



## Pregnancy Indicators Among Kansas City Residents

Populations are dynamic entities that are influenced by births, deaths, in-migration, and out-migration. These factors are reflected in the census data for communities. For example, in Kansas City, between 1990 and 2000, there was a loss of population in the Jackson County portion of the City, but increases in the remainder of the City actually led to an overall growth in population. Further, the proportion of the population that was white decreased while that which was black remained stable. Other minority groups, particularly Hispanics, increased. And, the age distributions of the Hispanic and black populations, were significantly younger than that of whites.

One of the areas of population dynamics that is tracked by demographers and epidemiologists is that of procreation. Successful reproduction, the

spectrum of events leading from conception to birth of a healthy infant is both biologically and epidemiologically complex (Epi Rev 24:916101, 2002). Problems that define the adverse outcomes during the course of the reproductive process define the adverse outcomes in epidemiologic studies of pregnancy. The Kansas City Health Department's Community Health Assessment 2003 ([www.kcmo.org/health](http://www.kcmo.org/health)) describes certain key measures of these outcomes for this community. The annual description of births in the nation produced by the National Center for Health Statistics, Centers for Disease Control and Prevention (Nat Vital Stat Rep 51(11), 6/25/03) and the Monthly Vital Statistics report series produced by the Missouri Department of Health and Senior Services provide data on larger scale.

**Crude Birth Rates and Fertility Rates, 2001 & 2002**

	Crude Birth Rates (births/1,000 population)		Fertility Rates (births/1,000 women 15-44 y)	
	2001	2002	2001	2002
United States	14.1	13.9	65.3	64.8
Missouri	13.4	13.3	62.3	62.1
Kansas City	16.6	NA	67.8	NA

Epidemiology: Think Globally, Act Locally

Office of Epidemiology & Community Health Monitoring  
 Gerald L. Hoff, Ph.D., F.A.C.E., Editor

**August 2003**  
**Vol. 24 # 1**

There was a decline in the number of live births to Kansas City residents between 1991 and 1994, dropping from 7,768 to 6,617, respectively. However, beginning in 1995 and continuing through 2001, the number of resident live births increased, reaching 7,345 in 2001 for a crude birth rate of 16.6/1,000 pop (data for 2002 is not yet available). This increase in births was attributable to births among non-black minority groups. Since 1991, the number of live births for whites and blacks in Kansas City decreased 17.8% and 16%, respectively. The crude birth rate in Kansas City in 2001 was higher than that for Missouri and the US. The US birth rate fell to a record low in 2002, due in large part to a drop in teenage pregnancies. Nationally, the birth rate for teenagers in 2002 was 42.9/1,000 women 15-19 y old. The teenage birth rate has dropped 28% since 1990. Also of note, cesarean deliveries accounted for 26.1% of all births in 2002, the highest rate reported in the US.

**The following information is for Kansas City and is from the *Community Health Assessment 2003* document.**

Since 1990, the rate of unintended pregnancies that resulted in live births has declined from 45.1% to 43%. There is considerable disparity among the racial/ethnic groups regarding live births resulting from unintended pregnancies. Between 1996 and 2000, the rate for blacks was 3 times that for whites and Asians, and 35-52% higher than that for Native Americans and Hispanics, respectively. These differences may be the result of higher rates of unintended pregnancies or they may be the result of actions, such as legal abortions, that would lower the number of unintended live births.

Two age groups that are monitored because of adverse outcomes of pregnancy or adverse problems for the baby are teenagers and women >40 years of age. In 2000, the teenage pregnancy rate in Kansas City was 93.2/1,000 women 15-19 y old. For the period 1996-2000, teenage pregnancy rates were highest among blacks and Hispanics and lowest for Asians. Meanwhile, the rate of births to women >40 y of age increased significantly to 1.5% of all births in 2000. For the period, 1996-2000, Asian women >40 y old had the highest rate and were 1.6 times more likely to have such a birth than white women, the 2<sup>nd</sup> highest group. Black women had the lowest rate.

The percentage of women who had a baby and

then, in <18 months, delivered another baby has been declining since 1990. During 1996-2000, blacks had the highest rate (17.2%) of subsequent deliveries within <18 months, while whites had the lowest rate, 13.4%.

The percentage of repeat pregnancies among women <20 years of age decreased 30.7% between 1990 and 2001. For the period 1996-2000, blacks had the highest rate for repeat pregnancies (7.7%) while whites and Asians had the lowest, 1.7% and 1.6%, respectively.

Determining the adequacy or inadequacy of prenatal care by pregnant women is based on a set of varying parameters and each woman's pregnancy history must be evaluated against these parameters in order to determine if the level of prenatal care was adequate, marginal, or inadequate. For example, inadequate prenatal care is defined as <5 prenatal visits for pregnancies <37 weeks, <8 visits for pregnancies >37 weeks or care beginning after the first 4 months of pregnancy. Between 1990 and 2000, the percentage of pregnant women in Kansas City who had inadequate prenatal care decreased from 10.2% to 4.6%. For 1996-2000, Native Americans had the highest percentage of inadequate pre-natal care (13.6%), followed by blacks – 9.3%, Asians - 7.2%, Hispanics – 5.0%, and whites – 3.2%. In 2001, 87.4% of pregnant women started prenatal care in the 1st trimester, which was higher than the national rate of 83.8% in 2002.

Pregnancy-related deaths are uncommon in Kansas City, with only 6 recorded between 1990 and 2000, for a maternal mortality rate of 7.6/100,000 live births for the time period, which is less than the Missouri rate of 10 in 2000. One mother was a teenager and 2 were  $\geq 35$  y old.

Women without a high school education are more likely to have poorer rates of prenatal care, smoking during pregnancy, and low birth weight babies, compared to women with a high school or higher education level. In 2001, 23.2% of births in Kansas City occurred to such women and this rate has essentially remained unchanged since 1990. For the period 1996-2000, this rate was highest for Hispanics (44.7%) and lowest for whites (14.2%). Hispanic women had a rate 3 times that of whites, 2 times that of Asians, and 1.5 times that of blacks or Native Americans.

Smoking during pregnancy is associated with low birth weight babies and spontaneous abortions. In Kansas City, between 1990 and 2001, there was a 41% decline in the percent of women who smoked during pregnancy. However, this decline in smoking was not universal. Whites, blacks, and Hispanics all had very significant declines in the percentage of women smoking during pregnancy, whereas there were no significant changes in smoking rates for Asians and Native Americans. For the period 1996-2000, the percent of women smoking during pregnancy was 2 times as high for Native Americans than for whites, 2.5 times that for blacks, and nearly 6 times that for Asians and Hispanics.

The amount of weight a woman should gain during pregnancy depends upon her pre-pregnancy weight and height. The National Academy of Sciences, in 1990, established guidelines based on the mother's body weight. Of concern, are women who gain too little or lose weight, and women who gain too much weight during pregnancy. In Kansas City between 1991 and 2000, slightly less than 10% of women gained <15 pounds, while the percent of women who gained >44 pounds increased from 16.5% during 1991-1995 to 18.1% during 1996-2000.

While the information above encompasses the

entire population of the city, the Kansas City Health Department also tracks many of the same indicators for a 9-zip code area (64106, 64108, 64109, 64110, 64124, 64126, 64127, 64128, and 64130) which forms a contiguous area in the Jackson County portion of the city. For the period 1991-2000, with more than 24,600 live births in the 9-zip code area there were high rates of first and repeat births, especially to teenage mothers. Live births by racial/ethnic groups are not uniform across this area. More than 60% of all births black and Asian mothers in the City occurred within the area as did 52% of Hispanic births and 42% of Native American births. Only 16% of births to white mothers citywide were from the 9-zip code area. Overall, the percentage of births to unmarried women in the area was 1.5 times higher than for the City as a whole. For all racial/ethnic groups in the area, the percentages of mothers who had received prenatal care during the 1<sup>st</sup> trimester of pregnancy and those who received adequate prenatal care were less than for the same racial/ethnic group citywide. Conversely, the percentages of women who received no prenatal care were higher within the 9-zip code area, with the notable exception of Hispanic women.

**The Kansas City Health Department will be offering its 4-day *Principles of Epidemiology* course on the 27<sup>th</sup>-30<sup>th</sup> of October 2003. The course will be held at the Health Department and is free. Enrollment is limited to 15 individuals. If you are interested in attending please contact.**

**Gerald L Hoff, PhD**  
**816-513-6149 or [gerald\\_hoff@kcmo.org](mailto:gerald_hoff@kcmo.org)**

## Potpourri

**W**ith the recognition of West Nile virus (WNV) infection in 5 crows and blue jays from throughout Kansas City and in a crow in Parkville, in early July the Kansas City Health Department stopped collecting birds for virus testing. Subsequently, WNV positive birds were identified in other communities on both sides of the

metropolitan area. Meanwhile, reports of dead crows and blue jays are still encouraged in order for the Health Department to assess the potential for human cases in the community. Human cases of WNV have been reported in Minnesota, Texas, Alabama, Louisiana, and South Carolina.

While WNV monitoring is conducted in North and Central America, researchers in England have been testing resident and migratory bird species for evidence of WNV infection. Antibodies have been detected in >50% of birds of >20 different species. None of the birds were ill, however, it does raise concern that WNV could become established in England as it has in North America.

**H**ome made chemical bombs (HCBs), also known as acid bombs, bottle bombs, and MacGyver bombs, are explosive devices that can be made easily from volatile household chemicals

purchased at the local hardware or grocery store. When these and other ingredients are combined and shaken in a capped container, the internal gas pressure generated from the chemical reaction causes the container to expand and explode. The subsequent explosion can cause injuries or death to persons in the immediate vicinity of detonation. A study by the Centers for Disease Control and Prevention (MMWR 52:662-664, 2003) found that the number of HCB events has increased during the last several years. This increase may be due to better surveillance or an actual increase in the number of events. The chemical reactions within a

HCB make these devices highly unstable and unpredictable, yet the data suggest that HCBs are a rare cause of injury. This is despite the fact that once the ingredients are combined, no timers or fuses are installed that could signal when detonation will occur — it could be seconds to hours after initial mixing.

**P**ost-exposure rabies prophylaxis may soon be improved. Research at Thomas Jefferson

University, Philadelphia, has yielded a replacement for rabies immune globulin (J Infect Dis 188:53-56, 2003). A cocktail of 3 synthetic virus neutralizing monoclonal antibodies has been shown to protect mice and hamsters from a lethal dose of rabies virus. The effectiveness of the preparation is comparable to that obtained with human rabies immune globulin. Replacement of the current rabies immune globulin product should reduce the potential for transmission of any human pathogens.



Office of Epidemiology & Community Health Monitoring - 233-050-1025  
Kansas City Health Department  
2400 Troost Ave, Suite 4000  
Kansas City MO 64108