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Poisoning Prevention: New Challenges and a Novel Tool



Moderator



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You are muted



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Presenters



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Poison Control Overview

Poisoning Prevention: New Challenges and a Novel Tool

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Data & Surveillance

Partnership

Overview

- Define "poison" and share some basic poisoning prevention tips.
- Describe the U.S. Poison Control System and give an overview of some recent trends in pediatric poisonings.
- Introduce web**POISON**CONTROL and how it works.
- Demonstrate webPOISONCONTROL's realtime surveillance dashboard.



Poison Control

- 55 centers in the U.S. answer the poison control hotline 24/7/365. 1 (800) 222-1222
- Staffed by specially trained clinicians with toxicologists' oversight.
- Manages millions of calls annually from the public, first responders, and health care providers.
- Proven to improve poisoning outcomes and save healthcare dollars by reducing poisoning-related ER visits and optimizing care.



Poll

What is a poison?

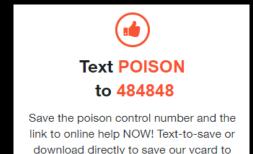
- Any substance that is harmful if too much is eaten, inhaled, injected, or absorbed through the skin. ("Routes of exposure")
- Top cause of injury death in the U.S. Main cause of unintentional poisoning death is opioid overdose. (CDC WISQARS)
- Any substance can be poisonous if used the wrong way, in the wrong amount, or by the wrong person.
- Every day, over 300 children in the U.S. ages 0 to 19 are treated in an emergency department, and two children die, as a result of being poisoned. (CDC)



Poisoning Prevention

- Most unintentional poisonings happen in the home. Room-by-room prevention tips helpful.
- Remember principles of health literacy when writing content - https://health.gov/healthliteracyonline/
- Advising the public to simply keep things that may be poisonous out of their homes is <u>not</u> an effective prevention message.
- Most poisonings that occur in young children are *unintentional*. The term "accident" implies a random, uncontrollable act of fate.
- Poisonings, like other types of injuries, are understandable, predictable, and *preventable* events.





Poisoning Prevention Basics

Download Poison Control vcard

your computer and smartphone contacts.

1. Be prepared for an emergency.

- Save the national poison control number in your phone and post it in your home. 1 (800) 222-1222
- Download the free web**POISON**CONTROL app to your devices, and bookmark www.poison.org.

2. Practice safe storage habits.

- Certain substances can be particularly dangerous for kids and should be stored up, away and out of sight.
- If it's impossible to keep them up, away, and out of sight, keep these substances in child-resistant cabinets or containers.
- Keep in mind that there is **no such thing as a child-proof lock or container**, and there is no substitution for adult supervision and vigilance.

3. Read and follow labels and directions.

- Review the label on anything that has one prior to use, especially before taking or administering medications.
- Take care to follow not only usage directions, but the directions provided for safe storage and disposal as well.
- Call your poison control center at 1-800-222-1222 if you have any questions about the directions.

4. Detect invisible threats.

- Install carbon monoxide detectors in your home.
- Install radon detectors if your home is at risk.

10 Things to Keep up, away, and out of sight.



All medications and pharmaceuticals, including over-the-counter medicines, vitamins and supplements.



Any recreational substance (whether licit or illicit), including marijuana, tobacco, and e-cigarette products - especially liquid nicotine.



Alcoholic beverages, as well as products that often contain alcohol like hand sanitizers, screen or lens cleaners, and mouthwash.



Laundry and cleaning supplies, especially single load laundry detergent packets.



Pesticides and insect repellants.



Button batteries, such as those found in singing greeting cards, key fobs and remote controls.



Any type of oil or lubricant, including fragrance oils, tiki torch oils, engine oil, etc.



Personal care products, such as hair products and contact lens disinfectants.



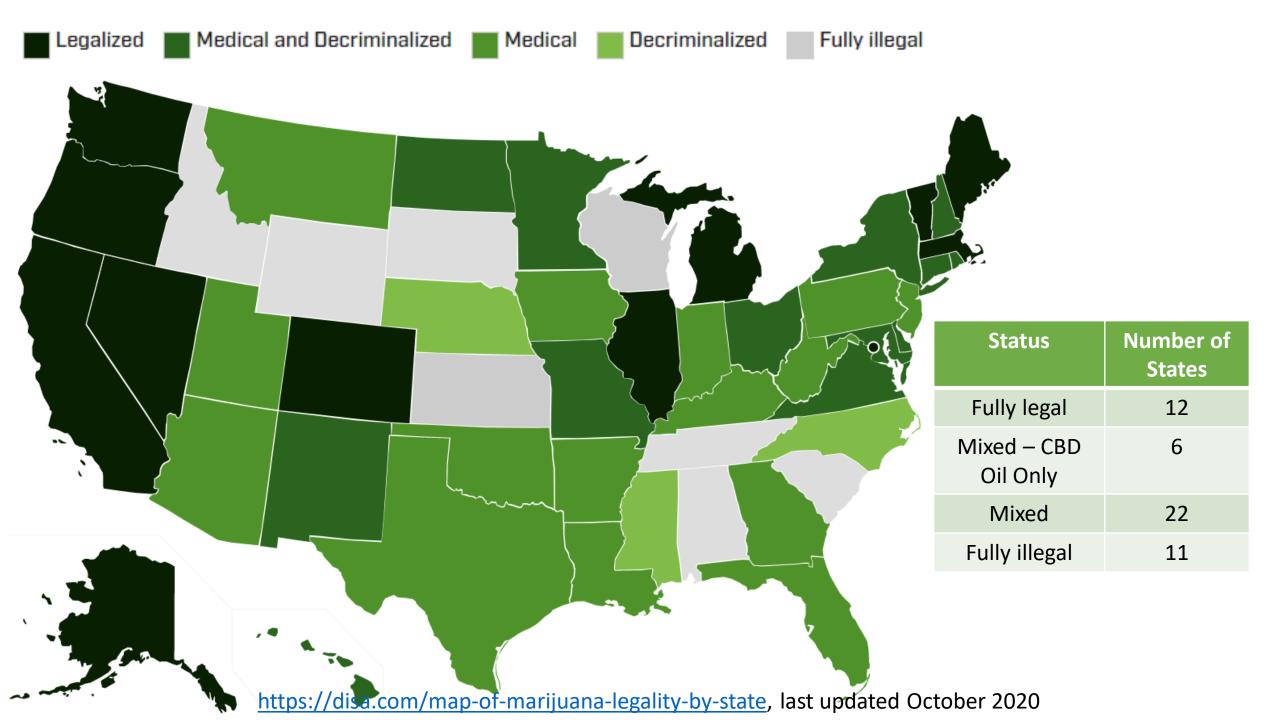
Other chemicals that may typically be kept in a garage, such as antifreeze.











Recent Trends in Pediatric Poisonings: Edibles with THC

- Cases increase in states where legal, despite using childproof packaging and warning labels.
- Lethargy is the most common presenting sign, followed by ataxia. Tachycardia, mydriasis, and hypotonia are also commonly observed.
- Same prevention messages apply: keep items
 containing marijuana up, away, and out of sight of kids
 especially edibles because they are so attractive.



Recent Trends in Pediatric Poisonings: "The Benadryl Challenge"

- Benadryl challenge on TikTok
- Why is this dangerous?
- What is the danger in using Benadryl not as directed in general?



FDA warns about serious problems with high doses of the allergy medicine diphenhydramine (Benadryl)

Teen misuse sparked by dangerous "Benadryl Challenge" promoted on social media

9-24-2020 FDA Drug Safety Communication

The U.S. Food and Drug Administration (FDA) is warning that taking higher than recommended doses of the common over-the-counter (OTC) allergy medicine diphenhydramine (Benadryl) can lead to serious heart problems, seizures, coma, or even death. We are aware of news reports of teenagers ending up in emergency rooms or dying after participating in the "Benadryl Challenge" encouraged in videos posted on the social media application TikTok.

We are investigating these reports and conducting a review to determine if additional cases have been reported. We will update the public once we have completed our review or have more information to share. We also contacted TikTok and strongly urged them to remove the videos from their platform and to be vigilant to remove additional videos that may be posted.

Consumers, parents, and caregivers should store diphenhydramine and all other OTC and prescription medicines up and away and out of children's reach and sight. FDA recommends you lock up medicines to prevent accidental poisonings by children and misuse by teens, especially when they are home more often due to the COVID-19 pandemic and may be more likely to experiment.

Always read the <u>Drug Facts label</u> included on all OTC medicines to find out if they contain diphenhydramine, how much and how often you should take them, and important safety information. Do not take more than the dose listed on the label, as doing so can cause serious problems. If someone takes too much diphenhydramine and is hallucinating, can't be awakened, has a seizure, has trouble breathing, or has collapsed, immediately get medical attention or contact poison control at 1-800-222-1222 or <u>online</u>.

Health care professionals should be aware that the "Benadryl Challenge" is occurring among teens and alert their caregivers about it. Encourage teens and caregivers to read and follow the Drug Facts label. In the event of an overdose, health care professionals should attempt to determine whether a patient with a suspected overdose took diphenhydramine.

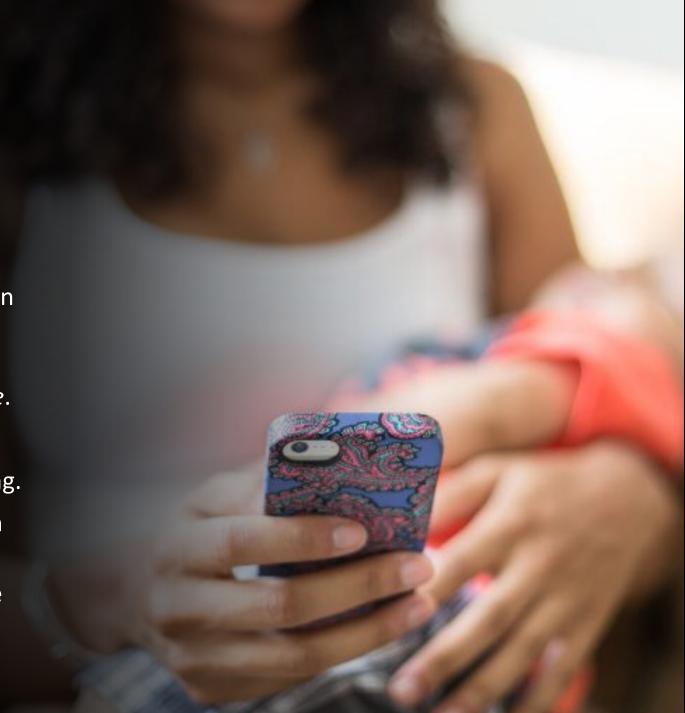
Diphenhydramine is an antihistamine used to temporarily relieve symptoms due to hay fever, upper respiratory allergies, or the common cold, such as runny nose and sneezing. It works by blocking histamine in the body, which is a substance that causes allergic symptoms. When used as recommended, it is a safe and effective medicine. Diphenhydramine is marketed under the brand-name Benadryl, store brands, and generics. It is also available in combination with pain relievers, fever reducers, and decongestants.

We urge health care professionals and consumers to report side effects involving diphenhydramine and other medicines to the FDA MedWatch program, using the information in the "Contact FDA" box at the bottom of the page.

webPOISONCONTROL®

Brought to you by Poison Control Centers

- Not everyone *can* or *will* call Poison Control when they need its help. They search online instead.
- web**POISON**CONTROL brings the benefits of poison control to people where they are *online*.
- Two tools: public facing vs. poison center-facing.
- 24 accredited poison control centers participating.
- Logic, algorithms, and recommendations written by board-certified clinical toxicology experts.
- Public tool accessible from poison.org or via free app.



webPOISONCONTROL is UX-Designed for Minimal User Burden

Users answer a few questions about the substance, amount, age, time since the exposure, and symptoms, and receive one of three initial triage recommendations:

1) it's safe to stay HOME, or

2) call POISON CONTROL, or

3) go to EMERGENCY ROOM

Users receive follow up emails and are encouraged to call the poison control hotline if they have any questions or concerns, or if certain symptoms develop. If a user is told to call poison control, the call is routed to the poison center that is assigned to handle cases from the user's geographic location.

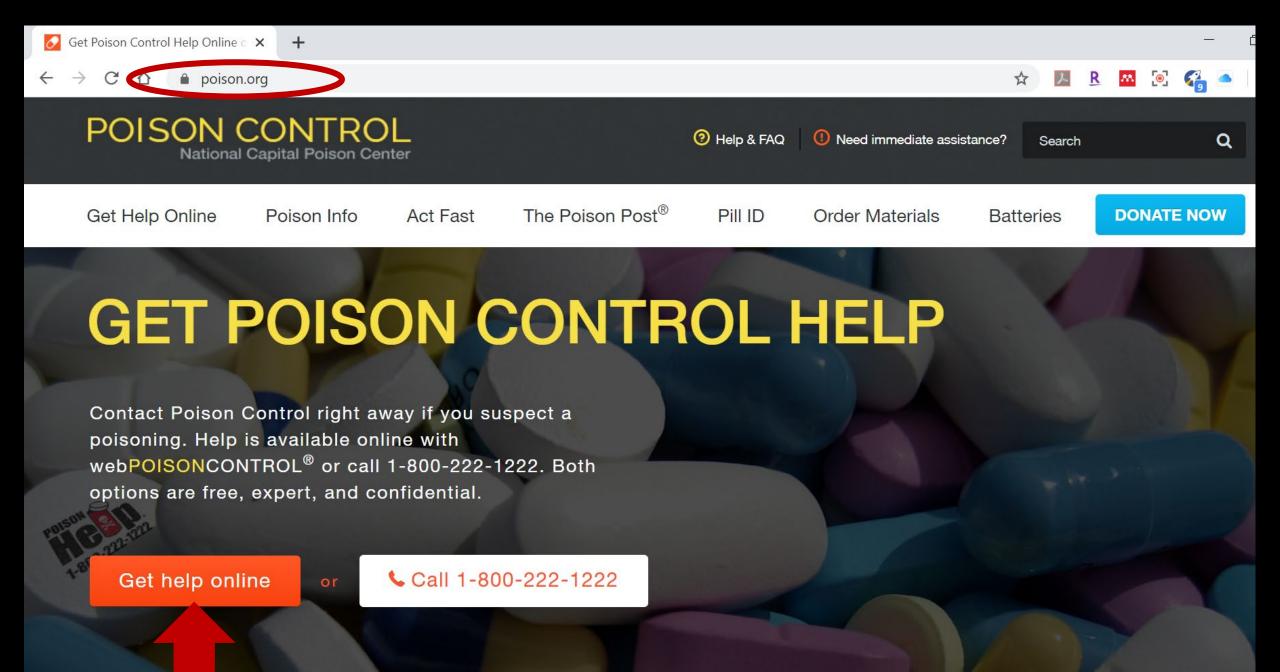
Try it.

- Imagine this scenario: Your 2-year-old daughter, weighing 25 lb, ingested some Suavitel detergent booster 15 minutes ago.
- For the test case, we will look for the product by barcode. Enter the number, below.









For mobile devices, the poison control hotline number can be touched to dial the number at any time.

Yellow indicates the selected option. Note that each subsequent question appears upon answering the preceding question.

Be sure to check the box indicating that you are just trying out the tool.



Before we begin...

Stay calm and let us guide you. Take the time to give us accurate information so we can provide the right recommendation.

Prefer to talk to a person? It's always OK to call Poison Control at 1-800-222-1222.



What is the person's age and sex?

This information helps determine safe amounts. If you know the person is under 3 years, but don't know the age in months, enter the years in the 'Age (enter years)' box.

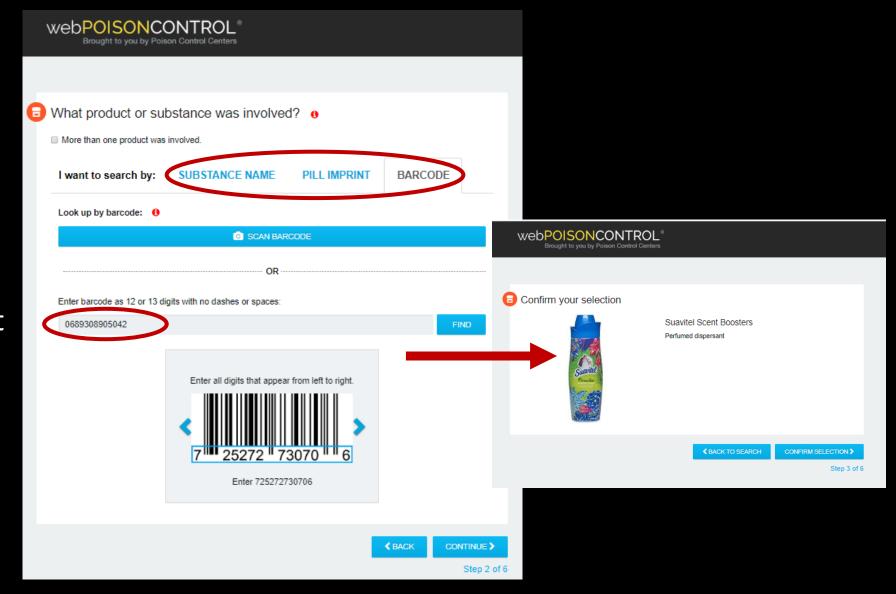


- I agree to abide by the terms of this agreement.
- I'm just trying the tool. This is not a real case. €



Users can find the implicated substance or product three different ways:

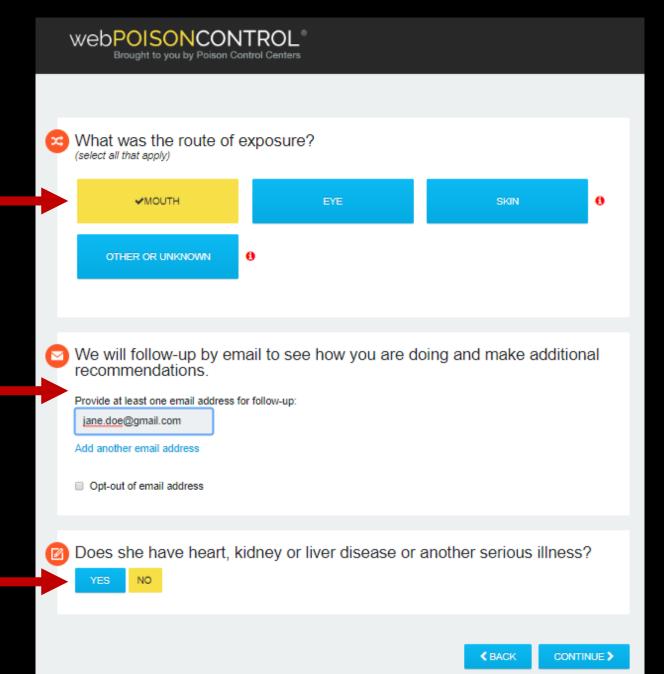
- 1) Searching for it by name,
- 2) Entering the pill imprint (if applicable), or
- 3) Scanning or entering the numerical barcode found on the product's packaging. For this case demonstration, choose "barcode" and enter 0689308905042.



Options for route of exposure vary based on substance formulation.

Email address is required for automated follow up.

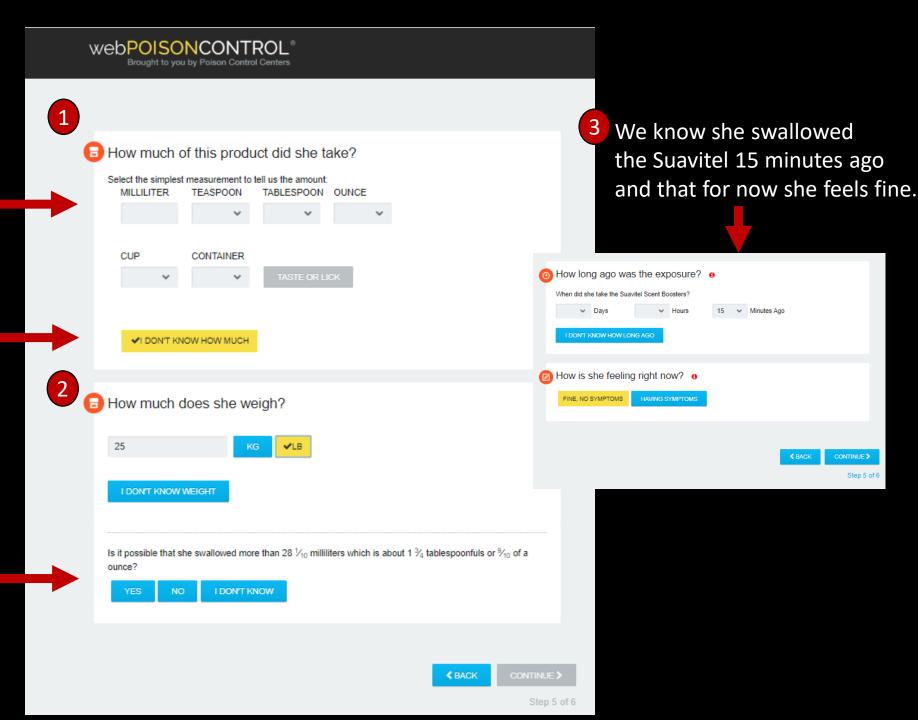
web**POISON**CONTROL will not give a recommendation for an exposed person with a serious medical condition. If the user selects "yes," they will be instructed to call poison control.



Units of measurement vary based on substance formulation.

For the test case, imagine you don't know how much she took.

If you don't know how much the person took, this question is presented and amounts are calculated based on the thresholds in the relevant algorithm(s).



Case recommendation: It's unlikely that significant toxicity will develop.

web**POISON**CONTROL tells you what you should do now, common symptoms that might occur, and more serious, but unlikely symptoms that should trigger a call to poison control.

Our recommendation

Based on the information you provided, it is unlikely that significant toxicity will develop. You do **NOT** need to go to the Emergency Room. Follow the instructions provided regarding what to do next, symptoms to watch for, and when to call Poison Control for additional help.

What should you do now?

- Watch for dehydration. Infants and the elderly can become severely dehydrated quickly. Contact a physician for help.
- For dehydration in infants (< 1 year): Give oral rehydration solutions such as Pedialyte®. Start with a teaspoon (5 milliliters) every one to five minutes and increase as tolerated. It may be easier to use a syringe. Contact your pediatrician.
- For dehydration in children 1-12 years: Give extra fluids in small sips. Clear soup, clear flat soda, or Pedialyte® are good options. Supplement with popsicles or ice chips.
- For dehydration in children over 12 years and adults: Drink 1 to 2 quarts of water, juice or sports drinks (like Gatorade®). Dilute juice or sports drinks with equal amounts of water. Give over 2 to 4 hours. Continue normal diet.
- Check with Poison Control (1-800-222-1222) to confirm there are no expected interactions if the exposed person is taking other medications.

These are common symptoms that might occur:

- > headache
- nausea
- > vomiting
- > abdominal pain
- gassiness or bloating
- diarrhea

If symptoms develop, expect them to start 1 hour to 4 hours after the exposure and to last 8 hours to 1 day.

We expect you might experience the common symptoms listed above and these are usually mild and selflimited. But if they are persistent or severe, call Poison Control at 1-800-222-1222.

Automated follow up ensues after initial triage recommendation, using the email address the user provided.

Always call Poison Control immediately (1-800-222-1222) if any of the following symptoms develop:

- allergic reaction (difficulty breathing; wheezing; chest tightness; hives; swelling of lips, face, tongue or throat; dizziness)
- > severe or persistent diarrhea
- > dehydration (sunken eyes, decreased urination, drowsiness, no tears, dry mouth, thirst)
- > dizziness or vertigo
- > weakness
- > feeling faint

Also call Poison Control if:

- > Any serious or worrisome symptoms develop
- > You don't understand a recommendation
- > The information you entered might not be accurate
- > You have any questions

What happens next?

We'll send you follow-up emails at 4 hours, at 8 hours and at 1 day after the exposure.

You can check on the status of your case by clicking follow-up on an existing case.

Follow Up

1

WebPOISONCONTROL Brought to you by Poison Control Center		
Follow Up: Login		
Email:	Case ID:	
jane.doe@gmail.com	3534232	
		Login >

Thank you for checking in.

We want to make sure you are OK. Please answer a few questions so we will know how you are doing.

We told you it was OK to stay home unless specific symptoms developed. But what was actually done? After your initial login to webPOISONCONTROL®, did the person exposed:

Check all that apply.

Stay home (did not go to an ER, doctor or hospital)?

Call Poison Control?

Go to an Emergency Room?

Call a doctor?

Go to a doctor's office, clinic or urgent care center?

Get admitted to a hospital (not just seen in an ER)?

Realized later that nothing was swallowed or taken (for example, the missing pills were found)

Continue >

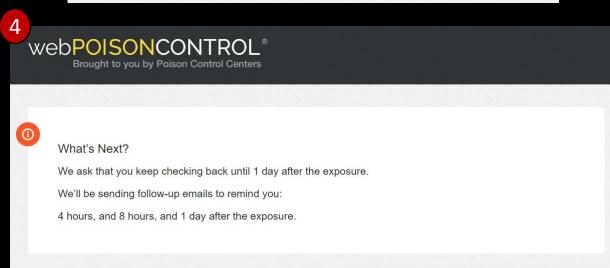
How Is This Person Right Now?

Fine, no symptoms developed after the exposure
Symptoms developed after the exposure, and all symptoms have resolved
Symptoms developed after the exposure but have not all resolved

What symptoms developed after the exposure?

SAVE

severe or persistent vomiting
vomiting (mild or self-limited)
vomiting blood



≺ Back

Continue >

How does web**POISON**CONTROL determine its recommendation?

- 2,050 ingredient-based algorithms, each matched to the corresponding ingredient(s) in more than 107,000 products and substances.
- More than 769,000 product barcodes are linked to these 107,000+ substances.
- More algorithms, products and barcodes are added daily.



Substance: Suavitel Scent Boosters

Substance ID: 153453

Class: Laundry detergent or additive

Generic Code Name (Code): Other/Unknown Laundry Additive Or Miscellaneous Product (0013508)

Formulation Group/Formulation: granules/granules

Use substance in Calculate it For Me - SPI thresholds

Use substance in Calculate it For Me - PUBLIC User thresholds

Ingredient table

Ingredient Algorithm ID Algorithm
1 Perfumed dispersant 1286 laundry fragrance booster, pellets Strength/Vol Alt Strength/Vol Salt Factor

Each algorithm contains:

- Calculation Type (Age- or Weight-Based)
- **User triage threshold value** "Call poison control if ingested amount meets these criteria" (some ingredients are direct ER referrals)
- An extensive triage rationale with justification
- **Toxic/Lethal Dose** information
- **Recommendations** (what is shown to user)
- **Referral Instructions**
- Timeline
- References

#1286: laundry fragrance booster, pellets

Laundry detergent or additive (Household Products)

MOUTH (User)

Calculation Type:

Age Bracket

FYF

6 months - 35 months

3 years - 12 years

13 years - 65 years

66 years - 79 years

User triage threshold value





Age Based

Call poison control if ingested amount meets these criteria:



Amount

EYE SKIN INHALATION

>2.48 mL/kg OR >44 mL

>2.48 mL/kg OR >111 mL

>4.4 mL/kg OR >311 mL

>2.48 mL/kg OR >111 mL



▼ BITE/STING ▼ INJECTION

MOUTH (SPI)

Calculation Type: Age Based

SPI triage threshold value

Triage to ER if ingested amount meets these criteria:

Age Bracket Amount

>2.48 mL/kg OR >44 mL 6 months - 35 months 3 years - 12 years >2.48 mL/kg OR >111 mL 13 years - 65 years >4.4 mL/kg OR >311 mL

>2.48 mL/kg OR >111 mL

66 years - 79 years

SKIN

Severity Score: Minor Effect

Age Bracket Triage type

6 months - 79 years Symptom-based triage Severity Score: Minor Effect

Age Bracket Triage type

6 months - 79 years Symptom-based triage

Triage Rationale

This algorithm applies to bead/pellet forms of laundry fragrance boosters (e.g. Downy Unstopables, Gain Fireworks, Dreft Blissfuls, Sauvitel Fragrance Pearls, and Bounce Bursts). It does not apply to crystal or packet forms of laundry boosters (e.g. Purex Crystals Laundry Enhancer).

Laundry fragrance booster pellets are scented dissolvable beads about the size of mini-chocolate chips that are added to the laundering wash cycle. The pellets release a fragrance that is incorporated into the fabric for up to 12 weeks. The typical formulation for pellet scent boosters is shown below (Downy Unstopable Poison Information Sheet, 2016):

- Polyethylene glycol 8000, 75-99%
- Perfume, 5-9%
- Perfume microcapsules, 1-4%

Where do we get Products & Ingredients?

- Proprietary UPC database
- Publicly available drug databases
- Safety Data Sheets (SDS)
- Product Labels, Drug Facts Labels, and Supplement Facts Labels
- Commercially available pharmaceutical database
- Medical literature on plant, mushroom, bite & sting toxicity
- Manufacturer responses to our inquiries

webPOISONCONTROL Case Statistics Summary



477,000 cases managed. Most cases are pediatric exposures; over half involve children <6 years old.



About 70% of cases are triaged to home management. Approximately 29% are triaged to call poison control. Very few cases advised to go to the emergency room (<2%).



Most cases involve ingestions (86%). The tool can manage cases that involve other routes of exposure and combinations of exposure routes.



The ratio of cases involving nonpharmaceutical to pharmaceutical substances is roughly 3:2.

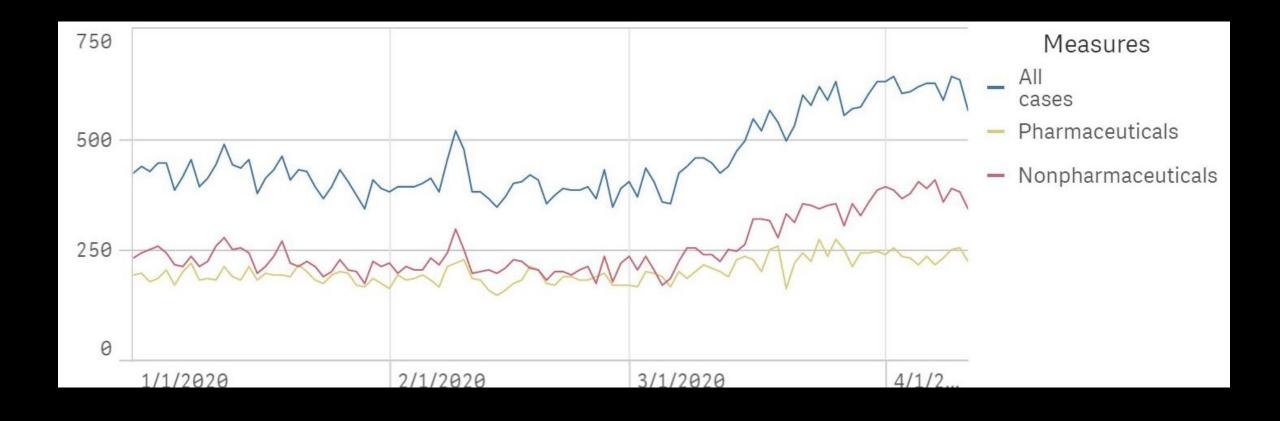
Impact of COVID-19 on webPOISONCONTROL

- Increased utilization (closed, nonduplicated human exposures, excluding test cases) began ~3/8/2020, with a 51% increase in daily volume seen by early April.
- 77% of the rise in volume involved nonpharmaceuticals.
- Prominent spikes in hand sanitizers and hand dishwashing detergent, household disinfectants and cleaners, household bleach, and hydrogen peroxide cases.



Impact of COVID-19

- Increased utilization of web**POISON**CONTROL began around 3/8/2020.
- Average volume for Jan/Feb 2020 was 406.9 nonduplicated cases/day, climbing to 615.8 cases/day in the first 11 days of Apr 2020.
- Nonpharmaceuticals were responsible for 77.1% of the increase.



Poll

"I really appreciate how quick it was to get a recommendation. I am disabled and it is very difficult for me to hold a phone up to make a phone call - so having a website that does this quickly is quite literally a lifesaver for people like me.

"I love the **fast results.** It was so easy to find the exact product with the barcode feature."

"I love the fact that at an extremely panicky moment involving the well-being of my child, poison control was there at the click of a finger, with **instant**, **accurate information**, calming me down and telling me exactly what to do."

Users love webPOISONCONTROL.

Of the 15,000+ user feedback survey responses collected:

- 98% say the tool is easy or somewhat easy to use.
- 95% say it met or more than met their needs.
- 97% would likely or very likely use the tool again.
- 96% say the speed is quick to very quick.
- The webPOISONCONTROL tool was a top 10 finalist for the 2018 Drucker Prize for Nonprofit Innovation and a semifinalist for the 2020 National Safety Council Green Cross for Safety Innovation Award.





Surveillance Dashboard Overview

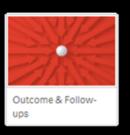






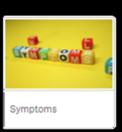


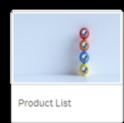










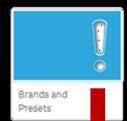


The dashboard provides visualization of:

- User's location
- Exposed person's age and sex
- Product or substance, analyzed by individual product, a group of products, a brand, or a generic category
- Route of exposure
- Initial symptoms
- Initial triage recommendation

If the user provides an email address, additional information is collected via automated follow-up, including:

- Action taken what was actually done?
- Specific symptoms that developed after initial triage recommendation
- Final triage recommendation
- Outcome: No effect, Minor, Moderate, Major, Death, Unknown minimally toxic, Unknown potentially toxic.







Age & Sex



Maps



Substances

Outcome & Follow-



Routes



Symptoms

Product List

Demo Brands and Presets

Brand (S)	Age Group (S&R)
Brand Owner (S)	Algorithm (S)
Reference Group (R)	Case Status (S&R)
Year (S&R)	Formulation Group (S)
	Formulation (S)
Dates (S&R)	Ingredient (S)
Cases Count by Bran	ıds

O Clorox Demo

O Purell Demo

O Terro Demo

Zarbee's Demo

Reference Group Presets				
Reference Group Q	Description			
All non-duplicated, public cases	non-test cases (nonduplicated, public, finished)			
Analgesics	Analgesics (nonduplicated, public, finished, generic category = analgesics)			
Cleaners (household)	nonduplicated, public, finished, generic category = cleaning substances (household)			
Hand sanitizers	Hand sanitizers (nonduplicated, public, finished, generic category = hand sanitizers)			
Insecticides	cides Insecticides (nonduplicated, public, finished, generic categ = insecticides)			
Melatonin	Melatonin (nonduplicated, public, finished, generic code = melatonin)			
Pharmaceuticals	nonduplicated, public, finished, major generic category = pharmaceuticals			

Count by year	
from 1/1/2017 to 10/19/2020	

Year Q	Selected Substances	Reference Group
Totals	10,630	450,101
2020	3,259	130,824
2019	3,715	162,083
2018	2,776	114,639
2017	880	42,555

Selected Substances

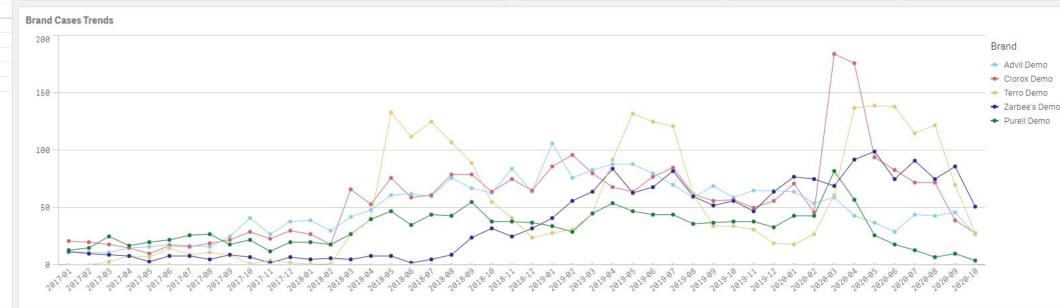
10,630 10,630

Reference Group

All Cases nonduplicated, public

All Demo Brands

450,101 450,102





Cases / 100 000

ppl

0.53207

0.46908

0.95688

0.45338

0.49705

0.42012 0.60777

0.28048

0.41078

0.28339

0.41904

We need your help.

- Post the national Poison Control hotline (1-800-222-1222) and link to www.poison.org from your websites.
- Encourage your audiences to text POISON to 484848 to download a vCard and save both the website and phone number in smartphones.



Questions?

Please enter your questions in the Q & A pod

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Thank you!

Please fill out our evaluation: https://www.surveymonkey.com/r/GF9K33Z



at Education Development Center

Visit our website:

www.ChildrensSafetyNetwork.org