The Shanghai Health Study

Patsy Clegg
Chair, Oversight Committee
Shell Chemicals, LP

May 2004

What is the Shanghai Health Study?

- A long-term clinical study to investigate the potential causes and development of lympho-hematopoietic diseases (diseases of the lymphoid organs, blood and bone marrow) as related to benzene
- A project of Fudan University Medical Center; University of Colorado Health Sciences Center; Applied Health Sciences - an independent U.S. research firm; Chinese public health agencies; and Shanghai hospitals

Benefits to Industry

- Set science-based standards to protect workers and general population from benzene-induced disease
  - Mobile source air toxics standards
  - Water quality standards
  - Site remediation clean-up standards
- Corporate responsibility and product stewardship

Shanghai Health Study Purpose

- To gain a quantifiable understanding of the relationship between benzene exposure and potential associated cancer risks

Path to developing the study:

- Pre-97: Benzene exposure associated with AML
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Benzene exposure and cancer
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   - 450 AML and 450 NHL patients into study
2. *Disease Progression Study*
   Prospective study on relationship of non-cancer bone marrow disease and benzene induced AML
3. Molecular Epidemiology Study
   Prospective study to establish quantitative relationship between exposure and effect

Uniqueness of Shanghai Study

- Prospective research
  - Patients at participating hospitals suspected of having a lymphoid, blood or bone marrow disease will be referred to the SHS
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- Study will be able to examine primary diagnostic and medical data in real time
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Uniqueness of Shanghai Study

- Robust data set
  - State-maintained benzene exposure and health effects databases documented from 1970s
  - Benzene related health effects are #2 in reported chronic occupational health hazards in China in 2001 (*Source: Ministry of Public Health*)
  - Large range of exposure levels from a variety of occupational sources
- Regulatory authorities interest in improving benzene exposure regulation and enforcement

Quality, Independent Science

- All protocols reviewed and approved by external Institutional Review Boards (IRB's)
  - Govern use of human subjects
  - U.S. and China independently
- Shanghai Health Study independent review panels
  - International Ethics Review Panel
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    - 12 members
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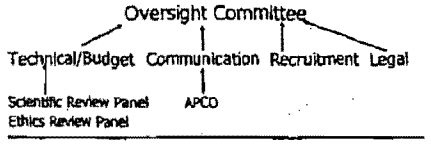

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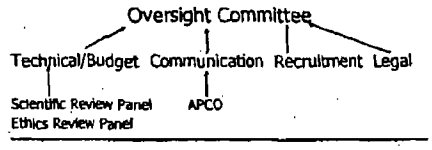

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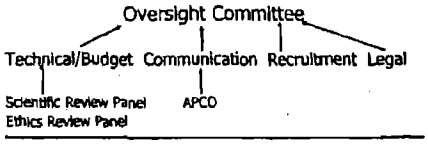

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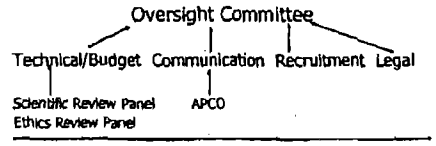

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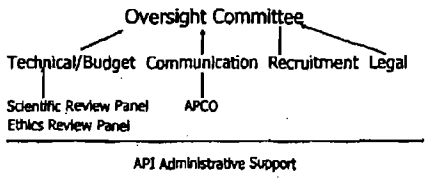

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