P183 SURVEILLANCE OF OCCUPATIONAL PESTICIDE EXPOSURE ON CANADIAN GOLF COURSES

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Objectives As part of a National Surveillance Project (CAREX Canada), we estimate potential exposure of pesticide applicators on golf courses to suspected carcinogenic pesticides. While studies have examined the ecological fate of golf pesticides, less attention has focused on occupational exposures. This research uses a geographical approach to determine where exposure occurs, by quantifying amounts of pesticide use and corresponding numbers of applicators by watersheds across Canada.

Methods A database of Canadian golf courses was compiled in a Geographic Information System (GIS) using data from various national datasets. GoogleEarth was used to confirm geographic locations. Best Management Practices Surveys by the Canadian Golf Superintendents' Association (2004, 2008) were used to identify pesticides used, number of annual applications, and average number of applicators. Total annual use estimates were calculated using application rates from Pest Management Regulatory Agency product labels.

Results We identified three pesticides used on courses classified as "possible" carcinogens by the International Agency for Research on Cancer: 2,4-D, MCPP, and chlorothalonil. Average annual use (total kilograms) was calculated based on number of applications and area size. For example, an average course applies 158 kg of chlorothalonil annually. We estimate the number of applicators in western provinces to be 993 in British Columbia, 945 Alberta, and 414 Saskatchewan. Hotspot watersheds with greater applicator and annual application values are identified.

Conclusions We geographically identify highest densities of golf pesticide applicators in Canada. Future research will apply risk assessment techniques to quantify dose and characterise cancer risk among golf pesticide applicators.