

Shanghai Health Study
Update to Shell Sponsors and Stakeholders
February 27, 2006

Background

The Shanghai Health Study (SHS), sponsored by the Benzene Health Research Consortium (BHRC) of which Shell Chemicals is a member, is a multi-stakeholder health study in Shanghai, China, which aims to better define potential human health risks associated with exposure to benzene.

Current Status

2005 Annual Meeting: The 3rd annual meeting was held in Nov 2005. Attendees included sponsors (BP, Chevron, ConocoPhillips, ExxonMobil, Shell Chemicals), principal investigators, Scientific Review Panel, and Ethics Review Panel. The investigators presented an update on the 3 studies:

1. Case Control studies of acute myeloid leukemia (AML) and Non-Hodgkin's lymphoma (NHL)
 2. Disease Progression of haematopoietic diseases
 3. Molecular Epidemiology of cytogenetic abnormalities
- Case accrual is ahead of schedule for the case control and disease progression studies with indications that protocol numbers will be achieved by YE06.
 - The diagnostic laboratory supporting the study has been moved, administratively, to a different department (Institute of Biomedical Sciences) within Fudan University. This should facilitate the on-going operation of the lab post Shanghai Health Study in its role to provide diagnostic support to Shanghai-area hospitals.
 - 3 papers resulting from study methodologies and results have been accepted for publication.

HIGHLIGHT: Benzene Symposium sponsored by Dr. Jerry Rice, Scientific Review Panel chair, was held at Georgetown University. Purpose of the symposium was to update government regulatory agencies and academia.

A new health effect, benzene-induced myelodysplastic syndrome, has been linked to long-term, high level exposure to benzene. Shell in the US filed a TSCA 8(e) on this finding and also revised the Benzene MSDS to include the effect.

Exposure Assessment: Continue to have challenges in getting level of exposure data that was originally proposed in the study protocols. Focus is on extra effort and methodology development to do sector analysis.

Path Forward

2006: Case accrual complete
2006 Annual Meeting
Planning for successful closure of study

- 2007: Data analysis
Publications
Laboratory, tissue bank, and database transitioned to Fudan University
2007 Annual Meeting
- 2008: Publications continue
Study closing event
International Benzene Symposium (not a SHS project, but study will be presented)

Shell Representatives to BHRC

Oversight Committee:	Patsy Clegg, Chair
Technical Committee:	Stuart Cagen, Co-Chair Shan Tsai
Budget Committee:	Stuart Cagen, Chair
Communications:	Sarah Colletti

Shanghai Health Study - Project Update – Q3 2004
September 27, 2004
DRAFT

The objective of this memo is to provide an update on the Shanghai Health Study (SHS). This study, sponsored by the Benzene Health Research Consortium of which Shell Chemicals is a member, is a multi-stakeholder health study in Shanghai, China, which aims to better define the hazards and health risks from exposure to benzene.

The SHS held its second annual meeting in August 2004 in Monterrey, California. The meeting brought together the Principal Investigators (both Chinese and American research team members), the Scientific and Ethics Review Panel members and the industry sponsors. The objective of the meeting was to provide a forum for reviewing the study's progress to date and expectations going forward. The two-day meeting included an open plenary session intended to discuss the progress of the study to date as well as closed meetings of the Scientific and Ethics Review Panel members and the Principal Investigators.

Patsy Clegg, Shell Chemical's Benzene Product Steward and Chair of the Benzene Health Research Consortium Oversight Committee, opened the session emphasizing the participating companies' ongoing commitment to product stewardship; the importance of the industry's commitment to better understanding the potential effects of benzene exposure and the study's role in helping industry effectively manage and minimize risk. Patsy also emphasized the importance of the cooperative and collaborative relationships that have been established among the researchers, the Scientific Review Panel and the Ethics Review Panel.

Participants offered their views on some key accomplishments and milestones including:

- The launch of the start-of-the-art lab Joint Sino-U.S. Clinical and Molecular Laboratory (JCML) at Fudan University in December 2003
- Partnership with 30 Shanghai hospitals that have allied themselves with the JCML
- Since January 2004, the inflow of cases into the JCML has exceeded expectations by two times the original estimate.
- No cases or controls have refused to participate in the study
- Several factories have agreed to participate and formal data collection is underway for 3-4 factories; the PI's conducted preliminary analyses on one factory, a Shanghai rubber factory.
- Preliminary results indicate that the study will indeed make a difference and help bring new clarity to the field.

Some of the key challenges noted at the conference include:

- Efforts to recruit factories and current workers to participate
- Data gathering and measurement of the workplace environments
- Quality control associated with recruiting of participants

In closing, the participants emphasized the importance of accurate exposure assessments to achieving the goals of all three studies, seeking to establish dose-effect relationships between benzene exposure and adverse health consequences. The participants also highlighted the importance of ensuring that the JCML continue to operate, providing diagnostic services and support for research long after the SHS concludes in 2006.

The 2005 meeting would be held in Shanghai the first week of November.

Background on the SHS:

Shell Chemical is participating in a multi-stakeholder health study in Shanghai, China, which aims to better define the hazards and health risks from exposure to benzene. The project participants include a wide range of stakeholders including the Fudan University Medical Center, University of Colorado Health Sciences Center; Applied Health Sciences, Chinese public health agencies, Shanghai hospitals as well as several peer energy and chemical companies. This study, which is part of our commitment to product stewardship, will help clarify previous assumptions regarding benzene health risks and will also help address some recent questions about benzene hazards and exposure. Further, this information will provide the industry with information, which we can use to determine what, if any, improvements are needed in existing protocols. The study will examine past and current exposures in Shanghai-area manufacturing facilities (none are Shell facilities and the benzene not a Shell product). A state-of-the-art clinical and molecular laboratory was built on the Fudan Medical University campus to support the research project and the Shanghai medical community. Chinese technicians have been trained to operate the lab. This facility will remain at Fudan once the project is completed.

For additional information or inquiries, please contact Patsy Clegg at 713-241-2521 or patsy.clegg@shell.com.