

Anesthesiology  
48:388, 1978

*To the Editor:*—While I do not quarrel with du Moulin and Saubermann's results, I certainly disagree with their conclusion that the anesthetic circuit system is an unlikely source of bacterial contamination.<sup>1</sup> Anesthetic apparatus has been proven—not assumed—to harbor pathogenic microorganisms that are a possible threat to the anesthetized patient.<sup>2,3</sup> To conclude that this is not so following a single use ignores the repetitive way many circuits are used in practice. Even in one of their own six cases of colonized patients the authors did find *Pseudomonas aeruginosa* in a segment of the expiratory tube after a 76-min tracheostomy. Statistical analysis of the difference in colonization between the expiratory and inspiratory tubes is irrelevant. The presence of organisms alone does not mean infection. The presence of organisms in the right situation in the right patient, however, may lead to an overwhelming infection or even death.<sup>4</sup>

When, a decade ago, some strove to increase the anesthesiologist's awareness of the part he might be playing in cross infection, gas sterilization of anesthetic equipment was unusual.<sup>5,6</sup> In fact, it was not unknown to find a rubber circuit firmly fused to the anesthetic machine metal, mute evidence of the infrequency of washing, let alone sterilization. It would be interesting to examine the circuits in du Moulin and Saubermann's cases following six months use with no intervening cleaning. I personally would not

wish to have used upon me corrugated tubing that had been washed out with water only following its use on a patient colonized with *Pseudomonas*, despite the assertion that the chances of infection are not statistically significant. It has taken years for us as anesthesiologists to remove the stigma of some of our old nonhygienic habits. It is sad that some of my colleagues are still not convinced.

B. BRYAN ROBERTS, M.D.  
Professor and Chairman  
Department of Anesthesiology  
Wright State University School of Medicine  
Dayton, Ohio 45431

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*To the Editor:*—By their report du Moulin and Saubermann have helped halt the crescendo of use of disposable anesthesia equipment.<sup>1</sup> Survival of the private practice of anesthesiology depends in part upon containment of costs. There is a current idea that the expense of disposable equipment does not matter when someone else, such as an insurance company or government, pays the bill. This idea, in the long run, is folly. Our world has only finite resources. We all eventually must pay.

That patients normally breathe unsterile air, eat unsterile food, receive unsterile mucus from their noses, and possess abundant bacterial flora in their mouths should not be overlooked. Common sense opposes the demand that anesthetic equipment in sequential contact with the patient's mouth and throat for a short time be absolutely sterile. The burden of proof properly should be placed on those physicians

who claim that sterility is mandatory, and no such proof has been presented.

My own practice differs somewhat from the article's recommendations. At the end of anesthesia, I flush the tubes and bag with oxygen, then use soapy water cleansing, followed by tap water rinse and drip drying. (Residual soapy water could become a culture medium.) Masks are cleaned by soap, then water rinse. I think routine gas (ethylene oxide) sterilization of rubber tubes and masks constitutes an unnecessary expense. I seldom employ disposable corrugated tubes or bags, much less bacterial filters. In more than 20 years of practice, I have seen no results that indicate harm to the patient from these procedures, and I have avoided producing a lot of non-biologically degradable trash.

A valid case can be made for the use of disposable circuits for patients receiving inhalation therapy for

24 hours or more. My preceding remarks are limited to patients receiving anesthesia.

du Moulin and Saubermann are to be commended for their excellent study.

ALBERT D. WARSHAUER, M.D.  
*Department of Anesthesia  
East Carolina University*

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*In reply:*—We thank Drs. Beck, Roberts, and Warshauer for their interest in our study of anesthesia machine contamination. In our study we document the microbiologic activity of the circle system before and after anesthesia of colonized and uncolonized patients. We show that the anesthesia machines do not reflect the microbiologic activities of the patients on whom they have been used. Our results suggest that the circle system is therefore an unlikely source for contamination of other patients. We stated that we do not suggest any relaxation of current decontamination policies. We hope that our study will encourage carefully controlled investigations of this

*School of Medicine  
Greenville, N. C. 27834*

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important problem. Our findings indicate that disposable circuits or bacterial filters are not necessary, since cross-contamination does not occur. That no epidemic has yet been identified as being caused by an anesthesia machine is evidence of the unlikelihood of a role for it as a source of postoperative infection.

GARY C. DU MOULIN, M.S.  
ALBERT J. SAUBERMANN, M.D.  
*Department of Anesthesia and Respiratory Therapy  
Harvard Medical School at Beth Israel Hospital  
Boston, Massachusetts 02215*

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