

NIOSH STUDY 7/78

that observed for United States males in 1972, 15 deaths due to all cancers and less than one death due to cancer of the pancreas could have been expected among the 86 observed deaths. Upon reviewing this information, NIOSH initiated a more detailed and systematic study of the mortality experience among plant employees. The purpose of NIOSH's investigation was first, to test the hypothesis of an excess of pancreatic cancer and, second, to generate hypotheses for further, in-depth study.

The plant, located in Massachusetts, has been operating since 1901. It currently employs approximately 1500 workers. The majority of active employees at the plant have been working over 10 years and therefore comprise a relatively stable working population. In 1901, the plant began the production of cellulose nitrate and cellulose acetate which ended in the late fifties and sixties. In 1938, the plant began the production of polyvinyl butyral and phenol-formaldehyde.

A few years later, the plant began the production of formalin, formaldehydes, amino plastics, and polystyrene. Production was expanded in the mid-fifties and early sixties and included processes such as polymerization and compounding. Between 1948 and 1975, various vinyl chloride products were manufactured. During this interval, the polymerization of vinyl chloride occurred. In 1968, styrene alcohol products were introduced, and in 1972, barrier resin production began at the plant. In addition, various other chemicals have been manufactured at both the pilot and main plant.

ABSTRACT

The National Institute for Occupational Safety and Health conducted an epidemiologic study of death certificates of former employees of a chemical manufacturing plant in Massachusetts. Proportional Mortality Ratios (PMRs) and Pronotional Cancer Mortality Ratios (PCMRs) were calculated for white male deaths.

Although the PMRs were significantly elevated for cancers of the digestive system and genito-urinary tract, the PCMRs (which used local county cancer mortality as the standard) were not statistically significant. Other factors, such as birthplace and date of death are discussed. Lack of information on personal habits and work histories may have masked possible etiologic factors.

It is possible that occupational factors could have accounted, at least in part, for the observed elevated proportions of digestive and genito-urinary cancers. Suggestions for future study are given.

INTRODUCTION

In 1975, the National Institute for Occupational Safety and Health (NIOSH) was informed of the occurrence of 86 deaths among former workers of a chemical-producing plant. Analysis of the 86 deaths indicated an excess of cancer, particularly of the pancreas. Among the 86 deaths, 21 (24.4%) were attributed to cancer, four of which were due to cancer of the pancreas. When the mortality experience of the plant was compared with