

20 FUTURE DIRECTIONS

A careful review of the results of the last five physical examinations provides an opportunity to refine and focus the remaining examination of the Air Force Health Study. The current and prior examination outcomes have identified several medical tests requiring more intense evaluation and other analyses that can be reduced or eliminated in the 2002 study while still satisfying the study protocol.

The recently completed pharmacokinetic study of dioxin elimination in Ranch Hand veterans suggests that additional measurements per subject will not increase the precision of the estimated elimination rate. Thus, only those participants new to the study or those who have not already had a dioxin measurement will be invited to give blood for a dioxin assay in 2002.

In the final morbidity report, the Air Force intends to present a review of all herbicides sprayed by Operation Ranch Hand: 2,4-D, 2,4,5-T, picloram, and cacodylic acid, as well as 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD, or dioxin).

The Jenkins Activity Survey, used to determine personality type (a covariate in the analysis of cardiovascular data), has become inappropriate to administer to elderly retired men because the survey questions refer to on-the-job situations. Alternative measures of personality type will be sought as a replacement for this instrument. In this regard, a thorough reassessment of covariate adjustments across all clinical areas will be made. New covariates may be added and out-of-date covariates may be dropped.

A new series of statistical analyses, accounting for disease outcomes that may cross two or more clinical areas, will be considered. The possibility of second-order effects will be studied for inclusion in the next report. A multifactor approach may be used to assess psychological outcomes, for example. Changes to or replacement of the current longitudinal analyses will be considered to explicitly account for loss-to-follow-up and time-dependent covariates.

Statistical modeling will be reviewed. In particular, Model 2 will be reassessed to address possible changes in the elimination rate with body fat. An analysis stratified by category of body fat measured in an earlier examination may be used. Interactions between extrapolated initial dose, disease outcome, and percent body fat will be considered as alternate approaches.

Special efforts will be made to address loss-to-follow-up and possible differential compliance due to ill health or other reasons that would bias the study. Expanded questionnaires may be administered to noncompliant veterans and consideration will be given to sending medical teams to the homes of veterans who report that they are too ill to attend the physical examination.

Analyses of disease prevalence among all study subjects, regardless of their compliance to the 2002 physical examination, will be accomplished and summarized in the final report.