

**CENTER FOR DISEASE PREVENTION & EPIDEMIOLOGY • OREGON HEALTH DIVISION**

**CHILDHOOD MORTALITY IN OREGON**

**F**ROM 1990 THROUGH 1994, 2,788 persons under the age of eighteen died in Oregon. For every illness or injury that ended in a child's death, many more resulted in temporary or permanent disability. We present here an analysis of these deaths, showing that many if not most could have been prevented. Any provider who interacts with children or their parents can play a part in reducing child mortality by identifying situations or conditions that may place a child at risk and by taking appropriate action to reduce that risk.

Death certificates were analyzed for the underlying cause of death, conditions that may have contributed to a person's death, and demographic characteristics. The underlying causes of death were classified into broad categories including: "unintentional" injuries\* (e.g., motor vehicle crashes, drownings, falls), intentional injuries (suicide, homicide), perinatal conditions (birth trauma, birth asphyxia, etc), congenital anomalies, cancer, heart diseases and infectious diseases.

**RESULTS**

Death rates were higher among black (169/100,000), Hispanic (112/100,000) and American Indian (96/100,000) children than among white children (72/100,000) or children of other racial/ethnic categories (64/100,000). The male:female ratio was approximately 3:2.

Over half of all child fatalities occurred among infants (<1 year old). The three leading causes of infant mortality were perinatal conditions (32%); sudden infant death syndrome (SIDS) (27%); and congenital anomalies (23%). Although many perinatal conditions may not be preventable, some are. The incidence of group B streptococcal sepsis, for example, can be markedly reduced by screening pregnant women and offering

perinatal antibiotic therapy. Certain neural tube defects are preventable through prenatal folic acid supplements. Of note, the SIDS death rate in Oregon is nearly twice the U.S. rate. The current public health campaign to place infants to sleep on their back or side, (rather than on their abdomen) may help reduce these rates.†

Among older children, at least three of the leading causes of death are potentially preventable: unintentional injuries, suicide and homicide.

**Unintentional injuries**

Unintentional injuries were the leading cause of death for children ages 1-17 years (see table) and accounted for one-fourth of all deaths in Oregon children. The major causes of unintentional injuries included motor vehicle crashes, drowning, fire, suffocation, and falls. Motor vehicle crashes were responsible for half of the deaths. Children between the ages of 15 and 17 were four times more likely to die in a motor vehicle crash than were younger children.

**Suicide**

In the five years between 1990-1994, more than 100 Oregon children under 18 years of age killed themselves, making suicide the second leading cause of death for children ages 10-17 years. In Oregon,

more teens died of suicide than homicide; the opposite is true in most other states. Two-thirds of suicides by Oregon teens were committed with guns. For every fatal adolescent suicide, about 30 non-fatal attempts were reported. Whereas girls are far more likely to attempt suicide than are boys, attempts by boys are more likely to result in death. While presumably markers for other factors, smoking more than a pack of cigarettes daily or being threatened or injured at school six or more times during the past year were the variables most strongly associated with a history of attempting suicide in a recent Oregon survey.

**Homicide**

Between 1990-1994, 108 Oregon children were murdered, most at home. Approximately two-thirds of these victims were boys. The annual homicide rate in Multnomah county was four times higher than that in other counties (7.4/100,000 vs. 1.8/100,000). According to death certificates, "child battering" was responsible for half of homicide deaths for children under 5 years of age. This is probably a significant underestimate; to be counted as child battering, there must be documentation of previous abuse.

**WHAT CAN PHYSICIANS DO?**

The following is a list of physician interventions and related activities that may help prevent childhood deaths:

† For more information about SIDS prevention, contact the "Back to Sleep" Campaign (800/505-2742)

**Leading Causes of Death among Oregon Children, 1990-1994**

rank	< 1 year	1-4	5-9	10-14	15-17
1	perinatal conditions	unintentional injuries	unintentional injuries	unintentional injuries	unintentional injuries
2	SIDS	congenital anomalies	cancer	suicide	suicide
3	congenital anomalies	homicide	congenital anomalies	cancer	homicide
4	unintentional injuries	cancer	homicide	homicide	cancer
5	homicide	heart diseases	heart diseases	congenital anomalies	congenital anomalies

\* Because of the preventable nature of these injuries, they are no longer consider "accidents" in public health circles.

### Before birth:

- Prescribe folic acid supplements for women of childbearing age to prevent neural tube defects.
- Advise pregnant women against smoking and alcohol/drug use, explaining the potential consequences.

### Infancy and beyond:

- Ensure that all new parents are aware of the possibilities of SIDS and counsel them about positioning the baby on its back for sleep and any other preventive measures.
- Counsel parents about the importance of using seat belts, baby safety seats and bike helmets.
- Educate parents about the importance of completing all immunizations.
- Assist parents (especially teens) who are having difficulty coping in learning how to cope with anger and frustrations.
- Be alert to signs of physical and sexual abuse of children. The Oregon Child Abuse Reporting Law, enacted in 1971, requires public and private officials (e.g., physicians, social workers, teachers), to report any suspected child abuse (including sexual abuse) or neglect to the Department of Services to Children and Families in the county in which the child resides.\*

### Young childhood and beyond:

- Ask parents about the presence of firearms in their household. Urge them to keep firearms locked up and out of reach of children. Urge parental supervision and training of adolescents who use guns for hunting and

target practice.

- Be aware of signs of possible physical abuse of parents. Spouse abuse often accompanies child abuse.

### Especially for adolescents:

- Learn about and be alert to warning signs of suicidal ideation. The family history of your patients/clients regarding suicide attempts is a good indicator of potential risk.
- Acknowledge all suicide attempts and consider them serious enough for intervention.
- If you are a school or youth consultant and there has been a suicide in your jurisdiction, be sure to do post-suicide intervention to help prevent or contain suicide clusters.
- Be aware of possible drug abuse in parents and teens. This may lead to abuse of other children in the family and possible drug experimentation by siblings.

### FUTURE DIRECTIONS

Information about childhood deaths and injuries come from death certificates, police reports, the Oregon Trauma Registry, and other state agencies. Oregon is working to develop a system to ensure that each child death is thoroughly reviewed, and that data related to each death are collected systematically. Analysis of these data will enable local communities, grassroots groups, and public and private agencies to develop targeted intervention strategies. Oregon's ability to reduce child fatalities will depend both on reducing risk factors for injury and illness as well as insuring proper and expeditious care once an injury or illness occurs. Intervention strategies must include mea-

asures to improve access to perinatal and emergency medical care as well as to enhance parenting skills. For more information about these initiatives or for a list of related references, contact Joan Krahmer at the Health Division' Injury Prevention Program (503/731-4241).

### Toxin or Antitoxin: Does it Matter?

**D**URING AN ONGOING wound botulism "epidemic" in a neighboring state, two unusual calls were received by health department epidemiologists that indicated some confusion regarding the use of purified botulinum toxin type A (BOTOX<sup>®</sup>) and botulinum antitoxin. One caller reported that they were treating a typical case of wound botulism and indicated an intention to use BOTOX. BOTOX is approved only for treatment of strabismus and blepharospasm associated with dystonia, including benign essential blepharospasm or VII nerve disorders in patients 12 years of age and older. *BOTOX has no place in the treatment of clinical forms of botulism.*

The second call involved a pharmacist's request for botulinum antitoxin. Trivalent antitoxin for treatment of foodborne or wound botulism is available only through state health departments, working in conjunction with CDC. The caller indicated that the intended use was to treat blepharospasm. The surprised epidemiologist had to explain that *botulinum antitoxin has no place in the treatment of strabismus or blepharospasm.*

We trust that every Oregon physician is well aware of such distinctions and would not be caught in such an embarrassing and potentially lethal situation.

\* In Multnomah County, call 731-3111.