

SOARING TO NEW HEIGHTS

Largest Workplace Health Study Involving Nearly 250,000 Employees

After examining the employment and exposure records of nearly 250,000 employees over a span of 50 years in what has been called the largest workplace health study ever conducted, professors, staff and a small army of students from the UIC School of Public Health Division of Environmental and Occupational Health Sciences hope they will soon know if the observed cluster of brain cancer in employees at a jet engine manufacturing plant can be linked to their workplace.

Nurtan Esmen, PhD, and his research team, including Steven Lacey, PhD, Roger Hancock and Kathleen Kennedy along with a team from the University of Pittsburgh led by Gary Marsh, PhD, and Jeanine Buchanich, PhD, have spent the past seven years investigating Pratt & Whitney Aircraft workers in Connecticut. The team hopes that the study, which generated more than 7 million person-years of observation, will help determine if a toxin the workers were, or are, exposed to, is associated with brain cancer or other causes of death.

“The study will be of no use to people who have already accrued the risk, other than that they will know the risk they carry if an association exists,” Esmen said. “If we determine that a cause is associated with something that is used today, it will be useful because they can stop using it.”

The study began in 2001 as an investigation into an apparent cluster of brain cancers at Pratt & Whitney’s plant in North Haven—13 cases of primary malignant brain tumor among the workers, 11 of them glioblastoma, a uniformly fatal form of brain cancer. People diagnosed with glioblastoma typically have less than 18 months to live, Esmen said.

According to Esmen, the best potential outcome at the conclusion of the study would be that they determine the cluster of brain cancer cases “just happened,” with no known cause, which would mean that people who work, or worked, at Pratt & Whitney did not accrue any risk associated with employment there.

“The second best outcome would be that the cancer is due to something they (Pratt & Whitney) used in the past and no longer use today,” Esmen said.

The worst outcome for the workers would be if the study finds the cancer is associated with something that continues to be

used today – which would mean anyone who was exposed to the toxin has an increased risk to develop cancer, Esmen said.

To make their determinations, the study teams had to search through over 126,000 boxes of data in storage, which has been time-consuming and somewhat tedious.

“It was overwhelming at times and we often felt like we would never be able to manage it,” Lacey said.

Once, Esmen and Kennedy pored over records in more than 50 boxes and found nothing, before they finally found 100 boxes in a row with information they needed.

“It is like detective work – trying to find what we need,” Kennedy said.

But while the massive size of the study may have made the work more difficult, it should also help detect even subtle patterns that might point to tumor causes.

“We don’t know much about brain cancer in general,” Lacey said. “Many oncologists seem very interested in our study, because as clinicians they feel hopeless (when a patient is diagnosed with brain cancer).”

The group expects to publish preliminary findings in 2008 and final results in 2009. The study was featured in the March 2008 issue of Scientific American. ■



Nurtan Esmen, PhD,
Steven Lacey, PhD &
Kathleen Kennedy