were performed. Hence, for every 9,690 procedures, 1 patient developed a clinically relevant infection (DAI risk, 0.010%). **Conclusions:** The risk of developing a DAI is at least 30–180 times higher than the risks that were previously reported for all types of endoscopy-associated infections. Importantly, the current calculated risk of 0.010% constitutes a bare minimum risk of DAI because endoscope-related infections are underreported. Apart from DAI risk, a patient is also at risk of becoming colonized with a microorganism through contaminated endoscopes but without developing symptoms of clinical infection. These data call for consorted action of medical practitioners, industry, and government agencies to minimize and ultimately eliminate the risk of exogenous endoscope-associated infections and contamination. As a first step, the FDA recently recommended that healthcare facilities and manufacturers begin transitioning to duodenoscopes with disposable components.[3]

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Poster Presentation

"The Six Moments:" A Novel Educational Tool to Promote Infection Prevention Practices in Patients Injecting Drugs

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Background: The opioid epidemic has led to a dramatic increase in the rate of invasive bacterial infections, including a 4-fold increase in sepsis and a 12-fold increase in endocarditis. The increase has been demonstrated in both veteran and nonveteran populations (Fig. 1). Thus, an urgent need exists to develop novel tools to educate patients and providers regarding (1) at-risk moments among intravenous drug users and (2) methods for preventing transmission of bacterial and viral infections associated with injection drug use. **Methods:** We conducted a survey among medical trainees and staff and collected information about knowledge and attitudes about harm-reduction services. To address gaps in knowledge, we developed an educational tool for promoting better infection prevention practices among patients who inject drugs by adapting the WHO Five Moments of Hand Hygiene. **Results:** In total, 43 medical trainees and staff responded to the survey. All respondents regarded infections as a serious risk among patients who inject drugs, although there was variation in perception about which types of pathogens were the most likely to be acquired through this pathway (ie, bacterial vs viral). Among survey respondents, 15 of 39 (38%) reported that they have counseled patients who inject drugs about infection prevention, whereas 24 (58%) reported that they had never provided counseling. The reason for the lack of counseling was primarily a lack of knowledge and a lack of resources (10 of 24, 42%). One-quarter (6 of 24, 25%) reported that they did perceive infection prevention counseling to be part of their role. To solve this knowledge and resource gap, we developed an educational tool designed to promote understanding of the risk of bacterial, viral, and fungal infections and how to prevent them (Fig. 2, A and B). The "Six Moments" model highlights important high-risk moments and activities, such as skin cleaning, use of clean needles, and avoiding oral contamination of needles, as well as the corresponding pathogens that can be transmitted at each stage. Infection prevention strategies are them applied to demonstrate how these infections can be averted. The tool focuses on simple infection prevention interventions that can be taught to patients and providers not trained in infection control to limit transmission of infections associated with IV drug use and addresses the

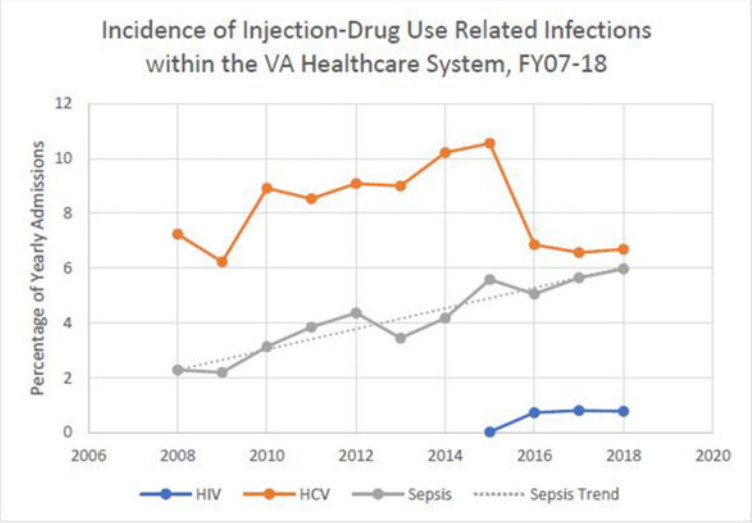

Fig. 1.

Fig. 2.

knowledge gap identified through the provider survey. **Conclusions:** This novel tool can be part of a comprehensive educational program that translates infection prevention principles and applies them to reduce infectious morbidity and mortality related to injection drug use.

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10 Years of Pulsed-Xenon Ultraviolet Disinfection

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Background: Ultraviolet light (UV) disinfection using low-pressure mercury lamps has been around since the 1940s. The advent of pulsed-xenon UV for hospital use in 2010 has provided a nontoxic and novel technology for hospital disinfection with the first data presented at the 2010 SHEA Decennial. The purpose of this systematic review and meta-analysis is to examine the current body of evidence for pulsed xenon UV disinfection. Methods: The literature search criteria included the following: research conducted in domestic and international settings using pulsed-xenon for surface disinfection, published between 2000 and 2019, and reporting on environmental effectiveness or hospital-acquired reductions (HAIs). We searched PubMed, Google Scholar, and Web of Science. The meta-analysis included 24 studies: 12 HAI outcome studies and 12 environmental effectiveness studies. Meta-analyses were conducted by calculating the percentage reductions for environmental effectiveness, and for the HAI outcome studies, we used a random-effects model to pool the relative risk of HAI. The outcome studies used 272 and 299 months of data for the experimental and control groups, respectively. Results: There was an overall benefit of using pulsed-xenon UV. The overall relative risk of infection decreased compared to the control arm (RR, 0.64; 95% CI, 0.54–0.76). The percentage reductions in environmental studies were as follows: *Clostridioides difficile* (94.8%), methicillin-resistant *Staphylococcus aureus* (91.5%), vancomycin-resistant *Enterococcus* (99.2%), and aerobic bacteria (94.2%). **Conclusions:** Overall, pulsed-xenon UV was effective for reducing environmental contamination and had the ability to significantly reduce HAIs.

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