



# Community & Hospital Letter

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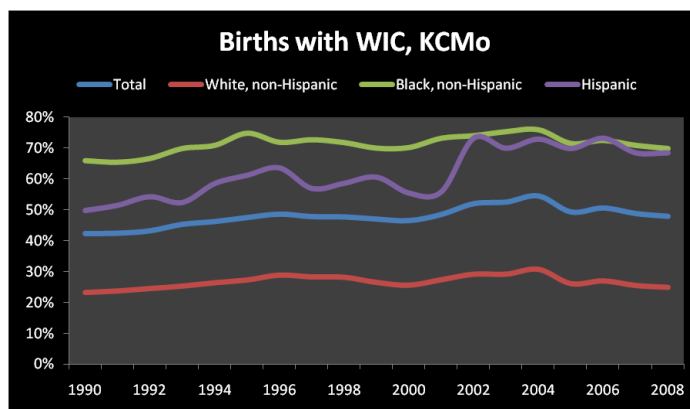
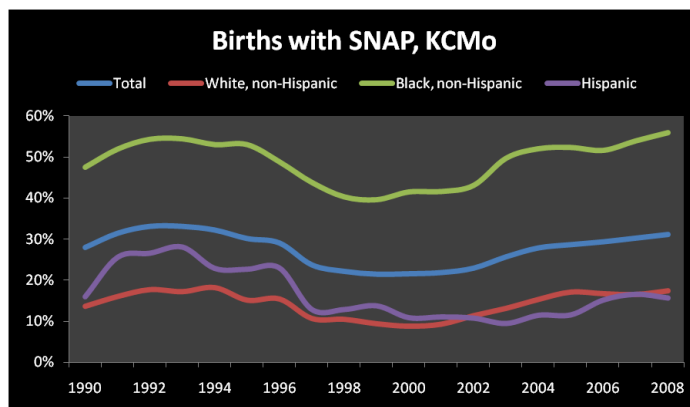
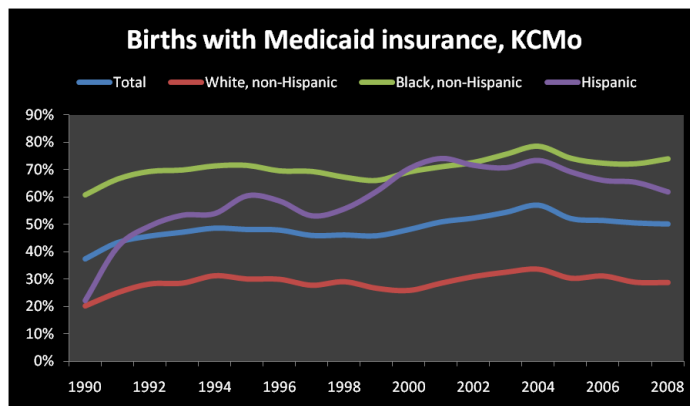
## Government Assistance during Pregnancy

A great deal of rhetoric during the health care reform debates focused on “government” involvement in individuals’ health care. What many people may not appreciate is the importance of “government” involvement in ensuring healthy babies are born. Although not an inclusive list of government programs, the Missouri Department of Health and Senior Services (MHSS) does capture data on three social assistance programs that are utilized by pregnant women—Medicaid insurance program, the Supplemental Nutrition Assistance Program or SNAP (more commonly known as food stamps) and the Women, Infants, and Children (WIC) food assistance program.

The three charts on the right display the trends in utilization of these three programs by Kansas City birth mothers from 1990 through 2008. The utilization rates for non-Hispanic whites and blacks mirror the overall trends for each program and, in each case, utilization by non-Hispanic blacks has been higher than that by non-Hispanic whites.

The trends for Hispanic birth mothers, however, have been erratic. How much of the variability in the Hispanic rates reflects the accurate capture of ethnicity information is unknown. For both Medicaid and WIC, the Hispanic utilization trends have been generally increasing and, in recent years, more similar to that for non-Hispanic blacks. Yet, for SNAP, the trend has been more similar to that for non-Hispanic whites.

In 2008, 50.1% of all birth mothers in Kansas City used Medicaid as their health insurance, 31.2% utilized SNAP, and 47.9% used WIC. Among non-Hispanic white birth mothers, 28.9% utilized Medicaid, 17.5% SNAP, and 24.9% WIC. The utilization rates among non-Hispanic black mothers were 73.9%, 55.9%, and 89.9%, respectively, while among Hispanic birth mothers, the utilization rates were 61.9%, 15.7%, and 68.5%, respectively.



## Are We Over Vaccinating for Rabies?

During 2009, 49 of the 64 rabid animals in Missouri were bats. This is significant because the recommendations for post-exposure rabies vaccination in people are broader when bats have been encountered than for other potentially rabid animals. Why? Because the risk for rabies resulting from an encounter with a bat might be difficult to determine due to the limited injury inflicted by a bat bite (compared with more obvious wounds caused by the bite of terrestrial carnivores). As a result, household bat exposure has become the most frequent reason for post-exposure rabies vaccination (*Vaccine* 2008;26:4456-4450).

The Centers for Disease Control and Prevention (CDC) have recommended for many years that any direct contact between a human and a bat should be evaluated for an exposure, particularly since there is evidence that some bat-related rabies viruses might be more likely to result in infection after inoculation into superficial layers of the skin. According to the CDC, situations that might qualify as bat exposures worthy of post-exposure vaccination include finding a bat in the same room as a person who might be unaware that a bite or direct contact had occurred (e.g., a deeply sleeping person awakens to find a bat in the room or an adult witnesses a bat in the room with a previously unattended child, mentally disabled person, or intoxicated person). These situations would not be considered exposures if the bat tested negative for rabies, or circumstances suggest it is unlikely that an exposure took place.

The recommendations promulgated by CDC regarding post-exposure rabies vaccination following exposure to bats have resulted in significant numbers of individuals undergoing vaccination (and its associated financial costs). The major questions about these recommendations center on their inclusiveness. For example, an analysis of bat rabies in the US and Canada from 1950 through 2007, looked at human bat-related rabies cases in which there was no history of known bat exposure (*Clin Infect Dis* 2008;46:1329-1337). It found that only 2 of the 16 persons would have qualified for rabies post-exposure prophylaxis on the basis of exposure criteria to include bats that were in the same room as a sleeping person.

The most serious challenge to the CDC recommendations comes from the Quebec Institute of Public Health (*Clin Infect Dis* 2009;48:1493-1499). Researchers from that organization concluded that as many as 2.7 million people would need to be vaccinated in order to prevent a single person from developing rabies from bedroom exposure. In addition, it would cost as much as \$2 billion for the vaccine, and require the manpower equivalent of between 293 and 2,500 healthcare professionals working full time for a year to prevent that one case.

These findings led Canada's National Advisory Committee on Immunization to issue new guidelines to cover "bedroom" situations (*Canada Communicable Disease Report* 2009;35 ACS-7). The new policy suggests that people not try to catch bats, because studies have shown between 2-5% of bats caught in homes are rabid. Additionally, the guidelines call for post-exposure vaccination only if the bat touched or landed on a person and only if it cannot be ruled out that a bite or scratch occurred or that bat saliva might have come in contact with a wound or the person's mucus membranes. The new policy exercises more caution with children than it does with adults; children should be vaccinated after any direct contact with a bat. There was no change to the guidelines for persons known to have been bitten or scratched by a bat.

It will be interesting to see if CDC revises its guidelines anytime in the near future.

The Kansas Health Department has begun to release draft sections of its **Community Health Assessment 2010** report for public review and comment. The Births section was posted to the website ([www.kcmo.org](http://www.kcmo.org)). Additional sections will be added over the next 6-7 months as they are completed.

All comments should be directed to the Office of Epidemiology & Community Health Monitoring via email to [Gerald\\_hoff@kcmo.org](mailto:Gerald_hoff@kcmo.org).

# Potpourri

**CHRONIC FATIGUE SYNDROME (CFS)** is a debilitating disease of unknown etiology that is estimated to affect 17 million people worldwide. Recently, it was proposed that infection with the xenotropic murine leukemia virus (XMRV), a virus previously linked to prostate cancer, or a related agent may be the etiologic basis of CFS (*Science* 2009;326:585-589). DNA to XMRV or related virus was detected in 67% of persons with CFS compared to <4% of persons without CFS. This finding, however, is challenged by another study that did not find any evidence of XMRV or murine leukemia virus DNA in CFS patients (*PLoS One* 2010;January 6<sup>th</sup>). Meanwhile, websites are appearing on the Internet offering testing to CFS patients for XMRV and affected persons are seeking the drug zidovudine (AZT) as it has been reported to block replication of XMRV (*Virology* 2010;397:1-6).

**MARIJUANA SMOKING** during pregnancy, even for a short period, has been associated with fetal growth-restriction during the 2<sup>nd</sup> and 3<sup>rd</sup> trimester and with lower birthweight (*J Am Acad Child Adolesc Psychiatry* 2009;48:1173-1181). This growth restriction was most pronounced for fetuses exposed to continued maternal pregnancy-smoking of marijuana. Maternal marijuana use during pregnancy resulted in more pronounced growth restriction than maternal tobacco use. Paternal marijuana use was not associated with fetal growth restriction.

**AVERAGE BIRTHWEIGHTS** for infants born in the US between 1990 and 2005 declined about 1.8 oz on average (*Obstet Gynecol* 2010;357-364). A national study examined changes over time in birthweight for gestational age and in gestational length among term (gestation of 37-41 complete weeks) infants. The study documented decreases in birthweight, decreases in large-for-gestational age (LGA) infants (-1.4%), and decreases in gestational length (-2.5 days). When only white, well-educated, married non-smokers who got early prenatal care were studied, their infants were 2.8 oz lighter in weight and they had 2.2% fewer LGA infants. The decreases in fetal growth could not be explained by trends in maternal and neonatal characteristics, changes in obstetric practices, or concurrent decreases in gestational length.

**TRICHOMONIASIS** is the most common non-viral sexually transmitted infection in the US, with an estimated 7.4 million new cases annually. Among reproductive age women, the prevalence has been reported to be 3.1% overall and 13.3% among black women (*Clin Infect Dis* 2007;45:1319-1326). The Vaginal Infections in Pregnancy Study reported higher rates (13% overall, >20% in blacks) (*Sex Transm Dis* 1997;24:353-360). Trichomoniasis has been associated with premature rupture of membranes, preterm births, and low birthweight. A new study now associates maternal trichomoniasis with intellectual disability in children, suggesting that it may be a preventable risk factor for intellectual disability (*Ann Epidemiol* 2009;19:891-899).

**HOMICIDE BY FRIGHT**, although not proven medically, is accepted by the legal system (*Am J Cardiol* 2010;105:136-138). Case law holds that sudden emotional stress can cause death and that if the sudden emotional stress is caused by criminal conduct, the resulting death of the victim of the criminal conduct can be prosecuted as homicide. The legal principles that support this position are as follows: emotional stress is sufficient, and physical abuse is not required for conviction; a time-lapse between the induction of emotional stress and death does not necessarily mitigate the charge of homicide; the criminal act must be the proximate cause of the victim's death; however, the accused does not always need to be physically present to commit the crime.

**DO YOU HATE YARD WORK?** Do you believe in "green" solutions? If so, you (like your editor) will love a report that found the environmental cost of maintaining lawns and parks in urban areas is far greater than the benefits (*Geophy Res Letter* 2010, doi:101029/2009GL041675, in press). Greenhouse gas emissions from fertilizer production, mowing, leaf blowing, and other management practices are 4 times greater than the amount of carbon stored by grass in lawns and parks. Grass covers 1.9% of land in the continental US, which makes it the most irrigated crop.

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**HISPANIC CHILDREN** are less likely than non-Hispanic white children to be diagnosed with autism, and socioeconomic factors and health care provider factors do not explain the difference (*Am J Public Health* 2010;100:270-272). Using schools in 254 counties of Texas, researchers found that for every 10% increase in Hispanic school children in a given district, the prevalence of autism decreased by 11%, while the prevalence of children with intellectual disabilities or learning disabilities increased by 8% and 2%, respectively. “Urbanicity” of a district, median household income, and number of health care professionals did explain the increased percentage of autism among districts with more non-Hispanic white students.

**RINDERPEST OR CATTLE PLAGUE**, is a viral infection that can wipe out entire herds of cattle, buffalo, and some species of wildlife inflicting severe economic disaster, malnutrition, and high human mortality in villages in poor countries. The loss of livestock and wild animals also can result in loss of grasslands and expansion of human vector-borne diseases such as sleeping sickness, as occurred in Africa in the late 1800s and early 1900s. Therefore, in early January, there was very encouraging news from the World Organization for Animal Health (OIE), namely, rinderpest is likely to be declared eradicated next year. This veterinary achievement would have the same significance as the eradication of smallpox among humans.

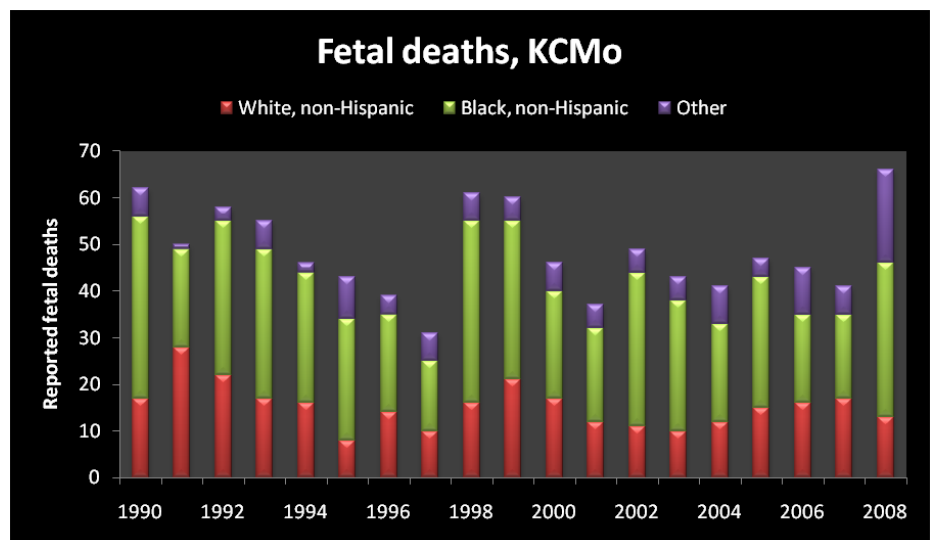
**FETAL DEATH IS** one of most common adverse pregnancy outcomes, complicating 1 in every 160 deliveries in the US (*Obstet Gynecol* 2009;113:748-761). In the US, only fetal deaths at >20 weeks gestation or a birthweight >350 grams are required to be registered; approximately 25,000 are reported annually. These deaths nearly equal the number of

infant deaths that occur each year, accounting for 49% of all fetal and infant deaths that occur between the 20<sup>th</sup> week of gestation and the 1<sup>st</sup> year of life.

The number of fetal deaths recorded in Kansas City is variable, although there was a significant increase in 2008 (66 fetal deaths) compared to 2007 (41 fetal deaths). Correspondingly, the fetal mortal rate (FMR) rose from 5.1 fetal deaths/1,000 fetal deaths + live births, to 8.3.

From the graph below, one can see that fetal deaths among non-Hispanic blacks and other racial/ethnic groups contributed to the bulk of the difference between the two years. Fetal deaths among non-Hispanic blacks increased from 18 to 33, while such deaths among Asians rose from 2 to 9 and among Hispanics they increased from 3 to 8.

An analysis of fetal deaths in Kansas City for 1996-2004 found that at gestations <28 weeks and birthweights <1,000 gm non-Hispanic whites were the more disadvantaged group, whereas non-Hispanic blacks were not disadvantaged until gestation was ≥32 weeks or weights were ≥2,500 grams (*J Natl Med Ass* 2007;99:1258-1261). Overall, however, non-Hispanic blacks had a FMR 2.3 times higher than that for non-Hispanic whites.



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