Poisoning encompasses a wide range of situations and overlaps with some other categories of child fatalities such as suicide or child abuse. In 2014, the 55 U.S. Poison Control Centers provided telephone guidance for nearly 2.2 million human poisoning exposures. That computes to 1 poison exposure in the U.S. every 15 seconds that is reported to a Poison Control Center (Poison Control, National Capital Poison Center, 2016).

Children under six comprise half of the poison exposures. Younger children are at higher risk for fatality due to smaller size and less well-developed physiology. Children are curious and a home and its surroundings can be dangerous. Common poisoning agents include pharmaceuticals, household products such as cleaning agents, pesticides, poisonous plants and bites from insects and animals. Medications are the major cause of poisoning deaths. Although the rate of death among children from poisonings has been cut in half since the late 1970’s, the percentage of child poisoning deaths due to medications has nearly doubled, rising from 36 percent of poisoning deaths to 64 percent (Safe Kids Worldwide, 2013). Unlike young children, adolescents are more aware of consequences of ingesting medications but are vulnerable to peer pressure and risk-taking behaviors that can result in taking illicit drugs or misusing alcohol. They are more prone to suicidal behaviors than younger children.

Some medications are especially dangerous.

For example, for every 100,000 persons prescribed buprenorphine (Suboxone), 200 children were hospitalized for an accidental ingestion. Medications
for diabetes, high blood pressure, and depression, all common conditions in adults, can cause the child to need hospital care (Health Day, 2014).

Many medication poisonings result in need for medical care. For example, Safe Kids Worldwide (2013) examined data from the U.S. Consumer Product Safety Commission’s National Electronic Injury Surveillance System (NEISS) for 2011. They found that year more than 67,700 children were seen in emergency departments for accidental medication exposures, and 12,390 of them required hospitalization. Those figures mean that each day, 185 children are taken to the ED for accidental medication ingestion or dosing errors and 34, almost one-fifth, require hospitalization. In 86% of the cases where information was available, the medication ingested was prescribed for an adult, generally a parent or grandparent (Safe Kids Worldwide, 2013).

Children can find and ingest poison on their own (although neglect and failure to supervise can be a factor in these situations). In other cases, a parent may give the infant or child the drug or poison in an attempt to control the child’s behavior or cause the child to sleep. The most serious poisonings are from pain medications (acetaminophen, sedatives, sleeping medications, opioids, and alcohol). These are most likely to result in a pediatric fatality. Even a single dose of a medication such as oxycodone or fentanyl can be deadly for a small child (Safe Kids Worldwide, 2013).

Intentional exposures are significantly more serious with a 32-fold greater percentage of a serious or fatal outcome (Poison Control, 2016).

Malicious poisonings are considered to be an unrecognized form of child abuse (Yin, 2010). Dr. Yin reports cases of malicious use of alcohol, pain medications, cough and cold medications, sedatives, sleeping medications and anti-psychotic medication. He studied more than 1,400 cases and nearly 14% resulted in serious consequences for the child, including death. Nationally, an average of 160 cases were
reported each year. There were varied motivations for the parent or caretaker giving the child the substance. These motivations included: amusement of the parent, punishment, and attempts to sedate the child.

Yin found the there was an increase in cases over time. The median age of the children was 2 years. Outcome data was available for 86% and of these exposures, 172 resulted in moderate or major negative outcomes, including death of 18 children (1.2%). These children were exposed to sedating agents such as antihistamines and opioids. Yin (2010) concluded that malicious administration of pharmaceuticals should be considered as an important form of child abuse.

Virginia’s Picture

According to the Office of the Chief Medical Examiner’s Annual Report, 2013 (Hobron, 2015), between 2009 and 2013, 41 children ages 0-17 died from poisoning. Over half (56%) were judged to be accidental. Suicides accounted for 17% of the poisoning deaths of children. Nine deaths (22%) were undetermined in manner and seven of the undetermined deaths were children age 6 or younger. Most of the poisoning deaths were to children ages 14 to 17 (61%) but over a quarter (27%) of deaths were to children ages 1 to 4. Prescription medications were included in the cause of death in 66% and heroin caused death in two cases.

The Virginia State Child Fatality Team released a preliminary Overview in February, 2016. The team reviewed all 41 child deaths due to poisoning from 2009-2013 in Virginia. The majority of fatalities were teens, but the review centered on fatalities of infants and toddlers. The team reviewed 15 deaths by poisoning to infants and toddlers. Nearly half of the deaths of children and toddlers were ruled ‘undetermined’ by the medical examiner while 40% were ruled accidental and 13% were homicides. The infant and toddler deaths often occurred in homes where parents and caregivers used prescription
drugs. Almost half of the infant and child fatalities due to poison were already known to Child Protective Services. Perhaps most important for prevention efforts was the finding that 87% of the infants and children were not adequately supervised at the time of the fatal ingestion of poison.

In 40% of the cases, the caregiver/parent knowingly administered a medication not prescribed to the child, an incorrect dosage of a prescribed medication, or a medication not intended for children of that age. Some had a history of improper medication administration and in some cases, other people knew about the misadministration. Drugs were administered to try to get children to sleep or to behave.

(obtain and add research by Dr. Shan Yin)

The Virginia State Fatality Team and other reports such as Safe Kids Worldwide have offered prevention guidelines. These are summarized and are on the VCPN website.

References are available on the VCPN website