Public Written Comment for the Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria (PACCARB), January 28 to 29, 2025.

I am writing to the Committee regarding the importance of carrier identification for the containment of dangerous pathogens and prevention of their infections. A recent study by Dustin Long and colleagues[1] that demonstrated this importance with their findings that the majority, 86%, of patients who developed post-surgical infections, did so from bacteria which were from their own preoperative microbiome.

Admission screening of pathogens has been successfully employed by the United Kingdom's National Health Service[2] and the United States' Veterans Administration[3] with MRSA. In addition, admission screening for COVID-19 has been observed to reduce hospital acquired infections.[4]

Horizontal measures, such as patient bathing, are part of the armamentarium, but in themselves will not provide adequate pathogen control. Although chlorhexidine bathing is advocated by some, it has uncertain effectiveness in non-ICU settings. As evidenced by testimony given before this Committee on May 22, 2024, when Dr. Souha Kanj presented that using chlorhexidine to decolonize patients in a conflict zone was not successful in the prevention of infections, possibly due to bacterial resistance.

The literature has inconsistencies regarding chlorohexidine bathing.[5] The ABATE study[6] as reported in the Lancet was unable to show a significant reduction in MRSA or all-pathogen bloodstream infections in general hospitalized patients. The authors attributed these negative findings because they "allow[ed] and expect[ed] hospitals to organize campaigns to improve adherence to existing best practices." A positive effect was observed in nursing home patients by Miller and colleagues.[7] However, the lack of this promotion in the control arm may have biased this study and produced positive results.

Upon admission to healthcare facilities, all patients should undergo admission screening for endemic defined pathogens. When pathogens are identified, decolonization should be attempted and if there is a risk of transmission a patient should be isolated. The recent SHEA/IDSA and APIC Statement regarding contact precautions is not consistent with infection control.[8] It is unclear what bearing the number of infected patients in a hospital has on the risk of a healthcare worker contracting an infection from an MRSA colonized or infected patient. The worker needs to be wearing PPE and contact precautions should be enforced.

> *"Although contact precautions remain an essential practice, considerations have been provided for hospitals that have strong horizontal prevention measures and neither ongoing MRSA outbreaks nor high or increasing rates of MRSA infection or hospital-onset MRSA-positive cultures and that choose to modify the use of contact precautions for some or all MRSA colonized or MRSA-infected patients."*

Currently, antibiotic resistance is on the rise and the identification of carriers and control of pathogen spread with cohorting, isolation and/or decolonization being of utmost importance.

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References

[1] Long DR, Bryson-Cahn C, Waalkes A, et al. Contribution of the patient microbiome to surgical site infection and antibiotic prophylaxis failure in spine surgery. Sci Transl Med. 2024 Apr 10;16(742):eadk8222. doi: 10.1126/scitranslmed.adk8222. Epub 2024 Apr 10. PMID: 38598612; PMCID: PMC11634388. https://www.science.org/doi/10.1126/scitranslmed.adk8222

[2] Otter J. The English MRSA Miracle. Reflections on Infection Prevention and Control. 2015. [cited March 12, 2023]. https://reflectionsipc.com/2015/03/03/the-english-mrsa-miracle/ . Accessed May 10, 2024.

[3] Centers for Disease Control and Prevention. Staph Infections Can Kill. More prevention in healthcare and communities needed. Centers for Disease Control and Prevention; 2019 [updated March 22, 2019]. https://www.cdc.gov/vitalsigns/staph/index.html . Accessed May 10, 2024.

[4] Pak TR, Rhee C, Wang R, Klompas M. Discontinuation of Universal Admission Testing for SARS-CoV-2 and Hospital-Onset COVID-19 Infections in England and Scotland. *JAMA Intern Med*. 2023;183(8):877–880. doi:10.1001/jamainternmed.2023.1261 https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2805585

[5] Kavanagh KT, M Maiwald, LE Cormier. Viewpoint: The Impending Pandemic of Resistant Organisms – A Paradigm Shift Towards Source Control is Needed. Medicine. Aug. 2, 2024. https://journals.lww.com/md-journal/fulltext/2024/08020/viewpoint__the_impending_pandemic_of_resistant.46.aspx

[6] Huang SS, Septimus E, Kleinman K, et al.; ABATE Infection trial team. Chlorhexidine versus routine bathing to prevent multidrug-resistant organisms and all-cause bloodstream infections in general medical and surgical units (ABATE Infection trial): a cluster-randomised trial. Lancet. 2019;393:1205–15. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)32593-5/abstract

[7] Miller LG, McKinnell JA, Singh RD, et al. Decolonization in nursing homes to prevent infection and hospitalization. N Engl J Med. 2023;389:1766–77. https://pubmed.ncbi.nlm.nih.gov/38354151/

[8] Popovich KJ, Aureden K, Ham DC, et al. SHEA/IDSA/APIC practice recommendation: strategies to prevent methicillin-resistant staphylococcus aureus transmission and infection in acute-care hospitals: 2022 update. Infect Control Hosp Epidemiol. 2023;44:1039–67. https://pubmed.ncbi.nlm.nih.gov/37381690/