Figure 1

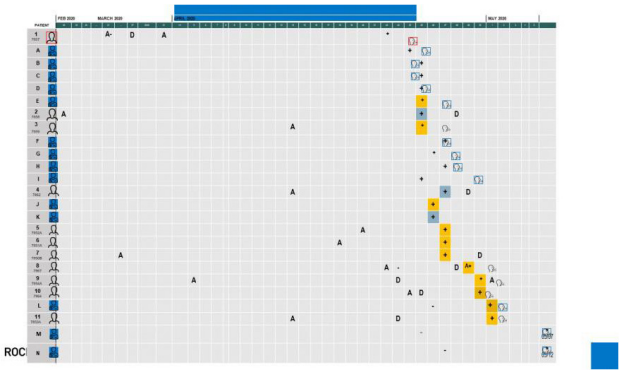


Figure 2

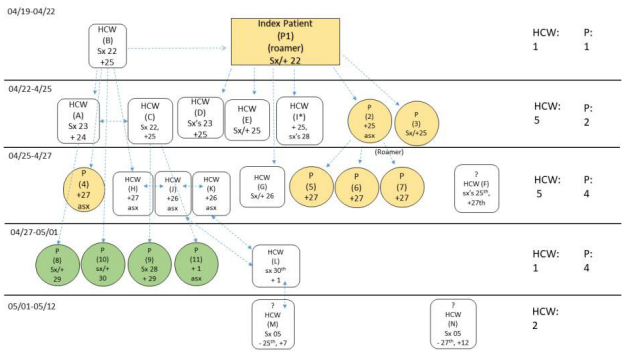
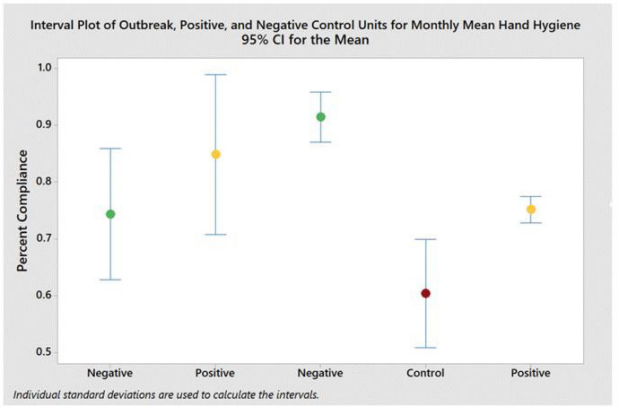
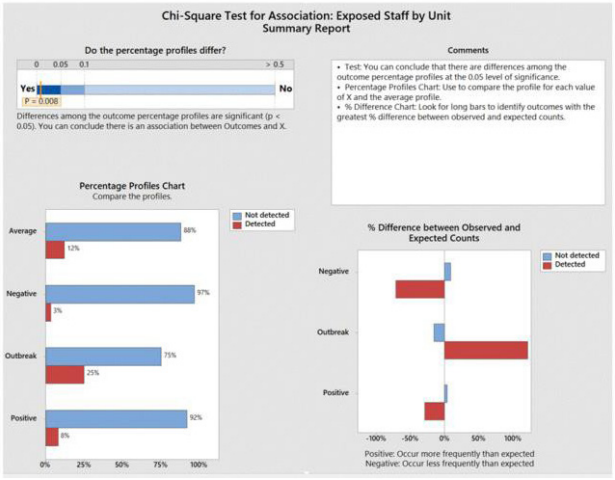



Figure 3




***Conclusion:*** The risk of staff exposure was higher in an outbreak setting than on a dedicated COVID-19 unit (Figure 4). Noncompliant patient behavior, decreased hand hygiene, and pre-symptomatic transmission can contribute to nosocomial spread and are important considerations for ongoing infection control efforts.

Figure 4




***Disclosures:*** **All Authors**: No reported disclosures

**490. A Randomized Crossover Study to Evaluate Interventions to Reduce Contamination during Reuse of N95 Respirators**

Daniel Li, n/a[1]; Heba Alhmidi, MD[2]; Basya Pearlmutter, n/a[1]; Jennifer Cadnum, BS[2]; Brigid Wilson, PhD[3]; Curtis Donskey, MD[4]; [1]Northeast Ohio VA Medical Center, Cleveland, Ohio; [2]Northeast Ohio VA Healthcare System, Cleveland, OH; [3]Louis Stokes Cleveland VA Medical Center, Cleveland, OH; [4]Cleveland VA Medical Center, Cleveland, OH

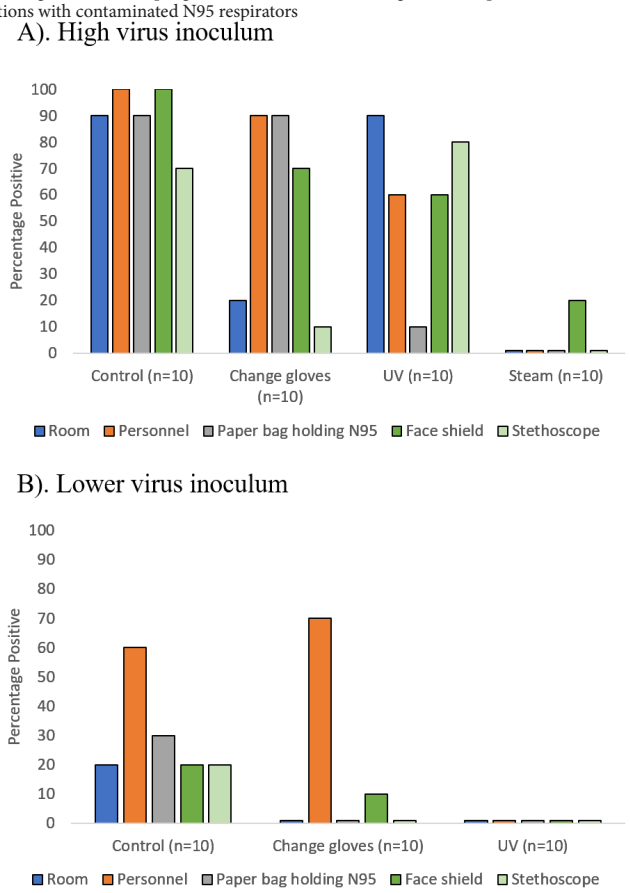
**Session:** P-17. COVID-19 Infection Prevention

***Background:*** During the Coronavirus Disease 2019 pandemic, shortages of personal protective equipment (PPE) have forced many healthcare facilities to require personnel to reuse N95 respirators. We hypothesized that use of correct technique such as changing gloves after N95 contact or providing rapid decontamination between each use would reduce the risk for contamination.

***Methods:*** We conducted a randomized crossover study using simulated patient care interactions to compare the effectiveness of interventions to reduce contamination of personnel and the environment with high-level N95 contamination ($10^7$ plaque-forming units [PFU] of bacteriophage MS2 applied to front of respirator). Ten healthcare personnel performed 4 randomly-assigned standardized examinations of mannequins including: 1) Control (PPE donning and doffing not including glove change after N95 contact); 2) Glove change after any N95 contact; 3) Control with 1-minute ultraviolet-C light (UV-C) treatment between simulations; 4) Control with 30-second steam treatment between simulations. A second trial was conducted with groups 1–3 using a lower inoculum ($10^5$ PFU). The frequencies of participant and environmental contamination were compared.

***Results:*** As shown in Figure 1.A, use of a highly contaminated N95 respirator resulted in frequent MS2 contamination in the Control, Glove change, and UV-C groups, but was dramatically reduced with steam treatment of the N95. With the lower level of contamination, MS2 contamination occurred less frequently across all groups, and was significantly reduced in the UV group, compared to the Control (Figure 1.B).

Figure 1: Bacteriophage MS2 contamination during simulated patient care interactions with contaminated N95 respirators




***Conclusion:*** Reuse of contaminated N95 respirators resulted in contamination of personnel and the environment even when correct technique was used. Rapid decontamination technologies can reduce the risk for transmission.

***Disclosures:*** **All Authors**: No reported disclosures

**491. Aerosol-Generating Medical Procedures: Transmission of SARS-CoV-2 and Emerging Viruses**

Seth D. Judson, MD[1]; Vincent J. Munster, PhD[2]; [1]University of Washington, Seattle, Washington; [2]National Institute of Allergy and Infectious Diseases, Hamilton, MT

**Session:** P-17. COVID-19 Infection Prevention

***Background:*** During the pandemic of coronavirus disease 2019 (COVID-19), many questions arose regarding risks for hospital-acquired or nosocomial transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Aerosol generating medical procedures (AGMPs), techniques that can generate infectious, virus-laden aerosols, could potentially amplify transmission among healthcare workers (HCWs). Thus, it was widely recommended that HCWs use airborne precautions when performing AGMPs. However, in clinical settings it is often unclear what procedures constitute AGMPs and how the risk varies by procedure or pathogen. We set out to further define AGMPs and assess the risk for nosocomial transmission of SARS-CoV-2 and other high-risk viruses via AGMPs.

***Methods:*** We identified potential AGMPs and emerging viruses that were high-risk for nosocomial transmission through reviewing experimental and clinical data. Potential AGMPs were those associated with previous virus transmission or mechanically capable of transmission. High-risk viruses were defined as those that cause severe disease in humans for which limited therapies or interventions exist, are infectious via aerosols in humans or non-human primates (NHPs), found in the respiratory tract of infected humans or NHPs, and had previous evidence of nosocomial transmission.

***Results:*** We identified multiple potential AGMPs, which could be divided into those that generate aerosols or induce a patient to form aerosols, as well as eight families of high-risk viruses. All of the viruses were emerging zoonotic RNA viruses. In the family *Coronaviridae*, we identified potential evidence for SARS-CoV-1, MERS-CoV, and SARS-CoV-2 transmission via AGMPs. SARS-CoV-1 and SARS-CoV-2 were also found to be similarly stable when aerosolized.

***Conclusion:*** Multiple emerging zoonotic viruses pose a high risk for nosocomial transmission through a variety of AGMPs. Given the similar stability of SARS-CoV-2 with SARS-CoV-1 when aerosolized and prior nosocomial transmission of SARS-CoV-1 via AGMPs, we suspect that certain AGMPs pose an increased risk for SARS-CoV-2 transmission. Additional experimental studies and on-site clinical sampling during AGMPs are necessary to further risk stratify AGMPs.

***Disclosures:*** **All Authors**: No reported disclosures

**492. Canadian consensus of COVID-19 policy and management aspects**

Kara Tsang, PhD(c)[1]; Dominik Mertz, MD, MSc[2]; Zain Chagla, MSc, MD, FRCPC, DTMH[1]; Fiona Smaill, MBCHB, MSc, FRACP, FRCP (C)[1]; Sarah Khan, MD, MSc, FRCPC[2]; [1]McMaster University, Toronto, Ontario, Canada; [2]McMaster University, Hamilton, Ontario, Canada, Hamilton, ON, Canada

**Session:** P-17. COVID-19 Infection Prevention

***Background:*** As evidence rapidly changes, a need for consensus in hospital policy and management aspects of COVID-19 patient care are needed. This study describes areas where consensus exists and is needed in infection control, and occupational health policy.

***Methods:*** An online survey was sent to the membership of the Association of Medical Microbiology and Infectious Disease (n~700). The survey included questions about COVID-19 patient and outbreak management, personal protective equipment (PPE), and occupational health considerations.

***Results:*** Our preliminary results (n=24) were from infectious disease MD/NP or infection control medical directors. All respondents agreed treatment of COVID-19 patients should only occur in the context of a clinical trial. Of 18 centers with neonatal populations, the majority (64.2%) did not have any neonatal specific treatment guidelines. Well-babies born to COVID-19 positive moms, are all being tested (10 of 10 respondents). Variation in practice on when to remove a patient from additional precautions and potential aerosol generating medical procedures (Table 1, 2). Universal masking is in place for all clinical staff (100%), non-clinical staff (70.8%), essential visitors or patient caregivers (70.8%), and universal eye protection is in place for clinical staff (93.3%), but there was a lack of consensus in PPE conservation strategies (Table 3). Most staff do not use neck PPE (68.2%), however there was comments of it being requested by anesthesiologists at 2 sites (Table 2). Healthcare trainees or workers in these groups were restricted from caring for COVID-19 patients; Age >65 years (54.5%) and immunocompromised status (54.5%). COVID-19 positive staff can return to work 14 days after symptom onset (84.2%).