The Maryland Poison Center (MPC) is a division of the University of Maryland School of Pharmacy and is certified by the American Association of Poison Control Centers as a regional poison center for Maryland. In addition, the MPC serves as a consultation center for the Maryland Institute for Emergency Medical Services Systems. This report presents an overview of MPC poisoning data for 2004. In 2004, the MPC received 66,593 calls. While 35,484 of these calls involved a human exposure, the remaining 31,109 were requests for information or animal poisonings.

**Age**

The majority of poison exposures involve children under the age of five as shown in the graph below.

<table>
<thead>
<tr>
<th>County</th>
<th>Human Exposures</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALLEGANY</td>
<td>499</td>
<td>1.4%</td>
</tr>
<tr>
<td>ANNE ARUNDEL</td>
<td>4,519</td>
<td>12.7%</td>
</tr>
<tr>
<td>BALTIMORE</td>
<td>6,313</td>
<td>17.8%</td>
</tr>
<tr>
<td>BALTIMORE (CITY)</td>
<td>5,348</td>
<td>15.1%</td>
</tr>
<tr>
<td>CALVERT</td>
<td>792</td>
<td>2.2%</td>
</tr>
<tr>
<td>CAROLINE</td>
<td>238</td>
<td>0.7%</td>
</tr>
<tr>
<td>CARROLL</td>
<td>1,592</td>
<td>4.5%</td>
</tr>
<tr>
<td>CECIL</td>
<td>891</td>
<td>2.5%</td>
</tr>
<tr>
<td>CHARLES</td>
<td>895</td>
<td>2.5%</td>
</tr>
<tr>
<td>DORCHESTER</td>
<td>240</td>
<td>0.7%</td>
</tr>
<tr>
<td>FREDERICK</td>
<td>1,734</td>
<td>4.9%</td>
</tr>
<tr>
<td>GARRETT</td>
<td>220</td>
<td>0.6%</td>
</tr>
<tr>
<td>HARFORD</td>
<td>2,261</td>
<td>6.4%</td>
</tr>
<tr>
<td>HOWARD</td>
<td>2,018</td>
<td>5.7%</td>
</tr>
<tr>
<td>KENT</td>
<td>200</td>
<td>0.6%</td>
</tr>
<tr>
<td>MONTGOMERY</td>
<td>1,035</td>
<td>2.9%</td>
</tr>
<tr>
<td>PRINCE GEORGE'S</td>
<td>1,333</td>
<td>3.8%</td>
</tr>
<tr>
<td>QUEEN ANNE'S</td>
<td>324</td>
<td>0.9%</td>
</tr>
<tr>
<td>SAINT MARY'S</td>
<td>940</td>
<td>2.6%</td>
</tr>
<tr>
<td>SOMERSET</td>
<td>138</td>
<td>0.4%</td>
</tr>
<tr>
<td>TALBOT</td>
<td>351</td>
<td>1.0%</td>
</tr>
<tr>
<td>WASHINGTON</td>
<td>1,127</td>
<td>3.2%</td>
</tr>
<tr>
<td>WICOMICO</td>
<td>762</td>
<td>2.1%</td>
</tr>
<tr>
<td>WORCESTER</td>
<td>364</td>
<td>1.0%</td>
</tr>
<tr>
<td>UNKNOWN/OTHER</td>
<td>1350</td>
<td>3.8%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>35,484</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

**GENDER**

48% of exposures occurred in males, 52% females.

**Animal Exposures**

In 2004, a total of 2,261 animal exposures were reported.
Circumstance

Acute exposures accounted for 95% of the total calls, acute-on-chronic for 4%, and chronic exposures accounted for 1% of calls.

The people who call the MPC have several different reasons for their exposures: Unintentional exposures include exposures by toddlers, occupational, environmental, bite/sting, or others; Intentional exposures which could be due to misuse or abuse or suicide attempts; Adverse reaction includes reactions to drugs, food and others substances; Other includes malicious or contaminant/tampering and unknown reasons for exposure.

Outcomes

The true measure of the effectiveness of the MPC program is in patient outcomes. Although there were 27 cases reported to MPC that resulted in death (0.1%), the impact of the MPC is obvious: few cases had poor outcomes. 91.7% of cases resulted in no or minor effects. For all exposures, prompt attention is the best way to reduce the likelihood of developing severe toxicity. Whenever you have a poisoning question, call the experts at the Maryland Poison Center.

Our mission is to decrease the cost and complexity of care while maintaining and/or improving patient outcomes. These data clearly show that we’re meeting our mission.

MPC Safely Manages Patients at Home

In 2004, 74% of all poisoning cases were safely managed at home (site of exposure). Safely managing patients at home saves millions of dollars in unnecessary health care costs compared with managing in a health care facility (HCF). It also allows more efficient and effective use of limited health care resources. Calling the Maryland Poison Center helps to save lives and save dollars!
The tables below list the top ten antidotal therapies and decontamination treatments used for poisonings in Maryland during 2004. Most patients were managed conservatively with dilution (given something to eat or drink), irrigation or washing.

### Antidotal Therapies

<table>
<thead>
<tr>
<th>Antidotal Therapies</th>
<th>#</th>
<th>%</th>
</tr>
</thead>
</table>
| Naloxone                     | 352 | 33.2%
| Oral acetylcysteine          | 294 | 27.7%
| Alkalinization               | 159 | 15.0%
| Fomepizole                   | 46  | 4.3%
| Calcium                      | 42  | 4.0%
| IV acetylcysteine            | 37  | 3.5%
| Flumazenil                   | 29  | 2.7%
| Glucagon                     | 21  | 2.0%
| Vitamin K                    | 15  | 1.4%
| Other Antidotes              | 65  | 6.1%
| TOTALS                       | 1,060 | 100.0% |

### Decontamination Techniques

<table>
<thead>
<tr>
<th>Decontamination Techniques</th>
<th>#</th>
<th>%</th>
</tr>
</thead>
</table>
| Dilute/Irrigate/Wash         | 23,487 | 78.4%
| Single Dose Activated Charcoal | 3,143 | 10.5%
| Food/Snack                   | 1,079 | 3.6%
| Fresh Air                    | 925  | 3.1%
| Cathartic                    | 798  | 2.7%
| Lavage                       | 172  | 0.6%
| Ipecac                       | 58   | 0.2%
| Multi-dose Activated Charcoal | 50   | 0.2%
| Whole Bowel Irrigation       | 43   | 0.1%
| Other Emetic                 | 185  | 0.6%
| TOTALS                       | 29,940 | 100.0% |

### Route of Exposure

- **Ingestion**: 78%
- **Dermal**: 9%
- **Inhalation**: 4%
- **Ocular**: 6%
- **Other**: 1%

The most common way that patients in Maryland were exposed to toxins is by ingestion. This includes cases of children putting substances in their mouths, patients mistakenly ingesting someone else’s medicines, people accidentally brushing their teeth with a product intended for topical use, etc. Dermal exposures were the next most common route of exposure.

For all exposures, prompt attention is the best way to reduce the likelihood of developing severe toxicity. Whenever you have a poisoning question, call the experts at the Maryland Poison Center.
The Maryland Poison Center (MPC) is well known for being an emergency telephone service that helps those who have been poisoned, including unintentional poisonings in small children, exposures to household products, occupational exposures, and intentional overdoses. But did you know that the MPC also educates thousands of people each year about poisonings and overdoses?

Our public education efforts are intended to help increase the awareness of the poisons that are found in every home, business, and school, and to help prevent poisonings from occurring. The MPC strives to make sure that everyone knows that they can quickly and easily get information by contacting the Maryland Poison Center, 24/7, if a poisoning occurs. In 2004, the MPC provided speakers and/or materials for 118 programs in 16 Maryland counties and Baltimore City. Public Education Coordinator Angel Bivens led classes that were attended by over 6,200 people. Several organizations partnered with the MPC to provide education to their patients, customers, clients and students. These organizations included fire departments, hospitals, health departments, schools, police departments, childcare agencies, pharmacies, Red Cross, Head Start and Healthy Start programs. In all, over 53,000 pieces of educational materials (brochures, magnets, telephone stickers, Mr. Yuk stickers, teacher’s kits and other pieces) were distributed at these programs and by these organizations. Tens of thousands of additional materials were mailed to people and groups who requested them.

Professional education is targeted towards the special needs of health professionals. Programs and materials are designed to help the clinician better manage poisoning and overdose cases that end up in a health care facility. The professional education program is coordinated by Lisa Booze. In 2004, 47 programs were conducted at hospitals, fire departments, and state and regional conferences. These programs were attended by approximately 1670 physicians, nurses, EMS providers, pharmacists and physicians assistants in 9 counties and Baltimore City. The MPC also provides professional education through publications. Articles written by Maryland Poison Center staff are often published in the Maryland Nurse, Maryland Pharmacist, EMS News and other professional journals and newsletters.

The Maryland Poison Center also provides on-site training for physicians, pharmacists and paramedics. Each year, over 100 health professionals come to the MPC to learn more about the assessment and treatment of poisoned patients.
Outreach and education are key elements of the MPC awareness campaign.

Presentations and Publications

The faculty and staff of the MPC provided a number of presentations and publications in 2003. Below are samples of those presentations and programs.


Toxalerts and Tidbits

The Maryland Poison Center publishes two newsletters, Toxalert and Toxtidbits for health professionals. Toxtidbits is faxed monthly to every Maryland emergency department and emailed to over 1500 health professionals. Toxalert, reaches over 3,900 health care providers by email and mail.

Past and current issues of Toxalert and Toxtidbits can be found on the Maryland Poison Center’s website: www.mdpoison.com.

To receive Toxalert and Toxtidbits by email, send a request to lbooze@rx.umaryland.edu.
Acknowledgements
The following organizations deserve special thanks for the continued support of the Maryland Poison Center:

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- AstraZeneca
- Maryland Institute for Emergency Medical Services Systems (MIEMSS)
- SAFE KIDS Maryland State and Local Coalitions

Call 410/706-7604 to see how you can support the Maryland Poison Center.

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