OUTBREAK OF SYNTHETIC CANNABINOID-ASSOCIATED COAGULOPATHY
· Introduction
  · Background

· IL DOH Presentation
  · Dr. Connie Austin will present on the on-going response by Illinois Department of Health

· CDC Presentation
  · Dr. Royal Law will explain how CDC is using poison center data from the National Poison Data System to identify possible cases
  · Dr. Johnni Daniel will discuss CDC’s planned next steps

· Q and A session
  · Presenters and involved personnel will take questions regarding topics including, but not limited to, the current and on-going response as well as next steps.
MARCH-APRIL 2018, ILLINOIS
Mid-day on Thursday, March 22, the Illinois Poison Control Center informed IDPH about 4 calls on cases of coagulopathy from hospitals in Chicago and the surrounding areas in the last week.

On Friday, a call for cases within Illinois was sent out to hospitals and LHDs in the state.

After interviews with cases, all four coagulopathy cases reported using synthetic cannabinoids (SCs).
WHAT ARE SYNTHETIC CANNABINOIDs (K2, SPICE)

• Synthetic cannabinoids are mind-altering chemicals that are either sprayed on dried, shredded plant material so they can be smoked or sold as liquids to be vaporized and inhaled in e-cigarettes and other devices.

• Dried leaves sprayed with chemicals

• Put in small packages

• Marketed as incense

• Obtained in convenience stores, on line, dealers and friends
WHY LACE SC’S WITH ANTICOAGULANTS?

- Bleeding issues following SC use is new
- Why add anticoagulants?
  - To enhance and extend euphoric effects of the SC
  - Rationale – to saturate liver enzymes with anticoagulants and this should reduce metabolism of the drug, prolonging its effects
EARLY CHALLENGES

- What part of the health department is best prepared to work on this type of outbreak?
  - Who has the skills?
    - Epidemiology
    - Relationships with LHDs
    - Sending SIREN alerts to health care providers and other interested parties
    - Experience in working on issues with people using illicit drugs

Communicable Disease Section, 3 of 4 of the skills
OTHER EARLY CHALLENGES

• SC product
  • Legal or illegal?
  • What chemical composition is in the bag?
  • Sold as incense, not for human consumption

• Law enforcement involvement to remove product
PARTNER ROLES AND RESPONSIBILITIES IN ILLINOIS

- Illinois poison center
  - Medical case management for health care providers
  - Laboratory testing guidance
  - Vitamin K issues

- Public health entities
  - Collection of information on cases
  - Summarizing and transferring information to other partners

- Law enforcement dealt with product/source trace back, testing and removal
CLINICAL PRESENTATIONS OF CASES

- Hematuria
- Bleeding gums/mouth
- Flank or abdominal pain
- Vomiting or coughing up blood
- Nose bleed
- Intracranial bleeding
HUMAN LABORATORY TESTING

- PTs and INRs at hospital
- Drug screens reveal what other drugs may be in the system (SCs not in a typical panel)
- Main laboratory used for human testing for anticoagulants (NMS)
- They have identified over 50 case patients positive for brodifacoum, some have tested positive for derivatives of brodifacoum as well.
LATER CHALLENGES. ISSUES WITH VITAMIN K THERAPY

- IV vitamin K in hospital; oral for months following hospitalization
- Many patients uninsured, underinsured, Medicaid
- Oral therapy may need to be continued for 5 months
- Need 100 mg per day (20 tabs a day)
- For one week supply=$9,800
- For one month supply=$39,200
- For 5 month supply $196,000

- 100 (5 mg tablets), $7,000
ISSUES WITH VITAMIN K THERAPY

- Vitamin K Supply in the U.S.
- Possible Solutions?
  - One hospital system-340 b funding
  - Patient assistance program (Valeant) for UNINSURED only
  - IV product compounded for oral use to reduce $$
## CASE DEFINITION

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<th>Case status</th>
<th>INR&gt;2 or abnormal PT</th>
<th>SC use</th>
<th>Bleeding</th>
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DATA COLLECTION AND SYSTEMS

- Cases initially coming primarily from IPC, daily calls to share cases.
- Hospitals also called to report cases
- Questionnaire for interview
- Spreadsheet then to Redcap
- Redcap is a data system where you can develop a project for data entry and develop reports for viewing and invite individuals into the project from LHDs, state HD and CDC
- Use of syndromic surveillance to identify possible cases, FU with hospitals
CURRENT CASE INFORMATION AS OF 4/11

- 118 probable or confirmed cases
- 12 jurisdictions
- Most have been hospitalized
- 3 deaths
- Most cases in their 20s or 30s
- 74% male
Number of Cases by Date of Symptom Onset

- **Central Illinois**
- **Chicago Area**

Supplier in Chicago shut down

Date of Symptom Onset vs. Count
WORD CLOUD ON PRODUCTS - MANY PRODUCTS REPORTED BY CASES
TIME FROM USE TO ONSET OF BLEEDING

- 50 patients-time from last use to onset of bleeding
- Range is 0 to 26 days
- Median=1 day and mean=2.5 days
SYNTHETIC CANNABINOID ALERT

If you have purchased any synthetic cannabinoids in the past month, DO NOT USE THEM.

What Are They?

- Synthetic cannabinoids are human-made, mind-altering chemicals
- Sometimes misleadingly called "synthetic marijuana" or "fake weed"
- They have brand names such as K2, Spice, Black Mamba, Bombay Blue, Genie, and Zohai

Examples of synthetic cannabinoid brands and packaging

Why Worry?

- Individuals are reporting severe bleeding after using synthetic cannabinoids.
- Synthetic cannabinoids are not natural, legal, or safe.
- The health effects from using synthetic cannabinoids can be unpredictable, harmful, and deadly.

What Can You Do?

- Alert friends not to use the product.
- Do not donate blood or plasma if you have used synthetic cannabinoids.
- If you experience any severe, unexplained bleeding or bruising after using synthetic cannabinoids, have someone take you to the hospital immediately or call 911. Do not walk or drive yourself.

For more information, visit the Illinois Department of Public Health website at dph.illinois.gov
Communications

• SIREN messaging. Hospital emergency departments, schools, coroners/medical examiners, dentists
• Epi-X notifications
• Web portal information – restricted to LHDs and health care providers
• Web site/press releases
Thanks to all the Partners in this Investigation!

- Illinois Poison Center
- Illinois local health depts.
- IDPH personnel
- CDC Epi-AID team and Atlanta based personnel
- Involved hospitals and HCW
- NMS laboratory
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Additional Resources

- National Center for Environment Health Synthetic Cannabinoid webpage (contains access to Clinical Action):
  - https://www.cdc.gov/nceh/hsb/chemicals/sc/default.html

- Some additional background on this issue is available at:
  - https://content.govdelivery.com/accounts/USCDC/bulletins/1e6dac3
For further information

- **CDC’s NCEH outbreak team email**
  - NCEHOutbreak@CDC.Gov

- **CDC hotline:**
  - (404) 498-5755

- **Dr. Connie Austin**
  - connie.austin@illinois.gov