Research Resources of the Fernald Community Cohort

The members of the Fernald Community Cohort (FCC) were participants in the Fernald Medical Monitoring Program (FMMP). The FMMP was a voluntary ongoing medical surveillance program for 9782 community residents living within five miles from the perimeter of a former US Department of Energy uranium-processing site, located near Cincinnati. Members of the cohort received medical screening examinations every two or three years, over an 18 year period, from 1990 to 2008 when the program ended. Medical history on this population is extremely well characterized, verified, and all cancer diagnoses have been validated with medical records. Extensive disease risk factor information has been collected, and for most information, prior to disease diagnosis. (Links on the left hand side of this page direct you to extensive descriptions of the data and codes.) The FCC has repeat measures of clinical laboratory tests on all cohort members, and a Medical Heritage program designed to allow standardization of the data for time dependent changes. Much of the clinical information is coded and all data are stored in a series of related SAS databases.

Blood and urine specimens were collected at enrollment and at various intervals throughout follow-up and were cryo-preserved in -80 degree C freezers. At the first examination three 1-ml aliquots of whole blood, plasma, serum, urine and urine with buffer were obtained from each participant (15 aliquots per person) for future analyses. Additional whole blood and serum was obtained in 1996-1997 and 2006-2008. To date, only a small proportion of the specimens have been used for research. We have a large inventory database of all of the biospecimens, with queries that enable us to retrieve information about biospecimens linked to a specific program participant. As of March, 2016, over 70 research projects have used the FMMP data and biospecimens.

This cohort is appropriate to use for studies that are not related to radiation or uranium exposure. Much of the cohort never received exposure beyond the background exposure received by the general population. Extensive uranium dose reconstruction using methods developed by the CDC demonstrate that over 60% of the cohort had such minimal exposure to uranium and radon that their cumulative ionizing radiation exposure was less than 3.2% over lifetime background levels. ***Because the cohort contains a large group of individuals without exposure, the data and biospecimens of the cohort can be used to address a wide range of research questions, both non-exposure related and exposure related.***

Data and Specimen Sharing.

The data and biospecimens of this cohort provide many advantages for future research.

- The Medical history on this population is extremely well characterized, verified, and all cancer diagnoses have been validated with medical records. Extensive disease risk factor information has been collected, and for most information, prior to disease diagnosis.
- All medical history and risk factor information is coded and stored in a relational database.
- A family relationship database exists for all FMMP participants, and some other family members.
- The FMMP has repeat measures on blood, serum and urine analytes on all participants, and a Medical Heritage program designed to allow standardization of the data for time dependent changes.
- An extensive collection of archived samples, most collected in 1991-1993, and

currently in excellent condition, already exists and is available for studies of proteomics, genetic variation, and urinary markers of both exposure and disease.

- The extensive information on participants of the FMMP allows for the selection of tailored control group subjects.
- The cohort is not racially diversified, which enhances the opportunity for detecting relationships between genomic variation and disease, and for discovering biomarker predictors of disease.

Use of the FCC Data and Biospecimens: Individuals and groups interested in using the FCC database and samples for health-related research may apply for Access to Data and/or Biological Specimens. If approved by the Research Director, with the advice of the Fernald Community Cohort Advisory Committee, data files from the FCC database or archived samples (frozen whole blood, serum, plasma and urine) may be distributed to qualified researchers.

Any individual or group desiring access to the FCC database or archived samples for purposes of analysis must first submit an application to the FCC Research Director, Dr. Susan M. Pinney, who, in turn, will first obtain input from the Fernald Citizens' Advisory Committee. Pdf files of the FMMP Access to Data and Specimens Policy can be accessed from this webpage.