

Shanghai Benzene Health Study

November 14, 2002 Update

Key messages

- Shell is contributing to a joint study in Shanghai that aims to better define the risks from exposure to benzene as part of ongoing product stewardship and safety and health programs
- A state-of-the-art clinical and molecular laboratory is being built on the Fudan Medical University campus to support the research project and the Shanghai medical community and will remain at Fudan once the project is completed.

Background

In 1997, the National Cancer Institute in the US released a study of benzene-exposed workers in China. The study concluded that benzene exposure may cause non-Hodgkin's lymphoma, (NHL). Previously, benzene exposure had been linked only to acute myelogenous leukemia (AML). The NCI study also showed development of AML at lower exposure levels than previously known.

Interest in designing a study to further investigate the NCI findings was presented to the API (American Petroleum Institute) Benzene Toxicology Task Group by Richard Irons, University of Colorado Health Sciences.

Benzene Health Research Consortium Formed

In March 2001, the Shell Chemicals CEC approved Shell's participation in a consortium (including BP, ChevronTexaco, ConocoPhillips, ExxonMobil) to fund a 5-year program in Shanghai. The purpose of the study is to gain a more refined understanding of the relationship between benzene exposure and associated cancer risks. The cohort participants - who are informed and consenting volunteers - are patients that are identified by Shanghai hospitals as having a benzene exposure related condition. The program includes three studies:

- (1) a prospective epidemiology study,
- (2) a disease progression study, and
- (3) a molecular biomarkers study.

Shell has committed \$3MM to the \$23MM project.

Why is Shell Participating?

- Shell's ongoing product stewardship and safety and health programs
- This new approach to better define the risks from benzene exposure could underpin future decisions on health-based air, water and occupational standards for benzene worldwide.

- The state-of-the-art clinical and molecular laboratory being built on the Fudan Medical University campus will support the research project and the Shanghai medical community and will remain at Fudan once the project is completed. This sustainable technology transfer is an important aspect of the project design.

Program has global participation

The study is a project of Fudan University Medical Center, the University of Colorado Health Sciences Center, and Applied Health Sciences (an independent U.S. research firm). Other key participants in China include the Shanghai Municipal Center for Disease Prevention and Control and the Shanghai Institute for Public Health and Supervision. The research protocols were subjected to independent reviews by outside experts, including reviews of their consistency with international ethical standards and reviews by an expert scientific panel. Independent review boards at Fudan University, the University of Colorado, and Applied Health Sciences have approved the research protocols.

Time Line

99-00	Feasibility study done in China
Sept 00	Study highlighted in Aromatics HSE Brief
Jan 01	Added to Shell Chemicals HSE Issue List, current status is “global significance”
Mar 01	CEC approves Shell’s participation in the project
Aug 01	Consortium Formed. Shell representatives: Nancy Sullivan, Sponsor; Patsy Clegg, Oversight; Stuart Cagen, Technical; Sarah Colletti, Communication
3/4Q01	Protocols reviewed by Bioethicists and independent scientific panel
2002	Clinical laboratory constructed and equipped at Fudan University, Shanghai; Technicians trained
Aug 02	Communication sent to Nanhai external affairs
1Q03	Begin accepting cases from Shanghai hospitals
2Q03	Opening Ceremony in Shanghai
Aug 03	First Annual Meeting
2007	Report

Shanghai Benzene Health Study

In 1997, the National Cancer Institute released a study of workers in China, which implicated benzene exposure to Non-Hodgkin's Lymphoma, (NHL). Previously, benzene exposure had been linked only to AML, acute myelogenous leukemia. The NCI study also showed development of AML at lower exposure levels than previously known.

There is a known population of workers in Shanghai that are exposed to benzene. The Chinese government keeps very good occupational exposure records. This presents a unique opportunity to do a prospective (as opposed to retrospective) epidemiology study of persons identified with illnesses that have been exposed to benzene. The study, which is projected to last for five years, will provide data on persons over a long period of time, with extensive histories.

Shell Chemicals is participating in a consortium of companies (including ExxonMobil, BP, ChevronTexaco, Conoco) to fund a 5-year study in Shanghai that will look at (1) a prospective epidemiology study, (2) a benzene poisoning disease progression study, and (3) a molecular biomarkers study. Bioethicists and an independent scientific panel has reviewed the protocols. The study will be a cooperative effort between the consortium, Dr. Richard Irons and Dr. Otto Wong, the principal investigators, in the U.S. and Fudon University School of Medicine, government agencies and hospitals in Shanghai. Shell has committed \$3MM to the \$23MM project.

The time line for the study:

01	Consortium formed Protocols reviewed by ethicists and independent scientific panel
02	Laboratory built and equipped at Fudon University School of Medicine; Chinese technicians trained
03	First cases accepted Opening ceremony in Shanghai First annual meeting
07	Report due

Shell's participation:

Nancy Sullivan:	Sponsor
Patsy Clegg:	Vice-Chair Oversight Committee Chair Recruitment Committee
Stuart Cagen:	Vice-Chair Technical Committee
Shan Tsai:	Technical Committee
Sarah Colletti:	Communications Committee
Dave Waskowiak:	Legal Committee

Shell is sponsoring the project because we believe it is important to understand the hazards of the products we make and sell; it supports our product stewardship program and sustainable development; and it is the right thing to do given Shell's investment in Nanhai.

September 30, 2002

Shanghai Benzene Study

Update: February 12, 2003

- Consortium Organization - Shell participation
 - Oversight Committee - Patsy
 - Technical Committee - Stu & Shan
 - Communications - Sarah
 - Recruitment - Patsy chairs
- 2003 Milestones
 - March - API Board Meeting - requesting funding
 - March - Shell/BP led workshop to develop strategy for NGO engagement
 - March/April - begin accepting cases at Shanghai clinic
 - Spring - Opening Ceremony in Shanghai
 - August - 1st annual meeting
 - 3Q - 5 sponsoring companies will have paid all committed funding
 - Decision on how to proceed based on funding level
 - On-going: Recruitment of new sponsors
 - On-going: NGO engagement
- Shell Activities
 - Recruiting potential sponsors
 - Leading engagement with organized labor - working with David Sauber
 - Leading engagement with NGOs - working with Lauren Iannarone
 - Internal Shell communications
 - Discussion of Shell's position on additional funding, if needed
- Other Benzene Activities
 - Benzene Product Stewardship presentation at AIChE conference
 - International Symposium in July 2004 in Lyon
 - Projects potentially impacting Group
 - Benzene OEL
 - Benzene emission reduction
- Other topics ?