Role of exposure databases in risk assessment.John Graham, Katherine D. Walker, Maurice Berry, Elizabeth F. Bryan, Michael A. Callahan, Anna Fan, Brent Finley, Jeremiah Lynch, Thomas McKone, Haluk Ozkaynak and Ken Sexton. ***Archives of Environmental Health*** 47.n6 (Nov-Dec 1992): pp408(13). (7494 words)

Abstract:

Risk assessments have assumed an increasingly important role in the management of risks in this country. The determination of which pollutants or public health issues are to be regulated, the degree and extent of regulation, and the priority assigned to particular problems are all areas of risk assessment that influence the country's $100 billion annual investment in environmental protection. Recent trends in public policy have brought the practice of risk assessment under greater scrutiny. As policy makers increasingly insist that specific numerical risk levels (so-called bright lines) be incorporated into regulatory decisions, the stakes for good risk assessment practice, already high, are raised even further. Enhancing the scientific basis of risk assessments was a major goal of the Workshop on Exposure Databases. In this article, we present the Risk Assessment Work Group's evaluation of the use of exposurerelated databases in risk assessment and the group's recommendations for improvement. The work group's discussion focused on the availability, suitability, and quality of data that underly exposure assessments, a critical component of risk assessment. The work group established a framework for evaluation, based on exposure scenarios typically used in regulatory decisions. The scenarios included examples from Superfund, the Clean Air Act, the Toxic Substances Control Act, and other regulatory programs. These scenarios were used to illustrate current use of exposure data, to highlight gaps in existing data sources and to discuss how improved exposure information can improve risk assessments. The work group concluded that many of the databases available are designed for purposes that do not meet exposure and risk assessment needs. Substantial gaps exist in measurements of actual human exposure and in the data necessary to model exposures, to characterize distributions of exposure, to identify high-risk groups, and to identify possible environmental inequities in exposure. The work group, on the basis of its findings, made both short-term and longer-term recommendations for improving the collection of exposure data in the future.