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Therapeutic error as a cause of poisoning: How common is it?

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Objective: In New Zealand, medication related harm that occurs in hospitals is reported on a voluntary basis by each District Health Board. Around a third of these events result in prolonged hospital stays.

Opioids and blood thinners account for the most commonly reported errors. There is no system set up to capture preventable medication related events taking place outside of the hospital or pharmacy environment. By examining calls to the National Poisons Centre (NPC), the aim of this study is to describe the number of medication errors reported, the types of substances involved, the circumstances of the error and the number that required medical referral.

Methods: A retrospective analysis of calls made to the NPC between 1 January 2011 and 31 December 2015 was undertaken. Enquiries classified as 'Therapeutic Error' were extracted from the call database 'NPCPhone'. Therapeutic error was defined as wrong: medication, dose, frequency, route of administration or patient. Descriptive statistics were used to summarise the number of calls, substances involved and outcomes. Calls were sorted into three distinct age groups: 0-12 years, 13-64 years and 65 years and over.

Results: A total of 9,876 call records involving 13,014 substances were identified. Therapeutic error calls accounted for approximately 10% of all calls to the NPC over this time period. There was an 18% increase in the total number of medication error events reported from 2011 to 2015. The number of events that required medical referral varied between age groups. Events that involved the elderly (aged 65 and over) resulted in more medical referrals than any other age group (38.5%). Errors involving children (0-12 years) resulted in only 6.8 percent of events requiring medical referral. This compared to 28.2 percent of those aged 13-64 years. Therapeutic analgesics (37.6%), therapeutic anti-inflammatories (12.28%) and therapeutic anti- infective (9.11%) were the top three classes of medications involved in the 0-12 year group. Therapeutic analgesics (13.28%), therapeutic anti-hypertensives (10.96%) and therapeutic anti-convulsants (8.68%) were the top three classes for the 13-64 year age group. Elderly (65 years and over) were more likely to suffer a medication error involving therapeutic anti-hypertensives (22.5%), therapeutic circulatory (7.65%) or therapeutic anti-inflammatory preparations (6.46%). Due to limitations on the data coding, it was difficult to report on the actual circumstances of the errors.

Conclusion: To better understand why the error occurred, calls need to be recorded with more discrete categories rather than broadly defined as just therapeutic error. Given the prevalence of therapeutic error enquiries to the NPC, further investigation into the cause would be warranted. Public awareness and education may help to reduce the number of these events.