the unit and after the environment had become heavily contaminated, prevention of CPE infection and colonization/acquisition would have been more difficult or even impossible. Because interhospital transfers may serve as a source of transmission, this study illustrates the importance of additional screening strategy to detect CPE at admission, as well as a surveillance strategy for those cases at the community level after discharge to help with early containment of these pathogens.

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Chlorhexidine Is Better than Aqueous Povidone Iodine as Skin Antiseptic for Preventing Surgical Site Infections

To the Editor—I have read with great interest the article by Kamel et al[1] in *Infection Control and Hospital Epidemiology.* The authors have conducted a systematic review on what is described as comparison of preoperative skin antisepsis preparations for preventing surgical site infections (SSIs). On the basis of their analyses, the authors conclude that "given the heterogeneity of the studies and the results, conclusions about which antiseptic is more effective at reducing SSIs cannot be drawn." However, I believe that this conclusion may be tempered by the studies included.

In many countries the most common antiseptic agents used for skin preparation before surgery are povidone iodine and chlorhexidine. Both compounds are available in aqueous formulations and in alcoholic formulations. The use of one antiseptic agent over another depends on the choice of the surgeon rather than national recommendations. However, studies selected by Kamel et al[1] may help in choosing the best agent.

Among the 9 studies included in their analysis, the 3 randomized controlled trials comparing aqueous ($n = 1$) or alcoholic ($n = 2$) formulations of chlorhexidine to aqueous povidone iodine in a total of 1,599 patients reported lower SSI rates with chlorhexidine. The 2 cohort studies led to conflicting results. However, their conclusions need to be tempered, given the inherent limitations to the lack of random assignment, particularly the inadequate control of major confounders. Moreover, the cohort study in favor of the use of povidone iodine was unable to demonstrate a significant reduction of SSIs in the multivariate analysis (odds ratio [OR], 1.35 [95% confidence interval [CI], 0.97–1.87]; $P = .073$) despite the inclusion of 3,135 patients, yet being by far the study with the largest sample size.[2] Finally, the last 4 studies were not direct comparisons of chlorhexidine-based formulations to povidone iodine-based formulations.

The superiority of chlorhexidine on povidone iodine was confirmed by 2 meta-analyses published in the *British Journal of Surgery* and in *Infection Control and Hospital Epidemiology* in 2010. The meta-analysis of Noorani et a[3]l included 6 studies published between 1988 and 2010 and a total of 5,031 patients. The use of chlorhexidine was associated with a risk reduction of SSIs compared with povidone iodine (OR, 0.68 [95% CI, 0.50–0.94]; $P = .019$). The meta-analysis of Lee et al[4] included 7 randomized studies and a total of 3,437 patients. Similarly, the use of chlorhexidine reduced the risk of SSIs compared to povidone iodine (OR, 0.64 [95% CI, 0.51–0.80]; $P < .0001$). The results of these 2 meta-analyses are concordant, which is not surprising because 4 studies and 2,952 patients were included in both meta-analyses, including

the study of Darouiche et al,[5] one of the most recent and powerful studies published in 2010 in the *New England Journal of Medicine*. It should be pointed out that in the studies included in these 2 meta-analyses, most patients had their skin disinfected with an alcoholic formulation of chlorhexidine or an aqueous formulation of povidone iodine.

I agree with the authors that some studies have several limitations, including the use of different concentrations of chlorhexidine, the comparison of alcoholic and nonalcoholic formulations, the use of different definitions for SSIs, and the lack of search for SSIs blindly to the antiseptic used. However, the superiority of chlorhexidine on povidone iodine was constant at a concentration ranging from 0.5% to 4%. Moreover, a subanalysis performed by Lee et al[6] in response to a letter to the editor published in *Infection Control and Hospital Epidemiology* confirmed the superiority of chlorhexidine on povidone iodine when aqueous or alcoholic formulations of both compounds were directly compared.

The superiority of alcoholic formulations on aqueous formulations of antiseptics still remains an unresolved issue. Alcohol is a potent skin antiseptic on its own, and its in vitro antimicrobial activity is enhanced when combined with povidone iodine or chlorhexidine.[7] The addition of alcohol to povidone iodine in the preparation of skin and nails before foot and ankle surgery increases the difference in total bacterial load before and after skin preparation.[8] Similar findings were reported with chlorhexidine. Skin disinfection with 2% chlorhexidine in 70% isopropyl alcohol prior to peripheral venous catheter insertion leads to a significant reduction in the number of catheter tips that have microorganisms present on their surface, compared with skin disinfection with 70% isopropyl alcohol alone.[9]

In conclusion, aqueous povidone iodine should never be used to disinfect the intact skin before surgery. Chlorhexidine-based formulations are more effective, at least at a chlorhexidine concentration of 0.5% or higher. The combination with alcohol should be recommended because of a synergistic effect on bacterial reduction. Although the available data comparing alcoholic formulations of chlorhexidine and povidone iodine are in favor of the use of chlorhexidine products, further well-conducted studies are warranted to definitively determine which antiseptic formulation is most effective in decreasing the incidence of SSIs, as pointed out by Kamel et al.[1]

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Seasonal Influenza Vaccine Compliance and Use of Declination Forms

To the Editor—The article by Rebmann et al[1] in the March issue of the journal established that mandatory vaccination was the strongest predictor of compliance for both hospital-based and non-hospital-based workers. Although the authors acknowledge the use of declination and/or mandatory vaccination policies by healthcare organizations to increase vaccination compliance, previously published literature supports the notion that mandatory vaccination policies are different in effectiveness, implementation, and perceived acceptability