

Goal: To form a consortium to fund research on benzene-exposed workers in China.

Purpose: To gain ~~an accurate~~ a better understanding of the ~~true~~ relationship between benzene exposure and the risk of disease. This study would lead to improved benzene-driven, health-based regulatory standards by providing the regulatory and scientific communities with information for more accurate assessment of the risks from exposure to benzene.

Opportunities: A unique set of opportunities exists at this point in time in Shanghai to conduct meaningful benzene research, including high occupational exposures that do not exist anywhere in the West, willing co-investigators influential in local scientific, medical, and regulatory establishments. Therefore, questions that have plagued and confounded benzene health risk assessment for decades appear to be answerable in Shanghai.

- High exposures
- Benzene-induced disease
- Good records since 1970s

- Technology sophistication
- Willing collaborators
- Influential contacts

1940's Exposures

21st Century Technology



Unique, unparalleled
research opportunities

Challenges: The proposed studies meet several technical, ethical, and cultural/political challenges.

- Technical - In order to stand up to scientific scrutiny, studies must be large, well-managed, and incorporate the latest technology. State-of-the-art research is absolutely necessary to make real progress in changing the existing benzene risk assessment paradigm.
- Ethical - To address the ethical issues, the study protocols have all undergone a thorough analysis to ensure that the subjects are appropriately compensated for their participation; that both the subjects and communities benefit from having participated in the study; and that worker safety will improve. An Ethics Panel is part of the oversight for the project and includes a Chinese bioethicist.
- Cultural/Political - In order to address the realities of doing research in China, collaborators on these studies include researchers from the Medical School at Fudan University, the Shanghai Municipal Centers for Disease Control (responsible for occupational exposure monitoring and enforcement).

Benefits: Information gained from this project will have a direct, cross-media impact upon regulatory standards designed to protect workers and the general population from benzene-induced disease. These include air and water quality standards, as well as hazardous waste and site remediation standards. The information gained from these studies will assist contributing companies in achieving product stewardship goals and will be useful in defending the industry's risk reduction programs. Additional benefits from this collaborative approach are outlined below.

Benefits of Extensive Collaboration

CHINESE PERSPECTIVE

- Imports from the West:
 - Study Methods Expertise
 - Leading Technology & Know-How
- Enhances Professional Advancement - Publications
- Broadens Training Opportunities
- Allows Greater Autonomy in Future

U.S. PERSPECTIVE

- Required to Navigate Socio-Political Infrastructure
- Ensures Adequate Participation
- Enhances Study Impact, Relevance
- Improves Business-Regulatory Interface in China