

**APPLIED
EPIDEMIOLOGY
INC.**



January 23, 1997

Dr. Hasmukh Shah
Manager, Vinyl Chloride Panel
Chemical Manufacturers Association
1300 Wilson Boulevard
Arlington, VA 22209

Reference: Tamburro Study

Dear Dr. Shah:

As requested, I have assembled below some notes from our January 17, 1997 meeting with Carlo Tamburro and Phil Fortwengler (and Jonathan Ramlow and Ed Beeler via telephone) in Louisville, Kentucky, as well as the follow-up telephone conference conversation with the same group on January 21, 1997.

January 17

1. Phil Fortwengler provided a summary of progress to date, walking us through a notebook containing the following:

- ◆ cohort constitution
- ◆ detailed work history sample
- ◆ site buildings, areas and job designations
- ◆ summary of exposure ranking scheme
- ◆ procedure for linking job history and ranks
- ◆ creating a job exposure matrix (by year)
- ◆ results of ERI mortality search (200 additional deaths)
- ◆ list of cancer cases and verification to date

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One copy of the notebook will be sanitized of all individual identifiers and forwarded to Ken Mundt for reference and to facilitate collaboration on establishing comprehensive and accurate data bases (received by Ken 1/22/97).

2. Phil and Ken discussed mutual data needs and procedures for data sharing. It was agreed that all exchanges of data must comply with any confidentiality agreements entered with states, companies, or CMA. Ken will send Phil information on one individual in the CMA cohort on whom employment information has been lost at the plant. Additionally, Ken will send an Excel file containing all individuals in the CMA cohort associated with the Louisville plant.

3. Has and Ken noted that the current study protocol still does not meet the expectations of CMA's Guidelines for Good Epidemiological Practices (GEPs). For example, all key members (such as the biostatistician) of the research team have not been identified, nor procedures for conducting and documenting scientific review procedures, if any. Has noted that the contract specified that all work performed on the study would comply with the GEPs.

4. Ken requested that Carlo address the comments received from expert reviewers Drs. Harvey Checkoway and Gary Marsh, as Carlo's written comments (letter to R. Venezia dated October 17, 1996) were largely unresponsive. This led to a broader discussion of whether the analysis, as described in the protocol and given the small number of brain cancer cases, would be informative and valuable. Ken proposed, and Jonathan agreed, that Carlo should consider analyzing the data in conventional ways in parallel with the proposed methodology. Carlo explained that this was not his understanding of the purpose of the study. Carlo had to excuse himself to teach a class before this discussion was completed. It was agreed that discussion would resume via a conference call, scheduled for Tuesday, January 21, at 9:00 a.m.

January 21

5. Conference call began with Has, Jonathan, Ed and Ken, as Carlo and Phil were not immediately available. Group reviewed key points from previous meeting, and discussed a strategy for proceeding. Has proposed that another face-to-face meeting be scheduled to resolve the issues of how the data should be analyzed, and by extension, how to address the reviewers' comments. Additional agenda item included adding a biostatistician to the study team, as well as an occupational epidemiologist. Jonathan recalled Carlo having worked with Ralph Buncher, and suggested that he be invited to assist Carlo.

6. Carlo and Phil joined the conversation. Carlo explained that he had intended to discuss during the January 17 meeting the role of one or more biostatisticians, and his interest in discussing further the various means of analyzing the study data (necessarily including the Greenberg method).

7. Jonathan suggested and all agreed that a "mini-symposium" be held in the near future to explore alternative analyses and determine a final strategy. Carlo will check on the availability of his staff and biostatistician(s), and Has will coordinate among the CMA representatives.

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8. Carlo agreed that the current version of his protocol was not complete, and that he will add the missing elements, including C.V.'s of the biostatisticians. However, he noted that until the final analytical plan were established, that section of the protocol would be incomplete. Whether and how the original reviewers' comments will be addressed was not determined.

9. Carlo requested that Ken provide a paragraph or two outlining the sequence of events to take place regarding the analysis of the study. This should be accomplished via the proposed mini-symposium. Carlo also requested that Ken provide a description of the analysis plan for the CMA mortality cohort update. Ken will send Carlo the appropriate pages from the protocol.

I hope that this is helpful. Please call if you have any questions or comments.

Sincerely yours,

A handwritten signature in black ink, appearing to be 'Ken' with a stylized flourish at the end.

Kenneth A. Mundt, Ph.D.