

## CANCER INCIDENCE IN THE SEVESO POPULATION, 1977-1991

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### Introduction

The 1976 Seveso accident in Italy exposed a large population to substantial amount of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), a nearly ubiquitous contaminant of the human environment, whose potential health effects include carcinogenicity.

The cancer frequency in the area had already been investigated for the years 1977-86 (1) and the follow-up has now been extended to 1991.

### Material and Methods

Based on TCDD soil contamination, three exposure areas were delimited: A-zone (N=700), very high contamination; B-zone (N=5,000), high; R-zone (N=30,000), low-scanty. Cancer incidence rates in these areas were compared with those of a reference population living in the surrounding non-polluted territory (N=200,000).

Possibly relevant hospital discharges for neoplasms were identified through record-linkage of the study population with the entire Lombardy Region hospital discharge data-base. Individual cancer diagnoses in the exposed and referent subjects were established after reviewing original medical records in all interested hospitals (2). Rate ratios (RR) and 95% confidence intervals (95%CI) were calculated using Poisson regression modelling, separately by gender, and adjusting by year and age. These preliminary analyses considered only first incident cancer occurrences, and included cases identified through death certificate only (DCO) in the concurrent mortality follow-up.

### Results

In the most polluted zones (A+B), lymphatic and hematopoietic neoplasms were increased both among females (RR 1.7; 95%CI 1.0-2.9; 14 cases), and males (RR 1.6; 95%CI 1.0-2.7; 17 cases). Biliary tract (4 cases) and central nervous system (6) neoplasms were elevated among females, rectal (12) and pleural (3) tumors among males. Soft tissue sarcomas (ICD 171), were elevated only among R-zone males (RR 2.2; 95%CI 0.9-5.1; 7 cases), while RR for sarcomas of any site was 1.3 (15 cases).

### Discussion

The elevated incidence of lymphatic and hematopoietic neoplasms in both genders in the most contaminated zones is closely consistent with the results of previous cancer incidence follow-up (1977-86), and 20-year mortality study (1976-96).

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These findings are also consistent with results of animal experiments and of epidemiological investigations in occupational cohorts (3,4,5).

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