

Dose-Response Modeling of Plague Data Reveals High Level of Dispersion

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Yersinia pestis, the bacterial causative agent for the plague, is classified as a Category A bioterror agent. It is also endemic in numerous countries and is responsible for approximately 1700 cases annually. In the United States, *Yersinia pestis* caused 61 infection and 7 human fatalities between 1994 and 2003. In this study, dose response data from the open literature for subcutaneous exposure of mammals to *Yersinia pestis* were fit to dose-response models. The data were more disperse than for other category A bioterror agents. This finding is consistent with widespread environmental distribution of *Yersinia pestis*. In general, data were best fit with exponential dose-response models and the susceptibility of the hosts to plague varied greatly depending upon the geographic region in which the animals were caught and between laboratory-reared and wild-reared hosts. The results of this study will be incorporated into the CAMRA (Center for Advanced Microbial Risk Assessment) effort, whose goals include establishing a critically reviewed reference set of dose-response relationships for Category A agents.