

The prairie dog trading market then seemed to vanish, even before the earliest report linking prairie dogs to the outbreak of monkeypox. On June 6, 2003, one day before any announcement by CDC, Wisconsin health officials banned the sale, importation, and display of prairie dogs because of human disease outbreak associated with animal-borne transmission (Ref. 25). Three notices mentioning the illness and the restrictions on trade appear at [exoticpets.com](http://exoticpets.com) in lieu of advertisements on June 8 and 9, 2003. No subsequent announcements or advertisements appear on the website. These data, summarized in Figure 1, suggest that the market reactions to risks of contaminated pets may have already curtailed most, if not all, of the retail trade.<sup>1</sup> Statistical testing of the prairie dog advertisement appearance rates before and after the CDC announcement shows a 99.3 percent chance that there was a real change in the daily advertisement appearance rate (i.e., the rate difference is very likely not the result of mere chance).<sup>2</sup> According to the prices listed in classified advertisements posted at [exoticpets.com](http://exoticpets.com), neither the markets for other pets, such as rabbits, nor the frequency of such advertisements, have been affected.

While the market has responded quickly to the outbreak, it is also important to note that the market enabled the outbreak to occur in the first place. With less vigilant public health surveillance, or with private parties that were less cooperative or less responsible, infected prairie dogs could have been distributed more broadly in commerce, posing greater disease risks. In addition, infected prairie dogs might have been released into the wild, posing large risks to native mammals and, through them, to humans. This rule would minimize the risks that such events could occur by requiring permits if individuals capture, transport, sell, barter, exchange, distribute, or release animals that have been implicated in the monkeypox outbreak.

#### D. Baseline

Economic analysis of a regulatory action requires as a first step the identification of a baseline, a depiction of the world in the absence of any action, from which to calculate the effects of the regulations. The baseline for this rule is complicated by at least two issues. First, as noted, news of the epidemic has curtailed trade in advance of Federal action. Buyers and sellers do not want to trade animals that may be infected with a virus that can make people sick. To distinguish between the effects of our actions to ban trade in certain animals and the effects of monkeypox on such trade, this analysis uses as a baseline the current state of affairs; that is, it recognizes that the outbreak is ongoing and that the market has responded.

An administrative order issued by FDA and CDC on June 11, 2003, and intended to manage the same risks as this interim final rule also complicates efforts to identify a baseline. We propose to use two baselines to provide full information about the effects of our actions. First, we assume that there is no administrative order, and second, we assume that the baseline includes the June 11, 2003, order.

With the second baseline there are no costs and no benefits because the interim rule formalizes and clarifies the June 11, 2003, order, with the important exception of a new procedure for Federal permits allowing people to import, capture, offer to capture, transport, offer to transport, sell, barter, or exchange, offer to sell, barter, or exchange, distribute, offer to distribute, and release into the environment prairie dogs and other specific animals when it otherwise would be prohibited. Relative to the outright prohibition in the June 11, 2003, order, permits would lower costs to parties seeking to import, capture, offer to capture, transport, offer to transport, sell, barter, or exchange, offer to sell, barter, or exchange, distribute, offer to distribute, and release into the environment listed animals. For example, zoos and related animal facilities, prairie dog relocation services, and research labs may request permission to import, capture, transport, or sell listed animals, and, if permission is granted, they may continue such activities that would otherwise be prohibited by the June 11, 2003, order. Generating quantitative estimates of the cost savings from such permits is not possible because of the uncertainty associated with how and when such permits would be granted. While these exemptions may in principle pose some risks, we believe that these are

negligible because permits would be granted only in instances where prohibited activities pose minimal risk of establishing or spreading the monkeypox virus.

#### E. Alternatives

Sound economic analysis requires an assessment of reasonable alternatives. The key alternative, and one on which we solicit comment, is a "sunset" provision ending the domestic restrictions by January, 2004, unless we made a determination that the ban was necessary to protect health and safety. The economic advantage of this alternative relative to this interim final rule may be the elimination of permitting costs for capturing, transporting, selling, bartering, exchanging, distributing, or releasing an animal that has been only a conduit and not a source of infection, as well as allowing for resumption of a prairie dog market as existed before the disease. It may, however, provide for later capture, transport, sale, barter, exchange, distribution, or release of an animal that may carry other diseases.

We also considered whether it would be possible to devise a regulatory program that would allow for testing and certification of animals, whereby animals that had been certified to be free of the monkeypox virus would not be subject to the rule's prohibitions. We did not pursue this alternative because studies are being conducted to determine the incubation period in various animal species and the manner in which the virus may be transmitted. In other words, scientific knowledge about monkeypox is still evolving, so it may be unlikely that a quick, reliable testing method, particularly when incubation periods and the extent to which animals may be asymptomatic carriers of the monkeypox virus are unknown, will be developed in the immediate future.

Assessment of other alternatives is limited because the interim final rule would allow exceptions to the prohibited activities provided that parties have Federal permits. The specific criteria for these exceptions have not been determined, but can be expected to include those activities that pose no risk of establishing or spreading the monkeypox virus.

#### F. Benefits

A recent report indicates that 71 cases of monkeypox in humans have been reported in Illinois, Indiana, Kansas, Ohio, Missouri, and Wisconsin (Ref. 4). Detailed clinical information was available for 30 cases reported in Illinois and Wisconsin. Among these, the

<sup>1</sup> Figure 1 excludes one advertisement because it was a solicitation to buy without reference to price.

<sup>2</sup> From May 15, 2003, through May 28, 2003 (14 days inclusive), there were 8 days when advertisements for prairie dogs appeared at the web site for [exoticpets.com](http://exoticpets.com). Thus, on about 57 percent ( $8/14=0.571$ ) of the days, prairie dog advertisements appeared. From May 29, 2003 through June 6, 2003 (9 days inclusive), there were no (zero) days when prairie dog advertisements appeared. According to Fisher's Exact Test, the probability that these two statistics came from the same distribution is 0.0072. In other words, we are 99.3 percent certain that there was a change in the daily appearance of prairie dog advertisements between these two time periods.