

Letter to the Editor

## Comments on Tengs *et al.*, "Comparative Study of the Cost-Effectiveness of Life-Saving Interventions"

Received October 17, 1995

Recently, Tengs *et al.*<sup>(1)</sup> published a comparative study of the cost-effectiveness of life-saving interventions. While the authors do summarize the important limitations of the study, the paper is easily misconstrued and misapplied.

Although the authors state that "the life-saving interventions . . . include those that are fully implemented, those that are only partially implemented, and those that are not implemented at all," this point is easily overlooked by readers who focus immediately upon the extensive tables of cost/life-year, which contains no such caveat, let alone any indication of which of these categories a particular "intervention" falls into.

This has led to considerable confusion. For example, the paper is being cited as proof that radiation protection is wildly inefficient from a cost-benefit standpoint, with billions of dollars being spent for every year of statistical life saved.<sup>(2)</sup> However, only two of the 11 interventions cited in connection with EPA's regulation of radionuclides under the Clean Air Act refer to options that were actually implemented by the agency: underground uranium mines and elemental phosphorous plants, corresponding to an estimated cost per year of life saved of \$79,000 and \$9,200,000, respectively. In all other cases, a control option less costly than that listed was adopted, or the decision was made not to regulate at all.

We would also note that Tengs *et al.* derived some of their cost-benefit estimates from secondary literature sources. As a result, even though the authors may have instituted strict quality control measures, errors are likely to have crept in. For example, carrying over errors appearing in a secondary source produced highly inflated estimates of the cost per life-year in the case of radionuclide emission control options for "NRC-licensed and non-DOE facilities" and for "uranium fuel cycle facilities."

### REFERENCES

1. T. O. Tengs, M. E. Adams, J. S. Pliskin, D. G. Safran, J. E. Siegel, M. C. Weinstein, and J. D. Graham, "Five-Hundred Life-Saving Interventions and Their Cost-Effectiveness," *Risk Analysis* **15**, 369-390 (1995).
2. J. Muckerheide, "The Health Effects of Low-Level Radiation: Science, Data, and Corrective Action," *Nuclear News* 26-34 (September 1995).

Jerome S. Puskin  
Byron Bunger  
United States Environmental  
Protection Agency  
Office of Radiation and  
Indoor Air (6602J)  
Washington, D.C. 20460