Title: International epidemiological and management differences in the acute pediatric poisonings. A PERN (Pediatric Emergency Research Networks) prospective multicenter study

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Background: Identifying worldwide epidemiological and management differences may be helpful to improve the prevention and management of acute pediatric poisonings.

Objective: To determine the epidemiology and management differences of acute poisonings in children evaluated in emergency departments (EDs) from 8 different regions of the world.

Design/Methods: This was a registry-based international multicenter prospective study of children treated for acute intoxication on the 4th, 14th and 24th days of each month in 110 EDs from 20 countries between 01/13 and 01/14.

Results: During the first 9 months, we registered 227301 ED visits (in the 3 days per month evaluated), and 1,123 acute poisonings (0.49%; 95% CI 0.47-0.52), with the highest rate in Eastern Europe (2.47%) and lowest in South America (0.32%, $p<0.001$).

The most common poisonings involved therapeutic drugs (45.9%), household products (17.9%) and ethanol/illicit drugs (9.7%). Pesticides were a leading cause in the Middle East-Asia (28.6%) and South America (11.2%).

The main mechanisms were non-intentional exposure (784, 69.8%; mainly in South America and the Middle East-Asia), suicide attempts (132, 11.8%; more common in Oceania and North America) and recreational exposure (126, 11.2%; mainly in Oceania and Europe).

Before going to the ED, 33.1% of the patients sought medical attention (mainly pre-hospital emergency services in Oceania and Eastern Europe) and 14.7% received some treatment (lowest rate in Oceania, Middle East-Asia and Northern Europe). Over 40% of the patients in North America, Oceania and Eastern Europe arrived to the ED in ambulances.

Overall, 527 (46.9%) received some treatment in the ED (18.9% gastrointestinal decontamination and 5.8 % antidote), more commonly in the Middle East-Asia and South

America and 3.8% were admitted to ICU (highest rates in North America and Western Europe). No patient died.

Conclusions: There are substantial epidemiological and treatment differences related to acute poisonings in children in different countries and regions of the globe. These differences appeared in both the pre-hospital and ED settings. International best practices need to be identified for prevention and management of acute pediatric