



# TRENDS IN ADOLESCENT SUBSTANCE USE: A POISON CENTER PERSPECTIVE

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WASHINGTON  
POISON CENTER  
(800) 222 1222

# Content warning

- Due to the nature of our data, we must acknowledge and discuss adolescent self-harm and suicide

# Today's discussion topics

The Washington Poison Center

Exposures in adolescents

Intentional substance abuse

Adolescent self harm/suicide

Overdose signs and symptoms

Ways to help



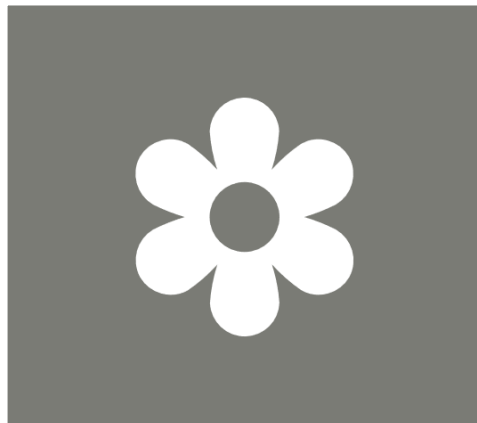




# The Washington Poison Center

# A poison is...

Any product or substance that can be harmful if it is used the wrong way, by the wrong *person*, or in the wrong *amount*





# Overdose

- **Overdose:** injury to the body that happens when a drug is taken in excessive amounts
  - Overdose can be **fatal** or **nonfatal**
  - Overdose can be **intentional** or **unintentional**





**(800) 222-1222**

**24/7/365**

**Free**

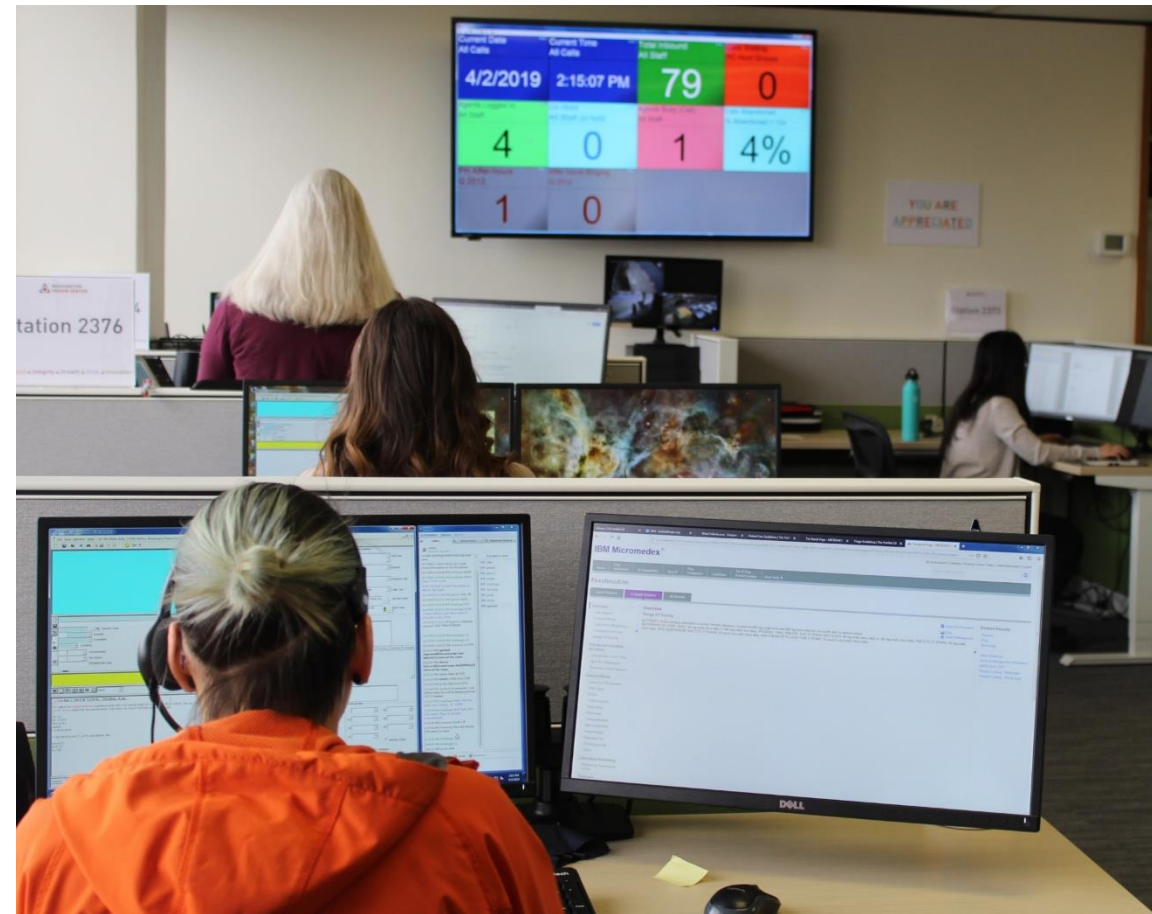
**Confidential**

**260+ Languages**



# Our staff

- Specialists in Poison Information (SPIs): expert-level nurses, pharmacists, and poison information providers
- On-call Board Certified Medical Toxicologists





# Who calls WAPC?



# Calls to the Washington Poison Center



Close to half of calls  
concern children  
under 6 years



**We're not just for kids!**  
Calls in teens, adults, and older adults  
tend to be more serious



# **Calls for Adolescents**

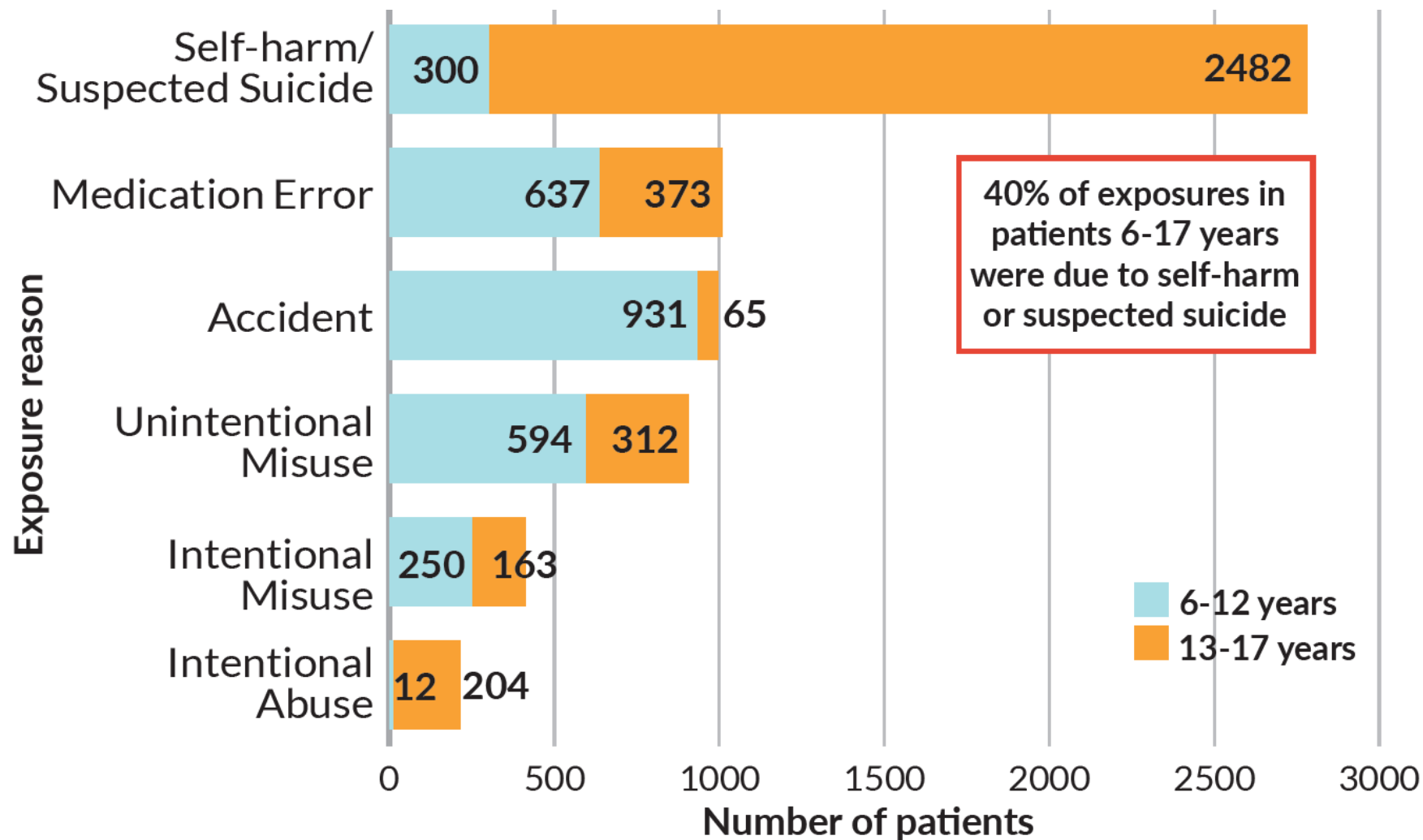
# Washington Poison Center data

- No requirement to call poison centers
- Our data tells many possible stories
  - Changing awareness
  - Changing access
  - Societal changes/large scale traumas
- Our treatment is for single or short-term poisonings



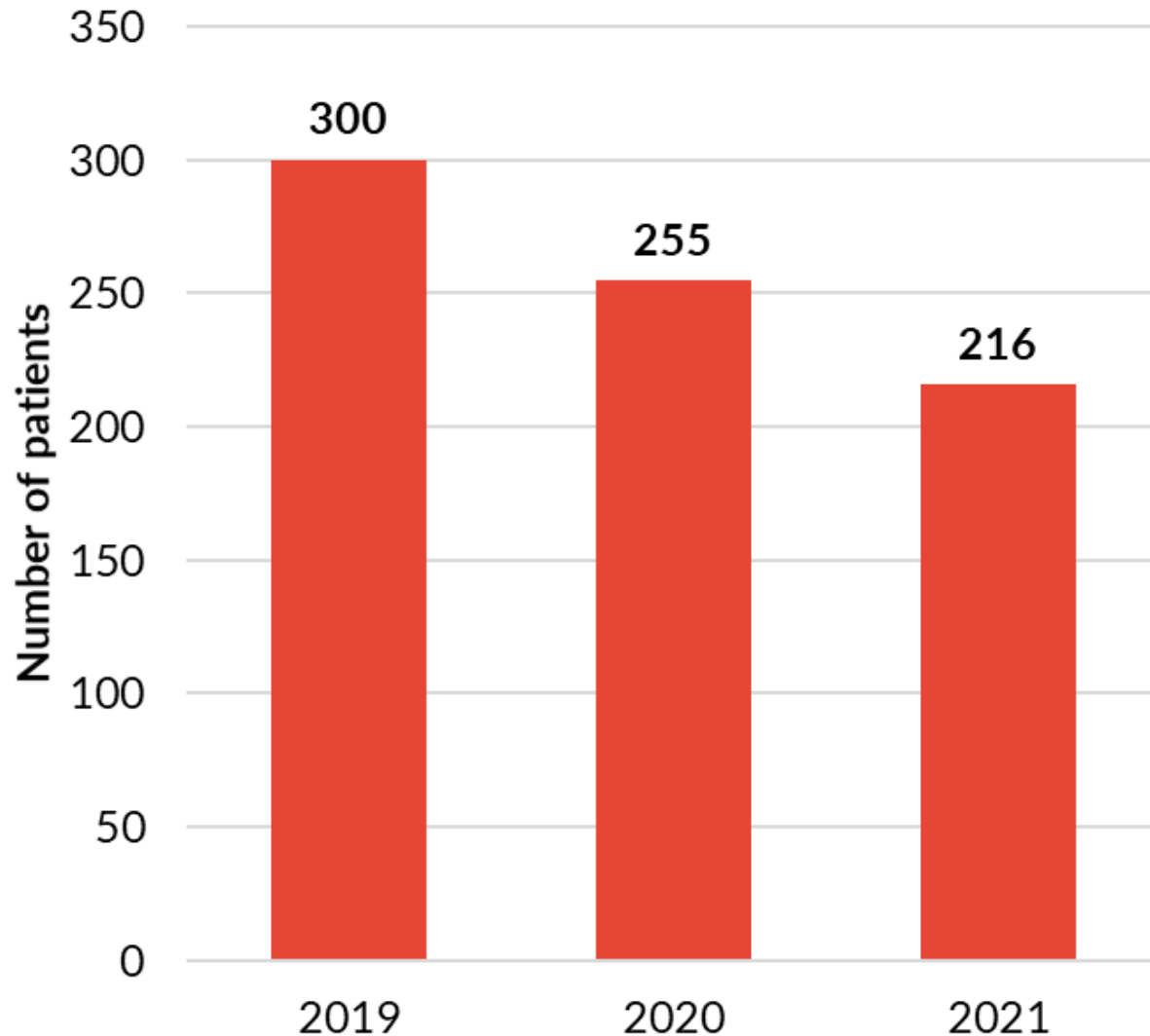


# Top adolescent call reasons (2021)



*\*This graph does not include all exposure reasons*

# Intentional abuse in patients 13-17 years (2019 – 2021)



- **Intentional abuse:** intoxication-seeking behavior; trying to get “high” or “drunk”
- ~28% decrease between 2019 and 2021



# Top 5 substances involved in adolescent intentional abuse (13-17 years)

2021	# of patients
Antihistamine with DXM*	20
Benzodiazepine	19
Alcohol	18
Cannabis edible	17
DXM*	14

*\*Dextromethorphan*

# Dextromethorphan (DXM)

- A substance often present cough and cold products
  - Cough syrups also may contain **alcohol**, **codeine**, or **acetaminophen**
- Can cause:
  - Nausea, vomiting
  - Sedation, lethargy
  - Impaired coordination
  - Visual hallucinations
  - Respiratory suppression



# Alcohol

- Alcohol is still a widely used substance among America's youth aged 12-17
- Alcohol IS a drug!
- Poison Centers don't get many alcohol calls
  - Hospitals know how to handle alcohol without Poison Center advice
  - Most alcohol calls we receive involve many substances at once





# Alcohol

## Acute intoxication symptoms

- Nausea and vomiting
- Headaches
- Drowsiness
- Fainting and loss of coordination
- Increases risk for internal bleeding, heart problems and breathing difficulties

- Underage drinking increases the risk of alcohol use disorder later in life
- Most commonly-combined substance
  - Especially with cannabis while driving
- Can alter the effects of other substances and medications

# Cannabis



Key terms:

- **Delta-9 THC:** the *main* regulated (and intoxicating) component in the cannabis plant
- **Hemp:** cannabis with <0.3% THC

# Short-term symptoms of THC

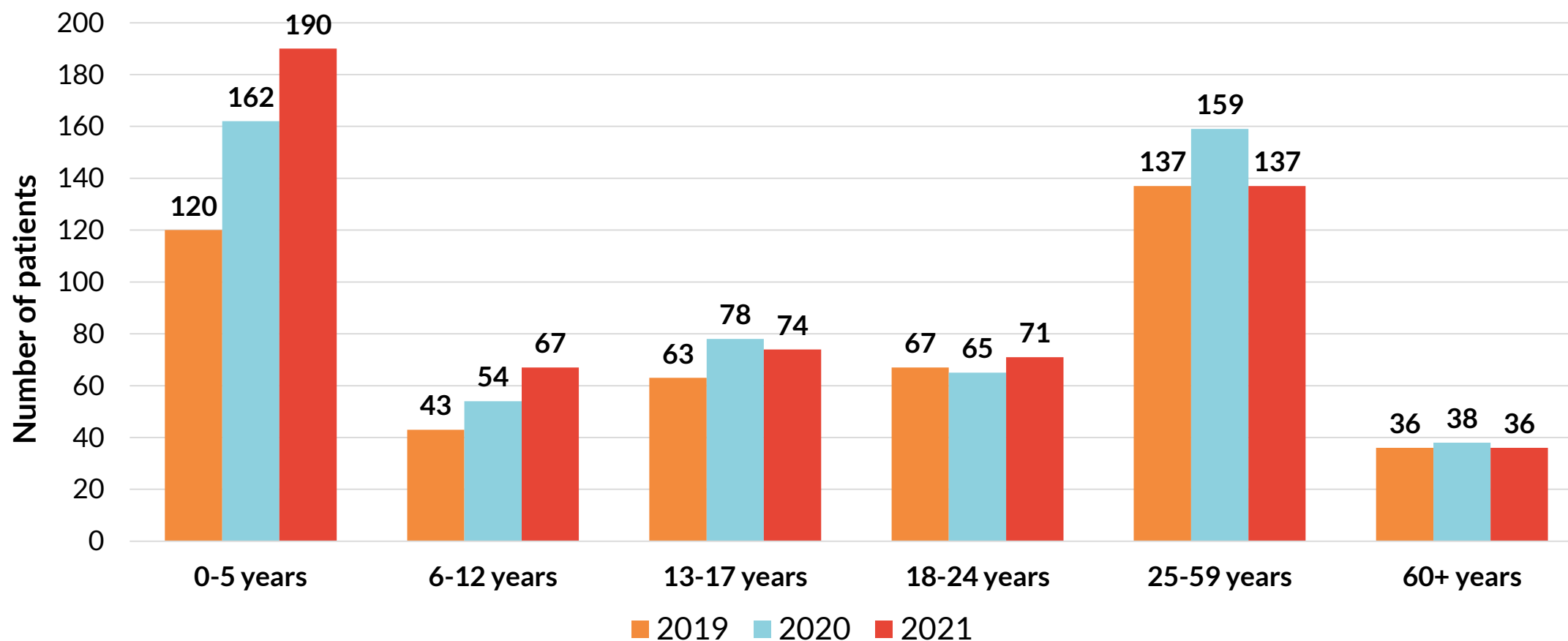
- THC gets into the body through:
  - Inhalation
  - Ingestion
  - Absorption
- Major effects last 4-6 hours (sometimes longer)

## Symptoms (mild, moderate, or severe)

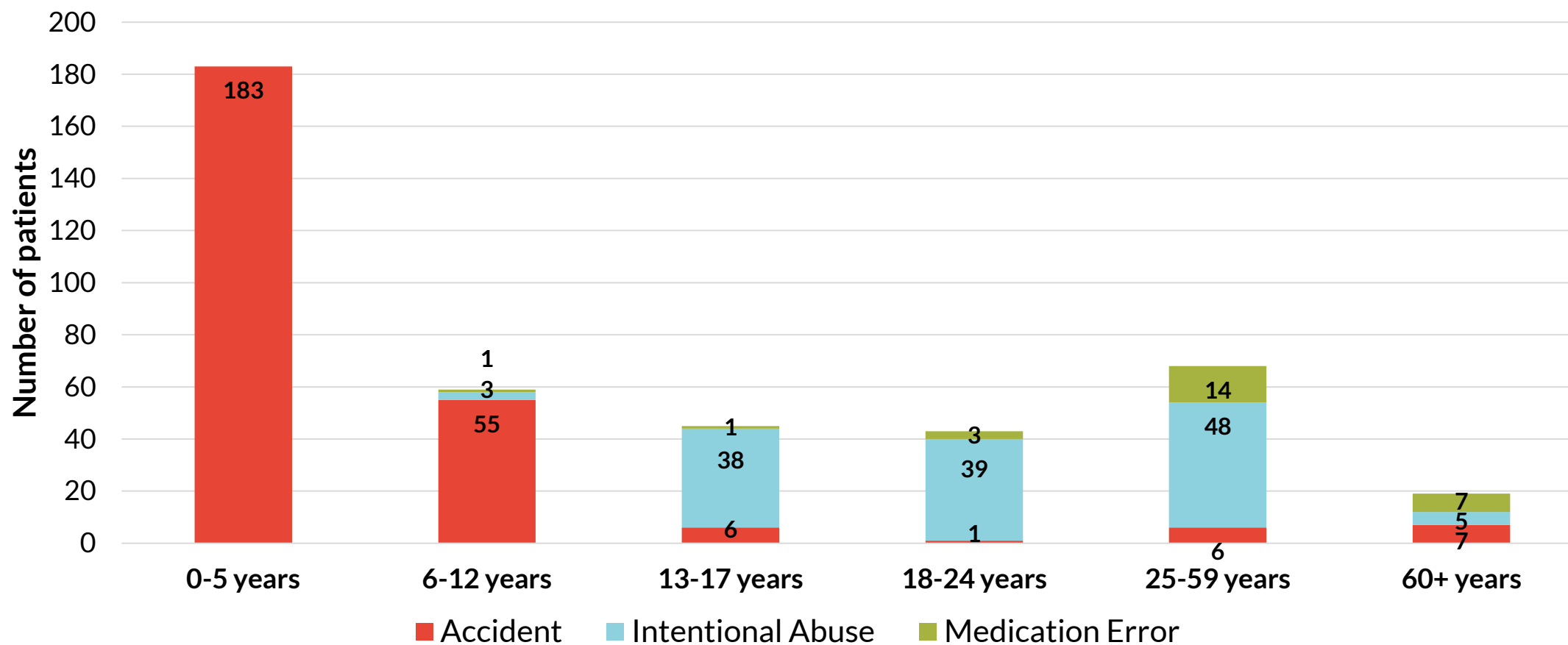
- Sleepiness, lethargy
- Euphoria
- Impaired time estimation
- Altered mental status
- Decreased motor coordination
- Increased heart rate
- GI upset (vomiting)
- Dilated pupils
- Coma



# WAPC – THC exposures by age (2019-2021)

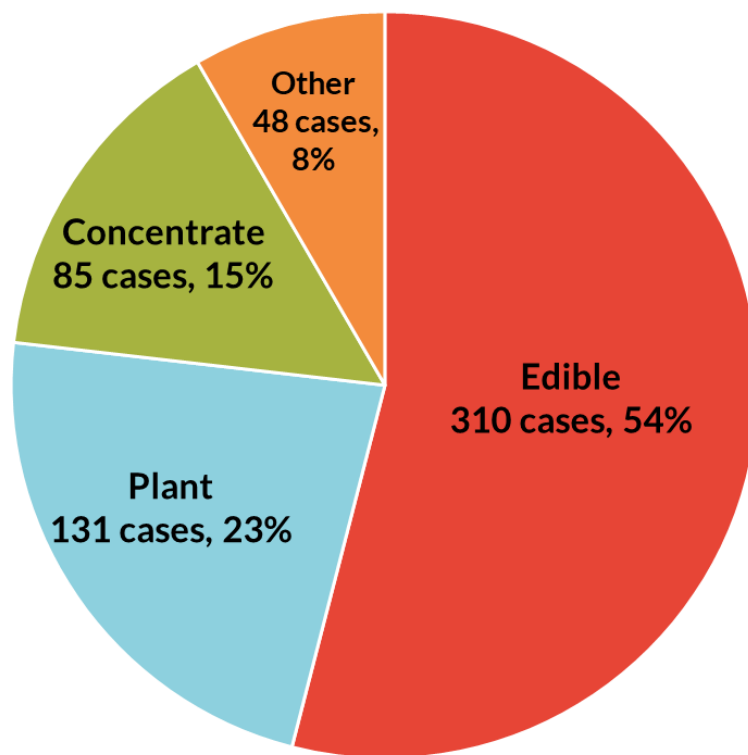


# WAPC - THC exposure reasons by age (2021)



# THC exposures by formulation (2021)

\***Other** includes pill/capsule, topical, or unknown formulations



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# Endocannabinoid system (ECS) – adolescence

- This is the body system then cannabis affects
- ECS helps maintain balance across body systems and influences:
  - Stress & anxiety behaviors, learning, memory, reward, & more
- Adolescence involves massive brain development
  - ECS is heavily involved with this period
- Earlier onset of cannabis use increases risk of dependence



# Cannabis risk: drug interactions

- The liver process many substances out of the body, including cannabis
- With cannabis use, other drugs processed by the liver can build up in the body
  - This can alter the effects of those other drugs (including medications)

# Risk of interactions with cannabis

Effect	Medications
Drowsiness	Benzodiazepines, opiates, barbiturates, antidepressants, alcohol
Bleeding	Aspirin, anticoagulants, antiplatelet drugs, non-steroidal anti-inflammatory drugs, some herbs and supplements
Blood sugar effects	Metformin, insulin



# Opioids

Opiate	Opioid	
	Semi-synthetic	Synthetic
<ul style="list-style-type: none"><li>Any drug derived from opium (or other natural sources)<ul style="list-style-type: none"><li>Morphine</li><li>Codeine</li><li>Heroin</li></ul></li></ul>	<ul style="list-style-type: none"><li>Derived from an opiate<ul style="list-style-type: none"><li>Oxycodone</li><li>Hydrocodone</li><li>Hydromorphone</li></ul></li></ul>	<ul style="list-style-type: none"><li>Completely lab made<ul style="list-style-type: none"><li>Fentanyl</li></ul></li></ul>

**ALL opiates and opioids act on the same parts of the brain and body!**

# Opioids

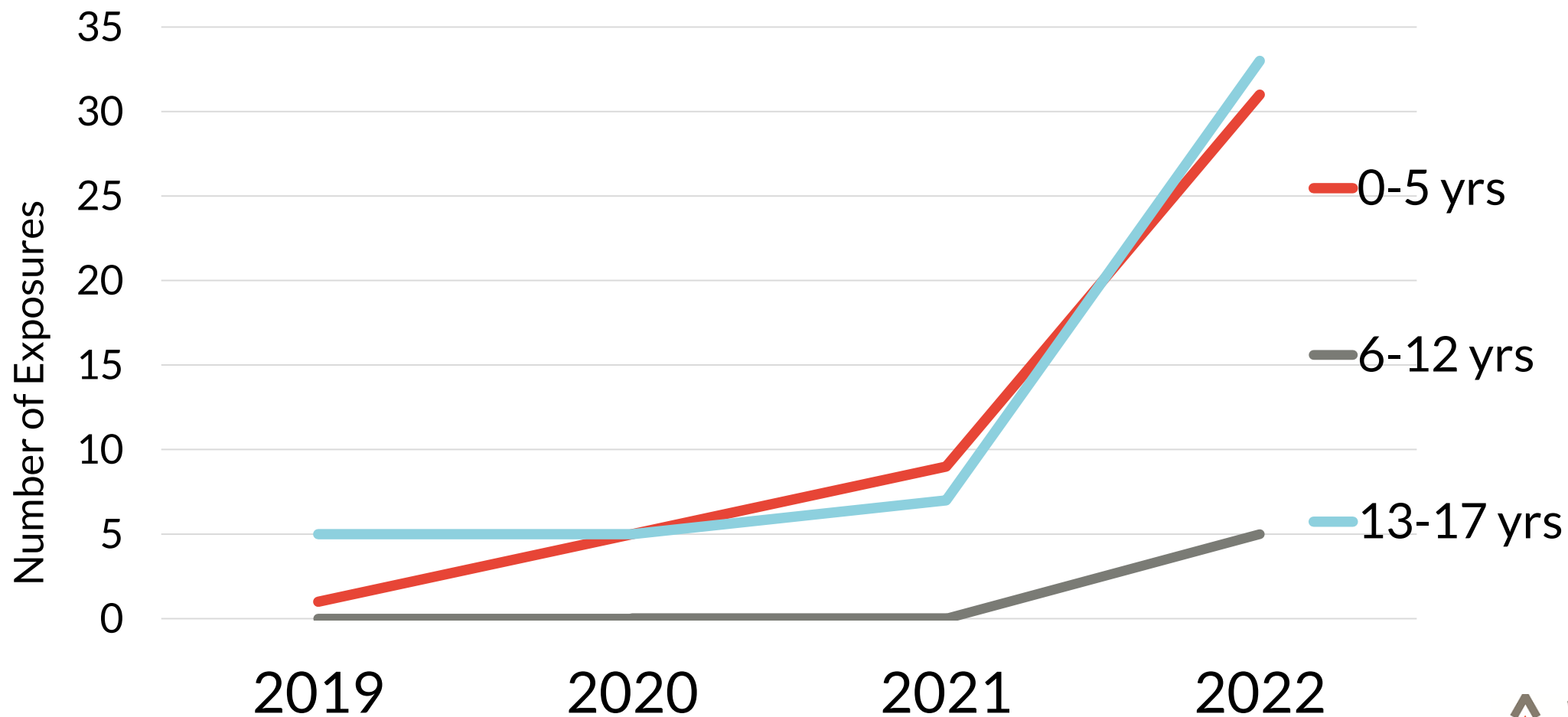
## Acute clinical effects

- Analgesia (reduces pain)
- Euphoria (feels very good)

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- Respiratory depression (makes it harder to breathe)
- Cardiac arrhythmias (heart rhythm problems)
- Seizures
- Muscle/chest wall rigidity

# WAPC Fentanyl Calls Over Time





# Pediatric Intentional Fentanyl Exposure by Reason

Exposure Reason	2019	2020	2021	2022
Intentional - Unknown	0	0	0	1
Intentional - Misuse	0	0	0	1
Intentional - Suspected suicide	0	1	2	6
Intentional - Abuse	3	3	3	20
Grand Total	3	4	5	28



# Nicotine

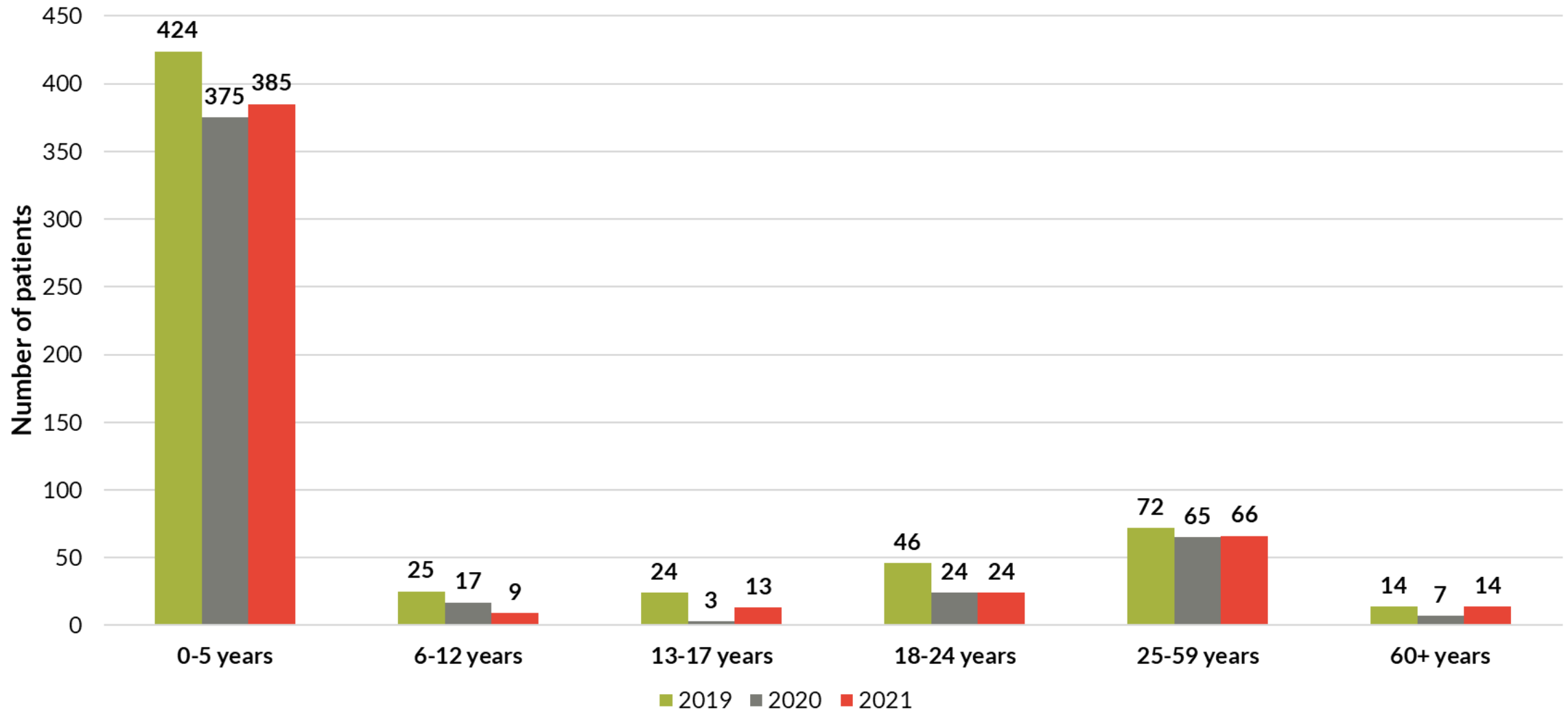
# WAPC short-term effects of nicotine

- Gets into the body through: inhalation, ingestion, absorption

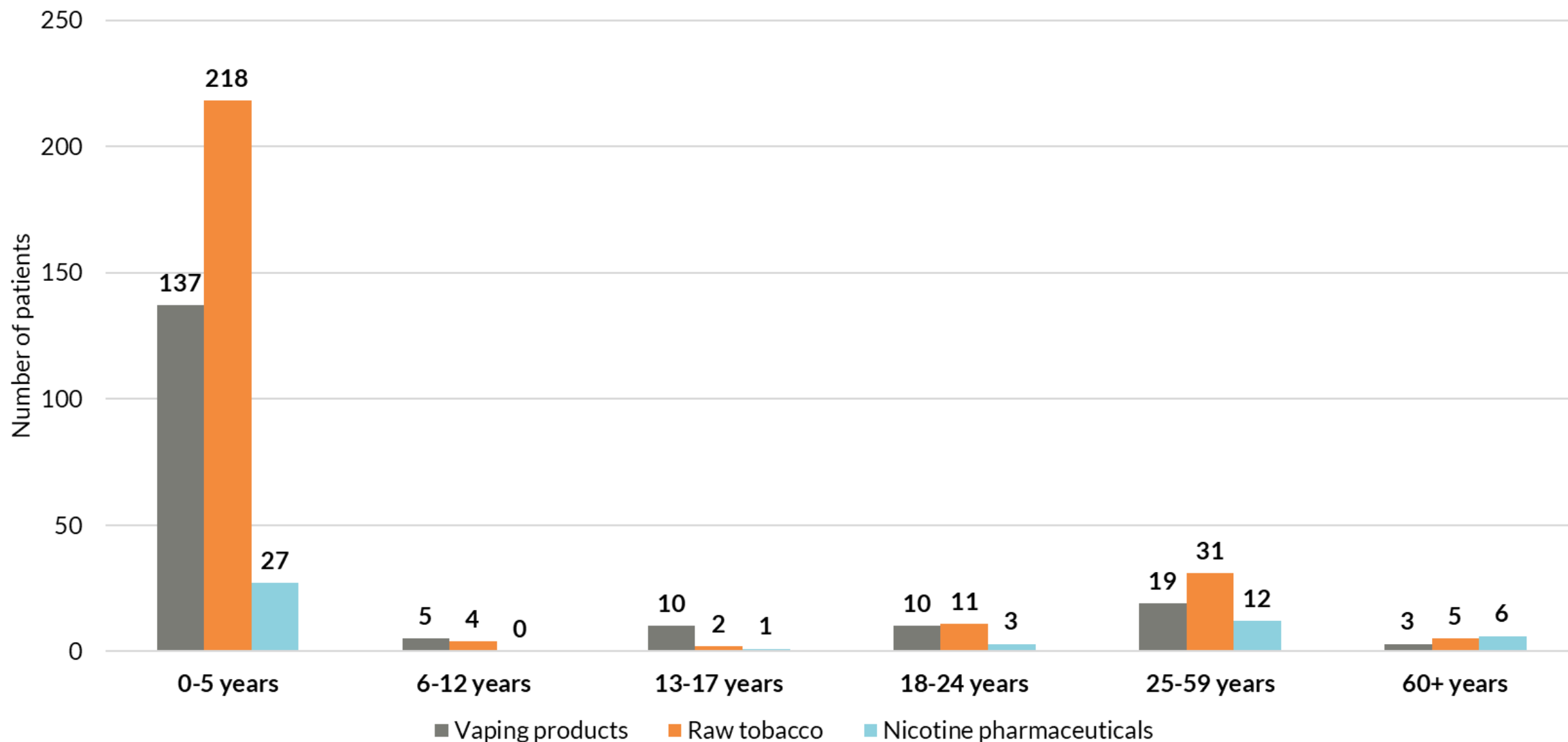
Mild or Moderate Symptoms	Severe Symptoms
<ul style="list-style-type: none"><li>• Euphoria (feels good)</li><li>• Increased focus</li><li>• Upset stomach</li><li>• Appetite suppression</li><li>• Dizziness, headache</li><li>• Tremor</li><li>• High heart rate and blood pressure</li><li>• Pale/clammy skin</li></ul>	<ul style="list-style-type: none"><li>• Seizures</li><li>• Confusion</li><li>• Weakness</li><li>• Low heart rate</li><li>• Low blood pressure</li><li>• Difficulty breathing</li></ul>



# WAPC – Total Nicotine Exposures by Age Group (2019-2021)



# WAPC – Nicotine Products by Age Group (2021)



# **Communicating about substance use**



# Communication to youth

## Key findings from Public Health – Seattle & King County Listening Sessions

What youth want	What youth DON'T want
<ul style="list-style-type: none"><li>• <b>Facts!!!</b> Unbiased information on:<ul style="list-style-type: none"><li>○ Health effects (short- and long-term)</li><li>○ Mechanisms of substances</li><li>○ Research about risks and benefits</li></ul></li><li>• Open discussion with accurate info</li><li>• Relevant risk messaging</li></ul>	<ul style="list-style-type: none"><li>• No exaggeration or shaming (e.g., scare tactics)</li><li>• No lectures</li></ul>

*Youth are aware that most sources of information have an agenda, including health educators and the industry*

# Rescue Agency – Marketing Health to Teens in a Post-COVID World



- Recommended marketing strategies for teens today

[Video link](#)

## Strategies

Acknowledge potential obstacles to addressing a health behavior AND provide ways to help overcome

Reframe behaviors around *short-term* benefits (can be more difficult to navigate with dependence/withdrawal)

Explain science without judgement

Focus on *repeated use*, not *one-time use*

# Adolescent Self-harm

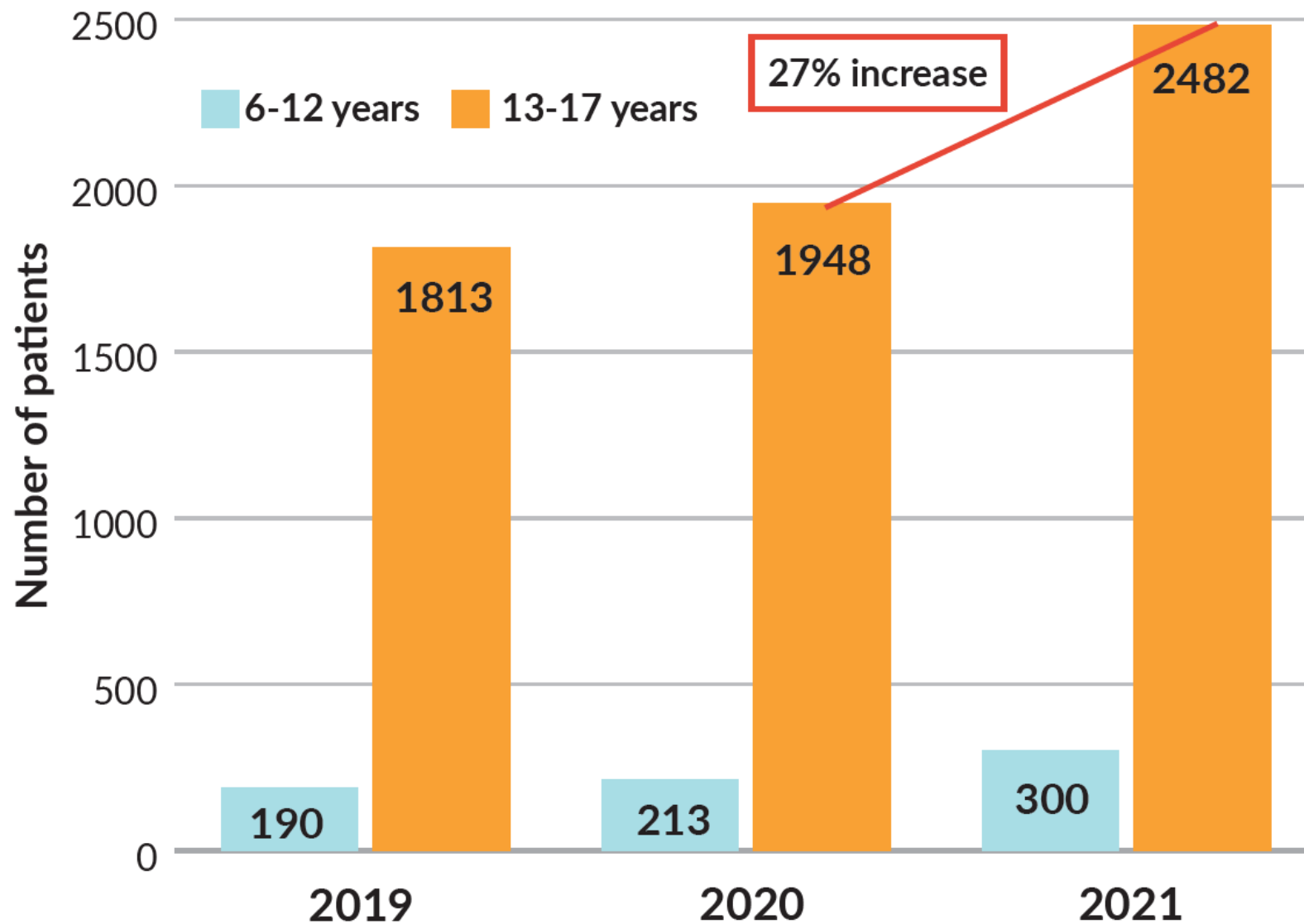


# Self-poisoning among adolescents

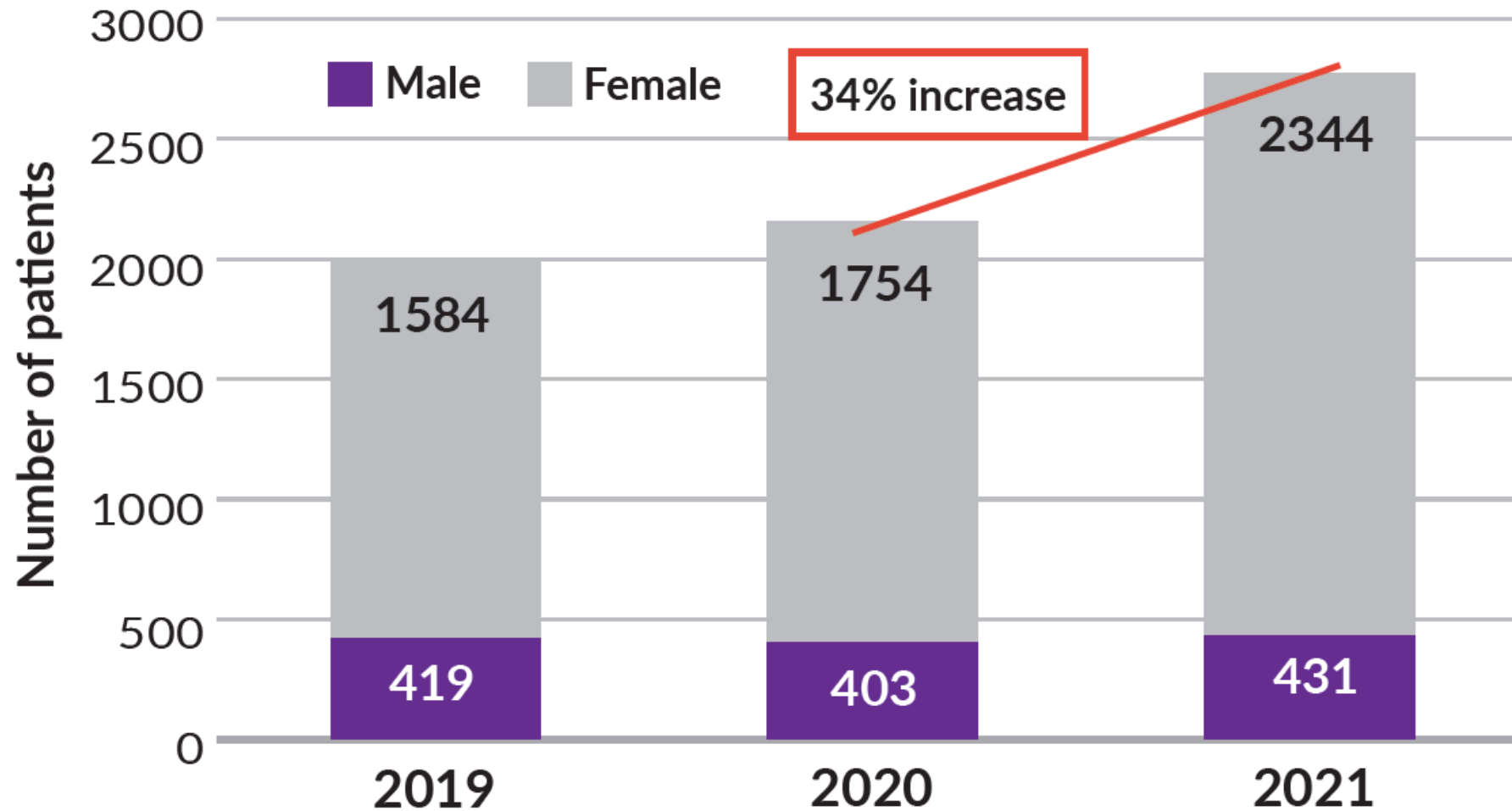
- Intentional self-poisoning is the leading type of suicide attempt for adolescents
  - 3<sup>rd</sup> leading cause of suicide deaths
- Adolescent suicide attempts by self-poisoning doubled from 2000 to 2018:
  - 40,000 attempts to 80,000 attempts
  - Likely an underrepresentation
- Other exposure reasons in these age groups didn't increase
  - Suggests increase isn't tied to utilization/awareness of PCs



# Self-harm/suspected suicide (2019-2021)



# Self-harm/suspected suicide by gender (2019-2021)





# Top substances in self-harm/suspected suicide patients (6-17 years, 2021)

Substance	# of patients
Acetaminophen	546
Anti-depressants*	544
Ibuprofen	475
Hydroxyzine	171
Atypical antipsychotic**	131
Melatonin	99

*\*Fluoxetine and sertraline*

*\*\*Atypical antipsychotics include aripiprazole, olanzapine, quetiapine, risperidone and others*



# Signs & Symptoms



# General red flags

- Big or small pupils
- Sweating
- Restlessness, fidgety
- Confused
- Agitated
- Drowsy, slowed response
- Dizzy, unsteady, uncoordinated



# Acetaminophen

- Very common in cold and cough medicine
- Symptoms may not show for several days
- **Primary concern:** damage to the liver
- Antidote available
- A major reason to send all self-harm attempts to hospital

## Symptoms

- Nausea
- Vomiting
- Abdominal pain
- Irritability
- Generalized weakness
- Convulsions
- Jaundice





# Antidepressants & antipsychotics

- May seem lethargic or anxious
- Pupil size normal or large
- Heart effects (arrhythmias & conduction abnormalities)
  - Only detected in a hospital
- Increased body temperature
- Tremors often precede seizures



# Antihistamines

- Low dose = Drowsy
- High dose = Extreme agitation
- Skin may be red/flushed/dry
- Pupils large
- Confused
- Hallucinations (visual / tactile)
- Heart rhythm issues
  - Only detected in hospital

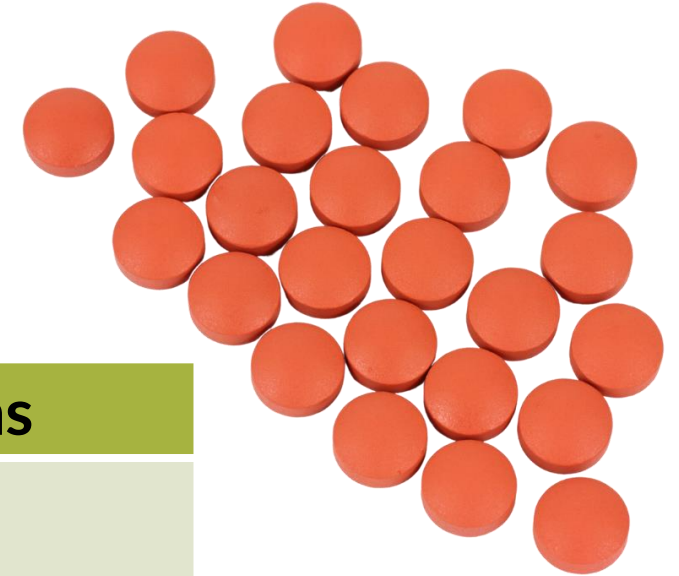


# Ibuprofen

- Overdoses are common
- Severe symptoms (e.g., kidney failure) are rare
- Often combined with other medication, such as Acetaminophen
- Very common in cold and cough medicine

## Symptoms

- Nausea
- Vomiting
- Headache
- Drowsiness
- Blurred vision
- Dizziness





# Melatonin

- Hormone used for sleep, non-sedative sleep aid
- Mild drowsiness possible, severe toxicity not seen
- Refer to hospital for lab work to rule out co-ingestions (like acetaminophen)







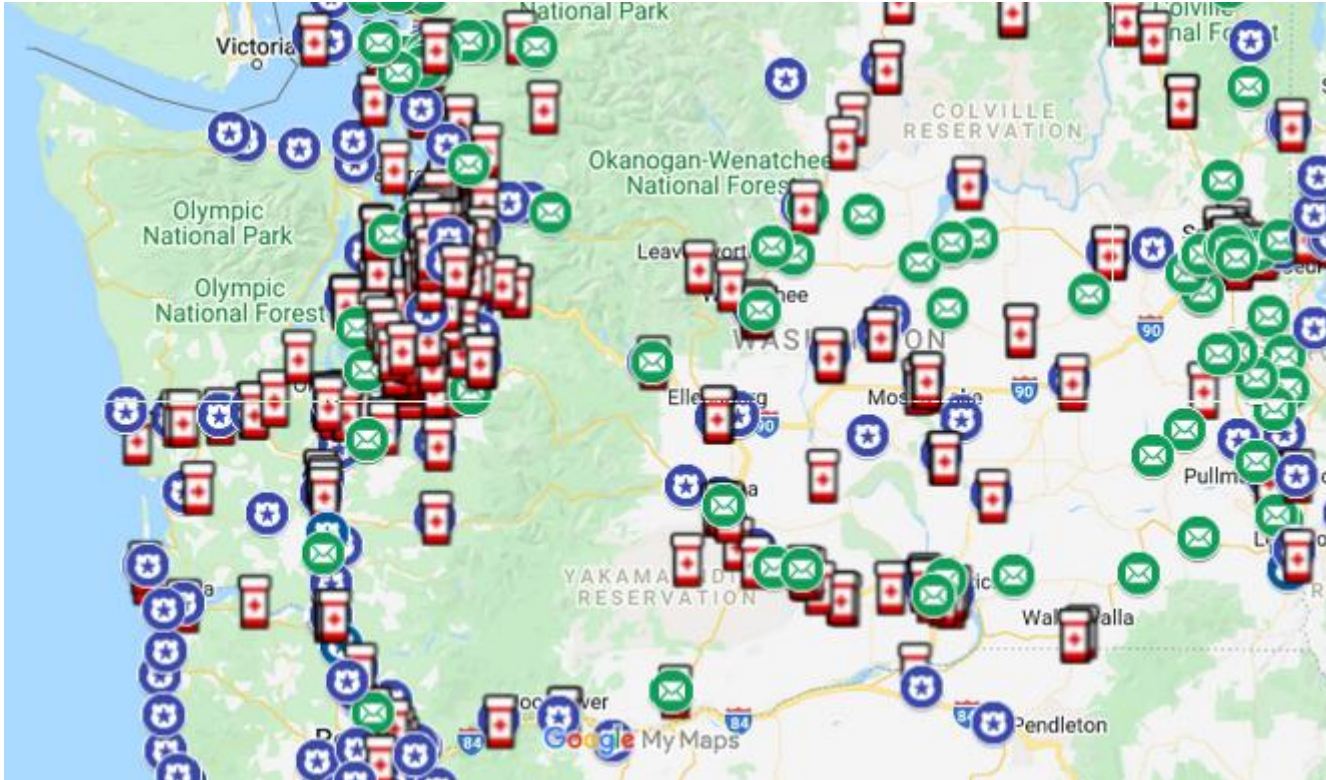
# How to Help

# Safe storage & disposal are essential





# Don't hang on to meds



[takebackyourmeds.org](https://takebackyourmeds.org)

Multiple languages available:

- Spanish
- Mandarin
- Cantonese
- Vietnamese



# When to call:

Poison Helpline	911	988
<ul style="list-style-type: none"><li>• In an overdose situation</li><li>• Medication errors</li><li>• Exposure to household products or chemicals</li><li>• In a potential poison emergency</li><li>• To receive info!</li></ul>	<ul style="list-style-type: none"><li>• In an overdose situation IF someone is:<ul style="list-style-type: none"><li>○ <b>Unresponsive/unconscious</b></li><li>○ <b>Not breathing</b></li><li>○ <b>Having a seizure</b></li></ul></li><li>• Other emergencies</li></ul>	<ul style="list-style-type: none"><li>• “Calls, texts, and chats from anyone who needs support for a suicidal, mental health and/or substance use crisis.” - SAMHSA</li></ul>

# WAPC caller experience – what to expect & what we need

## Who, What, Where, When, Why?

Patient	Substance	Scenario	Demographics
<ul style="list-style-type: none"><li>• Age</li><li>• Gender</li><li>• Weight</li><li>• Medical History</li><li>• Medication List</li></ul>	<ul style="list-style-type: none"><li>• Product Name</li><li>• Formulation</li><li>• Strength</li><li>• Amount</li><li>• Duration</li></ul>	<ul style="list-style-type: none"><li>• Why</li><li>• How</li><li>• Time</li><li>• Symptoms</li><li>• Treatments</li></ul>	<ul style="list-style-type: none"><li>• Patient Name</li><li>• Patient DOB</li><li>• Caller Name</li><li>• Phone Number</li><li>• Zip Code</li></ul>

It's helpful if you have the substance/product container!

# What then?

- After we gather info, we will tell you what to do
  - Stay at home
  - Go to the emergency room
- We will often call you back!
- And you can call us back anytime with additional questions, new symptoms, or a whole new exposure

# How to help

- Equip yourself with tools to engage in key conversations
- Speak to suicide and mental health directly; do not wait until a crisis to initiate dialogue with youth in your life
- Encourage multiple connections
  - With other teens and other adults/mentors (not just with parents or guardians)
- Set boundaries on social media and technology use
- Safe storage of medications



# Self-harm resources

- For help, text "HOME" to 741741 for a 24/7, free, confidential crisis counselor or call 1-800-TEENLINK (833-6546) to speak with a caring teen
- Understand the risk factors and watch for the warning signs:  
<https://afsp.org/risk-factors-protective-factors-and-warning-signs>
- University of Washington Forefront:  
<https://www.washington.edu/research/research-centers/forefront-suicide-prevention/>

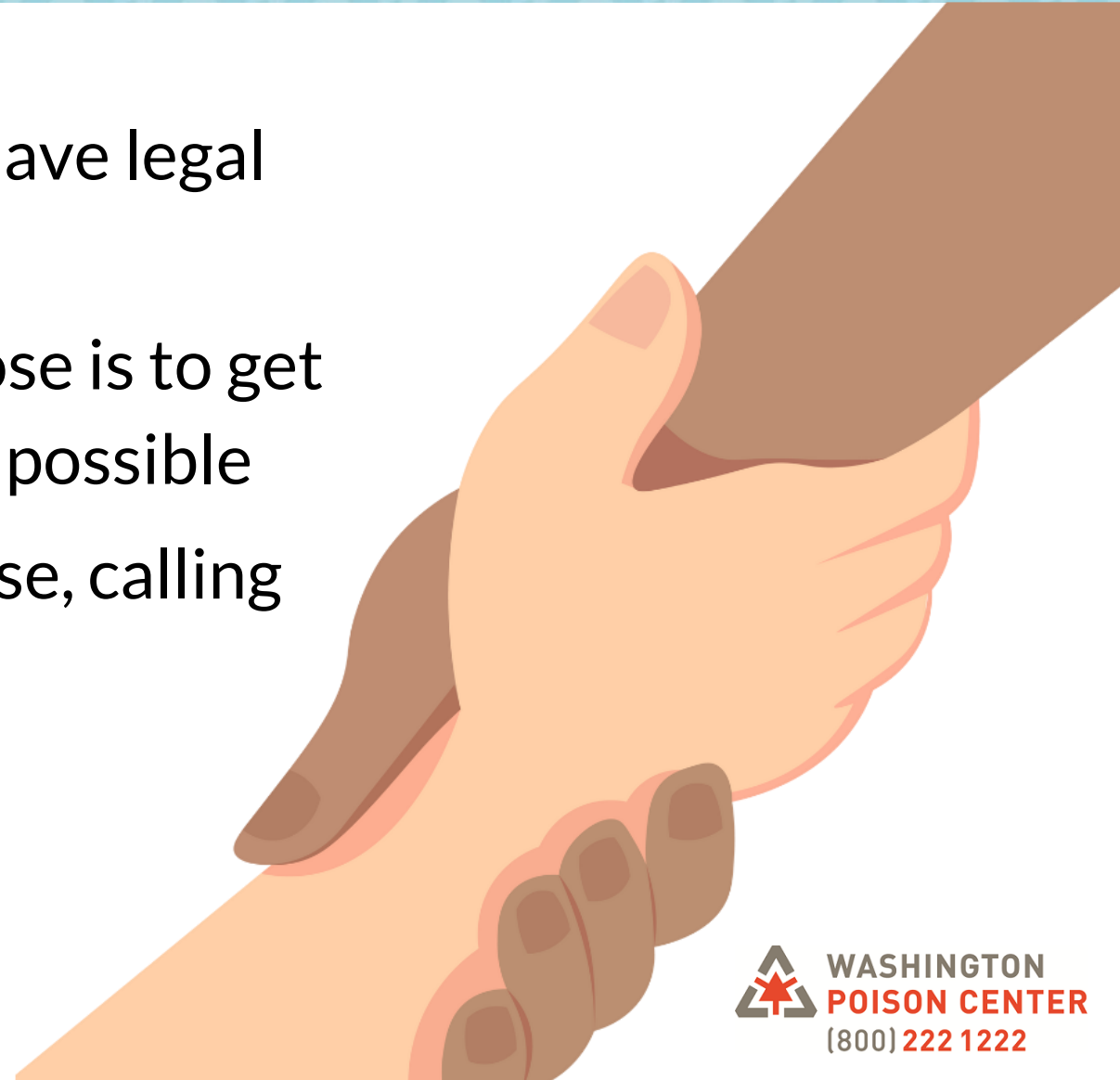
# Destigmatize

- Start conversations about drug use *without stigma* and *with empathy*
  - Stop Overdose: [www.stopoverdose.org](http://www.stopoverdose.org)
  - Starts With One: <https://getthefactsrx.com/>
  - Harm Reduction Coalition: <https://harmreduction.org/about-us/principles-of-harm-reduction/>



# Remind kids and adults about the Good Samaritan Law

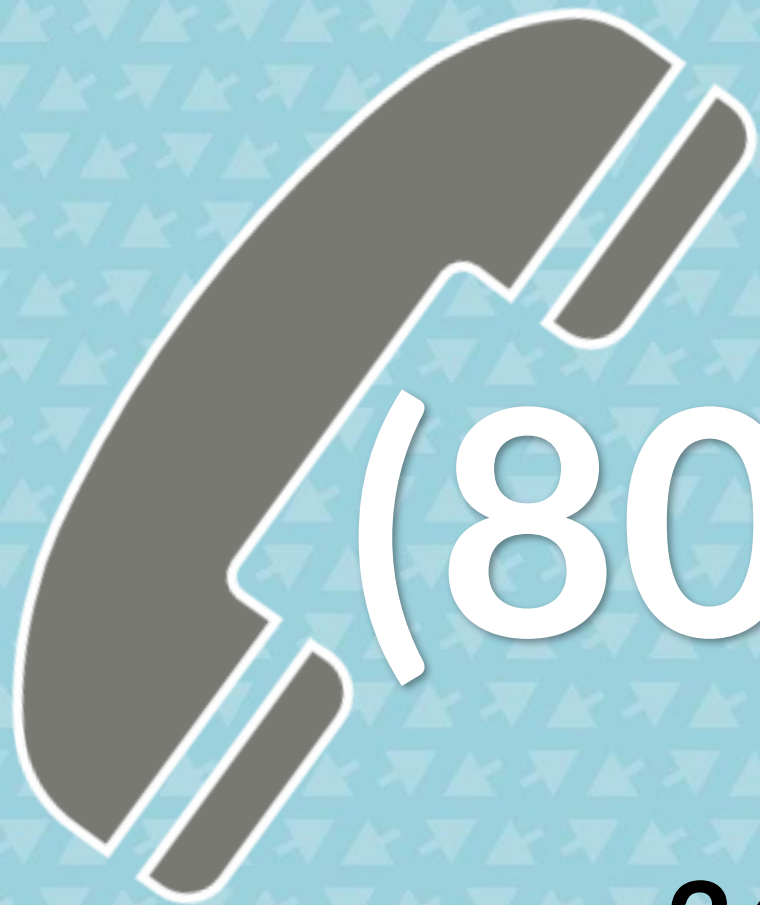
- Overdose victims and responders have legal protections in Washington State
- The key to saving a life from overdose is to get professional medical help as fast as possible
- If you are witnessing a drug overdose, calling 911 can save that person's life
- Remind yourself & others!





# Resources for parents

- [Washington Poison Center](#)
- [Start Talking Now website](#)
- [Partnership to End Addiction](#)
- [You Can WA campaign](#)
- [University of Washington Alcohol & Drug Abuse Institute \(ADAI\) and Clearinghouse](#)
- [National Institute on Drug Abuse \(NIDA\)](#)
- [King County Secure Medicine Return program](#)
- [Take Back Your Meds](#)
- [Washington Recovery Healthline](#)



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**Are you confident in  
knowing how to call the  
Washington Poison Center?**



**THANK  
YOU**

**Alex Sirotzki, MPH**

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