[ID-P#148] Prescription for Concern: Trends and Characteristics of Pediatric Medication Errors in Malaysia A 17-Year Analysis of Cases Reported to the National Poison Centre (2006- 2023)

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Introduction: Medication errors pose a significant threat to patient safety, particularly among the vulnerable paediatric population. Children are at a higher risk of experiencing adverse drug events due to factors such as weight-based dosing, limited communication abilities, and the need for specialized drug formulations. The consequences of medication errors in paediatric patients can be severe, leading to increased morbidity, mortality, and healthcare costs.

Methods: This retrospective study analysed medication error cases involving paediatric and adolescent patients reported to the Malaysia National Poison Centre (MNPC) from 2006 to 2023. Data collected included types of medications, patient demographics, exposure types, and routes of administration.

Results: A total of 1,208 medication errors were reported to the MNPC over an 18-year period, involving patients ranging from newborns to elderly individuals aged 92 years old. Notably, a significant proportion of the reported cases involved paediatric patients (0-19 years old), amounting to 671 cases, compared to the geriatric age group (75 years and above) with 45 cases, whereas adults aged 20-74 years old reported 484 cases. Meanwhile, 8 cases were recorded with an unknown age group. This highlights the vulnerability of the paediatric population to medication errors. Focusing on the study group of paediatric and adolescent cases reported(671), neonates, infants, and toddlers encompassing those aged 0 to 4 years old were most affected with 61.8%(415 cases), followed by children aged 5-14 years with 30.3%(203 cases), and adolescents aged 15-19 years with 7.9%(53 cases). The top 3 locations where incidents occurred the most were at home with 81.5%(547), followed by healthcare facilities with 16.4%(110) and daycare centres with 1.3%(9). The five highest recorded groups of pharmaceuticals reported were analgesics (20.9%), topical agents (15.2%), cough and cold medications (12.7%), anti- infectives (11.3%), and other pharmaceuticals including vaccines and sedating agents (10.4%). Paracetamol (13.9%), calamine lotion (5%), lindane
(3.6% cases), chlorpheniramine (3.3%), and chloral hydrate (3%) were among the most frequentlyreported single type of medications. Exposure types were predominantly acute (88.2%), with fewer acute- on-chronic (8.9%), chronic (2.5%), and unknown (0.01%) exposures. Therapeutic errors via oral administration were most common (84.6%), followed by intravenous/intramuscular routes (11.9%), other routes—mostly rectal involving suppositories(1.6%), cutaneous application (1%), and mucosal exposure (0.7%).

Conclusion: The study underscores the elevated risk of medication errors among children in Malaysia, particularly in younger age groups, due to difficulties in accurate dosing and the need for specialised drug formulations. Most incidents occur at home, especially with common cold and fever medications. The findings emphasise the need for targeted interventions, improved safety protocols, and caregiver education to reduce adverse drug events, enhance paediatric patient safety, and lower healthcare costs.