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Inconsistencies Regarding the Number of Outbreaks and Mortality Rate of Hospital-Acquired Infections Caused by Contaminated Propofol

To the Editor—We read with interest a review article by Vonberg and Gastmeier,¹ in which they ambitiously summarized the majority of hospital-acquired infections related to in-hospital contaminated substances with the aim of postulating the most important medical drug- and fluids-related outbreaks. First, we would like to express our concerns about the values stated in Table 1 of this debatable review.

Specifically, we perceive important inconsistencies in the number of propofol-related outbreaks and the mortality rate reported, and these inconsistencies call into question the quality of their search strategy. We wish to share our findings with these authors as well as other readers interested in this topic.

According to the methodology of the review and the results based on the articles retrieved through the open database they used,² the authors included only 6 outbreaks associated with contaminated propofol during 1990–2005. But reviewing the literature, we disagree with this value because more outbreaks evidently occurred during this time period. For example, why did the authors not include the outbreaks published by Bennett et al³ in 1995? Although this was a case-control study on postoperative infections, 6 of the 7 outbreaks reported were associated only with receipt of propofol (ie, infusions or maintenance), and in only 1 of these 6 outbreaks was the microorganism (identical to that isolated from the patient) recovered from an opened vial of propofol.³ Moreover, in the same article, Bennett et al reported 2 deaths that Vonberg and Gastmeier also probably missed. Perhaps the web database (an unofficial platform of outbreaks)² selected by the authors was not appropriate to correctly answer the question posed in the review. Furthermore, propofol is not only a promoter medium for bacterial growth, it is also a recognized intravenous anesthetic that facilitates yeasts and fungal growth as well as the transmission of viruses. Therefore and notably, the number of outbreaks might be even greater than those published, and this study limitation must also be highlighted.

On the other hand, the mortality rate reported in the review was 13.8% (4 of 29), but this percentage is inconsistent with other values missed by the search. Overall, this mortality rate must be rejected for the following reasons. First, according to the literature between 1990 and 2002 reviewed by Mattner and Gastmeier,⁴ who have more closely reported the true values, the number of patients (survivors) included in outbreaks caused by propofol contamination was, in total, 92 patients (>>29 reported by Vonberg and Gastmeier) in 7 outbreaks (>6 reported by Vonberg and Gastmeier).⁵ Second, as we discussed above, Bennet et al³ reported 7 outbreaks traced to propofol contamination, including 62 patients and 2 deaths;

TABLE 1. Reported Outbreaks Associated with Contaminated Propofol from 1989 through 2002 (Based on Mattner and Gastmeier³)

No. of Outbreaks Reported	Year ^a	Infection	Patients	Deaths
4 clusters	1990	Wound infection	24	NR
1	1994	BS	4	0
7	1995	BS, SS	62	2
1	1997	BS	5	0
1	2001	Hepatitis C	5	0
1	2001	BS, wound infection	7	2
1	2002	BS	4	2

NOTE. NP, not reported; BS, bloodstream; SS, surgical site.

^aYear the report was published.

these were not taken into account in the search conducted by Vonberg and Gastmeier. Third and finally, an editorial written by Trépanier and Lessard⁵ in 2003 interestingly affirmed that 5 deaths caused by contaminated propofol were reported during this time period (>4, as asserted by Vonberg and Gastmeier¹ and by Mattner and Gastmeier⁴).⁶ Table 1 of this letter presents the appropriate distribution of the outbreaks caused by contaminated propofol reported between 1990 and 2005.

In summary, limitations of the inclusion criteria were likely caused by natural methodological issues concerning the bibliographic source used by Vonberg by Gastmeier. Given the restrictions and gaps in the results of their review, we suggest a traditional systematic search of major bibliographic databases (eg, PubMed/Medline, EMBASE, Lilacs, and others).⁶ With a more robust data search, a more complete review could be conducted. Actually, the contamination of propofol is a worldwide problem that has been a focus of manufacturers, who have made pharmacological reforms such as addition of preservatives and/or modification of physical properties (ie, lipophilic solubility). The issue of determining the overall mortality related to the contamination of medical drugs is important, but the results of this particular review need to be discussed in depth to avoid the reporting of false rates.

ACKNOWLEDGMENTS

Financial support: No financial support was provided relevant to this article.

Potential conflicts of interest: All authors report no conflicts of interest relevant to this article.

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Infect Control Hosp Epidemiol 2015;36(4):489–490

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Potential Risk of Aerosol-Borne *Francisella tularensis* Transmission in the Operating Room

To the Editor—Tularemia, a potentially life-threatening zoonosis, is caused by the Gram-negative bacterium *Francisella tularensis* that occurs naturally in the Northern Hemisphere.¹ At least 6 distinct clinical syndromes have been described, and ulceroglandular tularemia is the most frequent disease manifestation in North America and Central Europe.² Recently, outbreaks in the United States, Turkey, and some European countries have led to the recognition of tularemia as an emerging infectious disease.³ *F. tularensis* is a highly infectious agent; a quantity of just 10–25 bacteria can infect a human and cause severe clinical disease. Hence, *F. tularensis* is considered a ‘category A’ bioterrorism agent. Transmission may occur through inhalation of infectious aerosols, direct contact with infected animals (eg, rodents), arthropod bites, or oral ingestion of contaminated tissues or water.¹ Similar to other bacterial zoonotic pathogens like *Bacillus anthracis* and *Brucella melitensis*, the causative agents of anthrax and brucellosis, respectively, person-to-person transmission of tularemia does generally not occur and infected patients do not need to be isolated. However, biological specimens from patients with tularemia may constitute a significant threat to healthcare workers. Indeed, *F. tularensis* ranks among the 5 most frequently reported laboratory-acquired infections, and inhalation of infectious aerosols is considered a major transmission route in these cases.⁴ After a recent case of ulceroglandular tularemia at our hospital, we investigated the possibility of tularemia as an airborne healthcare-associated infection in the operating room.

A 48-year-old male patient presented with painless cervical swelling on the right side accompanied by occasional fever and night sweats during the preceding 2 months. The patient worked as a falconer and reported having frequent contact with raptors and other wild animals. On clinical examination, cervical lymphadenopathy was noted. Ultrasound examination and subsequent magnetic resonance imaging (MRI) showed multiple enlarged, partially necrotic lymph nodes. Infectious and neoplastic etiologies were considered, and 1 enlarged lymph node was surgically removed. Histopathology showed a