EPIDEMIOLOGY OF POISONING IN JAMAICA

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Ministry of Health
• “All substances are poisons….the right dose differentiates the poison from a remedy.”

• “One man’s medicine is another man’s poison.”
A Poison can be defined as:

“A substance that when introduced into or absorbed by a living organism may destroy life or injure health.”
• A poison exposure is the ingestion of or contact with a substance that can produce toxic effects.

• A poisoning is a poison exposure that results in bodily harm.

• Poisonings may be unintentional or intentional.
Surveillance System

- Accidental Poisoning was added to the list of Class 1 notifiable diseases/health events in Jamaica in 1997.
- Definition: Any poisoning considered to have occurred by accident (unintentionally)
  - Does not include:
    - Foodborne illness
Surveillance System

2. **CLASS I NOTIFICATIONS**

Forms filled out and faxed to Surveillance Unit HPPD
Surveillance System

ACCIDENT & EMERGENCY UNITS

All cases of poisoning – are reported by age and gender.

- Monthly reports are available from 22 Hospitals (excludes UHWI)
Check if get info from UWI
Surveillance System

HOSPITALIZED PATIENTS

ICD$_{10}$ codes of cases of poisoning discharged from hospital - based on Doctors Discharge Diagnosis

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**DISCHARGE SUMMARY**

<table>
<thead>
<tr>
<th>SURNAME</th>
<th>WARD</th>
<th>RECORD NO.</th>
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<tbody>
<tr>
<td>ATTENDING PHYSICIAN</td>
<td>DATE OF ADMISSION</td>
<td>DATE OF DISCHARGE</td>
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Provisional Diagnosis:
Final Diagnosis:
Secondary Diagnoses/Complication:
Operative Procedures:

Brief History and Essential Physical Findings:

Significant Laboratory, X-ray and Consultation Findings:
VISITS TO A&E DEPARTMENTS FOR UNINTENTIONAL POISONING, 1999 - 2005

Visits to A&E Depts.
ACCIDENTAL POISONING CASES REPORTED TO SURVEILLANCE UNIT 1998-2005

Years

1998 1999 2000 2001 2002 2003 2004 2005

Number of Cases

0 100 200 300 400 500 600 700 800

177 313 256 384 371 520 696 536
Comparison of Number of Visits for Unintentional Poisoning to A&E Departments vs. Cases Reported to National Surveillance Unit, 1999 - 2005
PATIENTS HOSPITALIZED DUE TO POISONING IN JAMAICA 1996 - 2001

Years

# of Patients


<5 5 - 9 10 - 19 20 - 44 45+

Years
ACCIDENTAL POISONING REPORTED TO THE SURVEILLANCE UNIT BY AGE GROUP, 2002-2005

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
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<td>&lt; 2</td>
<td>155</td>
<td>220</td>
<td>308</td>
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<td>2 to 4</td>
<td>105</td>
<td>181</td>
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<td>5 to 9</td>
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<td>10 to 14</td>
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<tr>
<td>Unknown</td>
<td>49</td>
<td>27</td>
<td>12</td>
<td>4</td>
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HOSPITALIZED PATIENTS

• Over 900 Patients per year admitted due to poisoning.

• 600 (67 %) of these admissions were from children < 5 years.

• Six year review done in 2002:
  – over 5,000 patients admitted in the past six years,
  – 3,500 of who were children under five years of age.

• 72% (approx.1,000) were admitted to hospital.
Days of Care Distribution for Hospitalized to Accidental Poisoning cases in 2002

Total Discharges = 1160
Days of Care Distribution for Hospitalized Accidental Poisoning cases in 2004

Total Discharges = 1049
Average length of Stay

- Overall
- Metals
- Drugs
  - Non Opiod Analgesic
  - Psychotics
- Pesticides
- Corrosives (Bleach)
- Organic Solvents (Kerosene)

- 2-3 Days
- 6-8 Days
- 2-4 Days
- 3-4 Days
- 2 1/2 Days
- 2-4 Days
- 2-3 Days
Estimated Cost of Care of Accidental Poisoning

• For patients seen in A&E and admitted to hospital

  • $ JA 4.2 Million per year
Accidental Poisoning Rates Per 100,000 Population by Parish 2004

LEGEND
Accidental Poisoning Rates 2003
- 8.8 - 13.3
- 13.3 - 23.1
- 23.1 - 31.8
- 31.9 - 48.4
- 48.4 - 62.8

HealthGIS,
Health Promotion & Protection Division,
Ministry of Health, Jamaica.
Causes of Accidental Poisoning

Four agents responsible for over 80%

- Bleach
- Kerosene
- Pharmaceuticals
- Pesticides
Confirmed Cases of Accidental Poisoning by Causative Agent, 2005

- Bleach: 42%
- Pharmaceuticals: 16%
- Other: 16%
- Kerosene: 11%
- Pesticides: 13%
- Unknown: 2%

Accidental Poisoning Cases Reported by Causative Agents, 2001-2005

Percentage of Confirmed Cases by Causative Agent, 2001 - 2005

- Bleach
- Kerosene
- Pharmaceuticals
- Pesticides
- Other
Common Drugs Ingested

Most Common were

- Non Opioid Analgesics
- Antihypertensive
- Anti Epileptic
- Anti -Psychotic
- Systemic antibiotic
- Narcotic
Common Pesticides Ingested

Most Common were

- Organophosphates and Carbamates
- Bipyridils - Gramoxone
- Rodenticides
# Causes of Accidental Poisoning

## Other agents (13-16%)

**Household chemicals**
- Floor polish
- Toilet bowl cleaner
- Disinfectant

**Beauty Products**
- Hair products
- Nail polish remover

**Paint thinner**

**Recreational drugs**
- Alcohol
- Marijuana

**Carbon monoxide**

**Lead**

**Car care products**

**Acid**

**Gasoline**
FISH AND ACKEE POISONING

• Fish Poisoning
  • 23 reported in 2005
  • 42 since 2006

• Dockery et al did a review of casualty registers at 5 hospitals – Lucea, Port Antonio, Savanna-la-Mar, Morant Bay and Black River was done for the period 1993 – 2002.
  • 174 cases of fish poisoning were found.
  • 13 cases of ackee poisoning were found.
Mechanism of Poisoning

- Most poisoning reported were ingested.
- Most exposures occurred in the home.
- Most agents were consumed when left in inappropriate containers.
- 71% of accidental poisoning cases by bleach in 2005 were due to improper storage, even if this storage vessel was temporary.
RISK FACTORS

• Poor supervision of children

• Improper storage of household products and chemicals

• Use of cups and other eating utensils for purposes other than eating e.g. to assist with household chores.
RISK FACTORS

• Close resemblance of various drinks to product that are not edible.

• Toddlers and young children drinking from commercial drink bottles
IF YOU WERE A CHILD WOULD YOU BE ABLE TO TELL WHICH ONE IS………

THE DISINFECTANTS ? THE FRUIT/ SPORTS DRINKS?

DISINFECTANTS

DISINFECTANTS ALONGSIDE POPULAR FRUIT/ SPORTS DRINKS
IF YOU WERE A CHILD WOULD YOU BE ABLE TO TELL WHICH ONE IS....... THE WAX STRIPPER ? THE FRUIT PUNCH SYRUP?
IF YOU WERE A CHILD WOULD YOU BE ABLE TO
TELL WHICH ONE IS........

THE WAX STRIPPER ? THE FRUIT PUNCH SYRUP?
IF YOU WERE A CHILD WOULD YOU BE ABLE TO TELL WHICH ONE IS ……..

THE COOLANT? THE DISWASHING LIQUID? THE LEMON LIME SYRUP?
IF YOU WERE A CHILD WOULD YOU BE ABLE TO TELL WHICH ONE IS........

THE COOLANT? THE DISWASHING LIQUID? THE LEMON LIME SYRUP?
IF YOU WERE A CHILD WHICH WOULD YOU BE MORE TEMPTED TO DRINK?

TWO LEADING DISINFECTANTS
SOME IMPORTED PRODUCTS HAVE SAFETY NOZZLES ON THEM THAT ARE HARDER TO OPEN
IMPROPER STORAGE OF PRODUCTS
Excerpts taken from Investigation Reports

Case 1
- 29 Yr Old Mother of a 2 yr old infant stated that “… a syrup bottle with bleach was left on the steps”.

Case 2
- 28 yr old mother of a 4 yr old child stated that “… child swallowed bleach that was stored in a chubby bottle.”
Excerpts taken from Investigation Reports

Case 3
• Child was visiting with aunts when they realized that the baby had a foil paper containing rat poison.

Case 4
• 41 Yr Old Mother of a 7 yr old child explained that … “the Peritol tablets were placed on the table with some tamarind sweets.”
Interventions in Trelawny
Team formed to response to the situation

- Medical Officer (Health)
- Public Health Nurse
- Public Health Inspector
- Health Education Officer
- Community Health Aide
Accidental poisoning in Trelawny

- Methodology used
  - Health Education
    - Population based
      - Display at Parish library
      - Health fair
      - Outreach programmes
  - Risk group based
    - Health Centres
      » Child health, ANC clinic
Display

- Bottles familiar to children containing “BLUE” substances are placed alongside “BLUE” drinks are in place for viewing.
Display.....cont’d

- Chemicals
  - Blue toilet bowl cleaner
  - Blue bubble bath
  - Blue Windex glass cleaner
  - Blue liquid soap
  - Bleach with familiar bottles
  - Kerosene oil in similar bottle
  - A formula bottle with teat in place

- For consumption
  - Blue Pepsi soda
  - Blue Kisko pop
  - Water in Chubby bottle
Home visit

- **Focus on**
  - Storage area of food, medication and chemical
  - Labeling of bottles
    - Bottle containing bleach Vs drinking water
  - Usage of cups to measure OR transport chemical substance

- **Contact health education**
  - Placement of chemical away from children
  - Feed children from cup instead of bottles
Community visit

• Education session done
  – Churches
  – Large tent crusades
  – Outreach clinics
Visits to outlets

- Observation made on
  - Containers
    - brought in by consumers to purchase chemicals, other household substances
    - Sold by proprietors
  - Bottles on the floor / shelves without label were observed

- Intervention
  - Sensitization
  - Problems
  - Legal issue
THE WAY FORWARD

- Regulate manufacturing and distribution
- Educate Caregivers
- Educate Parents
ACKNOWLEDGEMENTS

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• Dr. E. Ward – Ministry of Health
• Dr. M. Aung – Trelawny Health Department
• Mr. E. Adams – Ministry of Health
THANK YOU