is the 500 CFU/mL recommendation a good indicator of biofilm control in dental water systems?
- How effective are the germicides that we have today and how effective are they at removing dental biofilm?
- How frequently should dental unit water be monitored?
- What are best practices for maintaining and monitoring equipment such as distillers and storage containers that also could become contaminated?

As next steps for developing updated guidelines for dental unit water quality, the Division of Oral Health respectfully asked the HICPAC to create a HICPAC Oral Health Workgroup (OHW). The OHW would be tasked with providing updated guidelines on infection control in dental healthcare settings, specifically starting with updates to DUWL-related issues.

Discussion Points

Dr. Maragakis asked whether Dr. Bell and/or Ms. Byrd could offer procedural advice about the request for HICPAC to form the OHW.

Dr. Bell said he thought the OHW was a great idea, and HICPAC certainly could do that. The question in the near term would be who on the HICPAC could sponsor that working group in order for it to be properly convened. At least 1 person, ideally 2, would be needed who are active members of the HICPAC. They can talk amongst themselves to decide who that would be, while at the same time, Dr. Neuburger could be thinking about who would be best to populate the OHW from within the dental health professional world. HICPAC and DHQP could also be thinking about water microbiology and biofilm science representatives. Given the equipment-heavy nature of dental medicine, thought should be given to how to conduct outreach to industry colleagues to get some early feedback on potential barriers and challenges.

OSAP supported the proposal for the OHW. DUWL contamination has been known about for 50 years, but it has been a struggle to get the profession to take note. In the realm of dental infection control, this is very important work for which there is an abundance of evidence available to support the creation of good guidelines.

An Infection Prevention & Control Program Manager expressed gratitude for this excellent presentation that answers multiple dental providers' questions and offers a better understanding of the pulpotomy issue.

PIDS emphasized that, as the outbreak cases suggest, this has become an important issue in pediatrics.

HICPAC noted that, in some ways, it is a wonder that there are not more outbreaks related to dental procedures. It is striking that the predominance of at least selected case outbreaks centered around children, particularly in pulpotomy procedures. HICPAC questioned whether

that is reflective of the epidemiology of dental-related water questions - that it is primarily children - and if that should be more of a priority.

Dr. Neuburger agreed that there is less evidence in adults, but thinks it has more to do with the type of procedure, that the pulpotomy procedure is done mostly in children, and because pulpotomy is not considered to be surgical. The frequency of pulpotomies has been decreasing over time as other therapies with similar outcomes that are less invasive are used. Again, it is not routinely a standard of practice in a pulpotomy procedure to use sterile water or antimicrobial solutions. In adult root canals and endodontic procedures, it is standard therapy to use an antimicrobial irrigant to flush the canals out. Some limited data shows that compliance varies widely for regularly and consistently treating equipment and monitoring to check that it is working properly.

AAKP indicated that there is always concern about the nexus between dental health and heart health.

HICPAC pointed out the importance of including a dentist on the WG and perhaps a representative from the American Dental Association (ADA) or the AAPD.

Federal Entity Comment

No federal entity comments were provided during the November 3, 2022 HICPAC meeting.

Public Comment

Kevin Kavanagh, MD, MS
Health Watch USA℠

Thank you very much. I'm Kevin Kavanagh from Health Watch USA℠. I would like to ask the CDC to pivot their COVID-19 policy from one which almost entirely solely relies on vaccination to one which also encourages the public to adopt other public healthcare measures. Two studies from Harvard and Columbia University have found the new bivalent booster performed no better than the ancestral booster. This is also supported by data presented at the Advisory Committee on Immunization Practices (ACIP) meeting, which found the monovalent BA.5 booster gave just as strong a response as the ancestral strain as the monovalent ancestral booster. One must also ask if immunological imprinting is taking place, shouldn't we be using a monovalent BA.5 booster and vaccines so we do not optimize the response to the ancestral strain. The CDC's current commercial, which encourages obtaining a booster, also appears to discourage other public health measures such as social distancing and masking. People are visualized unmasked in a crowded elevator and on public transportation. Almost 2% of our workforce is not working because of long COVID. This is expected to increase as infections and reinfections occur and as natural- and vaccine-induced immunity wane. In Kentucky, we have a record low unemployment rate of 3.8%, but 50% of our job openings are going unfilled. This is an ominous sign for the health of our workforce. Specifically, the CDC needs to give clear, non-contradictory advice. The following policies should be encouraged. The isolation of those infected should be at least 10 days and to follow the advice of the FDA of 3 negative rapid tests in 2 to 3 days before release. At 12 days after symptom onset, 20% are still infectious. Masking requirements need to be reinstated at all hospitals. With home testing community rates which are indeterminable and with other infectious diseases surging, high risk hospital patients are at risk and need to be protected. We need to start advocating for the use of N95 masks in public

settings, the provision of curbside pick-up with retail establishments, and to set firm ventilatory standards. The CDC needs to focus on preventing infections in long COVID and use these metrics for measuring success. Finally, please discontinue the commercial regarding maskless individuals gleefully depending upon their boosters. You cannot vaccinate your way out of this pandemic and Paxlovid™ cannot be taken by many high-risk individuals. There is difficult messaging which needs to be done and if we do not do it, we will be fueling the pandemic. Thank you.

Sam Guzman
American Ultraviolet Company

Hi. My name is Sam Guzman, and I'm with the American Ultraviolet Company. I'm also a member of the ASHRAE (American Society of Heating, Refrigerating & AC Engineers) Society, the IEDA (Independent Equipment Dealers Association), and the ASCA (Ambulatory Surgery Center Association). I apologize, I'm trying to turn my question into a statement. As I understand it, the HICPAC group is responsible for the *Guidelines for Environmental Infection Control in Healthcare Facilities,* and it appears that these were first developed in 2003 and updated in 2019. With the increase in research, particularly with regard to the use of ultraviolet energy for air and surface disinfection, I would hope that the use of this technology would garner a second look in the next revision of those guidelines.

Steve Brash, RN, MSN, MBA, CIC
Infection Prevention Nurse
Advent Hospital Portland

Thank you. I'm Steve Brash. I'm the Infection Prevention Nurse at Advent Hospital Portland, Oregon, and a frequent participant in these meetings. I appreciate what this committee has done. Much of it has been driven by the pandemic that we've been involved with. It's about time that there are changes in the way that we deal with the isolation precautions, particularly as we have thoroughly confused airborne and droplet precautions and added the word "modified" to that. Additionally, I must commend your recommendation about universal masking during respiratory season. Everything has been very thorough. We need some stronger recommendations though regarding the issues of what requires negative pressure. Maybe the recommendations are there, but we need further clarification on them as well as the masking. It's about time that our surgical masks, isolation masks, have been given the credibility that is due to them as compared to the N95. I know that's an ongoing battle with OSHA (Occupational Safety and Health Administration). Anyway, I just want to thank you very much.

Summary and Work Plan

Lisa Maragakis, MD, MPH
HICPAC Chair

In closing, Dr. Maragakis thanked everyone who participated in this meeting and briefly summarized. They heard a wonderful presentation by Dr. Mike Bell providing an update on DHQP, in particular, the guidelines that are in development, an update on the MPOX outbreak improving and the Ebola outbreak situation in Uganda worsening, and steps that CDC is taking with partners worldwide and domestically to help the US prepare. HICPAC heard an update of the *Isolation Precautions Guideline* from Mike Lin and Sharon Wright and had a vigorous and informative discussion about the new framework that has the overlapping domains of air transmission and touch transmission and discussed masking and eye protection in particular

and how the evidence will inform the new guidance that the WG envisions. Dr. Kraft presented on the *HCP Guideline* and the recommended practices and recommendations for measles, mumps, rubella, varicella, and pregnant HCP. HICPAC voted on these sections, which all passed unanimously. At the end of the agenda, HICPAC heard about the *Core Practices* document that is planned to go through clearance at CDC and become an official CDC guidance. Dr. Guzman-Cottrill provided an update on the *NICU Guideline* that continues on its way. Dr. Neuburger then provided an interesting and provocative presentation about DUWL.

Adjournment

Michael Bell, MD
HICPAC Designated Federal Officer

Dr. Bell expressed gratitude to everyone and emphasized how much Drs. Maragakis, Daniels, and Anderson would be missed.

With no additional business raised or comments/questions posed, HICPAC stood adjourned at 2:27 PM ET.

Certification

I hereby certify that, to the best of my knowledge and ability, the foregoing minutes of the November 3, 2022 meeting of the Healthcare Infection Control Practices Advisory Committee, CDC are accurate and complete.

_____
Date

_____
Lisa Maragakis, MD, MPH
Co-Chair, HICPAC / CDC

Attachment #1: Acronyms Used in this Document

Acronym	Expansion
AAKP	American Association of Kidney Patients
AAPD	American Academy of Pediatric Dentistry
ACIP	Advisory Committee on Immunization Practices
ACOEM	American College of Occupational and Environmental Medicine
ACS	American College of Surgeons
ADA	American Dental Association
AEH	America's Essential Hospitals
AHA	American Hospital Association
AHCA	American Health Care Association
AHRQ	Agency for Healthcare Research and Quality
ANA	American Nurses Association
AORN	Association of periOperative Registered Nurses
APIC	Association of Professionals of Infection Control and Epidemiology
ASCA	Ambulatory Surgery Center Association
ASHRAE	American Society of Heating, Refrigerating & AC Engineers
ASN	American Society of Nephrology
ASPR	Strategic Preparedness and Response
BSC	Board of Scientific Counselors
CCTI	Cambridge Communications & Training Institute
CDC	Centers for Disease Control and Prevention
CDPH	California Department of Public Health
CMS	Centers for Medicare and Medicaid Services
CMV	Cytomegalovirus
COI	Conflicts of Interest
COVID	Coronavirus Disease
DFO	Designated Federal Official
DGMQ	Division of Global Migration and Quarantine
DHQP	Division of Healthcare Quality Promotion
DUWL	Dental Unit Waterlines
DVA	Department of Veterans Affairs
EPA	Environmental Protection Agency
ET	Eastern Time
FDA	(United States) Food and Drug Administration
GI	Gastrointestinal
HAI	Healthcare-Associated Infection
HCP	Healthcare Personnel
HHS	(United States Department of) Health and Human Services
HICPAC	Healthcare Infection Control Practices Advisory Committee
HIV	Human Immunodeficiency Virus
HRSA	Health Resources and Services Administration
IDSA	Infectious Disease Society of America
IEDA	Independent Equipment Dealers Association
IFU	Instructions for Use
IHS	Indian Health Service
KHA	Kentucky Hospital Association
LTCF	Long-Term Care Facilities

Acronym	Expansion
MERS	Middle East Respiratory Syndrome
MGH	Massachusetts General Hospital
MoH	Ministries of Health
MPOX	Monkeypox
MSF	Médecins Sans Frontières
NACCHO	National Association of County and City Health Officials
NCEZID	National Center for Emerging and Zoonotic Infectious Diseases
NETEC	National Emerging Special Pathogens Training and Education Center
NHSN	National Healthcare Safety Network
NICU	Neonatal Intensive Care Unit
NIH	National Institutes of Health
OHW	Oral Health Workgroup
OSAP	Organization for Safety, Asepsis and Prevention
OSHA	Occupational Safety and Health Administration
PACCARB	Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria
PDIHC	PDI Healthcare
PHAC	Public Health Agency of Canada
PIDS	Pediatric Infectious Disease Society
PPE	Personal Protective Equipment
PrEP	Pre-Exposure Prophylaxis
PSAN	Patient Safety Action Network
RCT	Randomized Control Trial
RN	Registered Nurse
RSV	Respiratory Syncytial Virus
SARS	Severe Acute Respiratory Syndrome
SCCM	Society for Critical Care Medicine
SHEA	Society for Healthcare Epidemiology of America
SHM	Society of Hospital Medicine
SIS	Surgical Site Infection Society
SMEs	Subject Matter Experts
TB	Tuberculosis
US	United States
VA	(Department of) Veterans Affairs
VHA	Veterans Health Administration
WG	Workgroup
WHO	World Health Organization