

The True Cost of Aerosol Therapy

I thoroughly enjoyed the review article by Dr Rau on "The Inhalation of Drugs: Advantages and Problems," in the March 2005 issue of *RESPIRATORY CARE*.¹ I believe that Phil Kittredge would be honored by the quality of the article as a fine example of writing, which was so important to Phil.

I was intrigued by one of Dr Rau's conclusions when discussing issues, problems, and challenges of aerosol therapy. He stated that, "manufacturers must strive to reduce all equipment costs where possible." The point of the paragraph seems to be the importance of reducing the cost of the aerosol *device*. This emphasis is interesting in the context of the recent discussions in the political arena on the cost of *medications*.

Frequently, when I read articles about aerosol therapy, there seems to be an almost automatic tendency to link the words "nebulizer" and "expensive." The intent of this letter is not to re-examine the issue of the cost of using a nebulizer, but to ask that we include all the aspects of cost when discussing aerosol therapy. I have been practicing respiratory home care for almost 30 years. Aerosol therapy is a basic component of the provision of home respiratory care. In recent months I have been receiving an increasing number of complaints regarding the cost of the newer metered-dose inhalers (MDIs) and dry powder inhalers (DPIs). When their cost is compared with the cost of an aerosol nebulizer and medications for the nebulizer—keeping in mind that the nebulizer and medications are reimbursable by Medicare at 80%, whereas MDIs/DPIs are not covered—an increasing number of patients are requesting a change to nebulizer, for financial reasons.

I would suggest that in our discussions of aerosol therapy we cease almost automatically assuming that nebulizers are more expensive for the patient, and compare costs *and reimbursement* for all types of aerosol devices. There may be many reasons why the newer types of MDIs and DPIs are preferable for our patients, but I would submit that cost *to the patient* of a nebulizer and medications is probably no longer a viable reason not to consider a nebulizer for home aerosol therapy.

Tim J Good CRT AE-C RPFT
Goodcare by CPCI
Logan, Ohio

REFERENCES

1. Rau JL. The inhalation of drugs: advantages and problems. *Respir Care* 2005; 50(3):367–382.

The author responds:

I wish to thank Mr Good for his kind remarks concerning the paper resulting from the Phil Kittredge Memorial Lecture, published in the March issue of *RESPIRATORY CARE*.¹ I completely agree with the points he has made: we should not automatically equate nebulizers with more expensive aerosol delivery; if Medicare reimbursement is considered, nebulizers are actually more cost-effective currently than MDI or DPI for the patient; and cost of medications is at least as important and perhaps more so than cost of the aerosol device.

I would add several comments concerning these points in relation to the article, however. The emphasis in the article was on aerosol delivery devices rather than medications delivered as aerosols. The preceding 2 paragraphs in the section "Aerosol Therapy: Is-

suues, Problems, and Challenges" referred to aerosol devices in general, not just nebulizer devices. In the paragraph Mr Good references, I did use "nebulizer" as one specific device example of the type of cost analysis advocated by Dr Henry Milgrom, namely that the overall cost of patient care and not just device cost should be considered.² It was not my intent to imply that only nebulizer costs, and not MDI or DPI costs, should be kept as low as possible. In fact, as Mr Good noted, I said ". . . to reduce. . . expenses with a lower-cost. . . aerosol device," which includes MDIs and DPIs. However, I should note that recent developments in nebulizer technology, which offer more efficient aerosol delivery (higher lung deposition, reduced ambient loss, shorter treatment times), may be more expensive than traditional T-piece jet nebulizers. Examples would include the Pari eFlow, the Aerogen vibrating mesh nebulizer and adaptive aerosol delivery devices, as well as Aradigm's AERx nebulizer for systemic drug delivery. It is not apparent at this time that similar advances in more expensive technology are occurring with MDIs or DPIs, although the drugs themselves in all 3 types of device (MDI, DPI, nebulizer) can be quite expensive.

Finally, I think it is important for health-care providers to consider cost of medical devices in a more global fashion, rather than just cost to the patient. I quite agree that I would prefer an aerosol device/drug that is covered by insurance, whether private or Medicare, if I am inhaling a medication. At the same time, we need to be aware that increased costs of devices, or drugs for that matter, add to the cost burden for Medicare or private insurance. If we pay taxes or private insurance premiums, those costs must be passed through to us if they are to

be covered. So I agree with Mr Good that nebulizers are attractive for home-care patients who are on Medicare based on cost *to the patient*. At the same time, I would like to see *all* aerosol devices as inexpensive as possible, to help contain private insurance premiums and Medicare taxes. We pay for the cost of devices and drugs, one way or the other—either directly out-

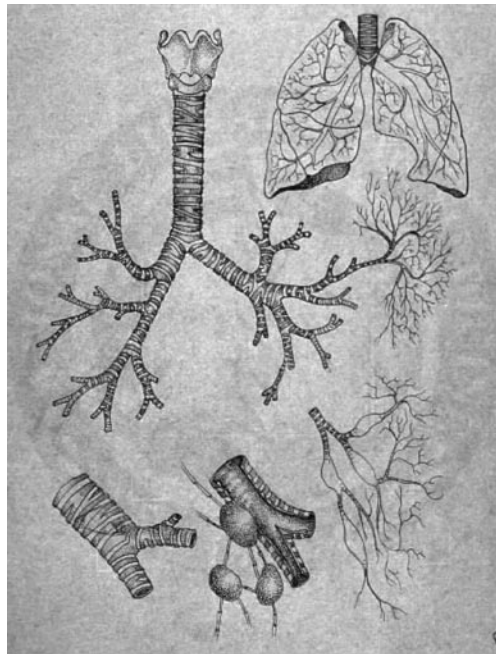
of-pocket for the device/drug, or as higher premiums/taxes.

I thank Mr Good for his observations and for the opportunity to elaborate further on my comments in the article.

Joseph L Rau PhD RRT FAARC
Cardiopulmonary Care Sciences
Georgia State University
Atlanta, Georgia

REFERENCES

1. Rau JL. The inhalation of drugs: advantages and problems. *Respir Care* 2005; 50(3):367–382.
2. Milgrom H, Skoner DP, Bensch G, Kim KT, Claus R, Baumgartner RA; Levalbuterol Pediatric Study Group. Low-dose levalbuterol in children with asthma: safety and efficacy in comparison with placebo and racemic albuterol. *J Allergy Clin Immunol* 2001;108(6):938–945.



Sectional views of the trachea, including section (lower left) with a safety pin lodged in it; also showing internal branching within the lung, and the development of mediastinal cyst(?) on the trachea
Herbert Louis Treusch, 1900–1958
Courtesy National Library of Medicine