

APPLIED
EPIDEMIOLOGY
INC.



JUN 5 2000

June 1, 2000

Ms. Marianne Kaschak
Industrial Health Foundation
34 Penn Circle West
Pittsburgh, PA 15206-3612

Dear Marianne:

Enclosed is a brief progress report, as requested by the Committee. In general, I believe that we are reasonably in line with the revised schedule discussed at the meeting in Köln. As you will see in the enclosed report, we now have in hand all data except those from Leverkusen, and these we should have in good shape by the end of June. We are now in the process of evaluating the exposure and work history data, as a preliminary step toward the development of job exposure matrices.

Please do not hesitate to contact me if you have any questions about the interim report or would like more detailed information on any aspect of the study.

Sincerely yours,

Kenneth A. Mundt, Ph.D.

enclosure

**Cohort Mortality Study of Four Chromate Production Facilities,
1958 - 1998: INTERIM REPORT**

Applied Epidemiology, Inc.
June 1, 2000

Following is a brief summary of project tasks as of June 1, 2000. A description of the broader project goals and objectives appears in our agreement of August 14, 1998

Data Acquisition

Data acquisition is nearly complete for all four plants. The accompanying table outlines the data collection effort by specific data type at each plant. For the Uerdingen, Corpus Christi and Castle Hayne plants, data collection is complete. For Leverkusen, data extraction is complete, but several data gaps are currently being filled and other final edit checks performed prior to final transfer to Applied Epidemiology, Inc. (without individual identifiers).

For the two United States plants, reasonable air monitoring but no biomonitoring data were available; however, from the two German plants, extensive urine and blood measures, but limited air monitoring measures, have been obtained. For many specific areas and time periods there are sparse or no data available: as expected, some imputation and interpolation of exposures will be required for these areas/time periods.

For all sites, work history data including job titles and job descriptions have been extracted. However, the linkages between job titles and discrete work areas are under final refinement for the Corpus Christi and Castle Hayne plants. This information is essential to developing the job-exposure matrix, in which indicators of chromium exposure by work area and time period are linked to individuals via their specific work histories.

Smoking data are nearly complete for the two Bayer facilities, but somewhat limited for the Corpus Christi and Castle Hayne plants. Analyses involving smoking history may need to be limited to those with adequate smoking data, or some methods for imputation will be considered.

Collection of data on vital status and cause of death has begun. Some death certificates of and/or cause death information have been obtained from each of the plants.

Data Editing and Database Construction

All cohort data received by AEI to date have been edited and entered into our ProQuest database management system. The edited and verified data from the Leverkusen plant are expected to be received by the end of June, and these will be incorporated into ProQuest shortly thereafter. Some data gaps and questionable data values are currently being researched by contacts at the individual plants; however, database construction is largely completed.

(continued)

(Interim Report, June 1, 2000, page 2)

Exposure Data / Job Exposure Matrix

Descriptive analysis of the exposure data has begun, in preparation for construction of plant-specific job exposure matrices (JEMs). Homogenous exposure groups (HEGs) are being defined for each plant and will be used to develop a JEM for each plant. Based on the quantity and quality of available exposure indicator data, the final strategies for summarizing exposure in each exposure area and time period will be determined next.

Vital Status / Cause of Death Determination

For the two United States plants, applications for using the Social Security Administration (SSA) databases and the National Center for Health Statistics' National Death Index have been filed. Upon approval (due within two to three weeks), search requests will be submitted, including all cohort members from these plants not otherwise known to be either dead or alive (e.g., currently employed). The SSA service is unique in that it not only identifies deceased workers, but also identifies workers known to be alive.

Vital status and cause of death information is currently being prepared for each of the German plants.

Next Steps

Before the mortality analyses can be conducted, two major tasks must be completed: construction of the final job exposure matrices; and obtaining complete vital status and cause of death information. For the next several months, the focus will be on exposure assessment, although the obtaining of vital status and cause of death information may be accomplished concurrently. As outlined in detail in the protocol, exposure assessment consists of several stages, the first of which have been completed for some plants (specifically the identification of exposure groups (HEGs) and the identification of exposure periods). Currently, the available exposure data are being assessed by HEG and time period for potential use in the JEMs. After filling out the JEMs, cells with sparse data and data gaps will need to be addressed.

It is anticipated that the exposure assessment will be completed by about October or November, after which the mortality analyses can be conducted.

Summary of data received by AEI from plants participating in the IHF chromium study.

	Bayer		Elementis	Occidental
	Leverkusen	Uerdingen	Corpus Christi	Castle Hayne
<u>Industrial Hygiene Data</u>				
Area air monitoring	yes	yes	yes	yes
Personal air monitoring	yes	yes	yes	yes
Biomonitoring data	in progress	yes	NA	NA
I.H. program history	in progress	yes	yes	yes
<u>Work Areas</u>				
Distinct Areas defined	in progress	yes	in progress	in progress
Job Titles	in progress	yes	yes	yes
Job Descriptions	in progress	yes	yes	yes
<u>Human Resources Data</u>				
Employee list	in progress	yes	yes	yes
Employee job histories	in progress	yes	yes	yes
Age	in progress	yes	yes	yes
Sex	in progress	yes	yes	yes
Ethnicity	NA	NA	yes	yes
Smoking data	in progress	yes	yes	yes
<u>Outcome Data</u>				
Vital status	in progress	yes	partial	partial
Cause of death	in progress	in progress	application submitted	application submitted
Chrome sores	no	no	partial	partial
Nasal lesions/perforations	partial (from medical exams)	no	partial	partial

NA=not available

[updated 6/1/2000]