



***FACT SHEET #3***

***February 2002***

**Investigation of a Possible Brain Cancer Cluster at Pratt & Whitney  
by the CT Department of Public Health**

The Connecticut Department of Public Health (DPH) began an investigation into a suspected cluster of brain cancer at the Pratt & Whitney North Haven Plant in May 2000. The investigation was instituted after members of the IAMAW Local 707 gave DPH a list of names of employees from the Pratt & Whitney North Haven facility that were suspected of having had brain cancer. A working group was set up to monitor the progress of the investigation and included representatives of DPH, The University of Connecticut Department of Occupational and Environmental Medicine, Health and Safety representatives of Local 707 and Pratt & Whitney personnel from the Medical, Human Resources, and Environment Health and Safety departments. A number of meetings were held by the Working Group and a process of confirming cases and work site histories was agreed to by all parties.

In April 2001, a fact sheet on the status of the brain tumor investigation was distributed to current and former employees of the Pratt & Whitney plant in North Haven. At that time only four primary malignant brain tumors were confirmed among employees who worked at the North Haven plant who were on the list that had been shared with DPH. At that point in the investigation there was not enough information to determine if the number of cases was more than expected. DPH recommended continued monitoring of the situation and the Working Group identified a method for early identification of possible cases via review of insurance claims.

The April 2001 Fact Sheet and subsequent media coverage generated additional reports of suspected cases (5 more were confirmed among North Haven employees) by May 2001. At this point the Commissioner of Health, Dr. Joxel Garcia, requested assistance from the National Institute of Occupational Health and Safety (NIOSH). NIOSH is the federal agency responsible for conducting research and making recommendations for the prevention of work-related disease and injury. NIOSH agreed to review the results of the investigation to date and to provide technical assistance. The Working Group realized that a comprehensive evaluation of the situation required dedicated resources and researchers who would bring expertise in a variety of technical issues to the study. Therefore, the Working Group encouraged Pratt & Whitney to hire an epidemiologist to conduct a comprehensive study. The researcher who was selected for the study, Dr. Gary Marsh, was recommended by DPH's technical consultant at NIOSH and was agreed to by the Working Group.

As of mid-January 2002, the investigation had confirmed that from 1960 – 2000 there were 19 cases of primary, malignant brain tumors diagnosed among persons who were ever employed at the North Haven plant between 1952 and 2000. Malignant brain tumors take many years to develop. Therefore, persons diagnosed with these brain tumors would most likely have had the relevant exposures in the 1950s through the 1970s.

The study that will be conducted by Dr. Marsh and his group will build on information that has been collected by DPH but also will increase significantly the scope of the investigation. A working group will continue to meet and provide information and direction to the study. Dr. Joxel Garcia and the members of DPH who participated in the investigation are committed to seeing that this study is conducted in a scientific and timely manner. Epidemiologists at DPH will review all aspects of the study and will be active collaborators in the upcoming study.

**Study on Incidence of Brain Cancer & All Cause Mortality**  
**University of Pittsburgh and University of Oklahoma**

The first step in this process was to determine if there were sufficient data to conduct a study. Dr. Nurtan Esmen of the University of Oklahoma and Dr. Gary Marsh of the University of Pittsburgh met with DPH, plant officials and the union on September 11, 2001. As a result of these meetings and a review of available data, Drs. Marsh and Esmen submitted the findings of their feasibility study to P&W in November 2001. They concluded, from their evaluation of available P&W employee and plant exposure records, that conducting a full-scale epidemiological study was feasible, and that the study should include all current and former P&W facilities in Connecticut.

In January 2002, Dr. Marsh visited the North Haven and East Hartford sites to participate in a series of talks and question/answer sessions with active P&W North Haven employees and family members. At these meetings, he provided an overview of the study objectives and the study design being considered for this investigation.

The study is being designed to achieve four main objectives:

- (1) To identify any additional living or deceased brain cancer cases among P&W employees that were not identified by the earlier CT DPH study.
- (2) To construct from available personnel records a complete study population of former and current P&W employees from which the brain cancer cases could have arisen.
- (3) To use the information obtained in (1) and (2) to determine if the number of brain cancer cases (living or deceased) observed among P&W employees is greater than the number that would have been expected in the general population of the United States, the state of Connecticut and the local areas surrounding the study sites.
- (4) If it is determined in (3) that the number of brain cancer cases is elevated relative to the general populations, then an attempt will be made to determine the reasons for the elevation.

Dr. Marsh's study will consist of two parts, a historical cohort study and a nested case-control study. The historical cohort study will be directed by Dr. Marsh and will focus on study objectives (1) to (3). The study will include all persons ever employed at one or more of P&W's seven Connecticut facilities (North Haven, East Hartford, Middletown, Southington, Cheshire, Rocky Hill and Manchester Foundry). This study, which may include over 100,000 persons, will examine and compare mortality and incidence rates from brain cancer and many other underlying causes of death. These other cause of death categories will include: all causes of death combined (i.e., total mortality); all cancers combined; organ system or site-specific cancers (e.g., digestive, respiratory and genito-urinary systems); non-malignant diseases (e.g., diabetes, heart disease and respiratory disease) and deaths from external causes (e.g., accidents, homicides and suicides). Any cause of death category that reveals a statistically significant excess number of deaths compared with the standard populations will be evaluated further in the historical cohort study.

The historical cohort study will also include a comprehensive exposure assessment of the seven P&W sites. This assessment, which will be directed by Dr. Esmen at the University of Oklahoma, will attempt to characterize the historical work practices and exposures that occurred in each study site. Dr. Marsh will then use this work history and exposure information to examine the relationship between brain cancer mortality and incidence and the past working environment of the seven study sites.

The second part of the investigation, the nested case-control study, will be directed by Dr. Marsh and will focus on study objective (4). In this investigation, each living and deceased brain cancer case (malignant and benign) will be matched to several employees from the study population who do (did) not have a diagnosis of brain cancer (control subjects). Living subjects or knowledgeable informants are then contacted and interviewed to obtain relevant information on possible risk factors for brain cancer that would be unavailable from P&W personnel records. While radiation exposure is the only established risk factor for brain cancer, some chemical exposures have been implicated in scientific studies. Once this risk factor information is obtained, the work histories and occupational exposure data of the cases and controls will be compared. If any occupational or non-occupational factors have played a role in the brain cancer cases, then we would expect to see a much greater frequency of these factors among the cases compared with the controls.

During his presentations, Dr. Marsh noted several major strengths to the proposed investigation:

- (1) The large study population size will be more likely to produce precise estimates of brain cancer risks.
- (2) By including persons employed during the early history of the site operations in the study, a sufficient latency period is built into the study design. Brain and many other cancers can take 20 or more years to develop.
- (3) The inclusion of all of P&W's Connecticut sites will allow brain cancer mortality and incidence rates to be compared across sites. This will also enable complete study data to be obtained for workers employed in multiple P&W sites.

Drs. Marsh and Esmen are developing the formal study protocol during the first quarter of 2002. The anticipated start date is in second quarter 2002, although some study activities are being initiated this month. Dr. Marsh estimated that the complete study (Parts 1 and 2) may take 3-5 years to complete. He noted, however, that to the extent possible, he will attempt to provide interim results as the study progresses.

### **Questions from the Employee Meetings**

*At the employee meetings there were a number of questions about screening for brain cancer. Dr. Michael Grey, from the occupational/environmental health unit at UCONN and member of the Working Group, has provided the following answers to these questions.*

#### **Brain Cancer Screening: What Should You Know?**

The State Health Department, in consultation with NIOSH, has not recommended that P&W employees be screened for brain cancer. Many of you want to better understand the basis for this decision and the pros and cons of screening for brain cancer. As consultants to the DPH, the UConn Division of Occupational/Environmental Medicine was asked to comment briefly on the issue for this newsletter. Please feel free to share the following information with your family and your co-workers.

#### **Can I be screened for Brain Cancer and, if so, should I be screened?**

In order to be effective, screening for a particular disease or health condition should result in early detection and improved outcomes, such as lower mortality. Examples would be screening for elevated blood pressure or blood sugar screening for diabetes. Early detection in such instances results in treatment and better outcomes (fewer heart attacks, strokes, etc.) Because early detection of brain cancer has not been shown to lower the mortality or morbidity associated with malignant brain cancers, screening for brain cancer is not recommended. Even in industries where the risk of developing brain cancer has been better documented, mass screenings are not performed, nor is routine testing with

imaging studies such as CAT scanning or MRI recommended. There are several reasons for this, but in general the cost versus benefit of screening has not been shown to favor testing. Not to be discounted is that most medical tests have potential downsides in terms of cost, risk of injury, and unnecessary tests, worry and anxiety in the event of false positive testing. In addition, we do not yet know the level of risk for current and past PWA employees. In fact, getting an understanding of this risk is the goal of the study being conducted by Dr. Marsh. As the study progresses and if new information becomes available on the possible benefits of screening, this recommendation would be reviewed.

### **If I have headaches, what should I do?**

If you have been having headaches, especially headaches that wake you up in the middle of the night, or are accompanied by vomiting or nausea, or if you are having any neurological symptoms (seizures, weakness in an arm, difficulty with speech, etc.) a detailed neurological examination by your primary care physician or a neurologist is necessary. If that exam is entirely normal, the likelihood of having a brain cancer is extremely low (<1%) and it is very unlikely that you have a brain cancer. If some abnormality is found, proper follow up testing can be arranged.

### **If I am not having headaches or symptoms, should I have a neurological exam anyway?**

If you are worried but do not have any symptoms, you can still ask your doctor to conduct a neurological examination. It takes just a little bit of time, it does not cost much, and if normal, it will be reassuring to you and your family. If some abnormality is found, proper follow up testing can be arranged.

### **Should I have a CAT scan or MRI of the head?**

Without symptoms that are worrisome for a brain tumor or an abnormal neurological exam, there is very little reason to get an imaging study. These studies take time, are costly, and may find incidental abnormalities that mean nothing in terms of your health but cause worry and generate a whole new set of tests.

This brief summary may answer some of your questions. We recommend a frank and open discussion with your physician with a referral to a specialist as appropriate.

### **Message from Pratt & Whitney**

Pratt & Whitney will continue to cooperate in a collaborative manner with the CT Department of Public Health, the National Institute of Occupational Health and Safety and the study team of Drs. Marsh and Esmen. As the study team performs their investigation, many of the employees will be asked to become directly involved by providing information about the various work processes and work environment over the years. The CT Department of Public Health in conjunction with Pratt & Whitney will periodically provide communication to all the Connecticut employees and involved family members as the study team produces pertinent information. Any pertinent medical or study related questions can be directed to any of the telephone numbers provided below.

### **Resources for Questions or to Report Cases**

*If you would like to report cases you may be aware of, or if you would like to request the previous Fact Sheet, or if you have questions about this investigation, please contact:*

Connecticut Department of Public Health  
Division of Environmental Epidemiology and  
Occupational Health  
410 Capitol Avenue, MS #11OSP, PO Box 340308  
Hartford, CT 06134-0308  
Phone: (860) 509-7744 Fax: (860) 509-7785

*If you have additional questions about this investigation, or would like more information, you may contact:*

IAMAW Lodge 707  
Chief Health & Safety Representative  
Debbie Belancik, Gary Frattalone  
(203) 239-5877  
*or*  
P&W Environment Health & Safety Manager  
(860) 557-3468