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The PULSE

On the 3rd of April, the Kansas City Health Department and The Lesbian and Gay Community Center of Greater Kansas City released the results of the first-ever comprehensive health assessment of the lesbian, gay, bisexual and transgendered (LGBT) community in the Kansas City bi-state metropolitan area. This project, entitled The PULSE, was a collaborative effort – from survey design and marketing to data collection and analysis – between the Health Department and the LGBT community.

Nationwide, little had been done to assess the health of the LGBT community as a whole. In fact, only one other community in the nation had attempted such a broad and challenging task.

The PULSE survey was undertaken to establish a baseline of selected health and social measures relevant to the LGBT community. It was a convenience survey rather than a statistically designed research survey and, as such, it has limitations with generalization of the findings to the LGBT community as a whole. The survey design was dictated by the available funding as well as the objectives established by the LGBT community. The PULSE achieved the established objectives in that baseline data was developed against which further policy and research assessments, whether conducted by the existing partnership, academics, or others, can be measured.

The survey questionnaire was distributed primarily through LGBT social events such as the AIDS Walk and the Heartland Pride Festival. As a result, respondents were more likely to be “out” to some degree, predominately white, predominately from the Missouri side of the bi-

state metropolitan area, and have a higher educational attainment level than the metropolitan area population in general.

A total of 1,143 returned questionnaires were used in the analysis of this report. Another 550 surveys were excluded because the respondent either did not live in the metropolitan area or did not complete a sufficient portion of the survey to make it useful.

Due to the diversity of issues covered by The PULSE, it is impossible to summarize the findings in this newsletter, but the entire report will be posted later in April on both the Health Department’s web site: www.kcmo.org/health and on the Lesbian and Gay Community Center’s web site: www.Take-the-Pulse.org. Topics included personal health

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history and status, relationships, social behaviors, infectious diseases, sex partners, protection during sex acts, mental health, discrimination, domestic violence, and more. The questions for the survey came from the LGBT community and therefore the report reflects topics of particular relevance and interest to that community. However, anyone

interested in health issues in the Kansas City metropolitan area will find this report to be of interest.

Potpourri

According to a new report from the Centers for Disease Control and Prevention (CDC), obesity is close to overtaking tobacco as the leading cause of death in the United States (JAMA 291:1238, 2004). In 2000, obesity killed 400,000 Americans, a third more than in 1990, and just 35,000 short of deaths linked to smoking. Obesity helps to trigger a host of diseases from type 2 diabetes and high blood pressure to heart disease. The total bill for obesity-related problems in 2000 alone has been put at \$117 billion.

The report listed, in descending order, the actual causes of death as tobacco, poor diet and physical inactivity (obesity), alcohol consumption, microbial agents, toxic agents, motor vehicle crashes, firearms, sexual behavior, and illicit drug use. These causes accounted for half of all the deaths in the US.

A Canadian Food Inspection Agency contract worker, who visited poultry barns British Columbia where an outbreak of avian influenza H7N3 was occurring, contracted laboratory confirmed infection with this virus. (ProMED 3/27/04) Several other workers who experienced mild cold-like symptoms are being tested. This individual is the first documented case of human infection by an avian influenza A H7N3 virus. It is becoming increasingly clear that individuals exposed to large amounts of avian influenza viruses by the nature of their occupation are at risk of infection.

The recent human infections caused by H5N1, H9N2, H7N7, and H7N3 avian influenza viruses highlighted the continuous threat of new pathogenic influenza viruses emerging from a natural reservoir in birds. It is generally believed that replication of avian influenza viruses in humans is restricted by a poor fit of these viruses to cellular receptors and extracellular inhibitors in the human respiratory tract. However, detailed mechanisms of this restriction remain obscure. A new study showed that during the course of a single-cycle infection, human flu viruses preferentially infected non-ciliated cells, whereas avian viruses, mainly infected ciliated cells. This pattern correlated with the predominant localization of receptors for human viruses (2-6-linked sialic acids) on non-ciliated cells and of receptors for avian viruses (2-3-linked sialic acids) on ciliated cells (www.pnas.org/cgi/content/abstract/101/13/4620?etoc). These findings suggest that although avian influenza viruses can infect human airway epithelium, their replication may be limited by a non-optimal cellular tropism.

The formulation of the influenza vaccine for the season includes one virus from last year's vaccine (A/New Caledonia/20/99 H1N1-like)

and two new viruses (A/Fujian/411/2002 H3N2-like) and B/shanghai/361/2002-like.

A new coronavirus that is predominately associated with relatively mild upper respiratory tract disease and more specific lower respiratory tract disease (bronchiolitis) in infants has been discovered (Nature Med online 3/21/04). It is only the 4th coronavirus to be found in nearly 4 decades. Named HCoV-NL63, the virus is clearly different from the 3 known human coronaviruses — human coronavirus 229E, human coronavirus OC43, and the SARS coronavirus. The virus appears to be widespread in the human population.

The standard oxygen masks worn by some patients produce plumes of droplets that increase the risk of medical staff contracting respiratory illnesses (Chest 125:1157, 2004). Such masks might be responsible for some cases of SARS in doctors and nurses during the outbreaks in Asia and Canada last year. Photographs show that when these masks are in use, plumes of exhaled droplets billow out of the side vents and can travel about 16 feet.

The Vaccine Research Center at Saint Louis University is conducting a clinical trial of a genetically engineered BCG vaccine aimed at preventing tuberculosis

(*Jefferson City News Tribune* 3/18/04). The vaccine is designated rBCG30 and is being administered to human volunteers.

According to research conducted at the University of Arizona, keyboards, computer mice and telephone dials are more infested with 400 times as many microbes than toilet seats. The study found that telephones harbored up to 25,127 germs/in², keyboards 3,295, and computer mice, 1,676. The average office contained 20,961 germs/in². By comparison, the average toilet seat harbored just 49 germs/in². The report attributes the discrepancies to the fact that desktops have become breeding grounds for germs largely because they have turned into tables where workers eat lunches and breakfasts. This combined with the fact that desks are not frequently cleaned, makes them the perfect environment for microorganisms.

Testing donated blood for the presence of West Nile virus (WNV) began in July 2003. Nationally, more than 1,000 blood donors tested positive for the virus making it one of the most common illnesses that potentially could be acquired through transfusions, according to the CDC. Provisional data indicated that about 16% of the donors eventually developed clinical disease, predominately WNV fever. In 2003, the Community Blood Center of Greater Kansas City detected 7 WNV positive donors from the Kansas City metropolitan area and overall had a WNV detection rate of ~1:10,000 donations screened.

Physicians in the US who prescribe methadone for pain relief inadvertently may be the cause of an alarming rise in deaths due to the drug (*New Scientist*, 3/6/04). In 2001, the Food and Drug Administration's MedWatch program recorded 61 methadone-related deaths which were more than occurred throughout the 1990s. The number doubled to 123 in 2002. According to the Substance Abuse and Mental Health Services Administration (SAMHSA), the agency that oversees methadone distribution for addiction treatment, the amount of the drug dispensed by pharmacies has trebled since 1998, while its use in addiction treatment has hardly changed. This suggests that the rising death toll is mainly due to misuse of methadone prescribed for pain relief. While 40 tablets cost as little as \$5.00 on Medicaid, each tablet can be worth \$10-20 on the street. Data from Oklahoma showed that about 66% of the persons whose deaths were associated with methadone did not have a prescription for the drug. SAMHSA reports that while seizures of illegal methadone pills more than doubled from 2001 to 2002, seizures of liquid methadone only increased 11%. The liquid form is the type most often prescribed for addicts.

Each year, in the US, seafood accounts for 10-19% of reported foodborne illnesses (*Lancet Infect Dis* 4:4/1/04). A causative agent can be identified in about 44% of seafood-related outbreaks, with viruses accounting for around half of these illnesses. Although viruses are the most common cause of seafood-related infections, most hospitalizations and deaths are due to bacterial agents.

A genetic analysis of the protozoan parasite *Cryptosporidium parvum* revealed why this agent has proven so notoriously difficult to treat effectively – it lacks many of the proteins targeted by current antiparasitic drugs (*Science* 2004 0:10947861-0). The study did identify

potential genetic weaknesses that might be exploited by drug developers – genes that appear to be of bacterial or plant origin.

Cyclospora cayentanensis is a protozoan parasite that may cause gastroenteritis with prolonged, intermittent diarrhea in humans. However, it is not known how many *Cyclospora* oocysts must be ingested in food or water to establish infection in a person. An attempt to infect human volunteers with 200-49,000 oocysts failed to produce gastroenteritis and no oocysts were detected in stool specimens (*Emerg Infect Dis* 10:726, 2004).

CDC's Unexplained Deaths Project is a collection of data on the mysterious deaths of 227 children and adults from 1995 to 2003. Despite advances in medical technology, a specific cause of death was found for just 53 of the cases, according to a paper presented at the International Conference on Emerging Infectious Diseases, held in Atlanta in early March. Of these 53 deaths, 37% involved a respiratory disease and 36% were from sepsis. The remaining deaths included pneumonia and heart problems.

Teens who pledge to remain virgins until marriage have the same rates of sexually transmitted diseases as those who do not pledge abstinence, according to a study presented at the National STD Prevention Conference in early March. Those who make a public pledge to abstain until marriage delay sex, have fewer sex partners and get married earlier, based on the data gathered from adolescents ages 12 to 18 who were

questioned again 6 years later. Both groups had similar STD rates.

Simian foamy virus (SFV) is a retrovirus that is widely prevalent among apes and monkeys in Africa, although there is no evidence that SFV causes harm to these animals or humans who become infected with SFV. However, there is concern that because this virus continues to pass from animals to humans via bushmeat hunting (Lancet 363:932, 2004) and via laboratory settings where workers handle monkeys, that it might establish itself like the HIV agents in the human population, possibly as an agent of significant morbidity and mortality. Limited data to date suggests that SFV has not been transmitted human-to-human via blood transfusion (Transfusion 42:886, 2002).

South American fire ants are becoming an increasing danger for nursing home residents in the US, according to researchers at the University of Mississippi. Ant attacks have been documented in 6 nursing homes in 3 states and on an institutionalized person in another. At least 4 nursing homes residents died within a week of a fire ant attack.

US military operations in southwest and central Asia over the past two years has resulted in hundreds of soldiers contracting infection with a sandfly-borne parasite called *Leishmania*. Between August 2002 and February 2004, the Department of Defense has confirmed 522 cases of cutaneous and 2 cases of visceral leishmaniasis in troops in this theater of operations (MMWR 53:264 & 265, 2004). *L major* was the etiologic agent for the cutaneous cases while the visceral cases were caused by organisms of the *L donovani-infantum* complex. The term leishmaniasis includes 3 primary syndromes: cutaneous, visceral, and mucosal. The cutaneous form manifests as weeping sores that can take up to a year to heal. The majority of lesions are on the face or on the hands over joints. In the

long term, the problem is scarring, which can be disfiguring if it is on the face and can limit movement of the hands if it is over a joint. In visceral infections the parasites replicate in the spleen, liver, and bone marrow; and, the resulting infection can range from asymptomatic to life-threatening.



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