

CC/DP Exposure Assessment for PROBABLE “BENZENE” EXPOSED

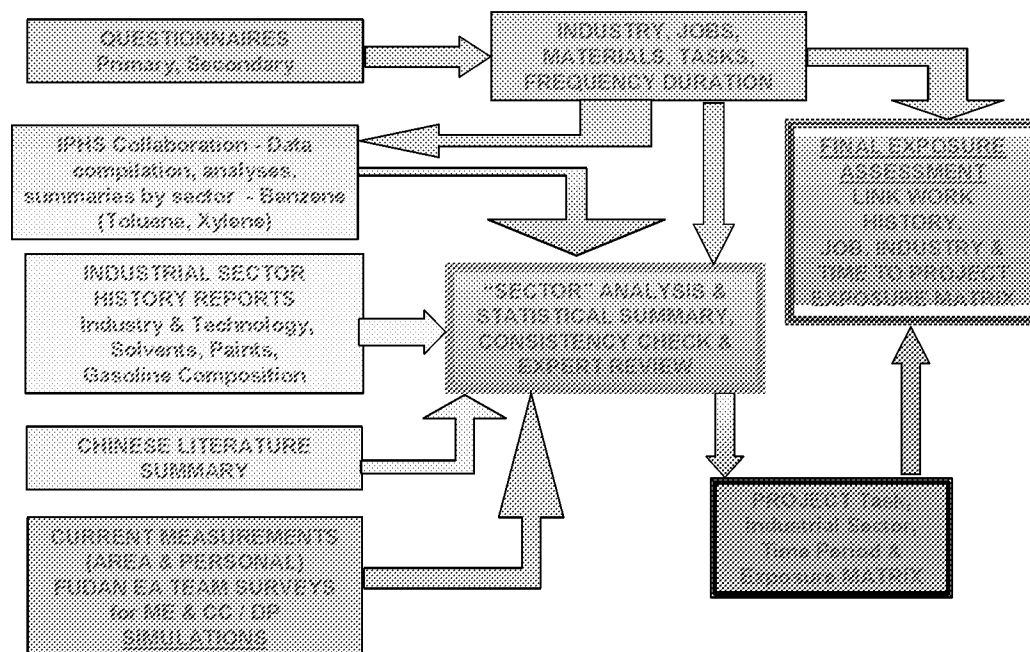


Figure 2. CC/DP Exposure Assessment for Probable “Benzene” Exposed.

III. Molecular Epidemiology (ME)

Another visit and survey of the Shanghai rubber plant operations was completed in early June. As part of this visit, IH samples were split to evaluate variability and/or bias in sampling media and laboratory analysis procedures for benzene in air. Urine was collected for the majority of the workers for determination of urinary benzene metabolites. This will complete the fieldwork for the ME Phase II study.

To date, over 1000 individual subjects have been recruited to the Phase II study from 5 different factories representing the rubber, pharmaceutical, asbestos/rubber composites and shoe manufacturing industries. A subset of these workers have been evaluated up to three separate time periods, in three different seasons, and in three different years, to establish a more accurate exposure profile. It is likely that publications on the ME Phase II study will consist of somewhat fewer than 1000 subjects since not all data (metabolites, exposure and outcome) is available for all workers. Notwithstanding, the power of the study should be considerable compared to past efforts in the literature. During 2006, a total of 583 urinary and blood metabolite samples were collected spanning exposure ranges from <1 ppm to >40 ppm. Blood CBC, benzene metabolites, polymorphism and exposure datasets are being organized, and an effort is underway to independently validate analytical methodology used in the analysis of benzene blood and urinary metabolites.