An Introduction to Poison Control in the 21st Century

Ashley N. Webb, MSc, PharmD, DABAT
Director
EXPERIENCE + INFORMATION = KNOWLEDGE
REDUCE MORBIDITY
AND MORTALITY
FROM POISONING

Kentucky Regional Poison Control Center of Kosair Children’s Hospital
Total Deaths: 9,143

Motor Vehicle: 4,564 Deaths, 41% decrease
- Always use seat belts, child safety seats, and booster seats that are correct for a child's age and weight.
- Use safe-driving agreements or contracts with teens.

Suffocation: 1,160 Deaths, 30% increase
- Make sure infants sleep alone; placed on their backs on a firm surface.
- Be sure crib meets safety standards.
- Avoid loose bedding or soft toys in crib.

Fall: 151 Deaths, 19% decrease
- Use a soft landing surface on playgrounds (such as sand or wood chips, not dirt or grass).
- Use protective gear, like a helmet, during sports and recreation.
- Install protective rails on bunk beds and loft beds.

Drowning: 983 Deaths, 28% decrease
- Learn to swim – important for parents and kids.
- Use a four-sided fence with self-closing and self-latching gates around pool.
- Watch kids closely when they are in and around water.

Fire/burn: 391 Deaths, 45% decrease
- Use smoke alarms – where people sleep and on every level of the home – and test monthly.
- Create and practice a family fire escape plan.
- Install a home fire sprinkler system if possible.

Poisoning: 824 Deaths, 80% increase
- Keep medicines away from children and teens.
- Keep cleaning solutions and other toxic products in original packaging and where children can't get them.

Percentages show changes in death rates from 2000 to 2009. Deaths are from 2009. Total deaths include 1,070 from other causes.

http://www.cdc.gov/vitalsigns/childhoodinjury/infographic.html
Kentucky Regional Poison Control Center of Kosair Children’s Hospital
TOP 3 EXPOSURES

**All Callers**
- Analgesics
- Cosmetics/Personal Care Items
- Household Cleaners

**Kids > 5**
- Cosmetics/Personal Care Items
- Household Cleaners
- Analgesics

**Fatalities**
- Sedative Hypnotics / Antipsychotics
- Cardiovascular Meds
- Opioids

Kentucky Regional Poison Control Center of Kosair Children’s Hospital
### 10 Leading Causes of Injury Deaths by Age Group Highlighting Unintentional Injury Deaths, United States - 2013

<table>
<thead>
<tr>
<th>Rank</th>
<th>&lt;1</th>
<th>1-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-24</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
<th>65+</th>
<th>Total</th>
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<tbody>
<tr>
<td>1</td>
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<td>Unintentional Suffocation 131</td>
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*Not elsewhere classifiable*

# National Estimates of the 10 Leading Causes of Nonfatal Injuries Treated in Hospital Emergency Departments, United States - 2013

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<th>65+</th>
<th>Total</th>
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<td>Unintentional Fall 624,990</td>
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*The “Other Assault” category includes all assaults that are not classified as sexual assault. It represents the majority of assaults.

**Injury estimate is unstable because of small sample size.

Keep 3 out of 4 callers at home
- Over 90% of kids are kept home
- Only 40% of adults can be kept home
Assumptions

86.5% of total exposures would have gone to the ER and of that, 52% would have been admitted

Median Cost ER: $2,000
Median Cost Admission: $16,500
33% Reimbursement Rate

ED Visits: $22M
Admissions: $14M

Total Savings: $36M
The Lewin Report - 2012 (www.aapcc.org)

Kentucky Regional Poison Control Center of Kosair Children’s Hospital
1930's
1st Poison Info Service

1953
1st Poison Control Center

1958
American Association of Poison Control Centers

1970's
> 600 PCC's in US

2000
National Poison Center Enhancement, Awareness, and Stability Act

Kentucky Regional Poison Control Center of Kosair Children’s Hospital
Currently 55 Centers in 37 states, DC, and Puerto Rico.
Product = Knowledge

Manage Exposures Through Provision of Recommendations
Poison Prevention Awareness and Education
Medical Professional/Student Education
Disaster Planning /
Preparedness / Response
Only “Real-Time”
Medical Database

Ideal Partner in Public Health
National Poison Data System

Poison center personnel include medical toxicologists, clinical toxicologists and specialists in poison information.
Over 400,000 Product Codes

131 Signs / Symptoms / Lab Results

Since 2001, Data Collected on >40M Calls

Kentucky Regional Poison Control Center of Kosair Children’s Hospital
Near “Real-Time” National Medical Database

Data from All 55 PCCs Uploaded Every 8 Minutes

National, Regional, Local Surveillance

Alerts

Volume Based
Temporal Based
Location Based
Case Based

Kentucky Regional Poison Control Center of Kosair Children’s Hospital
AAPCC – CDC Partnership

Identify Incidents of Potential Public Health Significance:

Chemical

Radiological

Infectious
Why Monitor NPDS?

Improve the CDC’s National Surveillance Capacity for Public Health Threats

Identify Early Markers For Chemical Incidents to Ensure Rapid / Effective Public Health Response

Enhance Situational Awareness and Inform Public Health Response During a Suspected or Known Public Health Threat
## Case Based Alerts

<table>
<thead>
<tr>
<th>Arsenic</th>
<th>Puffer Fish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botulism</td>
<td>Ricin</td>
</tr>
<tr>
<td>Ciguatera</td>
<td>Small Pox</td>
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<tr>
<td>Cyanide</td>
<td>Radiation</td>
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<tr>
<td>Nerve Agents</td>
<td>Acute Radiation Syndrome</td>
</tr>
<tr>
<td>Paralytic Shellfish</td>
<td></td>
</tr>
</tbody>
</table>

*In 2012, added all category A and most category B bioterrorism agents*
Anomaly or Case-based Alert Detected

Automatic Email to NPDS Surveillance Team

Public Health Significance?

Documents Info in a Separate CDC Accessible Field

Team Reviews Anomaly Within 24 Hours

Contact PCC where Data Originated for More Info

Team Member or Involved PCC Notifies Appropriate PH Agents

Reportable Exposure Related to Outbreak
Illness of Unusual Severity
Illness not Usually Associated with Substance
Suspected Terrorism
Part of PH Investigation
Many People with Same Exposure

Kentucky Regional Poison Control Center of Kosair Children’s Hospital
Too Much Selenium in Dietary Supplement

Salmonella in PB

Deep Horizon Oil Spill

Fukushima Nuclear Reactor

W.V. Water Contamination: 4-Methocyclohexane Methanol
Disaster Planning, Preparedness, Response...

Accessible Statewide Call Center
Information Outlet
Specialized Knowledge
- AHLS (Advanced Hazmat Life Support)
- MSDS
- National Information Database on Toxic Exposures
- Bio / Chemoterrorism
- Radiation

Kentucky Regional Poison Control Center of Kosair Children’s Hospital
Poison center calls involving e-cigarettes

215 Calls per Month

1 Call per Month

September 2010 - February 2014
Poison control calls concerning children, e-cigarettes up 400%

Posted: Dec 16, 2013 5:57 PM EST

By Katherine Kington - email
E-cigarette Exposures

Symptoms Reported with Ingestion of E-Cigarette Products
- Headache/dizziness/hyperactivity/other neurologic 12%
- Nausea/vomiting/diarrhea 25%
- Pallor/sweating/flushing 6%
- Irritation 13%

Symptoms Reported with Dermal Exposure to E-Cigarette Products
- Headache/dizziness/hyperactivity/other neurologic 37%
- Nausea/vomiting/diarrhea 18%
- Pallor/sweating/flushing 18%
- Rapid heart rate/hypotension/chest pain 9%
- Irritation 18%
Poison Prevention Education...
One Coordinator for Poison Prevention...

Website, Social Media (Facebook®, Twitter®, Pinterest®)

Public and Professional Materials
• Design and Distribute
• One Significant Campaign Annually

Presence at Fairs / Expositions

Teaching in the Classroom / Community Groups

Coordinate Volunteers
# H.R. 5486 – Child Nicotine Poisoning Prevention Act of 2014

- American Academy of Otolaryngology – Head and Neck Surgery
- American Academy of Pediatrics
- **American Association of Poison Control Centers**
- American Association for Respiratory Care
- American College of Cardiology
- American College of Physicians
- American College of Preventive Medicine
- American Congress of Obstetricians and Gynecologists
- American Public Health Association
- Arizona Consumers Council
- Association of Maternal and Child Health Programs
- Association of State and Territorial Health Officials
- Boston Public Health Commission
- Campaign for Tobacco-Free Kids
- Cancer Prevention and Treatment Fund
- Chicago Consumer Coalition
- Consumer Federation of America
- Consumer Federation of California
- Consumer Federation of the Southeast
- Consumers Union
- EverThrive Illinois
- First Focus Campaign for Children
- Kids in Danger
- March of Dimes
- Minnesota Department of Health
- National Association of County and City Health Officials
- Ohio Public Health Association
- Partnership for Prevention
- Public Citizen
- U.S. PIRG
- Virginia Citizens Consumer Council

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Kentucky Regional Poison Control Center of Kosair Children’s Hospital
Other Services and Partnerships...

RADARS Measures rates of abuse, misuse, and diversion

- Work with pharmaceutical companies to assist with risk evaluation and mitigation strategies
- Poison centers submit data monthly

Kentucky State Police

- Identify Medications and provide statistics based on data
Case Count Map – Requests from Law Officers for Drug Identification that were buprenorphine as reported by the Kentucky Regional Poison Center in 2013 (total= 209 drug identification calls)
All Calls to the KRPCC Including Exposures, Pills Identification, and Information
AAPCC Poison Center Synthetic Marijuana Exposure Calls (2010 -2015)

PLEASE NOTE:
- These data are only representative of calls received by the poison centers and may not reflect the actual severity of the problem in the U.S. or any specific geographic location.
- As there is no mandatory reporting, there may be emergency room presentations and hospital admissions of which poison centers are unaware.
- Subject to the above bullets, these numbers are largely reflective of those users/abusers who have experienced adverse effects from the use of these products significant enough to warrant poison center or other health professional intervention; not all individuals who use/abuse such products call poison centers or visit emergency rooms.
- Nevertheless, the data are a good surrogate marker for rising use/abuse patterns and patterns of adverse medical outcomes associated with their use.
- For more information about the American Association of Poison Control Centers (AAPCC) data, please visit: [http://www.aapcc.org/data-system/](http://www.aapcc.org/data-system/)
**FLU on CALL**

**How It Works**

1. A caller dials a toll-free number
2. A 2-1-1 Information Specialist answers
   - "Are you sick or caring for someone who is sick?"
3. Caller is sick (or caring for someone who is) and is a member of a participating health plan or healthcare system that has a triage line.
   - 2-1-1 Information Specialist: caller is sick. 2-1-1 Information Specialist transfers the caller to a poison center. A poison center clinician will triage patients, make recommendations, and provide access to antivirals (if appropriate), using a standard protocol.
4. Caller is sick (or caring for someone who is) and is not a member of a participating health plan or healthcare system or cannot reach their usual provider.
   - 2-1-1 Information Specialist transfers the caller to a triage line operated by their health plan or system.
5. Caller is not sick.
   - 2-1-1 Information Specialist serves as an active listener, providing information and referring caller to public-health information sources.

**Goals of Flu on Call™**

- Improve access to antiviral medications
- Reduce the need for face-to-face encounters with providers
- Reduce the surge on medical facilities

*Flu on Call™ is only activated in a severe pandemic.*
Flu on Call™ 2014 - 2015 Pilot Sites

- Kentucky Regional Poison Control Center of Kosair Children’s Hospital

POISON Help
1-800-222-1222
Information on this website is not to be used in an emergency situation. Please call 1-800-222-1222 for poisoning emergencies.

Kentucky Regional Poison Control Center
of Kosair Children’s Hospital

Don’t Wait

Call 24 hours a day, 7 days a week.
If you think someone has been poisoned, call us at 1-800-222-1222 right away.

Do not wait for the victim to look or feel sick. Do not try to treat the person yourself.

Videos

Poison Prevention

Email Newsletter

Subscribe to our mailing list

This newsletter may be useful for parents, daycare providers, health educators and safety officers as well as health care providers.

Contact Us