

POOLED ANALYSIS OF PETROLEUM WORKER EPIDEMIOLOGY STUDIES

Issue: Risk Management

Department: RASA

Program: Risk Management

Task Force/Staff: Benzene TF/Bruce
Jarnot

Segment(s): Multi-segment

Y2008 Budget Amount: \$100K **Prior Cost:** \$100K **Future Cost (2009–2013)*:** \$400K

Project Description:

This 2008 project contributes \$100K additional to the CONCAWE/API *Pooled Analysis of Petroleum-Worker Epidemiology Studies*: epidemiological analysis of pooled cohorts from 3 recent petroleum-worker case-control studies. Since last year, investigators revised the scope to update of the UK cohort, consistent with their earlier proposed updates of the Canadian and Australian cohorts. The expanded scope extends the study timeline into early 2009 and increases the proposed API contribution with \$100K additional funding in 2009.

CONCAWE requested leveraged co-funding for a "pooled analysis", combining populations from three recent epidemiology studies of petroleum industry workers. One, the Australian Health Watch study, implicated benzene as a causal factor in chronic lymphocytic leukemia (CLL) and suggested that CLL and acute myelogenous leukemia (AML) were increased at much lower benzene exposures than previously reported. The other two studies, of British (UK) petroleum workers and an Imperial Oil (IOL) cohort from Canada, did not report similar findings.

Benefit to Industry:

The statistical power from three pooled data sets will enable a more rigorous examination of CLL associations reported in the Australian Health Watch Study. Without this review, potential association of CLL as a "new" form of leukemia linked to benzene exposure adds questionable burden to benzene-based litigation. The suggested AML and CLL associations at very low benzene exposures challenge current thinking that benzene induced leukemias occur only at higher exposures. This could lead to tightening of benzene regulations related to occupational (especially in the EU), air quality and site remediation standards, which in turn would lead to unnecessary expenses to meet standards with no additional health protection.

***Future Costs Over Next 5 Years (2009-2013; in 2007 dollars):**

Pooled analysis of worker data may reasonably be expected to take longer and cost more than originally projected. Based on IOM recommendations, this effort may require 1-2 additional years of funding past 2009. We have estimated 2 years additional funding during this period, totaling \$400K.

Anticipated Research Needs Based on Regulatory and Legislative Issues Beyond 2013:

No additional funding is anticipated for this project beyond 2013.

Program Priority: 1