

# Mortality among US employees of a large computer manufacturing company: 1969–2001

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## Abstract

### Background

Previous studies suggested increased cancer incidence and mortality in workers exposed to solvents and other chemicals in computer manufacturing jobs. Most previous studies were of small cohorts and findings were inconsistent. A lawsuit involving a large U.S. company produced a data file for analysis. This study sought to elucidate patterns of mortality in workers who were engaged manufacturing computers and related electronic components in the largest database available to date.

### Methods

A proportional mortality and proportional cancer mortality analysis of deaths in eligible workers between 1969 and 2001 was carried out, with U.S. population mortality data as the standard for comparison. Mortality and work history data was from corporate mortality and work history files produced during litigation and standard U.S. and state mortality files. The study base comprised 31,941 decedents who died between 1969 and 2001, who had worked for at least five years and whose death information was collected in the corporate mortality file. Proportional mortality ratios (PMRs) and Proportional Cancer Mortality Ratios (PCMRs) and their 95% confidence intervals were computed for 66 causes of death in males and females.

### Results

PMRs for all cancers combined were elevated in males (PMR = 107; 95% CI = 105–109) and females (PMR = 115; 95% CI = 110–119); several specific cancers and other causes of death were also significantly elevated in both males and females. There were reduced deaths due to non-malignant respiratory disease in males and females and heart disease in females; several specific cancers and other causes of death were significantly reduced in both males and females. Proportional cancer mortality ratios (PCMRs) for brain and central nervous system cancer were elevated (PCMR = 166; 95% CI = 129–213), kidney cancer (PCMR = 162; 95% CI = 124–212), melanoma of skin (PCMR = 179; 95% CI = 131–244) and pancreatic cancer (PCMR = 126; 95% CI = 101–157) were significantly elevated in male manufacturing workers. Kidney cancer (PCMR = 212; 95% CI = 116–387) and cancer of all lymphatic and hematopoietic tissue (PCMR = 162; 95% CI = 121–218) were significantly elevated in female manufacturing workers.

### Conclusion

Mortality was elevated due to specific cancers and among workers more likely to be exposed to solvents and other chemical exposures in manufacturing operations. Due to lack of individual exposure information, no conclusions are made about associations with any particular agent.