

more complex to assemble. At the present time, most bath seats are manufactured in the U.S. The proposed rule would require that bath seats entering commerce meet the new requirements within a year of publication of the final rule. Bath seats already in commerce (for example, those on store shelves) will not be affected and will still be saleable. According to one manufacturer, they plan to have bath seats that meet the new voluntary standard leg opening requirement as well as the stability requirement that is part of the proposed rule by the end of 2003. Also, the second manufacturer will probably have bath seats that meet the leg opening requirement by the end of 2003.

Revenues may be affected if sales do not match current levels. Sales may be reduced because of price increases and possible reductions in the utility of the new, safer bath seats. Consumer utility could be reduced if the product is more difficult to use or the age range of users is reduced. On the other hand, the added safety of the product may increase the utility of the product to some consumers, a factor that may be a positive influence on sales.

Currently, bath seats sell for about \$10 to \$16. Convertible seats, which convert from an infant bathtub to an infant bath seat, sell for about \$20 to \$25. Based on discussions with an industry representative, bath seat prices will increase to reflect the increased cost associated with producing a complying product. Although exact costs and price increases are not known at this time, industry representatives estimate that complying bath seats will retail for about \$20 to \$25, with a likely price closer to \$25.

All else equal, a price increase of \$10 (which represents an increase of more than 50 percent) may reduce the quantity of bath seats demanded, and hence sales. The magnitude of such a reduction is unknown, but would be affected by a number of other factors, including the perceived usefulness of the product, the expected useful life of the product, and other variables such as the number of births, household incomes, and the availability of substitutes.

Despite the relatively large price increase over that of existing bath seats, the reduction in sales may be small if consumers find the product convenient and useful, and expect to use it for a long time. If, for example, a consumer would use a bath seat for a year or more (*i.e.*, for one or more children) the price increase would amount to less than \$1 per month. Moreover, all else is not equal. The product will change—it will

presumably be safer than the earlier models. If consumers perceive the increased safety, and if safety is an important factor when they purchase products for use with their infant children, the demand for bath seats could increase. Thus, product improvements can conceivably mitigate or even offset the reduction in the quantity demanded associated with the price increase.

Although product design is not specified by the proposed requirement, consumer utility could be affected if changes intended to make bath seats safer also make them more difficult to use, or if the changes tend to limit the age of children that can use them. The analysis by Human Factors indicates that bath seats meeting the proposed requirements could still accommodate the current user population, without a loss of utility. However, since the design is not specified, and we do not know how manufacturers will modify the seats to meet the proposed requirements, we cannot predict if the new designs will provide the same level of usefulness or convenience to caregivers. Any reductions in utility could lead to the reduced use of bath seats, either by reducing sales or actual amount of use. While reduced use would also reduce the risk of drowning in bath seats, the overall risk of drowning would not be eliminated since other modes of bathing children also present a drowning risk.

Potential Benefits of the Proposed Rule

The benefits of the proposed rule will result from a reduction in deaths and injuries due to product failure from tip-over, entrapment and submersion. CPSC is aware of 96 deaths associated with bath seats from January 1983 through December 2002. Eighty-three of these reported deaths occurred in the past ten years (1993 through 2002), a period during which about one-third of all new mothers owned bath seats and the number of bath seats in use remained relatively constant at about two million.⁴ Of the 83 reported deaths since 1993, the hazard scenario is known in 57 of the deaths (leaving 26 with unknown scenarios).

Of the 57 deaths in which the scenario is known, 28 (about 50 percent) involved hazards addressed by the performance requirements of the proposed rule (26 involved the tip-over

hazard and two involved entrapment/submersion). While we do not know the hazard scenarios in the remaining 26 deaths, if we assume that they are distributed proportionally to the known cases, another 13 deaths (*i.e.* 50 percent) might be also be addressed by the proposed rule. This amounts to about 2.8 to 4.1 deaths annually (*i.e.* 28 deaths/10 years to 41 deaths/10 years), or about 1.4 to 2.05 deaths per million bath seats in use (since about two million were in use annually).

Comparison of Costs and Benefits

As described above, the proposed rule may result in an increase in the retail price of bath seats by about \$10. Assuming a \$10 price increase, the costs of the proposed rule (*i.e.*, the costs of making bath seats safer) will increase consumer outlays by \$10 million per million bath seats sold. Additionally, according to the *Baby Products Tracking Study*, about half of the bath seats were acquired used and therefore are likely used for more than one child. If we assume that bath seats are used for an average of about two years (*i.e.* more than one use cycle), and there are about 1.4 to 2.05 deaths per million bath seats in use annually, each million bath seats would be associated with about 2.8 to 4.1 deaths over their two-year product life.

If the proposed rule eliminates all of these tip-over deaths and entrapment and submersion deaths (*i.e.*, is 100 percent effective in preventing the deaths addressed), then the cost per life saved would range from about \$2.4 million to about \$3.6 million (\$10 million/4.1 deaths to \$10 million/2.8 deaths). If the rule were 50 percent effective in preventing the tip-over and entrapment/submersion deaths, then the cost per life saved would range from about \$4.9 to \$7.1 million per death prevented (\$10 million/(4.1 × .5) deaths to \$10 million/(2.8 × .5) deaths). Based on current economic literature, empirical estimates of the statistical value of life have generally ranged from about \$3 million to \$7 million. Thus, for purposes of cost-benefit analysis, even the high estimates of the cost per life saved are generally within the accepted range and suggest that the benefits of the rule would be in line with the costs, even if the standard were only 50 percent effective in preventing addressable deaths.

The proposed rule has the potential to bring about a reduction in deaths from tip-over and entrapment/submersion hazards. However, it is not clear at this time whether manufacturers will design baby bath seats that are safer, while maintaining the current level of

⁴ The benefits assessment is limited to the 1993 to 2002 time frame because the number of baby bath seats in use, which is needed to calculate the risk that will be addressed by the proposed rule, was less clear prior to 1993. In addition, there has been improved reporting and collecting of death data in the later years.