

- Case-Control Study - A hospital-based case control study to investigate the potential relationship between benzene exposure and both Non-Hodgkins Lymphoma (NHL) and Acute Myelogenous Leukemia (AML), including an attempt to quantify the potency of benzene for the AML response.
- Disease Progression Study - A hospital/clinic-based investigation of the relationship between non-cancer diseases of the bone marrow (e.g. myelodysplastic syndrome, aplastic anemia) and AML (cancer) to determine if effects on bone marrow progress through non-cancer stages to an ultimate leukemia. This study would also attempt to define the shape of the dose response for possible “precursor” diseases and could result in characterization of unique identifiers of benzene-induced AML.
- Molecular Epidemiology Study - Investigate if there is a quantitative relationship between benzene exposure and potential early indicators of both exposure and effect in a focused population of workers.

The investigators are leading experts in their fields, coming from such well-known institutions as the University of Colorado Health Sciences Center, Fudan University Medical Center (Shanghai) and Applied Health Sciences in the private sector.

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, independent, and incorporate the latest technology. State-of-the-art research is absolutely necessary to make real progress in developing sound benzene risk assessments. To that end, a Scientific Review Panel made up of leading experts from a number of fields relevant to these studies has reviewed and endorsed the research protocols. Additionally, the protocols have been reviewed by Use of Human Subjects Committees (IRB) both in the US and China.
- Ethical - To address the ethical issues, the study protocols have all undergone a thorough analysis to ensure that they meet international standards for research involving humans, including that the subjects and participating communities benefit from having participated in the study; that confidentiality is preserved, and that researchers are working with local regulatory authorities to improve worker safety. An Ethics Review Panel is part of the oversight for the project and includes a Chinese bioethicist.
- Cultural/Political – A key to this program’s success is local partnerships. Collaborators on these studies include researchers from the Medical School at Fudan University, the Institute for Public Health Supervision, and the Shanghai Municipal Centers for Disease Control and Prevention (the latter two are responsible for occupational exposure monitoring and enforcement in Shanghai).
- Sponsors, Benzene Health Research Consortium

Major Sponsors: BP, ChevronTexaco, ConocoPhillips, ExxonMobil, Shell Chemical Company

Also Contributing: Marathon Ashland Petroleum and Marathon Oil