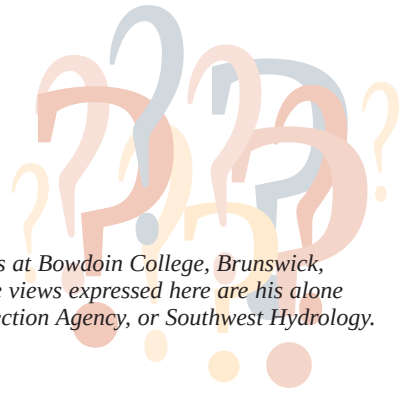
Arsenic in Drinking Water: How Much is Too Much?



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Many were surprised when President Bush's Environmental Protection Agency (EPA) announced that it would uphold the 80 percent reduction in the maximum allowed concentration of arsenic in public drinking water set by the Clinton administration in January 2001. The EPA had announced in March that it was blocking implementation of the Clinton standard pending reviews of the basic science and the analyses of the benefits and costs of the proposed standard. Since the EPA's own analysis showed the costs of the proposed standard exceeded the benefits, and since Bush's environmental appointees generally supported the use of benefit-cost analysis in environmental decision making, many believed that the EPA would use this review to justify a weaker standard for arsenic.

The Bush decision has not settled the controversy. Opponents of stricter controls announced that they would fight Bush's decision. And environmental organizations such as the Natural Resources Defense Council announced that they would push for an even stricter standard.

Economists argue that we should compare the increase in well-being that we get from environmental protection with what we give up by taking resources from other uses. We should measure the values of what we gain (the benefits) and what we lose (the costs). We should undertake environmental protection only if the results are worth more than what is given up by diverting resources from other uses.

There is substantial evidence from exposed populations in some developing countries that drinking water containing some 50 times more arsenic than the new standard results in a significant increase in the risk of cancer. What is not known is whether there is a threshold concentration below which there is essentially no risk, or whether lower concentrations result in proportionately lower, but still positive risks of cancer.

Assuming no threshold, the EPA estimated that the benefits of the new standard would be between $140-200 million per year; but costs would be about $206 million per year. Opponents of tightening the standard point to this excess of costs over benefits. They also say that the benefits could be zero, since it is likely that there is a threshold for arsenic at some level well above the new standard. Supporters of the proposed standard say that it is likely that there are other adverse health effects besides cancer and that it is worth the extra cost as a safety margin. Some also argue that it is immoral to make policy decisions on the basis of benefit-cost analysis when people's lives are at stake.

Some of the most vocal opponents of the new standard are the public officials in those cities where drinking water presently exceeds the new standard and whose people would have to bear the costs of meeting the new standard. Most of the arsenic in public water supplies is of natural origins. There is no set of "black hat" polluters who arguably should be made to bear the cost of cleaning up the arsenic. Rather those who are currently bearing the risks of arsenic will wind up paying the higher taxes and/or higher water bills required to meet the standard. This opposition to the standard is consistent with the EPA's finding that the benefits (the willingness of the affected people to pay for reduced arsenic) are less than the costs.

In Conclusion:

1. Economists argue that if the benefits of the new standard are clearly less than the costs, it is bad public policy to force the standard on an unwilling population.

2. However, the excess of cost over benefit is relatively small; and there are enough uncertainties in the estimates of both benefits and costs that the excess cost might be worth it in terms of purchasing a safety margin.

3. Because of these uncertainties, benefit-cost analysis can rarely provide an unambiguous answer about difficult policy choices. Therefore, choices have to be made by politically responsible officials. The new standard is arguably a reasonable judgment in the face of this uncertainty. And it is a judgment made by both a Democratic and Republican administration.

4. But there is another way to look at this issue. The cost of meeting any standard for arsenic is high because all of the water going through the system must be treated to remove the arsenic. But only a small percentage of this water is used in a way that poses any health risk to people, that is, for drinking. Most of it goes to other uses. The costs of protecting people from the risks of arsenic would be much lower if water suppliers simply gave their customers bottled water for drinking. The benefits of this option would likely exceed the costs by a substantial margin. But the Safe Drinking Water Act does not allow the EPA to consider this option. Rethinking our approaches to improving environmental health can often show less costly and more beneficial ways to promote desirable environmental goals.

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