Poisonings and Public Health Emergencies: The Importance of the California Poison Control System in Occupational and Environmental Health/Kent Olson, MD

The California Poison Control System and Public Health Emergencies

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Disclosure Information
Western Occupational Health Conference 2012

Kent Olson, MD

I have nothing to disclose.
I will not discuss off label use and/or investigational use in my presentation.

Poison Control hotline provides 24/7 immediate advice to:

- The public
- 9-1-1 dispatchers
- Health professionals (ERs, ICUs, clinics)
- Health plan advice lines
- EMS
- Law enforcement (pill identification)
- State and county health departments
Poison Control Staff

- Highly trained, licensed, certified experts
  - PharmDs and Nurses
  - Extensive training, national examination
- Non-licensed information providers
  - Handle simpler calls
  - Use approved protocols
  - Supervised by licensed specialists
- Back-up by board-certified MD toxicologists

Why expertise counts . . .

**NONTOXIC**
- Nail polish
- Oil of Olay
- Barium sulfate
- Hair conditioner

**TOXIC**
- Nail glue remover
- Oil of wintergreen
- Barium chloride
- Hair straightener

Triage of Poison Center cases

- Managed at Home 75%
- Call from Hospital 17%
- Sent to Hospital 8%
Typical case: it’s 7:00 am

- A frantic mother calls –
- Her 18 month old child may have eaten a pill from a plastic Ziplock baggie
- The pills belong to the grandmother, who isn’t at home right now
  - *White capsules, imprint code OME 20*

An unusual case

- Two men in the ER on the morning of July 4th with vomiting, diarrhea and sweating after eating watermelon.

Hasn’t happened, . . .yet

- An appellate judge has dizziness, tingling lips and generalized muscle weakness shortly after eating appetizers at a political event.
Critical, time-sensitive decisions:

- Send an ambulance?
- Go to the ER?
- Call the Health Department?
- Call Police/Homeland Security?

Typical case: it’s 7:00 am

- A frantic mother calls –
- Her 18 month old child may have eaten a pill from a plastic Ziplock baggie
- The pills belong to the grandmother, who isn’t at home right now

Poison Control identifies the pills as omeprazole (Prilosec™), a harmless drug used for stomach acidity.

\textit{No treatment needed, no need to go to ER}

An unusual case

- Two men in the ER on the morning of July 4th with vomiting, diarrhea, and sweating after eating watermelon.

Poison Control staff suspects pesticide poisoning (organophosphate-type)
- Medical director consulted, promptly called the health department
- Calls to other ERs reveal more cases
- Statewide watermelon recall within 6 hours of the original call
Hasn’t happened, . . . yet

- An appellate judge has dizziness, tingling lips and generalized muscle weakness shortly after eating appetizers at a political event.

- Symptoms suggest possible paralytic shellfish poisoning or a similar toxin (eg, tetrodotoxin)

- Circumstances are suspicious for an intentional poisoning, possibly a terrorist incident?

Poison Control and Public Health Emergencies

- Unfolding disaster: “Surge Capacity”
  - Increase staffing rapidly in response to a sudden increase in call volume
  - Rapidly prepare accurate and understandable information for public, hospitals, EMS, and the media

San Francisco May 15, 1983
Poison Control and Public Health Emergencies

- "Surge Capacity"
  - Increase staffing rapidly in response to a sudden increase in call volume
  - Rapidly prepare accurate and understandable information for public, hospitals, EMS, and the media
- Ongoing surveillance for the next disaster
  - Watching for the "index case" . . .
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Environmental Health News
published by Environmental Health Science

Insecticide to be banned – three decades after tainted melons sickened 2,000 people

4th of July, 1985

Aldicarb in watermelons

https://www.environmentalhealthnews.org/ehn-news/aldicarb-phocense

San Francisco Chronicle

Poison Center Warning About Depilatory

Friday, September 7, 2007

(09-07) 01:00 PST CALIFORNIA — The California Poison Control System issued a warning yesterday about a depilatory called EPIL-STOP, which has caused skin discoloration and blisters suggestive of second-degree chemical burns.

Poison control staff members have received five calls in the past two weeks from people who have developed skin burns after exposure to the hair-removal product.
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Wyoming kidney failure outbreak linked to "Spice" drug

ALASKA 2011
Poison Center Surveillance

- National: NPDS
  - Call volume trends
  - Specific symptoms or symptom complexes
  - Specific substances (e.g., "RICIN")
- California:
  - Pesticide cases reported to DPR
  - Reports to County Health Officers
  - "SQUIDD" system
  - "ALERT CLINICIAN" system
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Hotline service model

- Single telephone number 1-800-222-1222
- Integrated call distribution system
  - Each call goes to the next available hotline staff, anywhere in the state
- Real-time access to all statewide data
  - Networked computers have all cases visible to all staff, all the time

SQUIDD system

- Passive data mining for specific symptom complexes or substances
- Daily e-mail to medical director with copy of suspect cases attached
Sample SQUIDD definitions

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<th>Vomiting and Diaphoresis</th>
<th>Atropine AND 2-PAM</th>
<th>Hyperbaric O2 Administration</th>
<th>BFP with Neurological or Ocular Symptoms</th>
<th>Pesticide Related Atropine or 2-PAM</th>
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SQUIDD Reported Cases 2010-2011

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<td>1033</td>
<td>Pesticide Related Atropine or 2-PAM</td>
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</tbody>
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ALERT CLINICIAN project

- Grant from California Department of Health Services (2006)
- Relies on well-trained, experienced hotline staff to recognize “suspicious” cases
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- Cases are tagged so all hotline staff can easily see the "suspect" case list at any workstation
ALERT CLINICIAN project

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- Cases are tagged so all hotline staff can easily see list at any workstation
- Review by medical director to determine if rapid notification of local/state health dept is needed
Alert Clinician Cases - 2011

- Food poisoning (atypical): 40
- Dietary supplement w/ unexpected reaction: 23
- Drug w/ unexpected reaction: 8
- Cosmetic w/ unexpected reaction: 3
- Spray/aerosol w/ unexpected reaction: 1
- Other: 37
Summary

- Poison Control Centers play a critical role in public health chemical/drug emergencies
- 24/7 reliable information
- Already known and trusted by the public, health professionals, EMS, health departments, media
- Ongoing surveillance for the next disaster
  - Passive data mining
  - Alert, experienced professionals