

ASSESSING THE COMPLETENESS OF OCCUPATIONAL EXPOSURE DATA IN THE LIFETIME SURVEILLANCE OF ASTRONAUT HEALTH

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INTRODUCTION: Longitudinal analysis on how spaceflight affects human health requires significant amounts of data. Missing data, especially if missing in a non-random fashion, could be a significant challenge to the success and validity of ongoing occupational surveillance and research. Astronaut occupational health data have been collected since 1959 in various formats and as part of several flight programs. As a result of changing methodologies over this span, epidemiologists in the NASA Lifetime Surveillance of Astronaut Health (LSAH) project regularly compile data sets with important exposure or outcome data missing.

METHODS: NASA medical records of astronauts participating in voluntary annual LSAH examinations were reviewed and compiled to develop Individual Exposure Profiles (IEP) for each astronaut. These data were supplemented by an interview. If the interview yielded medically relevant information absent from the medical record, that information was considered an update. The IEPs were analyzed to identify trends regarding the characteristics of astronauts who provided updates and what kinds of information were consistently being updated.

RESULTS: To date, 190 astronauts have participated in the IEP project. Medical information was updated for 119 individuals during these interviews. The astronauts' likelihood of updating their record upon interview was not significantly related to their spaceflight experience, era of active spaceflight, or duration of longest spaceflight. The most commonly updated categories of medical information were issues encountered during spaceflights, including CO₂ symptoms, vision changes, back pain, headaches, and space motion sickness.

DISCUSSION: The most commonly updated categories correspond to areas where LSAH has ongoing analysis efforts and therefore do not appear to have been reported at random. This presentation will address identification of missing astronaut health data and trends, forward work identified by the IEP project and how this information may be used for future LSAH data gap analyses.