



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



LEADER

The prevention and control of nosocomial infections: it is time for renewed emphasis and efforts

Proceedings of the 7th international BODE hygiene days, 15-17 May 2003, Tarragona (Barcelona), Spain

This supplement is devoted to 21 presentations from nine different countries at the 7th International BODE Hygiene Days held in Tarragona (Barcelona), Spain (May 2003). The 180 or so delegates came from countries that covered nearly the entire globe. The papers, and the discussions following them, clearly reemphasized that, in spite of much progress in the past few decades, nosocomial infections remain a serious threat to human health worldwide. Indeed, many on-going changes in our societies, wide-spread drug resistance and immunosuppression, greater international trade in livestock and comestibles, faster and more frequent air travel as well as general reductions in health care funding have considerably enhanced the risk from nosocomial infections in our times. The information presented covered the highly relevant and topical issues of environmental surface disinfection,¹ hand hygiene,²⁻⁵ reprocessing of medical devices,⁶⁻¹⁰ surveillance of nosocomial infections¹¹ and the role of viruses as nosocomial pathogens.¹²⁻¹⁴

French gave a balanced perspective on the dangers of newly discovered pathogens and our ability to successfully deal with them, as evidenced in the recent past; also, while complete elimination of hospital-acquired infections may never be attainable, we must continually apply our improving knowledge in medicine, biology and epidemiology to making hospitals safer.

The controversy on the need and benefits of disinfecting floors in hospitals rages on.¹⁵ Exner expressed the view that the potential of environmental surfaces as reservoirs and sources of nosocomial pathogens is underestimated, and the equivocal findings thus far could be due to a lack of methods to assess detergents and disinfectants properly in the field.¹ Kramer showed that routine movement of staff could rapidly spread localized experimental contamination of hospital floors with

the spores of *Bacillus stearothermophilus*, used primarily as surrogates for *Clostridium difficile* and *Bacillus anthracis*; sporicidal disinfectants were the only effective means of preventing such spread. While this study makes a case for the use of sporicidal chemicals in the disinfection of hospital floors, we need further studies to determine the benefit: hazard ratio of the wide-spread use of sporicides, many of which can be unsafe. The contact time for sporicidal activity under ambient conditions would also require a substantial reduction to make routine application of sporicides on hospital floors practicable.

A substantial portion of the symposium was devoted to the topic of hand hygiene with contributions from world-renowned experts and with particular emphasis on the European norms and the newly released guideline from the U.S. Centers for Disease Control and Prevention (CDC).¹⁶ Kampf discussed several key factors to improve compliance with hand hygiene and emphasized that preventing even a small number of nosocomial infections through proper hand antisepsis could easily justify the added expense of making handrubs available; this view was corroborated by Pittet. Boyce and Pittet, the two co-authors of the CDC guideline, gave the scientific basis and global implications of its recommendations. This document has already had a substantial impact on the practices of hand hygiene in the U.S., particularly by catalyzing the acceptance of alcohol-based hand rubs in healthcare settings.

Rotter provided an update on the accepted or candidate European methods to assess hand antiseptics against a variety of nosocomial pathogens.³ These developments are leading the world in the introduction and refinement of standardized methods for testing the microbicidal activity of skin antiseptics in general.

Widmer outlined several crucial factors in the testing and selection of alcohol-based hand rubs to ensure their effectiveness, acceptance and safe use and King⁴ described a hospital-based pilot study on the introduction and use of an alcohol-based hand antiseptic; the antiseptic pump dispensers were installed on each patient's bed and the staff were encouraged to use them through posters and information sessions.

Reprocessing of endoscopes was the second most extensively covered topic at this symposium. The emphasis here was on cleaning of such medical devices prior to their disinfection and several perspectives from Europe⁶⁻⁹ and the U.S.¹⁰ were presented, thus facilitating the exchange of ideas between several nations.

Steinmann¹³ summarized the European approach to testing chemical disinfectants against nosocomial viral pathogens and the use of surrogate viruses in such testing, and also described the European experience in assessing the virucidal activity of hand antiseptics employing ASTM International's (formerly American Society for Testing and Materials) fingerpad method.¹⁷ The U.S. still does not allow the use of surrogate viruses to evaluate products, while it is an accepted practice in Europe and Canada. Payan's¹² was a rare study where a cell culture system (HepG2) was used to assay the infectivity of human hepatitis B virus before and after its exposure to several types of disinfectants. Sattar¹⁴ presented an overview on viruses and their mounting significance as nosocomial pathogens, with the SARS virus (Severe Acute Respiratory Syndrome) and noroviruses as examples; it was also noted that there are major gaps in our knowledge on the exact mechanisms of spread of many types of viruses in hospital settings and prevention and control strategies to be applied.

Rosselló-Urgell¹¹ described how recently introduced surveillance programs are generating useful information on the incidence of nosocomial infections in Spain. The design and application of these programs has been possible due to unprecedented collaboration between government agencies, scientific societies and the pharmaceutical industry. The Spanish expertise and experience are now ready to be applied in other European countries.

The right blending of science and culture in the conference program, the generally high quality of the speakers, and the charm, elegance and historical significance of the setting itself made the event highly conducive to the exchange of knowledge and ideas inside as well as outside the conference venue. The relatively small number of

the participants and the focused nature of the subject matters also greatly facilitated the interactions. The organizational acumen and the hospitality of the sponsors of the event were of the highest order.

References

1. Exner M, Vacata V, Hornei B, Dietlein E, Gebel J. Household cleaning and surface disinfection: new insights and strategies. *J Hosp Infect* 2004;**56**(Suppl. 2):70–75.
2. Kampf G. The six golden rules to improve compliance in hand hygiene. *J Hosp Infect* 2004;**56**(Suppl. 2):3–5.
3. Rotter ML. European norms in hand hygiene. *J Hosp Infect* 2004;**56**(Suppl. 2):6–9.
4. King S. Provision of alcohol hand rub at the hospital bedside: a case study. *J Hosp Infect* 2004;**56**(Suppl. 2):10–12.
5. Kampf G, Ostermeyer C. Efficacy of alcohol-based gels compared with simple hand wash and hygienic hand disinfection. *J Hosp Infect* 2004;**56**(Suppl. 2):13–15.
6. Martiny H, Floss H, Zühlsdorf B. The importance of cleaning for the overall results of reprocessing endoscopes. *J Hosp Infect* 2004;**56**(Suppl. 2):16–22.
7. Heeg P. Reprocessing endoscopes: national recommendations with a special emphasis on cleaning—the German perspective. *J Hosp Infect* 2004;**56**(Suppl. 2):23–26.
8. Darbord JC. Importance of cleaning for reprocessing endoscopes and thermolabile sterile medical devices: French use and regulations. *J Hosp Infect* 2004;**56**(Suppl. 2):40–43.
9. Bloß R, Kamp G. Test models to determine efficacy with different types of bioburden and its clinical correlation. *J Hosp Infect* 2004;**56**(Suppl. 2):44–48.
10. Rutala WA, Weber DJ. Reprocessing endoscopes: United States perspective. *J Hosp Infect* 2004;**56**(Suppl. 2):27–39.
11. Rosselló-Urgell J. Nosocomial infection surveillance and control activities in Spain under HELICS and NosoMed programs frame. *J Hosp Infect* 2004;**56**(Suppl. 2):55–57.
12. Payan C, Pivert A, Kampf G, Ramon C, Cottin J, Lemaire C. Assessment of new chemical disinfectants for HBV virucidal activity in a cell culture model. *J Hosp Infect* 2004;**56**(Suppl. 2):58–63.
13. Steinmann J. Surrogate viruses for testing virucidal efficacy of chemical disinfectants. *J Hosp Infect* 2004;**56**(Suppl. 2):49–54.
14. Sattar SA. Microbicides and the environmental control of nosocomial viral infections. *J Hosp Infect* 2004;**56**(Suppl. 2):64–69.
15. Voss A, Verweij PE, Kluytmans J. Should we routinely disinfect floors? *J Hosp Infect* 2003;**53**:150.
16. Boyce JM, Pittet D. Guidelines for hand hygiene in health-care setting. *Morbidity Mortality Wkly Rep* 2002;**51**(RR-16):42.
17. ASTM International. Standard test method for determining the virus-eliminating effectiveness of liquid hygienic hand-wash and handrub agents using the fingerpads of adult volunteers. Document #E1838-02, ASTM, West Conshohocken, PA, U.S.A.

S.A. Sattar*

Centre for Research on Environmental Microbiology, Faculty of Medicine, University of Ottawa, 451 Smyth Road, Ottawa, Ont., Canada K1H 8M5
E-mail address: ssattar@uottawa.ca

*Tel.: +1-613-5625800x8314; fax: +1-613-5692-5452.