

WHAT IS TODAY'S OBJECTIVE?

When you realize it's going to be 420 all April this year



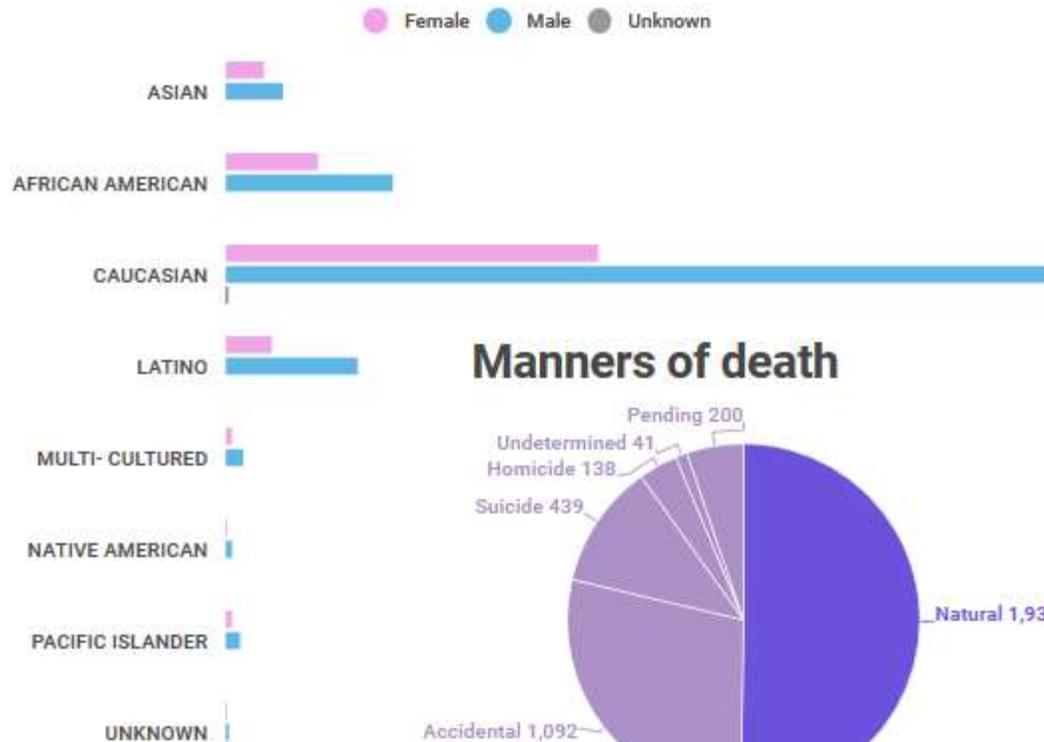
Understand the phrase:
"The dose makes the poison"

The Clark County coroner's office investigated 6,487 of the deaths reported to the Health District in 2019.

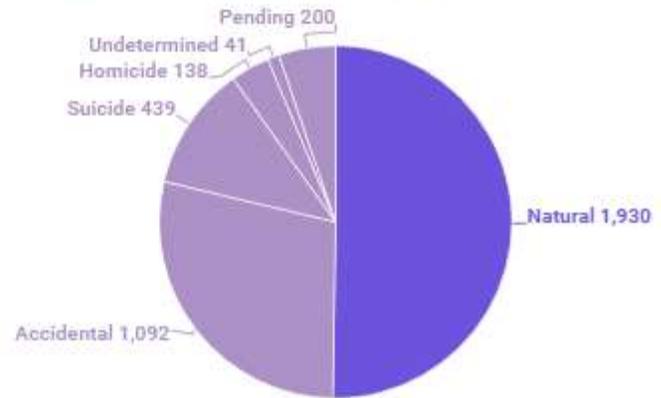
2019 Clark County deaths

The number of deaths last year in Clark County could increase as more deaths are reported to the Southern Nevada Health District, according to Susan Zannis of the district's vital records department.

Race by gender:



Manners of death



Source: Clark County coroner's office

In 2019, some were killed by the blistering desert heat or chronic alcoholism. Gun violence, drug addiction and opioid misuse continued to plague Clark County.

Those who died in the county were from all reaches of the United States, including from Florida and Connecticut in the East and from Hawaii and Washington in the West. One man was from Port Macquarie, a town on the western coast of Australia.

A Las Vegas woman died in May at the age of 109. The youngest was a day old.

At least six remain unidentified, known only by nicknames given by the coroner's office, such as "John Stocker Doe" and "Jane Desert Doe."

One man, from Monclova, Mexico, died in a [Fourth of July fireworks accident](#), while another man died in an accidental fall from a scissor lift.



Kyna Marie Pamela DeShane
(GoFundMe)

A 1-year-old girl from Ely was [mauled to death by a family friend's Rottweiler](#) in April. It was the only fatal dog mauling in the county last year, according to the coroner's office.

The girl, Kyna Marie Pamela DeShane, was at her grandparents' home in Henderson when she was attacked by the 4-year-old dog.

It was later euthanized at the owner's request, county officials previously said.

How they died

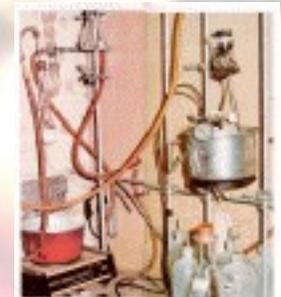
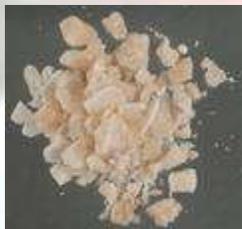
The Las Vegas Review-Journal reviewed the 3,840 deaths in the county last year that warranted autopsies by the office.

- Half of those people died of natural causes. Heart disease, for example, was a factor in at least 1,603 of the deaths. Diabetes was a primary factor in at least 518 deaths and obesity in 174 deaths.
- Accidental deaths came second, and 70 were caused by environmental heat stress, up from 65 the previous year.
- Gun violence killed 326 people — 69 percent of whom died by suicide, the third-leading manner of death last year in the county. However, the number of suicides was down after rising for several years.
- Nineteen of 439 people who died by suicide last year were teenagers, and the youngest was a 13-year-old boy.
- Half of all suicides last year were the result of a gunshot wound.

- **Eighty-eight deaths in 2019 were caused by chronic alcoholism and 68 more by combined alcohol and drug intoxication.**
- **Chronic alcoholism also contributed to 132 other deaths last year, while alcohol poisoning killed three people and was a factor in 20 other deaths, according to the data.**
- **Meanwhile, opioids killed or contributed to least 185 deaths, down from 255 in 2018 and 308 the year before.**
- In 2019, the county saw its most [drastic drop in homicides](#) in at least a decade.
- **The coroner's office could not determine how or why 41 people died last year.**

Forensic Toxicology

A poison in a small dose is a medicine, and a medicine in a large dose is a poison.
— Alfred Swaine Taylor, 19th-Century toxicologist.



Texas nurse's bleach injection deaths trial begins

Posted: Mar 05, 2012 2:43 PM PST

Updated: Mar 05, 2012 2:43 PM PST

By MICHAEL GRACZYK
Associated Press

LUFKIN, Texas (AP) - An East Texas nurse violated the trust of a noble profession when she injected kidney dialysis patients with toxic bleach, killing five of them and injuring five others, a prosecutor said as the woman's murder trial began Monday.

Kimberly Saenz, 38, faces a possible death sentence if convicted of capital murder in the April 2008 deaths.

Saenz stood in court holding her hands behind her back as Angelina County District Attorney Clyde Herrington read the six-count indictment against her. Her lawyer, Ryan Deaton, answered "Not guilty, your honor," on her behalf when the judge asked for a plea after each count.

Herrington told jurors in his opening remarks that evidence would show there was bleach in the IV dialysis lines of victims who were being treated at a DaVita dialysis clinic in Lufkin, about 125 miles northeast of Houston.

"The defendant in this case is the one that put it there," he said.

He said investigators also found Internet searches on Saenz's computer about bleach poisoning in blood and whether bleach could be detected in dialysis lines.

"The profession of nursing is one of the most respected," Herrington told jurors. "Health care providers devote their career to those who are sick and ill ... But involves a great deal of trust. And if that trust is violated, very serious things can happen."

Saenz was charged a year after the Lufkin clinic closed for about two months following a rash of illnesses and deaths.

Emergency crews had been called to the clinic many as 30 times that April, including seven for cardiac problems, and made at least 19 runs. Four people had died.

There had been only two calls during the previous 15 months, according to the Texas Department of Health Services.

Denver-based health care giant DaVita Inc. investigated along with local, state and federal agencies.

Inspectors were present on April 28, 2008, when two dialysis patients said they suddenly didn't feel well and two others reported that they saw Saenz inject bleach into tubing used by two fellow patients.

Saenz, who had held her entry-level position as a licensed vocational nurse for eight months, was sent home. Police were summoned. The next day she was fired.

In his opening defense statement, Deaton said the stories told by the two patients who complained about Saenz varied widely and said DaVita officials waited eight hours before calling police.

Toxicology

What is toxicology? The study of the effects of poisons.

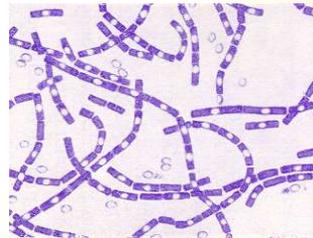
Poisonous substances are produced by plants, animals, or bacteria.



Phytotoxins

Zootoxins

Bacteriotoxins



Toxicant - the specific poisonous chemical.

Xenobiotic - man-made substance and/or produced by but not normally found in the body.

Penalties

Violating NRS 202.170 is a [category B felony in Nevada](#). The punishment includes:

- a sentence of 2 to 15 years in [Nevada State Prison](#), AND/OR
- a fine of up to \$10,000

Attempt to Kill by Poisoning

Attempted murder by means of poison is a [category A felony in Nevada](#) carrying a sentence of:

- life in Nevada State Prison with the possibility of parole after 5 years, OR
- 15 years in Nevada State Prison with the possibility of parole after 5 years

Murder by poison

Poisoning animals

Poisoning horses, mules or domestic cattle is a [category C felony in Nevada](#) carrying 1 to 5 years in prison and maybe a \$10,000 fine. The judge may also impose [restitution in Nevada](#).

Otherwise, poisoning animals is a [gross misdemeanor in Nevada](#) carrying up to 364 days in jail and/or up to \$2,000 in fines. The judge may also impose restitution in Nevada.

it includes:

, OR

years

note that the court may not impose death unless the jury finds aggravating circumstances in the case that outweigh all the mitigating circumstances. Aggravating circumstances are facts that make the defendant seem more blameworthy (such as if he tortured the victims). In contrast, mitigating factors make the defendant seem less blameworthy (such as if the defendant had an abusive childhood).



Swiss physician **Paracelsus**
(1493-1541) credited with
being **the father of modern
toxicology**



“All substances are poisons: there is none which is not a poison. The right dose differentiates a poison from a remedy.”

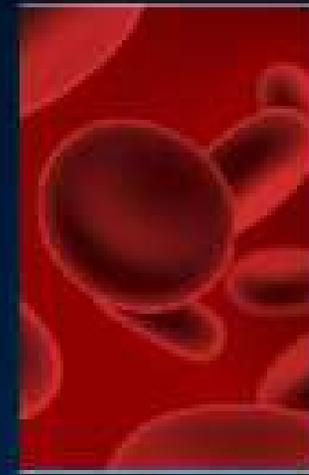




Formaldehyde
found in a vaccine
(50 μg)



Formaldehyde
found in a pear
(360 μg)



Formaldehyde found in
infants blood from
DNA demethylation
(575-862 μg)

Can you tell them apart? Neither can your body. Stop using formaldehyde in vaccines as an excuse. The dose makes the poison and no, ingestion vs injection does not make a difference (No Observable Adverse Effect Level (NOAEL) - 200 $\mu\text{g}/\text{kg}$ in addition to formaldehyde from natural processes).*

Chronic toxicity

Acceptable daily intakes
of minimal concern

SUBSTANCE	FOUND IN	Limit mg/kg
Water	You know this one 	50000
Sucrose	Table sugar 	800
Ethanol	Alcoholic beverages 	170
Monosodium glutamate	Cheese, soy, flavor enhancer 	120
Sodium chloride	Table salt 	60
Vanillin	Vanilla bean, vanilla sugar 	10
Eugenol	Clove oil, organic pesticide 	1
Glyphosate	Herbicide (RoundUp) 	0.5
Copper sulfate	Organic fungicide 	0.5
Aluminum hydroxide	Antacid, vaccine adjuvant 	0.14
Paracetamol	Tylenol, Panadol 	0.093
Spinosad	Organic insecticide	0.024
Hydrogen cyanide	Fruit pits, bitter cassava 	0.012
DDT	Restricted insecticide	0.010
Lead	Batteries, cables, paints 	0.007
Caffeine	Coffee, tea, chocolate 	0.003
Vitamin D3	Supplements, fish 	0.002
Chlorpyrifos	Organophosphate pesticide 	0.001
Rotenone	Restricted organic pesticide 	0.0004
Nicotine	Natural pesticide, tobacco 	0.0008
Mycotoxin T2	Fusarium, moldy grain	0.00002

Lethal Doses

Approximate Lethal Doses of Common Chemicals (Calculated for a 160 lb. human from data on rats)

Chemical	Lethal Dose
Sugar (sucrose)	3 quarts
Alcohol (ethyl alcohol)	3 quarts
Salt (sodium chloride)	1 quart
Herbicide (2, 4-D)	one half cup
Arsenic (arsenic acid)	1-2 teaspoons
Nicotine	one half teaspoon
Food poison (botulism)	microscopic

Source: Marczewski, A.E., and Kamrin, M. Toxicology for the citizen, Retrieved August 17, 2000 from the World Wide Web: www.iet.msu.edu/toxconcepts/toxconcepts.htm.

'He made a deadly choice': Parents share final heartbreaking photographs of son, 19, to raise awareness of the dangers of synthetic marijuana which left him brain dead after one hit

- Connor Eckhardt, 19, slipped into a coma after taking one hit of synthetic marijuana
- He was declared brain-dead in hospital and his vital organs were donated
- His parents spent four days with him before the organs were removed
- They are sharing their tragic photographs of Connor's death to warn others about the dangers of synthetic marijuana
- The drug is illegal but can be readily obtained over the counter under names like 'spice' and 'K2'
- It contains a mixture of herbs which are sprayed with chemicals to produce a marijuana-like high
- It's impossible for users to know what chemicals and in what quantities the drug contains

By A. GREG

PUBLISHED: 21:55 EST, 9 August 2014 | UPDATED: 00:51 EST, 11 August 2014



'It was just two beers and six shots': Mother releases heartbreaking photographs from her daughter's hospital bed warning teens about the dangers of binge drinking

- Kellie Jo Nelson, of Minnesota, wrote on Facebook how her 16-year-old daughter nearly died after drinking two beers and six shots
- Taylor Nelson was brought to the hospital with blood alcohol level five times the legal limit and spent 13 hours on a ventilator

By SNEJANA FARBEROV FOR MAILONLINE

PUBLISHED: 23:20 EST, 25 September 2014 | UPDATED: 06:23 EST, 26 September 2014



 71
View comments

A mother has taken to Facebook to warn other parents about the dangers of binge drinking - and her cautionary tale has been shared across the world.

Kellie Jo Nelson wrote a lengthy post detailing how her 16-year-old daughter, Taylor, nearly died after consuming three beers, six shots and a handful of liquor-soaked blueberries.

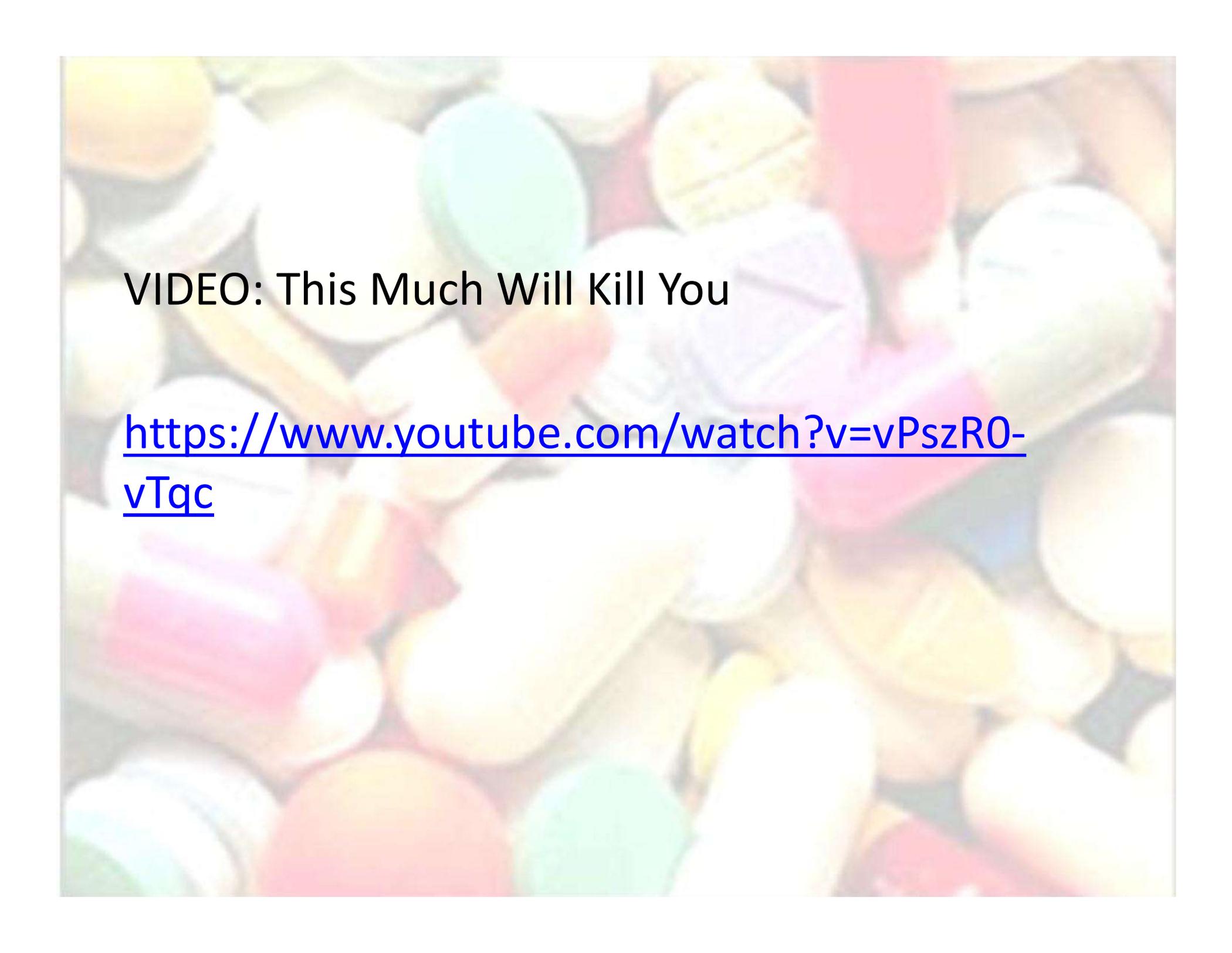
According to Mrs Nelson, the teen and her cousin raided her father's liquor cabinet while they were home alone for two hours on the evening of March 7.

When Jeff Nelson returned home, he discovered his daughter unresponsive and rushed her to a hospital in Wyoming.

When Taylor Nelson's mother got the terrible news, she raced to the hospital where she found the 16-year-old girl on a gurney wrapped in blankets to combat hypothermia that caused her body temperature to drop to alarming 95 degrees.



© Facebook
Heartbreaking: Taylor Nelson, 16, from Minnesota, ended up in the hospital after she got drunk on two beers and six shots



VIDEO: This Much Will Kill You

<https://www.youtube.com/watch?v=vPszR0-vTqc>

TOXICOLOGY REPORT

- Is **ONLY** a printed list of drugs detected and their concentrations!!!
- You **CAN NOT** take these #s @ face value w/o considering the **ENTIRE** case investigation
 - Drugs *may* have played a **primary role** and listed as the CoD
 - Drugs *may* have played a **minor role** and listed as a contributory condition

REMEMBER: A person can die with drugs **IN** their system, and not **FROM** them (& therefore drugs played **NO role** in the CoD)

Forensic Toxicology: an examination of all aspects of toxicity that may have legal implications

Used in 3 places

Postmortem

Workplace

Investigation of contraband materials



1. Postmortem Drug Testing:

investigating if drugs were the cause or a contributing factor in death

- was death accidental, suicidal, or homicidal?



Body Stuffer vs Body Packer

BODY STUFFER: drug not packaged w/ intent of being consumed, but instead was hastily swallowed to escape detection



BODY PACKER: drugs packaged so that they may be swallowed and carried “internally” (*in the intestine*) into another country

**Either act can easily lead to a toxic death **

2. Workplace Drug Testing: evaluation of biofluids (*urine, blood, or hair*) for drug content



3. Contraband Materials: ID prohibited/unknown drugs/substances