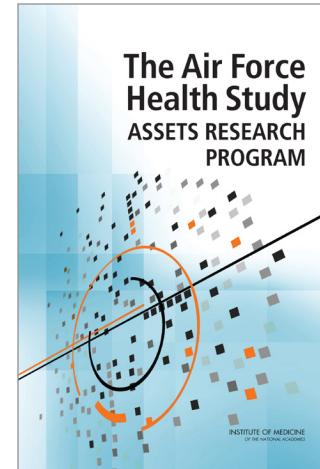


The Air Force Health Study Assets Research Program

Findings, Conclusions, and Recommendation



Initiated in 1979, the Air Force Health Study (AFHS) is a longitudinal, prospective epidemiologic study of more than 2,700 men followed for approximately 20 years. The AFHS cohort participated in six intensive physical examinations with high rates of compliance. In addition to a complete record of clinical measurements and observations collected during these exams, serum and other biological samples were obtained and preserved. Extensive questionnaires addressing health, lifestyle, and socioeconomic status were administered during each exam, and other information was obtained about the participants' employment, families and offspring, and potential sources of environmental exposures. More than 200 clinical laboratory tests and measures were conducted and evaluated, and more than 60 of these were measured at all six exams. Although the study was completed in 2006, the extensive health data and biospecimens remain a resource for additional research. The AFHS is a rare example of a well-designed cohort study that includes the collection and storage of biospecimens for use in current and future analyses.

In 2007, Congress directed that custodianship of the AFHS data and biospecimens be transferred from the Air Force to the Institute of Medicine's (IOM's) Medical Follow-Up Agency (MFUA). In a separate law, Congress directed the Department of Veterans Affairs (VA) to provide funding to MFUA to maintain and manage the AFHS assets and make them available for research aimed at understanding determinants of health and promoting wellness in veteran as well as non-veteran populations. MFUA convened an advisory committee that was charged with administrative oversight of the research program and established a process for soliciting and reviewing research proposals. International and U.S. researchers from academic institutions, industry, and government organizations were eligible to apply for access to the AFHS assets. Since MFUA became the custodian of the AFHS assets, more than 80 inquiries from researchers have been received. As of February 1, 2015, 19 proposals spanning a wide range of scientific, biomedical, and public health research topics were reviewed by the committee and 13 proposals were approved; 6 studies required access to the data only, and 7 studies used both data and biospecimens. Given the rapid development of new analysis techniques and instrument technologies; assay methods with improved analytical sensitivity and specificity; and an abundance of existing proteomic, metabolomic, and genetic methods that can be applied to specimens and data from the AFHS, the potential value and utility of the AFHS specimens is far greater than what was originally imagined at the beginning of the study.

Congress also directed the IOM to issue a report assessing the feasibility and advisability of conducting additional research on the AFHS data and biospecimens based on MFUA's experience since becoming the custodian of these assets. Included are discussions and results, where applicable, of pilot projects and other research studies approved for use of the AFHS data or biospecimens. In *The Air Force Health Study Assets Research Program*, an IOM committee responds to that congressional directive. The committee's findings, conclusions, and recommendation appear below.

Findings

Scientific Value of the AFHS Assets

- A great majority of AFHS cohort members continue to allow use of their data and biospecimens for research.
- The biochemical integrity of the AFHS biospecimens appears to be well preserved, and the biospecimens are amenable to analysis by long-established and newly developed assays.
- A broad spectrum of the scientific community has demonstrated interest in performing research on the AFHS data and biospecimens.

AFHS Assets Management

- IOM staff have begun the process of transforming and standardizing the AFHS data into a form that is more amenable to modern data curation and research techniques.
- The IOM's data management practices have preserved the security of the AFHS data and biospecimens and the privacy of the participants' information.
- The Air Force Research Laboratory (where the AFHS biospecimens are physically stored) has successfully managed the collection.
- Pilot funding, provided by VA under congressional direction, catalyzed research involving biospecimens. However, it is premature to draw any conclusions about the effectiveness of the pilot funding effort.
- The IOM has created knowledge about the AFHS assets management process that will benefit future efforts.

Conclusions

- It is possible to manage the AFHS assets and perform high-quality scientific research with them.
- Sustaining access to the AFHS biospecimens and data repository benefits the veteran community and the public at large, who gain from the information derived from studies of the assets.
- The AFHS assets have been underutilized, and the custodian should continue to seek ways to improve management approaches to maximize the use of this resource in research.
- It is feasible and advisable to maintain the AFHS data and biospecimens and make them available for continued use in research.

Recommendation

The committee recommends that Congress continue to support the maintenance of the AFHS data and biospecimens as a resource for research and to facilitate making them available to the scientific community as broadly as possible.

This must be done in a manner that continues to preserve the privacy of study participants and the security of their data.