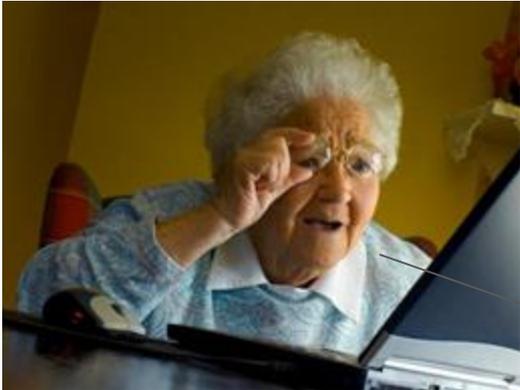


Pediatric Ingestions

Tyler Hoelscher MD

Grandma's Pills



Where did I leave my
methadone?

Objectives

Understand the demographics of pediatric toxic ingestions

Explain unique pathophysiologic considerations in a pediatric population

Take advantage of prehospital information

Better grasp common pediatric ingestants

Roadmap

Basics

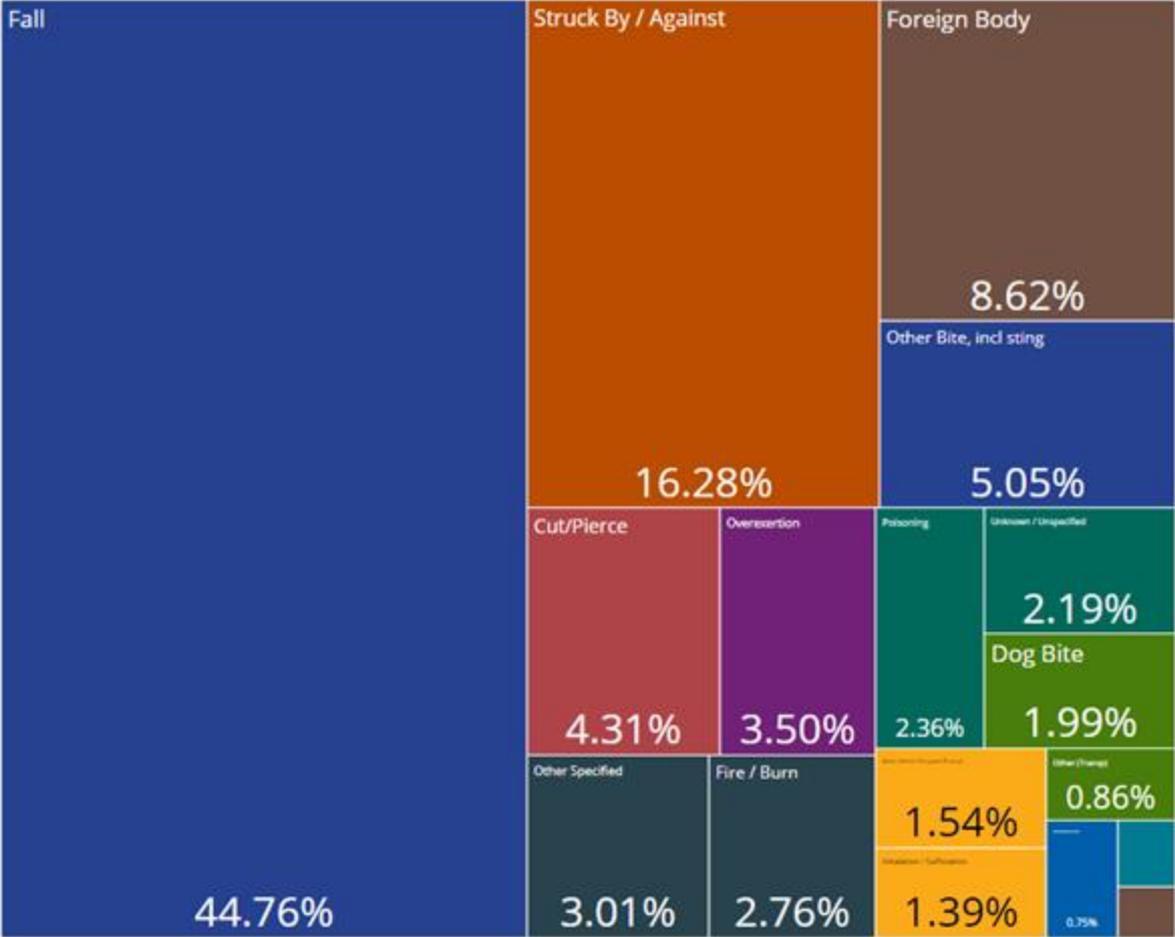
General Prehospital Care

Trends

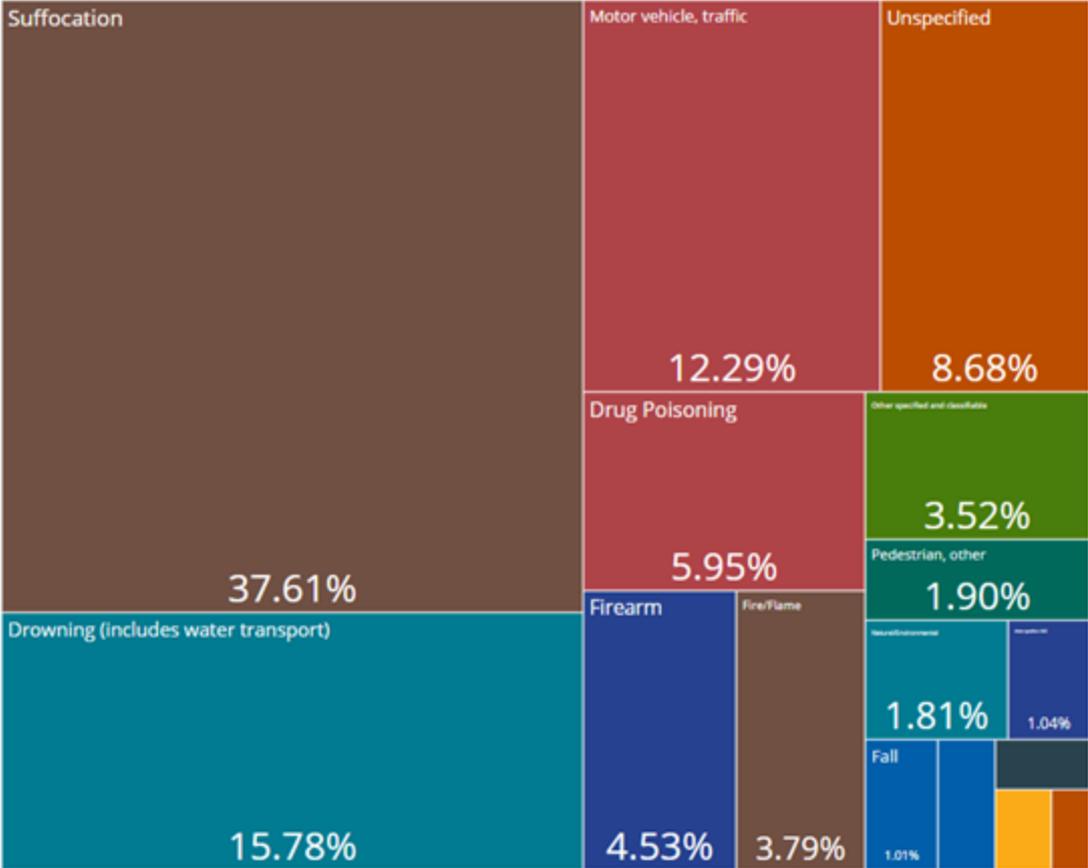
Classics



Injuries Ages 0-4



Fatalities Ages 0-4





9-12mo



9-10mo



7-12mo

Physiology

Higher Metabolism

Less oxygen reserve

Lower mass

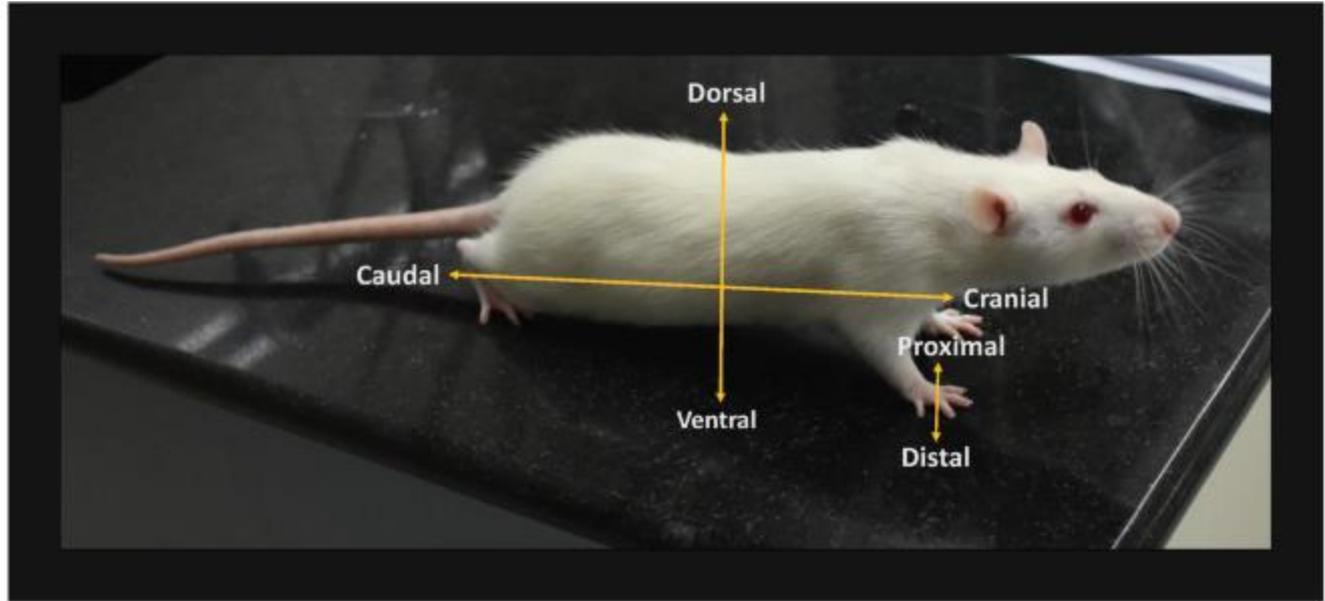
Higher gastric pH

Less pancreatic enz

More permeable GI

Inferior hepatic metabolism

Underdeveloped P glycoproteins



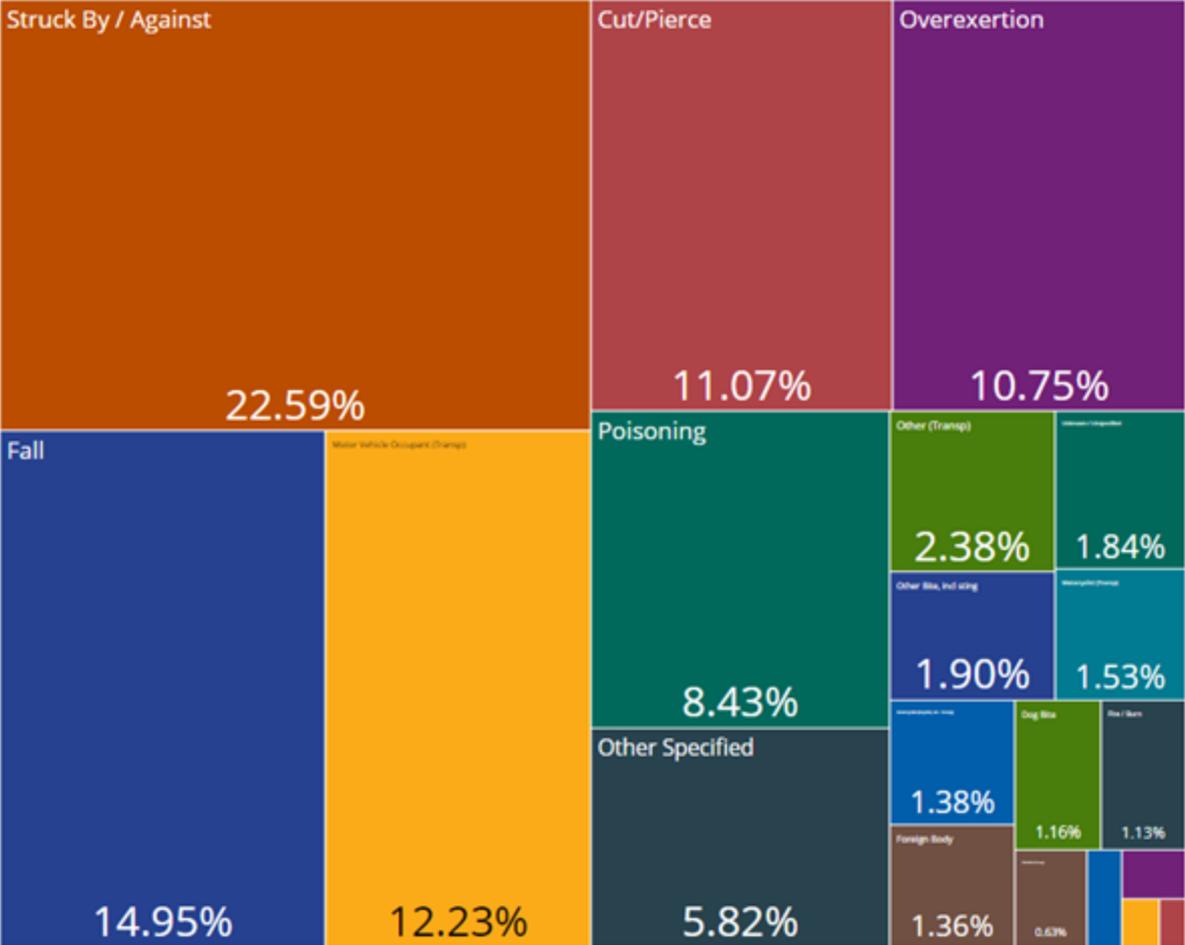
(antibiotic treatment, solid food introduction, ...)

(solid food introduction, ...)

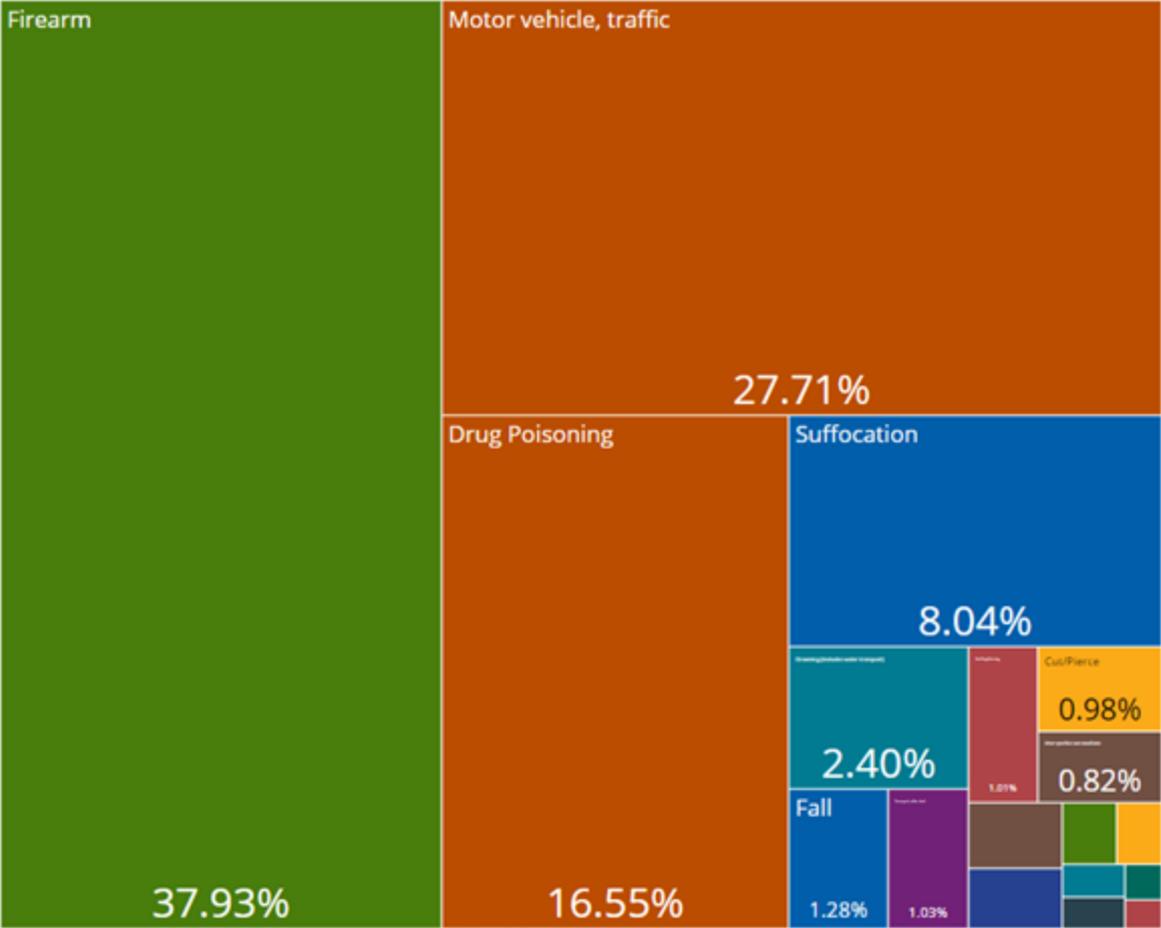
Similar developmental maturation of the immune system

Close similarities in genetics, anatomy, physiology, development and reproduction

Injuries Ages 15-19



Fatalities Ages 15-19



Teenage Ingestions



Prehospital



Case

19 mo old male found somnolent at home, mother states he was playing with bottles from her medicine cabinet.

VS

HR 160 RR 41 BP 77/54 T 38.2 SpO2 99% RA

Pt is lethargic, tachypneic

Prehospital care for the poisoned patient

Gathering Information

Poison control notification

Supportive care

Information

What substances are available

Family's medical conditions

OTCs/Herbals

Pictures of bottles/bottles themselves

How much was consumed

Pill counts

Last fill date

Time of ingestion



Poison Control

520-626-6016

Medical information, direction

Care coordination with hospital



Initial supportive care



Case cont'd

Mother takes prenataals

Pt lives with mother who takes prenatal vitamins, father, and grandfather who has diabetes and arthritis, takes metformin, and uses acetaminophen and supplements for pain.

Mother thinks grandfather has a bottle of percocet he uses occasionally

Mother found one bottle had spilled from the cabinet



Resolution

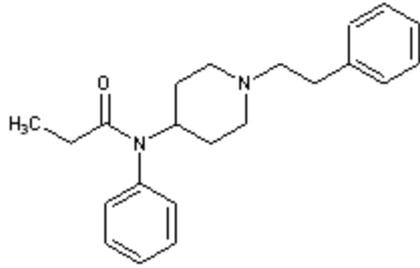
PCC contacted, recommended ED evaluation, and noted that patient will likely need admission in a tertiary care facility

Local ED notified, air transport arranged

Salicylate 85 mg/dl

Pt started on NaHCO_3 drip and flown to regional pediatric hospital

Tolerated therapy well, and discharged clinically well on HD 3



Poisons of the 2020s





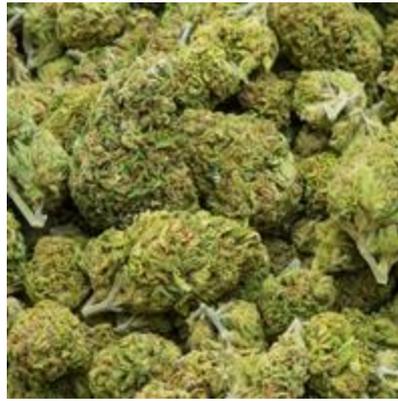
Cannabis

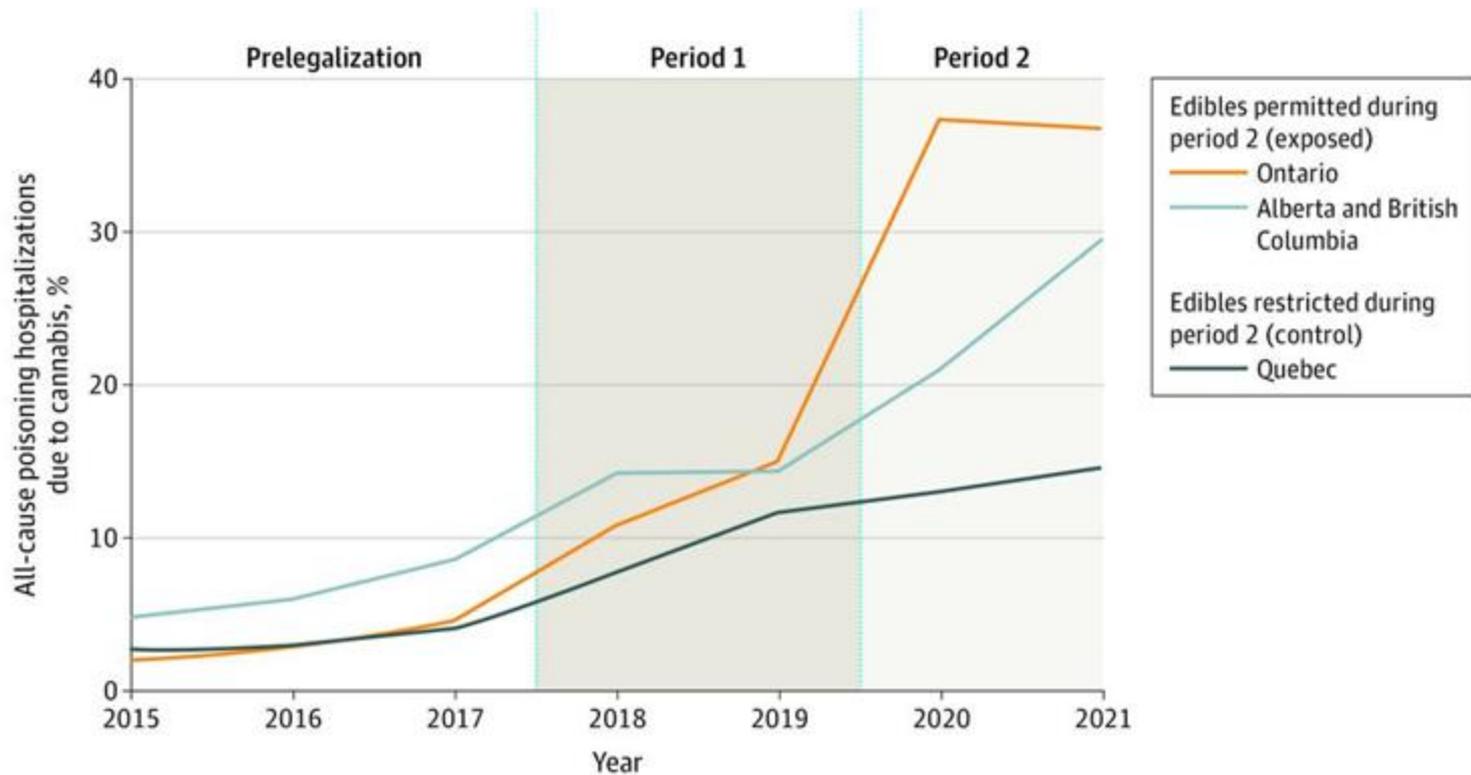
Legality

Availability

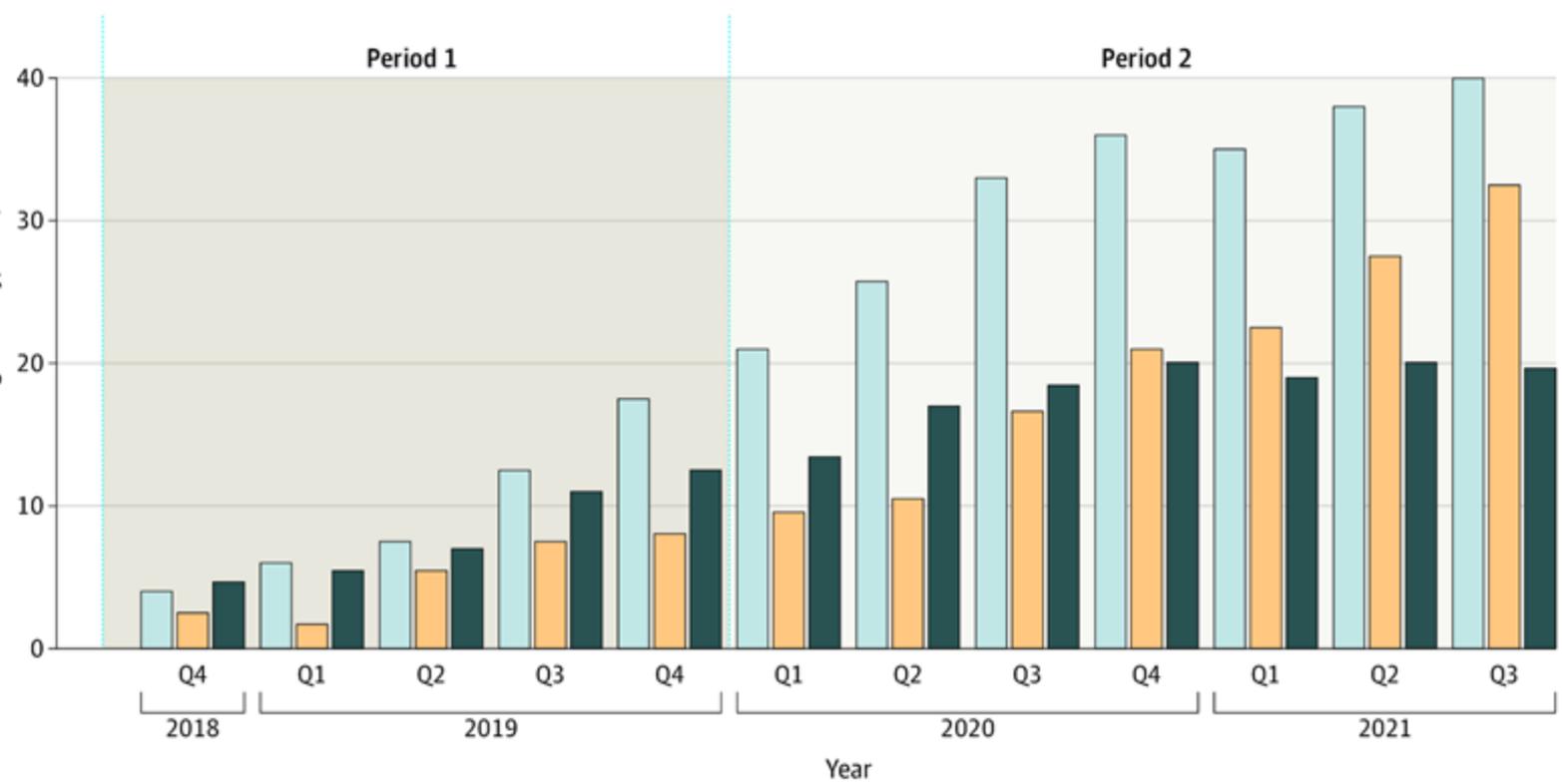
Potency

Desirability





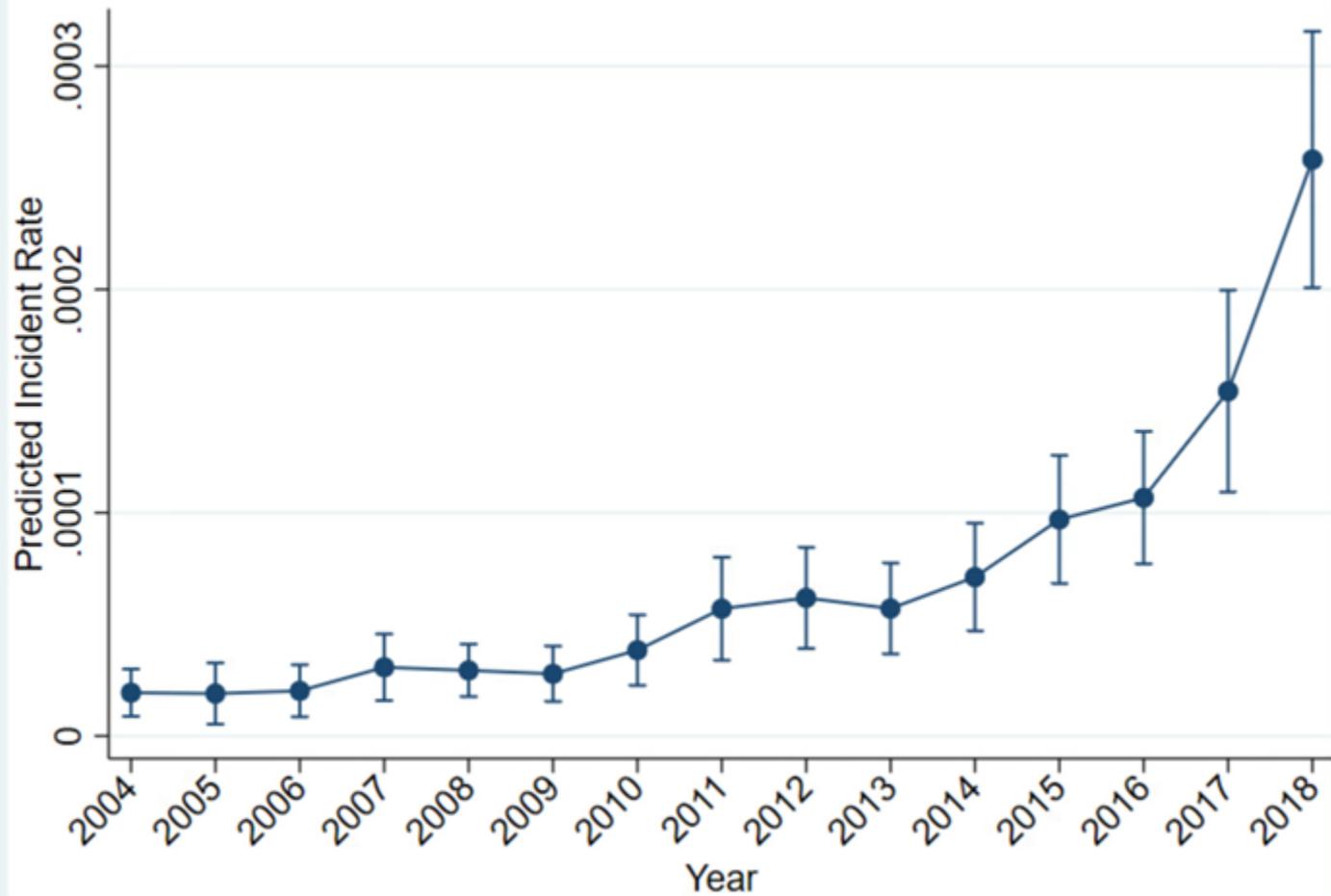
Quarterly cannabis sales per individuals aged ≥ 15 y, CAD\$



Edibles permitted during period 2 (exposed)

Edibles restricted during period 2 (control)

- Alberta and British Columbia
- Ontario
- Quebec



Cannabis intoxication

CNS: Euphoria, ataxia, coma, seizure

Pulm: Respiratory depression

CV: Tachycardia, arrhythmia, hypotension

Toxic dose: 1.7 mg/kg*

Treatment: Supportive
Rimonabant*, AM251*



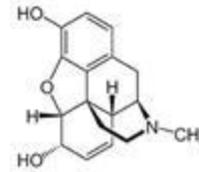


Opioids

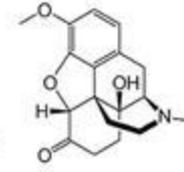
Availability

Potency

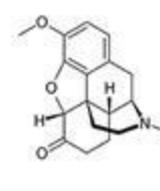
Adulterants



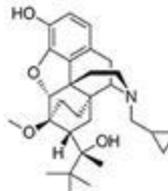
Morphine



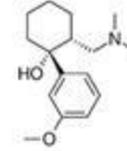
Oxycodone



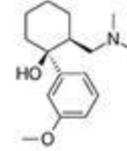
Hydrocodone



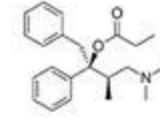
Buprenorphine



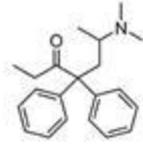
(1R, 2R)-Tramadol



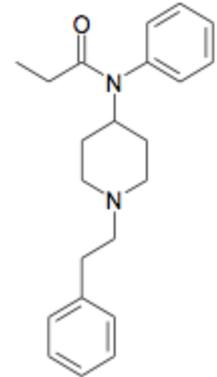
(1S, 2S)-Tramadol

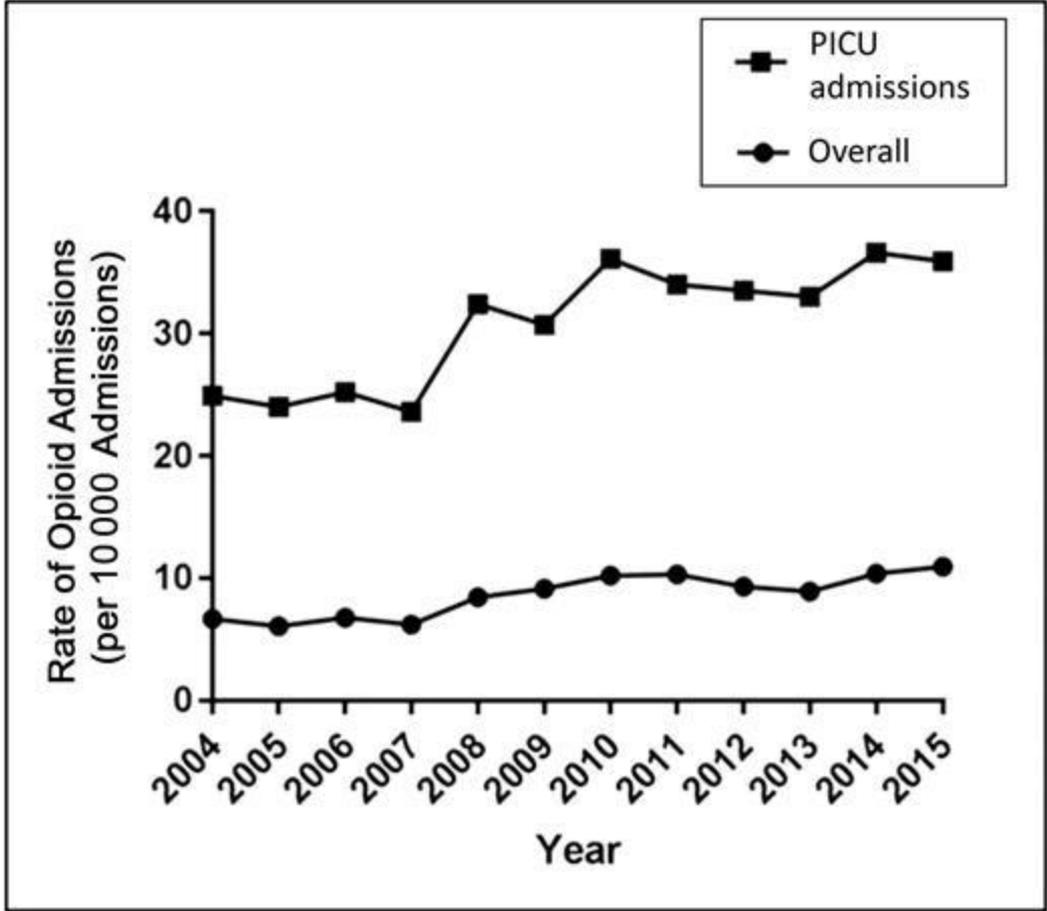


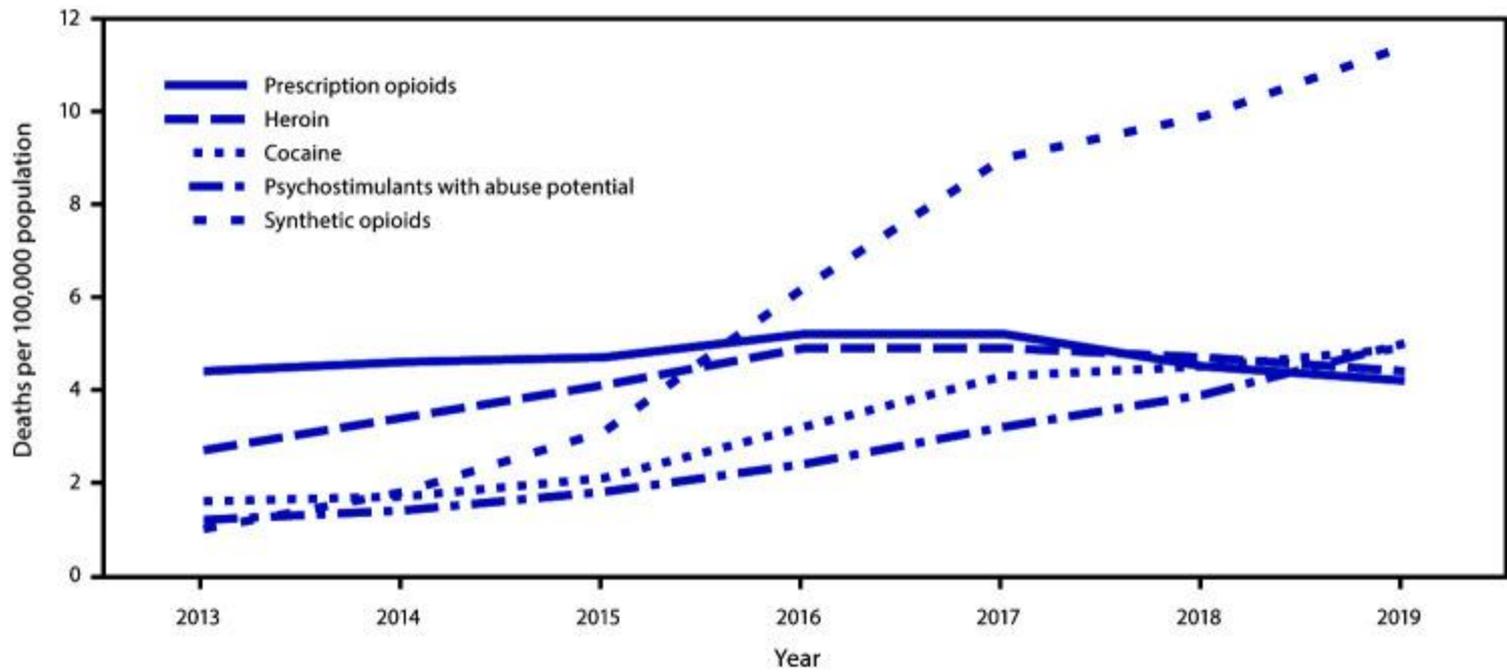
Dextropropoxyphene



Methadone







Fentanyl

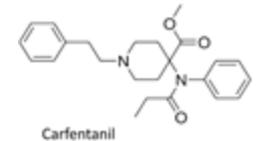
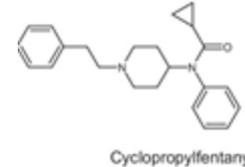
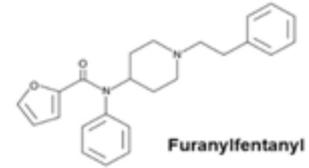
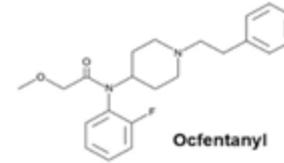
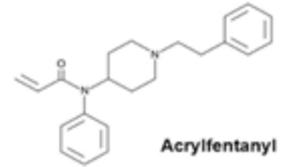
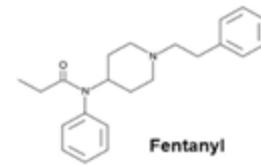
Fentanyl: Primate LD50 30mcg/kg

Treatment: Naloxone, 0.1mg/kg IN, IV,
repeat as needed

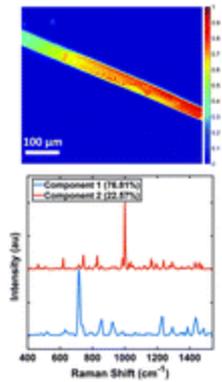
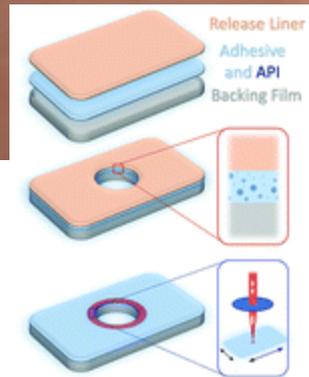
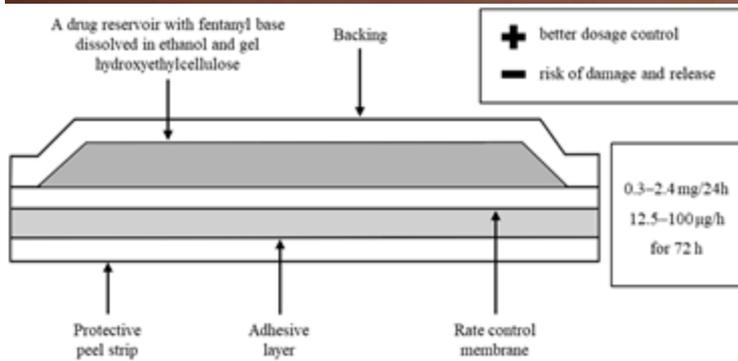
May be delivered as a continuous infusion

If needed, intubate

Monitor for pulmonary edema







Xylazine

Central α_2 agonist

Common fentanyl adulterant

“Tranq”

Cardiac sx

Little response to Naloxone





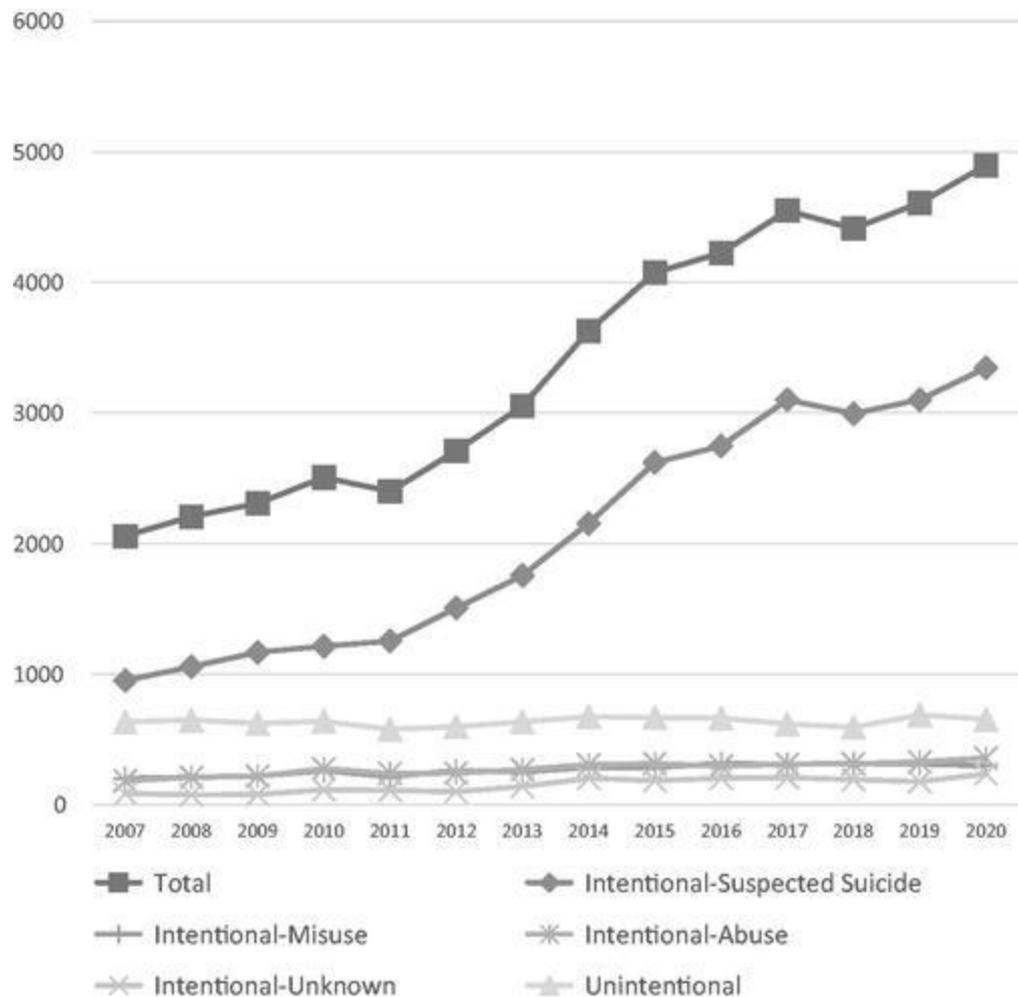
Benadryl Challenge

Recreational ingestion

Induce hallucinations

More common in teens





Diphenhydramine

Anticholinergic

Benzos, support, foley,
physostigmine*

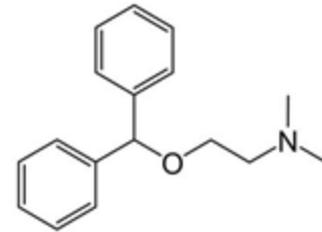
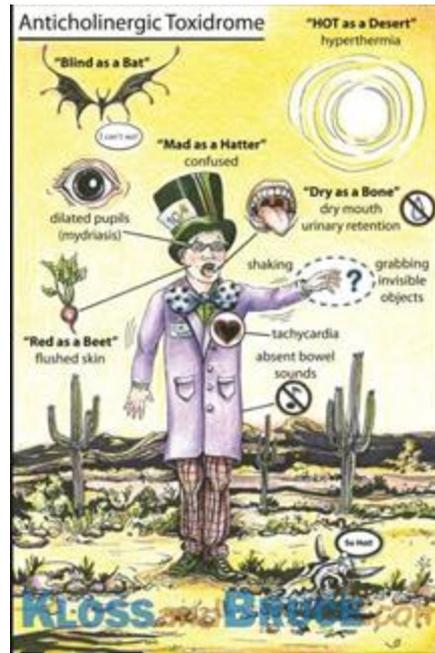
Na channel antagonist

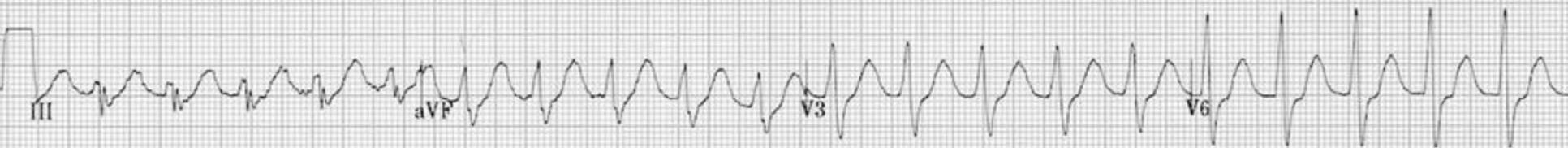
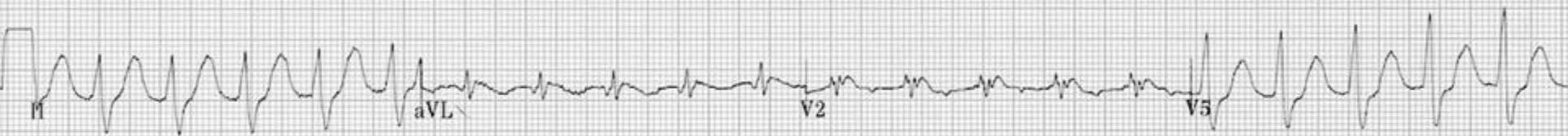
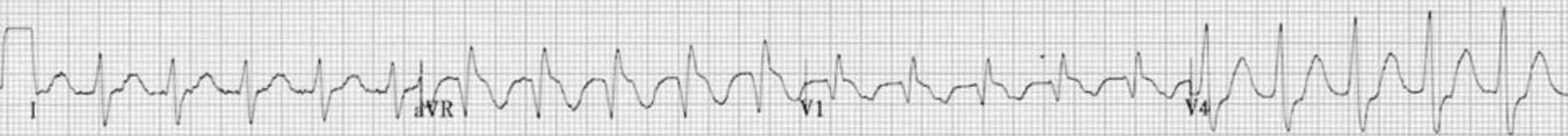
Hypotension, AMS, Arrhythmia

Prolonged QRS on EKG

Tx Bicarb, bicarb, bicarb

Seizures







Laundry Pods

Sx Drowsiness, hypotension, respiratory depression, acidemia

High risk for aspiration

Caustic injuries documented

Unclear cause

Treat supportively

Intubation often necessary



Classics





30
mins

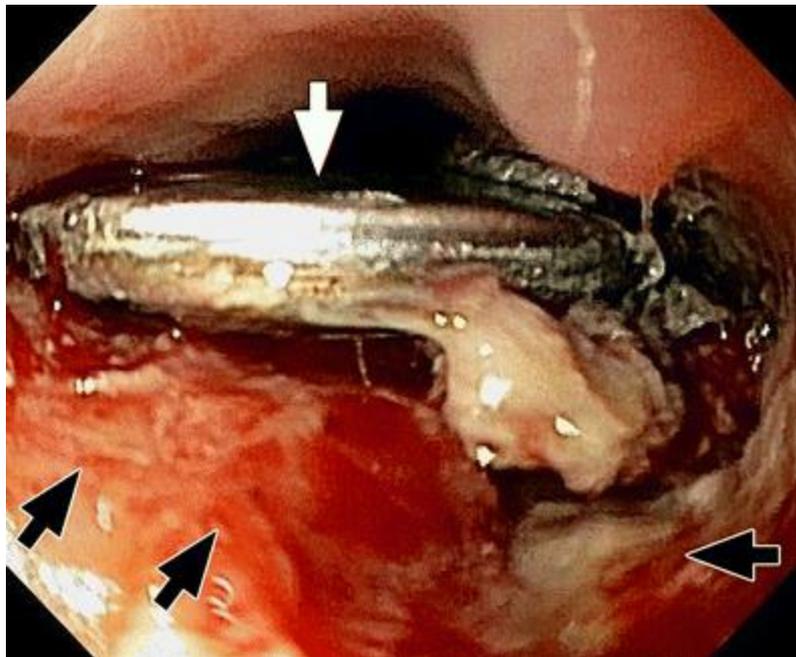


2025
Lithium



2032
Lithium





Button Battery

Caustic injury

Can rapidly perforate

Long term sequela

Tx: Endoscopy

Prehospital



Saline



Honey



Jam



Coca-Cola



Orange Juice



Milk



Yoghurt



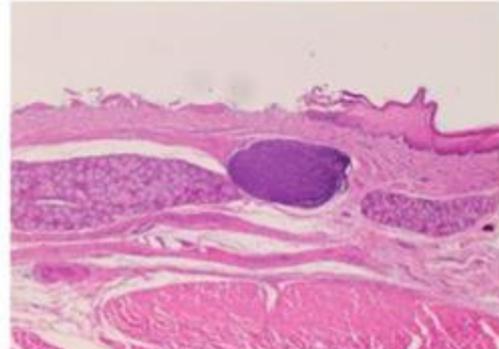
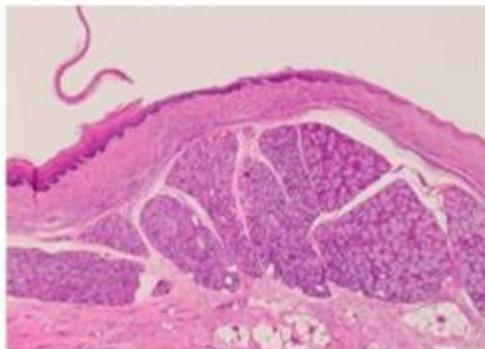
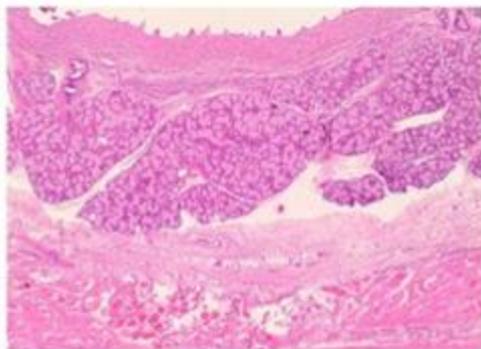
Saline



Honey

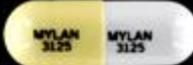


Jam





ONE PILL CAN KILL

		
Tricyclic antidepressants	Quinolones	Sulphonylureas
		
Amphetamines	Calcium channel blockers	Opioids
		
	Theophylline	Propranolol

Don't know what it is?
 Ask the **family** if there are any known medications...
 Ask the **paramedic** if there was anything at the scene...
 Ask the **GP** if there's any known prescriptions for the family...

Still don't know?
 Use an online pill checker like at www.drugs.com
 e.g. Amphetamines? Search for Pill Imprint = cor 132,
 Colour = blue, Shape = round

What's next?
 Check www.TOXBASE.org for further directions

Disclaimer: this is NOT a comprehensive list of all potentially fatal one-dose drugs.

em3.org.uk      @EM3FOAMed 

Cardiac drugs

Beta Blockers, Calcium Channel Blockers

Hypotension, Bradycardia

Tx Fluids, pressors, calcium

Max pressor rate?

Lipids, HIE





Caustics

More significant in intentional overdose

Abuse potential

Potentially challenging airway





Sulfonylureas

Hypoglycemia

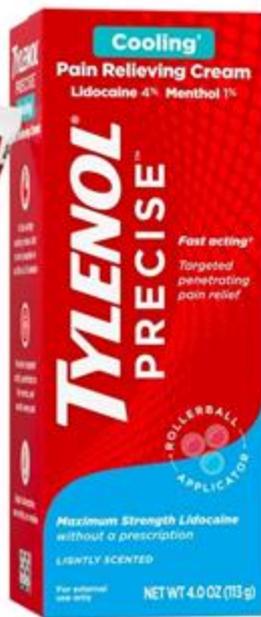
Long half life

Oral glucose/sugar

IV dextrose

SQ/IM Glucagon





Percocet



\$5.5/ Pill



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