



# Community & Hospital Letter

Volume 25, Issue 8 March 2005

## Rising Syphilis Case Count in Kansas City

**DURING THE** past two months, syphilis alerts have been posted for the St Louis metropolitan area and the Springfield metropolitan area. In both areas there had been significant increases in early syphilis cases among men-who-have-sex-with-men. A number of these men were also HIV+. As of this writing, the Kansas City metropolitan area is not under an alert.

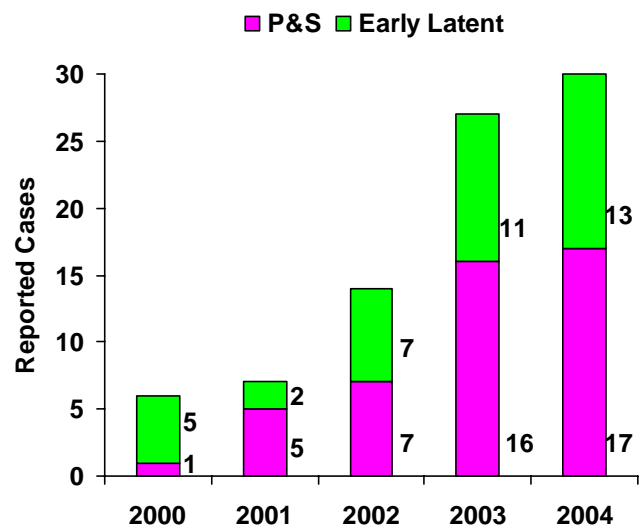
For epidemiological purposes, the Centers for Disease Control and Prevention (CDC) stages cases of syphilis by primary & secondary (P&S), early latent, late and late latent, and congenital. Early syphilis is considered P&S and early latent (duration <1 y), although just P&S is used as the primary indicator of new syphilis cases and for comparing syphilis activity between communities. For example, in 2003, Kansas City was ranked 30<sup>th</sup> out of 61 cities nationwide for P&S syphilis.

Early syphilis cases have been rising in Kansas City over the past 4 years (Fig 1). While these increases are of concern, the case counts pale compared to years such 1991 and 1992 when there were 438 and 433 cases, respectively. In 2004, there were only 4 P&S and 3 early latent cases reported between January and June, however, between July and December there were 3-5 cases of early syphilis reported each month. In January 2005 there were 4 cases.

Nationally, P&S syphilis cases increased from 5,979 in 2000 to >7,300 in 2004. Cases have been increasing in men during this time while decreasing among women. In 2000, the ratio of male to female cases was 1.4:1 while in 2003 it was 4.9:1. In concert with these dynamics, cases of congenital syphilis have been declining.

In January, there was an analysis published that examined epidemic cycling of

**Figure 1 Early syphilis cases, Kansas City, Missouri**



syphilis in the US (Nature 433:417-421, 2005). It was concluded that syphilis epidemics occur every 8-11 years and are driven by changes in the population immunity to the disease rather than to changes in sexual behavior. The increased synchrony across cities was considered evidence for an increasingly connected sexual network.

### Principles of Epidemiology

The Kansas City Health Department is pleased to announce that the next session of its *Principles of Epidemiology* course will be offered from

**April 25-28, 2005**

This four day introductory course to epidemiology is free of charge. The class size is limited to 15 individuals.

To register send an e-mail to:

gerald\_hoff@kcmo.org

## Creating Pandemic Influenza

**BETWEEN THE** 25<sup>th</sup> of October 2004 and the 2<sup>nd</sup> of February 2005, 11 additional human infections and 10 deaths in Vietnam and Cambodia were attributed to the avian influenza H5N1 virus. These cases raised the total number of recognized cases to 55 since the 28<sup>th</sup> of January 2004. Forty-two (76%) of the cases were fatal. At the time of this writing, additional human cases in Thailand of human respiratory illness were being evaluated to see whether the H5N1 virus was the etiologic agent. Since the beginning of the year, Vietnam has culled hundreds of thousands of birds, primarily chickens and ducks, to minimize viral transmission among birds and to humans.

Meanwhile, CDC has begun attempting to create reassortment viruses by simultaneously infecting cell cultures with both the H5N1 virus and various human influenza viruses and by reverse genetics to custom tailor a virus with a predetermined constellation of genes from each parent virus. The former approach more closely mimics the evolution of influenza viruses in nature

CDC started with the most recently circulating H3N2 strains and the most recent H1N1 strain now circulating in Thailand. Viable viruses will be tested in animals to see if these new agents can be transmitted easily from infected animals to healthy ones and to note the severity of disease each provokes. In other words, CDC will be delib-

erately engineering viruses of pandemic potential. It is a dangerous experiment with high risks, but is crucial work to quantify the risk posed by the H5N1 virus.

For many long-time influenza researchers, the H5N1 virus is considered the worst influenza strain they have ever encountered. And even though the work will be done in Level-3 containment facilities there is fear of a possible breach of containment or accidental infection of a researcher. Such accidents in high containment facilities are not unknown. The most recent was the infection of four individuals in Asia with the SARS coronavirus.

Hybrid influenza viruses already have been produced by CDC using the 1997 strain of H5N1 that was epidemic amongst poultry and humans in Hong Kong. However, the more recent strains of H5N1 are quite different from the 1997 strain and appear to be evolving more efficient transmission capabilities.

Even if the experiments fail to produce a single viable hybrid virus, that will not prove that H5N1 will not reassort in nature.

Meanwhile, in Canada, similar reassortment experiments are being conducted using the H7N3 avian influenza virus that infected poultry and humans in British Columbia in the spring of 2004.

## Infection in Breast Implants

**IT IS ESTIMATED** that 2 million women in this country have breast implants and that about 200,000 women are implanted each year (Cancer Invest 19:821-832, 2001). Breast augmentation is the 3<sup>rd</sup> most common type of plastic surgery done for cosmetic reasons in the US after nose reshaping and liposuction.

Infection is the leading cause of morbidity that occurs after breast implantation and occurs in about 2.0-2.5% of procedures (Lancet Infect Dis 5:94-106, 2005). Two-thirds of infections develop within the acute post-operative period, whereas some infections may develop years or even decades after surgery. Infection rates are

higher after breast reconstruction and subsequent implantation than after breast augmentation. Risk factors for infection associated with breast implantation have not been carefully assessed. Surgical technique and the patient's underlying condition are the most important determinants. In particular, breast reconstruction after mastectomy and radiotherapy for cancer is associated with a higher risk for infection.

The origin of infection in women with implants remains difficult to determine, but potential sources included a contaminated implant, contaminated saline, the surgery itself or the surgical environment, the patient's skin or

mammary ducts, or seeding of the implant from other infection sites in the body. Late infection usually results from secondary bacteremia or an invasive procedure at a location other than the breasts.

Acute infections around breast implants are usually associated with fever, rapidly evolving pain, and marked breast erythema. Onset of infection occurs at between 6 days and 6 weeks after surgery (median 10-12 days). Severe sepsis can develop, but generally signs and symptoms remain non-specific. Ultrasonography can be used to confirm the presence of fluid collection around the breast implant in most cases.

Surgical removal of the implant must be done in most cases, coupled with appropriate antibiotic therapy. Immediate reimplantation is not advocated and the delay to proceed will depend on the causative organisms and the

appropriateness and duration of antimicrobial therapy. Whether a contralateral implant also should be removed is a matter for debate.

The need for antibiotic prophylaxis in breast surgery is controversial. While not routinely recommended for breast procedures, it is fairly routine for implant placement. Either or both of the following are commonly used: systemic administration of antibiotics (most commonly a cephalosporin) starting before surgery and continuing up to 1 week after implantation, and/or, irrigation of the surgical pocket and rinsing of the implant before implantation in a solution containing either an antiseptic or an antibiotic. The effectiveness of these procedures remains unknown. Although some surgeons recommend prophylactic antibiotics for women with breast implants before any dental procedure, there is no scientific evidence to support such a recommendation.

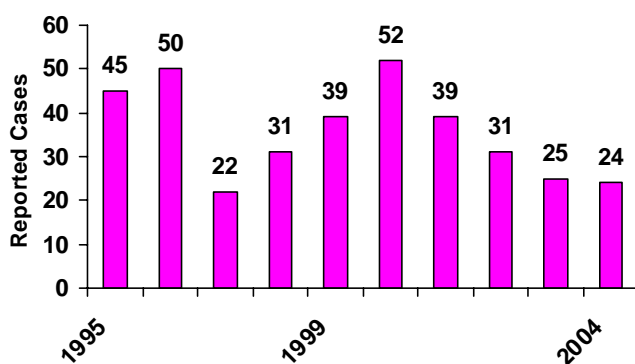
## Campylobacter Infections, Kansas City, MO

**CAMPYLOBACTERIOSIS** in humans is one of the most common bacterial foodborne illnesses in the US. The infectious dose is <1,000 bacteria. According to the CDC, *Campylobacter* infections affect about 0.5% of the population each year. An estimated 100 people die from this disease each year, most often infants, the elderly, or immunosuppressed individuals (Emerg Infect Dis 5:607-625, 1999). In addition, about 1 in every 1,000 persons with campylobacteriosis develops Guillain-Barré syndrome, the most common cause of acute flaccid paralysis in the US. While Guillain-Barré syndrome can follow a

variety of infectious diseases, approximately 40% of such cases follow *Campylobacter* infection, particularly a few strains of *C jejuni*.

In Kansas City, *Campylobacter* infections are required to be reported to the Kansas City Health Department. Since 2000 reported cases of *Campylobacter* infection have been declining in the city (Fig 1), which is consistent with an observed reduction of 28% in cases nationwide between 1996 and 2003 (MMWR 53:338-343, 2004). The annual incidence rates of *Campylobacter* infections in Kansas City, since 1995, have been substantially below the national Yr 2010 objective of 12.3 cases per 100,000 population.

**Figure 1** *Campylobacter* gastroenteritis, Kansas City, MO



*Campylobacter*iosis is a zoonotic disease transmitted to humans through food (JAVMA. 223: 445-452, 2003). There are multiple strains of *Campylobacter* although most infections in humans are caused by *C jejuni* (~90% of cases) and *C coli*. While fecally contaminated raw poultry is generally considered the primary source of organisms that infect humans, other foods such as lettuce and sweet potatoes have been implicated during outbreaks. However, many of these other foods were believed to have been cross-contaminated during preparation as a result of contact with surfaces or other objects used for

raw poultry. There are reports epidemiologically linking campylobacteriosis to other meat products, unpasteurized milk, and untreated surface water. This is not surprising as *Campylobacter* spp are found in a variety of warm-blooded animals other than poultry.

Approximately 5% of human cases of campylobacteriosis are contracted from contact with pet dogs and cats, especially juvenile or diarrheic pets. A recent study from Minneapolis demonstrated a *Campylobacter* fecal carriage rate of 24% among cats, many of which were overtly healthy kittens (JAVMA 226:544-547, 2005).

While it is popular at Easter to give young children pet chicks or ducks many adults do not understand the significant risks posed to the children from both *Salmonella* and *Campylobacter* strains that are common in the feces of these birds (Epidemiol Infect 127:399-404, 2001).

Prevention of campylobacteriosis requires attention to hygiene and food handling processes when working with raw meats, particularly poultry, and with hand washing following contact with animals in household and occupational settings.

---

## Potpourri

**FOR THE 2<sup>ND</sup> TIME** in two years, a cluster of human rabies cases has been associated with organ transplants from an undiagnosed donor. The current cluster is in Germany and there were 7 recipients of organs. While rabies has not yet been demonstrated in all recipients, this may be simply due to varying incubation times.

**WHILE INFLUENZA CASES** just began to increase in

the Kansas City metropolitan area in mid-February, changes in the vaccine composition of the 05-06 influenza season were announced. The A/Fujian strain will be replaced with A/California, while the A/New Caledonia and B/Shanghai strains will remain.

**CHLAMYDIA PSITTACI**, the cause of psittacosis in humans, is now known as *Chlamydophila psittaci*.



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