

Kidsafe WA

Kidsafe WA is the leading independent not-for-profit organisation dedicated to promoting safety and preventing childhood injuries and accidents in Western Australia. Injuries are the leading cause of death among Australian children and young people aged zero to seventeen, and many of these deaths and injuries can be prevented. Kidsafe WA works to educate and inform parents and children on staying safe at home, at play and on the road.

Perth Children's Hospital Injury Surveillance System

Perth Children's Hospital (PCH) is the only paediatric hospital in Western Australia and is the referral centre for paediatric illness and injury within the state. Each year approximately 64,000 children present to the PCH Emergency Department (ED). The PCH ED Injury Surveillance System is designed to capture data related to all children who present with an injury. This bulletin provides a summary of injury presentations relating to vapes and e-cigarettes between 2014 and 2024.

WA Poisons Information Centre

The WA Poisons Information Centre (WAPIC) is an emergency phone service to Western Australia, South Australia and the Northern Territory, providing management advice in cases of suspected and known poisonings, along with drug information and poisoning prevention. The WAPIC handles on average 40,000 phone calls annually with 25 percent received from medical professionals managing cases of poisoning, and 75 percent from the general public. This bulletin provides a summary of calls to The WAPIC from Western Australia relating to vapes and e-cigarettes involving children under 15, between 2018 and 2024.

Vapes & e-Cigarettes

A snapshot of vaping product related injuries

- **18** children presented to PCH ED for a vaping product related injury between 2017 and 2024.
- Between 2018 and 2024, there were a total of **260 calls** made to the WAPIC, regarding children under 15 exposed to a vape product.
- Children **under 5 years old** are most at risk of accidental exposure to vaping products.
- Children aged **0 to 4 years** accounted for 93.1% (n=242) of calls received at WAPIC.
- 97.7% (n=254) of calls to WAPIC reported the exposure occurring in the **home environment**.
- 95.4% (n=248) of calls were classified as potential **exposure to nicotine**.
- The majority of calls to WAPIC were reported as exposure via **accidental inhalation** of a vape device (65.4%, n=170).



Partner:



Government of **Western Australia**
Department of **Health**

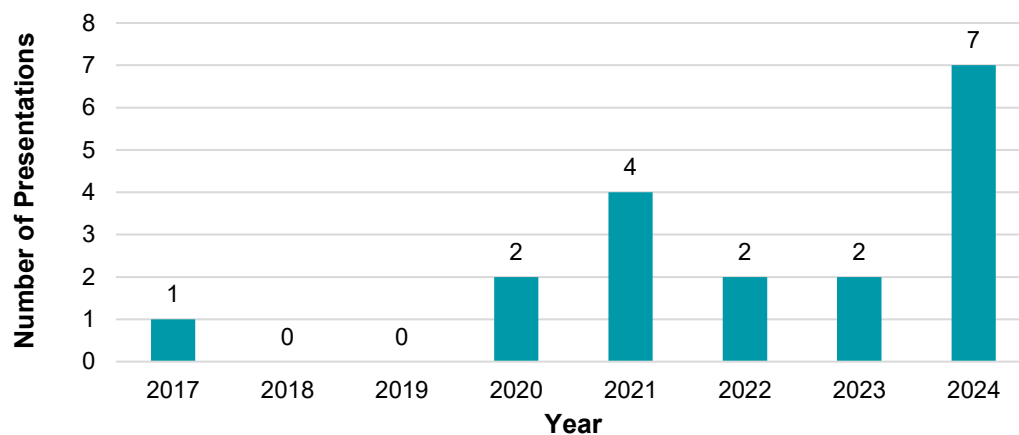
Introduction

Over the past decade, the use of and access to vaping products in Australia has significantly increased. Alongside this trend, there has been a rise in injuries relating to vaping products, particularly amongst children and adolescents¹. Younger populations are particularly vulnerable, as even small exposures to hazardous substances in vaping products can result in serious injury or fatality². While most children exposed to these substances experience mild or no symptoms, there has been at least one reported fatality in Australia, with similar incidents occurring in the United States and South Korea. Poison centres in Australia and internationally report that infants and young children account for up to one third of cases relating to vaping product exposure³.

Perth Children's Hospital Emergency Department Presentations

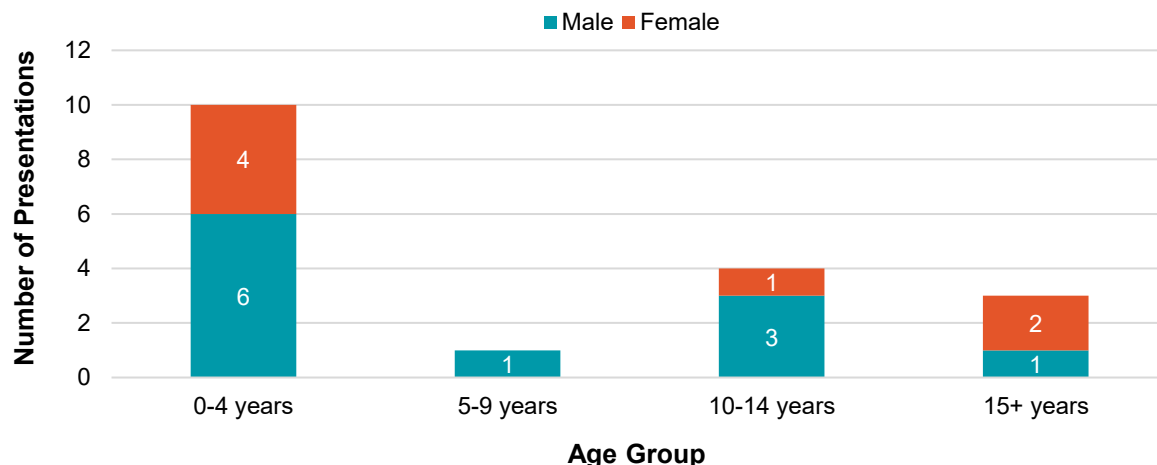
Between 2017 and 2024, there were 18 injury presentations to PCH ED, relating to vaping products. While this number is low, there has been a gradual increase since 2020, with a notable spike in 2024 with seven presentations. This suggests a growing childhood injury concern possibly related to the increased use and accessibility of vaping products over time (Figure 1).

Figure 1: Vaping Product-related Injuries at PCH ED by Year, 2017-2024



The majority of presentations relating to vaping products occurred in children aged between 0 and 4 years, with 10 reported cases (55%). This was followed by a smaller number of cases in the 10 to 14 year age group (22.2%, n=4), and 15 year old age group (16.7%, n=3). Only one case was reported in the 5 to 9 year age group, indicating that exposures are more common amongst younger and older children. Overall, males accounted for 61.1% (n=11) of presentations compared to 38.8% (n=7) of females, with this variation most noticeable in the younger age groups (Figure 2).

Figure 2: Vaping Product-related Presentations at PCH ED by Age and Sex, 2017-2024



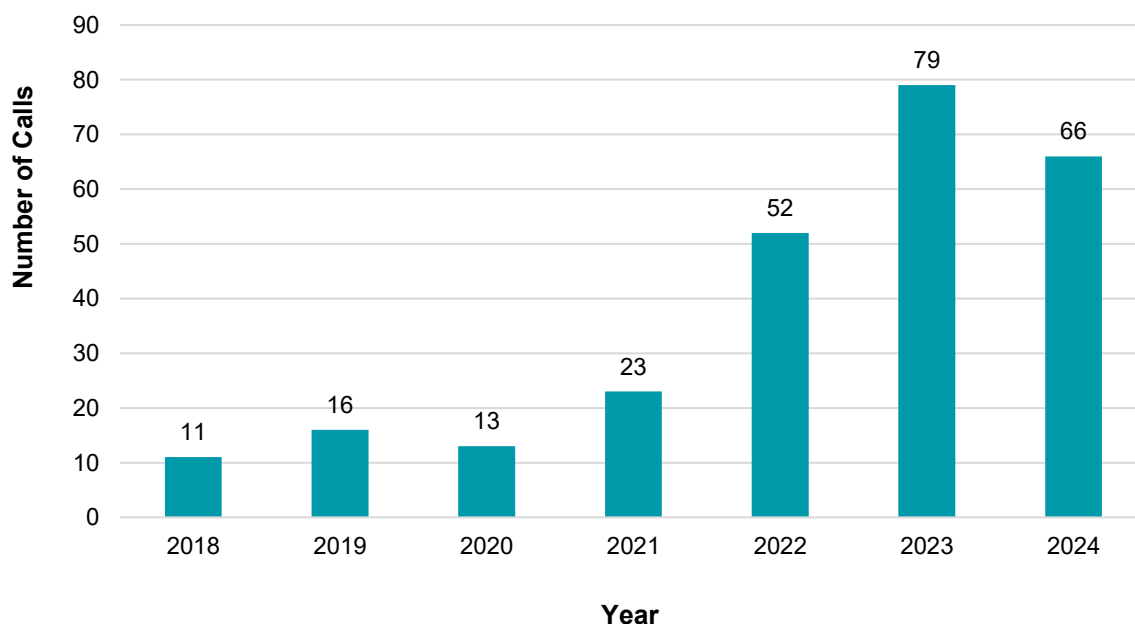
From all presentations, nine cases (50.0%) were reported as poisoning caused by a gaseous substance such as accidental inhalation or intentional use of a vaping product. This was followed by eight cases of poisoning caused by chemicals in liquid form (44.4%), often involving accidental ingestion of vape liquid, and one case (5.6%) of poisoning by a solid substance (a combination of vape and medication use).

Each child presenting to PCH ED is assigned a triage category based on the urgency of medical attention required. Most presentations relating to vaping products were triaged as 2 - Emergency (50.0%, n=9), followed by 3 - Urgent (39.0%, n=7), and 4 - Semi-urgent (11.0%, n=2). Despite the high proportion of cases triaged as Emergency, over half of the presentations were discharged without being admitted (56.0%, n=10). An additional six cases (33.0%) were admitted for further treatment, while a small number were either transferred to another hospital or left at their own risk (11.0%, n=2).

WA Poisons Information Centre Calls

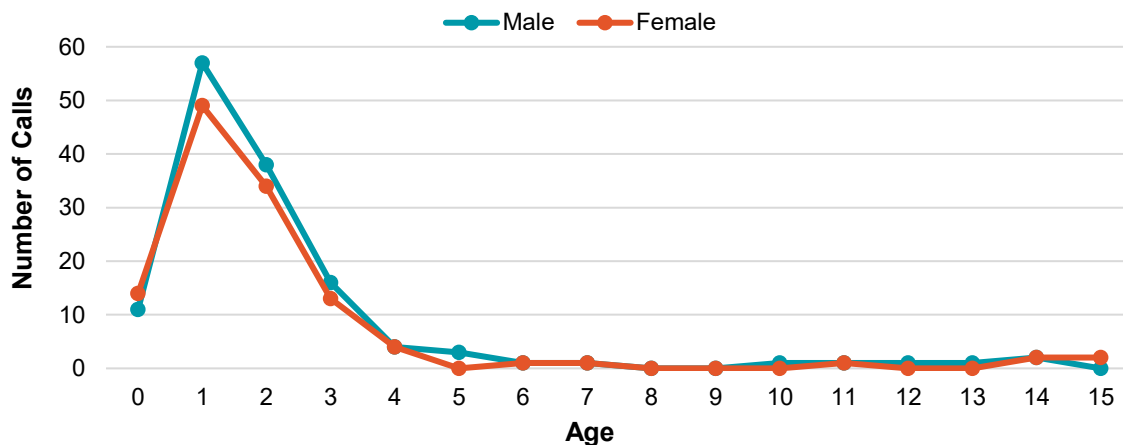
Between 2018 and 2024, the WA Poisons Information Centre received 260 calls related to vaping product exposure involving WA children aged 0 to 15 years. While call numbers fluctuated slightly each year, there is a clear upward trend, with a notable increase in calls from 2021 onwards, peaking in 2023 with 79 calls (30.4%). Although there was a slight decline in 2024, call numbers remain significantly higher than in earlier years, indicating an increase in exposure risks and concerns for children (Figure 3).

Figure 3: Vaping Product-related Calls to WAPIC for WA Children aged 0-15, by Year



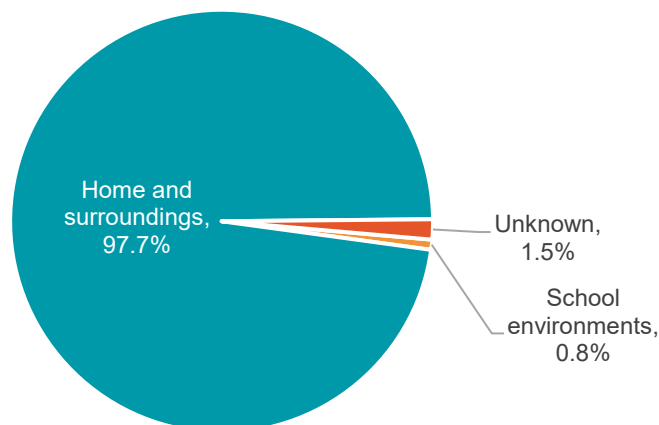
Most exposures were reported as unintentional or accidental (96.2%, n=250), with a small proportion reported at intentional abuse, misuse or other intentional circumstances (3.1%, n=8). Children aged 0 to 4 years were most at risk of exposure to vaping products, accounting for 93.1 percent (n=242) of all calls to WAPIC. Within this age group, one year olds made up the largest proportion of calls (40.7%, n=106), followed by two year olds (28.0%, n=73). Across all ages, there was minimal variance between sex with males accounting for 52.7 percent (n=137) and females accounting for 46.5 percent (n=121) of calls (Figure 4).

Figure 4: Vaping Product-related Calls to WAPIC for WA Children aged 0-15, by Sex



The majority of calls to WAPIC regarding vaping product exposure were made by a family member of the child including parents and grandparents (87.7%, n=228), followed by health personnel including ambulance officers and physicians (11.5%, n=30). A small number of calls were made by the child themselves based on their own concerns of exposure (0.8%, n=2). The vast majority of exposures were reported to have occurred in and around the home (97.7%, 254), highlighting the home as a common setting for children to access vape devices and associated products. The remaining exposures took place in other settings such as school environments (0.8%, n=2), or in an unknown location (1.2%, n=3).

Figure 5: Vaping Product-related Calls to WAPIC for WA Children aged 0-15, by Location of Incident



When a call is received at WAPIC, the substance associated with the suspected or confirmed poisoning is categorised by the centre, based on the caller's description. The majority of substances were classified as a nicotine product (95.4%, n=248), with the remaining substances categorised as propylene glycol (a common base ingredient in vaping products) (2.3%, n=6), unidentified chemicals (1.5%, n=4), and miscellaneous low toxicity products (0.7%, n=2).

The most common route of exposure reported was inhalation (65.4%, n=170), which typically occurs when young children accidentally activate a vape device and inhale the vapour. Ingestion was the second most common route (26.5%, n=69), typically occurring when a child swallows an e-liquid after accessing vape cartridges or refill bottles. Buccal exposure (where the substance comes into contact with the inside of the mouth without being swallowed) accounted for 6.5 percent (n=17) of cases, typically when a child chews or sucks on a vape device or cartridge. The remaining 2.5 percent (n=4) of exposures involved cutaneous (skin), ocular (eye) or unknown routes.

Prevention

To reduce the risk of childhood injuries from vaping related products, it is important to restrict access to these products, especially in and around the home environment. Young children under five are particularly vulnerable, as exposure to even small amounts of e-liquids can cause serious harm. It is essential that parents, grandparents and carers understand these risks and take the following steps to help prevent injuries:

- Be aware of where vape products are kept in your home, including devices, e-cigarettes, vape pens, e-liquids and pods.
- Treat all vape products as poisons and store them securely in a locked or child-resistant cupboard at least 1.5m above the ground.
- Never leave children alone with a vape product or in places they can easily access.
- Avoid using vape products in front of children.
- Keep e-liquids and nicotine products in their original container and store them securely out of reach of small children.
- Be cautious with disposable vapes as they are more likely to break and expose e-liquids.
- Dispose of any empty or unused vape products safely.
- Talk to family and friends about the dangers of nicotine exposure and how to reduce the risk of injury for children around them.
- Keep the Poisons Information Centre number (13 11 26) visible and easily accessible in an emergency.
- Discuss the risks of vaping with older children and adolescents to discourage use.

First aid for poisons

If you suspect a child has been exposed to liquid or vapour from a vaping device, take the child and the product and ring the **Poisons Information Centre** on

13 11 26

(Australia-wide, 24 hours a day, 7 days a week)

References:

1. Chadi, N, Moore-Hepburn, C, Beno, S, Richmond, S. Vaping-related injury and illness among Canadian children and adolescents. *BMJ Paediatrics Open*. 2020;4(1). <https://doi.org/10.1136/bmjpo-2020-000840>
2. Richmond, S, Pike, I, Maguire, J, Macpherson, A. E-cigarettes: A new hazard for children and adolescents. *Paediatrics & child health*. 2018;23(4):255-259. <https://doi.org/10.1093/pch/pxx204>
3. Dempsey, K, Zia, K, Elliott, R, Noghrehchi, F, Wong, A. Trends in e-cigarette exposures reported to an Australian poison's information centre between 2017 and 2023 with a reflection on legislative changes in 2021. *International Journal of Drug Policy*. 2024;135. <https://doi.org/10.1016/j.drugpo.2024.104684>

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The Kidsafe WA Childhood Injury Bulletins are produced by Kidsafe WA in consultation with the Perth Children's Hospital Emergency Department and WA Department of Health.

For further information please contact Kidsafe WA