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An analysis of pesticide exposures reported to a poison control centre in South Africa over a 3-year period

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Objective: There are 10 poison information centres recognised by the World Health Organisation across the 54 countries in sub-Saharan Africa (SSA). In comparison, many countries in other regions of the world, especially high-income countries, have a poison information centre in every major city. As a result, relatively little is known about the characteristics of calls received by poison information centres in SSA or the epidemiology of poisonings as a source of morbidity and mortality in the region. This study provides an analysis of the largest known database of calls to a poison information centre in South Africa to determine the burden of calls related to pesticide exposures.

Methods: The Poisons Information Helpline (PIH) of the Western Cape in South Africa is a combined service provided by the Red Cross War Memorial Children's Hospital Poisons Information Centre and the Tygerberg Poisons Information Centre. It provides a 24-hour, 7 days-a-week hotline that can be reached by members of the general public and health professionals for help with managing poisonings. An electronic database recording all calls to the PIH has been maintained since mid-2015. All call data from June 2015 to May 2018 were retrospectively analysed for calls related to substances classified as pesticides.

Results: During the 3-year period, 28,561 human-related poisoning calls were received by the PIH. Of these, 3,724 (13.0%) described poisonings with insecticides or rodenticides, while 453 (1.6%) described poisoning with herbicides or fungicides. Over the study period, these ratios have been relatively constant, with a range of 15.3% to 11.7% of the calls in any given year describing poisonings with substances classified as insecticides and rodenticides, and a range of 1.4% to 1.7% of the calls in any given year describing poisonings with substances classified as herbicides or fungicides.

Conclusion: This epidemiological description of pesticide exposures reported to poison information centres in South Africa represents a description of the largest dataset of poisoning information from a SSA country ever published. Our results indicate that pesticide exposures constitute a substantial percentage of the call burden received by the PIH in South Africa. Additional research is needed to determine if these figures are typical of the experience in poison information centres in other SSA countries and whether any regulatory efforts have been effective in reducing these numbers in low- and middle-income country settings.