



Community & Hospital Letter

Volume 25, Issue 9 April 2005

Sexual Behavior Related Deaths

MORE THAN 1 in 100 deaths in the United States is related to sexual behavior and infections acquired during sex, according to the Centers for Disease Control and Prevention (CDC) (*Sex Transm Infect* 81:38-40, 2005). Rates of illness and premature death attributable to sexual behavior in the US are triple the rates in other wealthy nations.

As part of an analysis of the burden of disease and injury during 1998, CDC determined that sexual behavior contributed to 29,782 deaths or 1.3% of all deaths in the US. Also, it was calculated that sexual behavior contributed to 2,161,417 disability adjusted life years (DALY) or 6.2% of all US DALYs. DALYs are a time composite of years of life lost to premature death or disability.

The majority of health events (62%) and DALYs (57%) were among women, and curable infections and their sequelae contributed to over half of these. Viral infections

and their sequelae accounted for nearly all sexual behavior related deaths. Sixty-six percent of the deaths occurred among men and 93% of these male deaths were due to HIV infection. Cervical cancer was the leading cause of death among women (48%) followed by HIV (42%). Although cervical cancer caused more deaths than HIV in women, the estimated DALY for HIV among women was almost double that for cervical cancer, as cervical cancer tends to occur later in life.

In Kansas City, there were 19,771 deaths among City residents between 1999 and 2003. Deaths due to cervical cancer, HIV, and syphilis totaled 310, of which 270 would be attributable to sexual behavior based on the CDC study. Therefore, just these 3 infections accounted for 1.4% of all deaths over the 5 year period, which almost identical to the national finding.

CDC Reports the Elimination of Rubella in the US

IN MARCH, CDC announced the elimination of rubella (German measles) and congenital rubella syndrome (CRS) from the US (*MMWR* 54:279-282, 2005). Since rubella vaccine licensure in 1969, substantial declines in rubella and CRS have occurred. In addition, there is no evidence of endemic transmission of rubella virus in the US. This observation is supported by recent data: 1) <25 reported rubella cases each year since 2001, 2) at least 95% vaccination coverage among school-aged children, 3) estimated 91% population immunity, 4) adequate surveillance to detect rubella outbreaks, and 5) a pattern of virus genotypes consistent with virus originating in other parts of the world.

A similar situation appears to exist in Canada according

to the new Public Health Agency of Canada. There were only 7 sporadic cases of rubella reported in 2004, all believed to be travel related.

Usually a mild rash illness, rubella can have devastating effects when a pregnant woman is infected, especially during her first trimester. During the 1962-1965 worldwide rubella epidemic, an estimated 12.5 million cases of rubella occurred in the US, resulting in 2,000 cases of encephalitis, 11,250 fetal deaths, 2,100 neonatal deaths, and 20,000 infants born with CRS, a constellation of birth defects that often includes blindness, deafness, and congenital heart defects. The economic impact of this epidemic in the US was estimated at \$1.5 billion. The global epidemic spurred development of rubella vaccines.

Community & Hospital Letter

With the elimination of rubella from the US, and probably Canada, the need for vaccination has not diminished. Worldwide rubella remains a common childhood infection with >100,000 cases of CSR reported annually. Because imported cases of rubella are occurring in this country it is critical to maintain the high level of immunity in the population to prevent the establishment of

chains of transmission that could include pregnant women.

Between 1980 and 2004, Kansas City recorded only 6 cases of rubella: 3 cases in 1980, and single cases in 1990, 1994, and 1998.

New Publications

THE OFFICE OF Epidemiology & Community Health Monitoring frequently collaborates with community partners in analyzing health information about Kansas City. In March, the results of two of those collaborative efforts were published in medical journals:

Okah FA, Cai J, Hoff GL. Term-gestation, low birth weight and health-compromising behaviors during pregnancy. *Obstet Gynecol* 2005; 105(3):543-550.

Young TW, Wooden SE, Dew PC, Hoff GL, Cai J. The Richard Cory phenomenon: suicide and wealth in Kansas City, Missouri. *J Forensic Sci* 2005; 50 (2):443-447.

The first analysis was a cohort study of 78,397 term births between 1990 and 2002. The analysis found that smoking alone or in combination with alcohol and/or drugs was associated with term-gestation, low birth weight babies among women who engaged in health compromising behaviors. This effect was especially pronounced when smoking was combined with alcohol consumption.

The second analysis was a case-control study of 426 suicides that occurred between 1998 and 2002. It was found that suicide victims in Kansas City were 77% more likely to live in houses rather in apartments or trailers, more likely to live in more expensive houses, and more likely to have killed themselves because of factors other than financial strain.

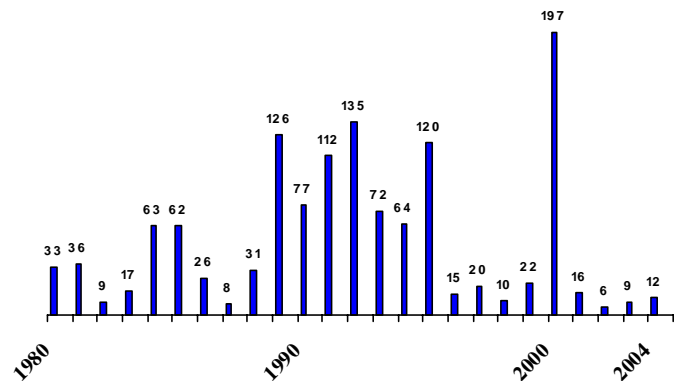
Update on Shigella

SHIGELLOSIS IS generally a person-to-person transmitted infection of the gastrointestinal tract caused by bacteria of the genus, *Shigella*. This is a reportable disease in Kansas City that exhibits high variability in the number of reported cases each year (MO Med 93:361-366, 1996). The last community-wide outbreak occurred in 2000, when a record number of cases were reported. While *S sonnei* PFGE type MOS060 predominated, there were at least 10 other *S sonnei* and 2 *S flexneri* PFGE types contributing to the disease burden in Kansas City that year. Typically, reports of shigellosis in Kansas City peak in August.

Transmission of shigellosis increases with poor hand hygiene and poor toileting behaviors. Poor toileting practices may lead to contamination of the hands and subse-

quent contamination of food or beverages. In 1989, the

Shigellosis in Kansas City, MO, Residents



Kansas City Health Department documented a shigellosis outbreak involving at least 50 people that was associated with a restaurant salad bar (MO Epidemiol 12(5):8, 1990).

In developing countries the burden illness and death from shigellosis constitutes a major public health problem. The World Health Organization (WHO), for example, estimates that each year in Asia there are 91 million cases and 414,000 deaths resulting from infection with *Shigella* species, predominately *S flexneri* (WER 80:94-99, 2005).

Based on the worldwide burden of shigellosis, WHO reports that the need for a *Shigella* vaccine is urgent, but progress has been hampered by the antigenic complexity of *Shigella* species, lack of cross protection, and lack of understanding of the protective immune response. Several approaches have been used; the most advanced being live, attenuated *Shigella* strains.

There are four so-called species of *Shigella* – *S boydii* (18 serotypes), *S dysenteriae* (15 serotypes), *S flexneri* (6 serotypes), and *S sonnei* (1 serotype). Based on genetic studies, all *Shigella* “species” and serotypes (except *S boydii* serotype 13) constitute a single genomic species of *Escherichia coli*. In fact, WHO proposes that *Shigella* should be considered as special *E coli* clones that are strictly adapted to humans.

Worldwide, the choice of antibiotics to treat shigellosis has become limited and the complications of these infections are multiple. As a result, WHO is in process of revising its guidelines for the control of shigellosis. The revisions will place more emphasis on prevention (hand hygiene), the antibiotic regimens used to treat shigellosis (fluoroquinolones as the first-line of treatment), and zinc supplementation for persons with shigellosis. The revised guidelines are expected to be released in the near future.

Toxoplasmosis and Pregnant Women

SHOULD ALL pregnant women or all newborn infants be serologically screened for infection with *Toxoplasma gondii*? Physicians associated with the National Institutes of Health’s Chicago Collaborative Treatment Trial at Rush University Medical Center believe that they should (Am J Obstet Gynecol 192:564-571, 2005). Their recommendation is based on the fact that maternal risk factors (direct or indirect exposure to raw/undercooked meat or to cat excrement) or compatible illnesses could be retrospectively identified in less than half of North American mothers of infants with toxoplasmosis. Currently only Massachusetts and New Hampshire test all babies for congenital toxoplasmosis.

What is not known is how big a problem congenital toxoplasmosis truly is. It is estimated that approximately 3,000 children are born with toxoplasmosis each year. Some of studies that suggest 1 out of 1,000 babies are born with *T gondii* infection. However, the data from Massachusetts, covering nearly 20 years of newborn testing, shows a infection rate of about 1 in 15,000 babies. Even with this low rate of seropositivity, the screening in Massachusetts is considered cost-effective.

Although the majority of infected infants are asymptomatic, many are likely to develop signs of infection in later life. Children congenitally infected suffer from loss of vision, mental retardation, loss of hearing, and death in severe cases.

The National Health and Examination Surveys (NHANES) have found *T gondii* antibody prevalence rates of 14.9% to 24.7% among women and these rates have remained stable through the 1990s (Emerg Infect Dis 9:1371-1374, 2003; CDC Advance Data Vital Health Statistics 352, 3/9/2005). The data suggest that the overwhelming majority of women are susceptible to acute toxoplasmosis, which if acquired during pregnancy could lead to a congenitally infected infant. Transplacental transmission of *T gondii* occurs when a pregnant woman has actively dividing toxoplasma cells in the bloodstream, a situation that usually occurs during primary infection.

The main risk factors for acute toxoplasmosis infection are eating raw or undercooked meat (30-63% of infections), contact with soil (6-17% of infections), and travel outside of North America and Europe (Brit Med J 321:142-147, 2000). Yet, physicians in the US seem to

ignore the major risks factors and instead focus on whether there is a cat in the household of their pregnant patients. While it is true that cats are the definitive hosts for this parasite, the chance of pregnant woman contracting the disease from her cat is extremely rare and there is no association between toxoplasmosis and having a cat, litter box cleaning or having a cat that hunts.

Surveys of physicians have found that the vast majority advise pregnant women to have someone else clean the cat litter box, a prudent recommendation (Contemporary OB/GYN 12/1/04). However, about 3.5% of physicians

turn pass this “authoritative” advice to friends and relatives. The overall effect of this can be seen in surveys of parental knowledge, attitudes and practices regarding specific pet-associated health hazards (Arch Pediatr Adolesc Med 152:1035-1042, 1998). Seventy-six percent of parents reported that cat feces were a source of toxoplasmosis, but only 15% knew the disease could be transmitted by raw or undercooked meat, and just 10% knew *T gondii* could be contracted from garden soil.

Coming back to the proposal that all pregnant women and/or newborn infants should be serologically tested for

suggest patients should find another home for their cat or put the animal outside to prevent an infection; these recommendations have no basis in fact. Further, nearly 40% recommended serologic testing of these women, something that is not recommended by the American College of Obstetrics and Gynecology. But more importantly, 58% of the physicians do not recommend avoiding raw and undercooked meat and using gloves during gardening, preventive measures that clearly address the primary methods by which people contract *T gondii* infection.

Such an imbalance in advice represents misinformation about toxoplasmosis and the preventive measures that should be taken. And, the misinformation provided by a physician can have an exponential impact as patients in

antibodies to *T gondii*, there is simply not consensus on this matter. Pregnant women who are serologically positive have little risk of passing the infection to their fetus, provided their primary infections occurred prior to pregnancy. In immunosuppressed pregnant women who are serologically positive for *T gondii*, a reactivation of latent infection may rarely result in congenital toxoplasmosis. A primary infection early in pregnancy may lead to fetal infection, whereas a primary infection later in pregnancy typically leads to mild or subclinical fetal disease with delayed manifestations. Therefore, the timing and frequency of testing of pregnant women would need to be defined.



Office of Epidemiology & Community Health Monitoring
2330 501025
Kansas City Health Department
2400 Troost, Suite 4000
Kansas City MO 64108