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## Optimal Frequency of Changing Intravenous Administration Sets: Is It Safe to Prolong Use Beyond 72 Hours?

### To the Editor:

In the March 2001 issue of *Infection Control and Hospital Epidemiology*, Raad et al suggested that delaying the replacement of intravenous (IV) administration sets up to 7 days may be safe. The study is analyzed by Muder in the editorial of the same issue.<sup>1,2</sup> Authors state that, as bacteremia caused by IV fluid contamination is now uncommon, this would have a substantial cost-saving impact "worldwide." Fortunately, the conclusion is cautious: this could be done only if the patient is at low-risk for infection and if he or she is not receiving parenteral nutrition, blood products, or interleukin-2. I think this conclusion shows only some of the bias of the study, and, to those "ifs," I would like to add, "if the patient is hospitalized in a research-oriented center in the United States of America."

Under controlled trials in hospitals with stringent nursing practices, some other investigations with 500 patients could conclude that it is not harmful to use a big stock bottle to

load burettes from several patients, to mix IV fluids in the wards, and to reuse vials designed to be used once; all of these are standard practice in many hospitals through the world. Despite nursing standards, managers from many hospitals in developing countries would like to see studies showing that they always had been right by not spending too much, but would those studies have enough potency to apply the conclusions to hospitals worldwide? I think they would not. *Klebsiellae* tribe bacteria (KTB) are able to sustain late growth in IV fluids, even starting with a low inoculum,<sup>3</sup> and their contaminating IV fluids is, by no means, a thing buried in the past. The article does not state clearly how many KTB Raad et al found, but my guess is less than 5. If a similar study is performed in most hospitals in developing countries, they would find at least 25 per 500 administration sets. During the last decade, we found such rates in different hospitals from Guanajuato State in Mexico, with data reproduced in hospitals from Mexico City.<sup>4,7</sup>

I think that the conclusions of the study have only local, not "worldwide," application. Most hospitals in the world do not work with the nursing standards of the tertiary-care centers in the United States of America. Even there, a wide variety of lapses in aseptic techniques have been observed, and publication could be biased toward observations from hospitals with research units and strict nursing standards.<sup>8</sup> No data are known, but I dare to say that most hospitals from developing countries lack a central pharmacy, syringes are shared to administer the same drug to several patients, and IV fluids are mixed without any care in the wards. This could explain why most episodes of primary bacteremia from hospitals in developing countries are caused by KTB. Worse, most episodes of KTB sepsis are not recognized, as personnel in most hospitals do not draw blood cultures and official bacteremia rates of zero are the rule. Indeed, bacteremia outbreaks are more frequently reported by the media in developing countries when a critical mass of patients' relatives complain at the same time, mainly when death of children is involved. I hear such reports at least twice a year; then, bacteremia becomes hospitals' nem-

esis, and the hospital's very existence is questioned by reporters and society.

Under these circumstances, how far should we go to reduce costs? I consider that we still have to honor some redundancy in safety measures, at least to avoid the worst hospital infection. For commercial aviation, most safety measures are redundant, because if the plane crashes, people die. When we infuse KTB directly in the bloodstream, people die also. The difference is that, when the plane crashes, the crew dies and it is news; when the patient dies, we do well and it is not news. Even if a study of 500 flights demonstrates that all the safety redundancy was unnecessary and, indeed, that the pilot could fly the plane with a remote handstick, we would rather fly the traditional way, with a pilot in the plane and everything by the book.

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