

# Medication Safety and the Accidental Death of a 9-Month-Old

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**Abstract:** Since the turn of the century, there has been a 225% increase in the number of deaths of children under 5 years old caused by opioid poisoning because of accidental ingestion. One measure aimed at reducing this trend, currently being considered by the U.S. Food and Drug Administration, is increasing the safety of opioid use by requiring unit-dose packaging. Another classic measure is educational efforts around medication safety and children. Although medication safety education lacks standardization, stepped-up educational efforts by the Centers for Disease Control and Prevention, Safe Kids Worldwide, and others in response to the increase in accidental opioid poisoning in children appear to be making an impact. After the start of these programs' efforts, emergency room visits for children for accidental medicine poisoning have declined by 32%.

**KEY WORDS:** accidental poisoning, medication safety and children, opioid packaging

In January 2019, 9-month-old Maise Gillan died from an overdose of methadone. As reported by local and national news sources, Maise had gone the previous night with her parents and sister to visit a neighbor's home and ingested a methadone pill belonging to a 75-year-old woman living there. The pill had unfortunately been accidentally dropped, and unbeknownst to anyone, Maise found it and swallowed it when she was crawling around on the ground. She was put to bed as normal and never woke up.

This heartbreaking tragedy makes us cry out at the needless loss of such an innocent life. Why did this happen? Maise's parents are obviously devastated that they failed to have their attention on their daughter for those few moments. The elderly woman who misplaced a legally prescribed methadone pill must view the situation with horrible remorse. The owners of the home surely had no idea that an inspection of their home would

have revealed a fallen pill. This case is tragic because no one wanted such a terrible thing to occur.

Although this may seem like an isolated and horrible accident, Maise's death does not stand alone. According to a review published in 2018, the number of deaths of children aged 0–4 years from prescription and illicit opioid poisonings increased 225% between 1999 and 2016 (Gaither, Shabanova, & Leventhal, 2018). It seems that the explosion in opioid availability and use in the United States is taking a toll on young children. According to the Centers for Disease Control and Prevention (CDC), finding and ingesting drugs without an adult being aware is the main cause of emergency care for adverse drug events in children under 5 years old, currently about 60,000 incidents a year (CDC, 2017a).

As a controlled substance, an opioid such as methadone is already required to be placed in child-resistant packaging by the Poison Prevention Packaging Act of 1970 (Substances Requiring Special Packaging, 2012). Child-resistant packaging is regulated by the U.S. Consumer Product Safety Commission and is specifically designed to stop children under 5 years old from accessing the medication it contains (Consumer Healthcare Products Association, 2020). Even this directive does not seem to be providing enough protection in the case of opioids. Increased regulation of opioid use is a huge political issue with many components. Following the passage of the Substance Use Disorder Prevention and Treatment for Patients and Communities Act by the 115th Congress (2017–2018), and in response to multiple childhood poisonings, the U.S. Food and Drug Administration (FDA) is proposing to require blister packs for certain opioids (Robinson, 2019).

Requiring blister packs has precedent. Iron has been a long-standing cause of unintentional poisoning in children. In the 1940s, iron poisoning was the most common cause of poisoning in children aged 1–4 years (Tenenbein, 2005). From 1983 to 1990, it accounted for 30.2% of the accidental poisoning deaths in children in the nation (Tenenbein, 2005). In response to this, the

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# Safe Medicine Storage for: Grandparents

Put your medicines  
**up<sup>AND</sup>away**  
and out of sight



You love your grandchildren and would do anything for them, but did you know these startling facts?

Approximately 60,000 young children – or roughly four school busloads of children per day – are brought to the emergency room each year because they got into medicines that were left within reach.<sup>1,2</sup>

Nearly 1 out of every 4 grandparents say they store prescription medicines in easy-access places, and 18 percent keep over-the-counter medicines in easily accessible spots.<sup>3</sup>

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Don't let your grandchildren become a statistic, take these precautions to help keep them safe:

Keep all medicines and vitamins up and away and out of sight in a high cabinet or other place your grandchildren can't reach or see.

Keep purses, bags, or coats that have medicines or vitamins in them out of their reach and sight.

Never leave medicines or vitamins out on a table, countertop, or bedside table where your grandchildren could reach them. Relock the safety cap and put them away every time you use them.

Set a daily reminder to take your medicines and vitamins on your refrigerator or a location you check on a daily basis, since they will be safely stored up and away and out of sight.

Keep the Poison Help number in all of your phones: (800) 222-1222.  
Or text "POISON" TO 797979 to automatically save it.

1. Centers for Disease Control and Prevention (CDC). CDC Features - Put Your Medicines Up and Away and Out of Sight. <http://www.cdc.gov/features/medicationstorage>. Accessed October 10, 2012.

2. Safe Kids Worldwide. Safe Storage, Safe Dosing, Safe Kids: A Report to the Nation on Safe Medication. March, 2012.

3. C.S. Mott Children's Hospital National Poll on Children's Health. Easy-access medicines a poisoning risk for kids at home. <http://mottnpch.org/reports-surveys/easy-access-medicines-poisoning-risk-kids-home>. Accessed November 27, 2012.

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In partnership with the Centers for Disease Control and Prevention (CDC)

**FIGURE 1.** Safe Medicine Storage for Grandparents pamphlet provided courtesy of Up and Away, an educational program of the PRevention of Overdoses and Treatment Errors in Children Taskforce (PROTECT). Reprinted with permission.

FDA required unit-dose packaging for iron beginning in 1997, although there was no evidence for this measure at the time (Tenenbein, 2005). After this change, poisoning deaths dropped from 29 to 1, indicating a dramatic positive effect for unit-dose packaging (Tenenbein, 2005).

Political wheels turn slowly, and it remains to be seen how and when the FDA will implement more stringent packaging requirements and for which opioids. In the meantime, parent education about child safety measures is an ongoing effort in the healthcare system but lacks standardization. In general, there is limited decisive research on home- and family-based prevention of unintentional childhood injury with directives for change implementation. In a recent study (Jones et al., 2018), the parents of 104 children who had come to the emergency room because of an unintentional injury were interviewed. Researchers found that, when asked to identify a prevention strategy, the most common response was to create a safer environment; this was promising given that this is a good injury prevention strategy (Jones et al., 2018). Unfortunately, of those 40% who identified this strategy, only about half actually followed through (Jones et al., 2018). Another study aimed at reducing accidental injury in children under 4 years old improved on traditional parent education by including supplemental training on obtaining safety-related materials such as child safety locks for cabinets, in addition to education classes including goal setting and self-efficacy principles (Wang, Gielen, Magder, Hager, & Black, 2018). The intervention had “a modest effect on reduction of home safety problems at 12 months” with an actual decline in mothers’ feelings of self-efficacy (Wang et al., 2018). A study in the United Kingdom aimed at looking at cost-effectiveness of interventions to prevent poisoning in children found that “education offers better value for money” but worked well mainly for mothers who are of low income or have multiple children. Providing equipment, inspections, and installation was more effective than education alone (Achana et al., 2016).

Despite the mixed results in these studies, there is reason for optimism that educational efforts in the United States around medication safety and children are having an impact. According to a brief by nonprofit Safe Kids Worldwide (SKW), the number of emergency room visits for accidental medicine poisoning for kids under 6 years old decreased 32% from 2010 to 2016 (SKW, 2019). This period follows the start of stepped-up educational efforts by the CDC, SKW, and others (SKW, 2019). Organizations throughout the United States have been working on child safety related to

medications. SKW has a wealth of resources and publications on their Web site dedicated to the issue of medication safety and children. The CDC, in response to the increasing risk of unintentional overdoses in children, formed the PREvention of Overdoses and Treatment Errors in Children Taskforce (PROTECT) initiative. Strategies covered by the initiative include safer packaging, safer use, and safer storage (CDC, 2017a). Through the safer packaging and safer use initiatives, PROTECT has developed enhanced safety packaging, showed its use in keeping children from accessing medication, and made improvements in medication labeling and standardization of pediatric doses (CDC, 2017b). Under its safer storage initiative, PROTECT has developed the “Up and Away campaign...simple, data-driven actions that parents and caregivers can take to prevent medication overdoses” in children (CDC, 2017b). The Up and Away campaign has an accessible Web site with printable educational materials. Included in the educational material is a brochure especially targeted to grandparents because larger numbers of the older adults leave medicines in easy-to-access places (Up & Away, n.d.). This brochure is reproduced with permission in Figure 1. Please print and distribute widely.

There were many factors that contributed to the tragic loss of this 9-month-old child's life. No magic solution exists to prevent every child death from medication poisoning, but various measures being explored or implemented, from governmental policy to evidence-based educational materials such as the one included here, can be part of an effective response. You as a pediatric nurse have the potential to be part of a solution. Discuss these issues with parents and grandparents. Let the discussion about Maise serve a purpose that encourages everyone to do the right thing.

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