

929	<p>RISK OF CANCER RELATED TO EXPOSURE TO MUNICIPAL SOLID WASTE INCINERATORS IN FRANCE</p> <p>P EMPEREUR-BISSONNET¹, S GORIA¹, C DANIAU¹, P DE CROUY-CHANEL¹, A PAEZ JIMENEZ¹, P FABRE¹, JF VIEL², M COLONNA³, M LEDRANS¹</p> <p>(1) , French Institute of Public Health Surveillance (InVS), Saint-Maurice. (2) , Faculty of Medicine of Besançon, Besançon. (3) , Isère Cancer Register and Francim Network, Grenoble.</p>
<p>Preferred presentation format: Oral</p> <p>Abstract category 1: 06 - Cancer and Environmental Hazards.</p> <p>Abstract category 2: 30 - Hazardous Wastes.</p>	<p>Introduction: Incineration is the largest waste disposal method in France. Although municipal solid waste incinerators (MSWI) are no longer emitting contaminants above European limits owing to current regulatory practice, some facilities were responsible of important emissions in the past. Several epidemiological studies have highlighted an excess risk in cancer morbidity for residents around incinerators, but no consistent pattern has emerged. Consequently, the French population is concerned about the potential health impact of waste incineration.</p> <p>Methods: To estimate the association between cancer incidence and past exposure to MSWI emissions, we conducted an ecological study with the IRIS (a geographical unit composed of blocks with demographic homogeneity) as spatial unit. Incidence rates were estimated for all cancers and selected subtypes (lung, liver, bladder, soft-tissue sarcoma, leukaemia and non-Hodgkin's lymphoma) from 1990 to 1999 in adults aged over 14 years old. Four departments, divided into 2,272 IRIS, were chosen among the eleven covered by a general cancer register, according to statistical power and feasibility criteria. Sixteen MSWIs have ever functioned in these 4 departments representing, during the study period, about 25,000,000 person-years and 136,000 cases of cancer. Exposure status of each statistical unit to MSWI emissions of dioxins and particles was estimated by a second-generation Gaussian dispersion model (ADMS3), distinguishing an inhalation exposure route and a global exposure. The home address at the time of diagnosis was used to localize each case in an IRIS. Urbanization, socio-economic deprivation, exposure to air pollution from traffic and other industries were considered as confounding factors. All collected data were implemented in a geographical information system in order to estimate cancer incidences, exposure to MSWI emissions and confounding factors at the IRIS level. Lag periods of 5 and 10 years were used between incinerators start-up and cancer diagnosis, respectively for leukaemia and solid tumors. Standardised incidence ratios (SIR) and 95% confidence intervals for all cancers and the studied subtypes were estimated using age- and sex-specific incidence rates from France as a whole. A log-linear Poisson regression was performed to analyse the relationship between exposure to MSWI emissions and cancer incidence. A Bayesian hierarchical analysis accounted for over dispersion and spatial correlation.</p> <p>Results and discussion: Results will be presented and discussed, for the first time to the scientific community, during the communication. We developed methodological efforts to overcome the main difficulties encountered in previous similar studies: lack of statistical power, exposure misclassifications and residual confounding.</p>