

## Breastfeeding Initiation among Kansas Resident Live Births by Population Group by Selected Maternal and Infant Characteristics, 2011-2013

### Introduction

Early nutrition plays a major role in long-term health. The benefits of breastfeeding infants are well documented: immunologic protection, prevention of chronic diseases and obesity later in life, etc. The World Health Organization recommends exclusive breastfeeding during the first six months of life [1]. Breastfeeding initiation rates have been increasing in recent years both nationally and in Kansas. According to the most current national breastfeeding rate from the Centers for Disease Control and Prevention’s National Immunization Surveys (2012-2014), a 4.1 percent increase was found in breastfeeding initiation between 2009 births (76.1%) and 2011 births (79.2%) [2, 3]. In 2012, a breastfeeding initiation study was done in Kansas by obtaining data from birth certificates. Findings from the Kansas data showed a significant increasing trend from 2005 (75.6%) through 2010 (77.2%) with percentages in all six years meeting the 2010 Healthy People goal of 75 percent. In addition, the percent of breastfeeding initiated among Black non-Hispanic mothers was significantly lower than the percent of White non-Hispanic, Hispanic and other non-Hispanic population groups in Kansas from 2008-2010 [4].

In 2012, data from the Pregnancy Risk Assessment and Monitoring System (PRAMS) found breastfeeding patterns, including initiation and duration, to vary among population groups. PRAMS is a state, population based surveillance system and results were based on data from 11 states and New York City from 2004-2006. Results showed White non-Hispanic and Hispanic women reporting the highest percentages of breastfeeding initiation and duration. However, maternity care practices associated with breastfeeding also varied among population groups. Breastfeeding within the first hour, use of a pacifier and assistance from hospital staff were associated with breastfeeding duration among black and white women, but not Hispanics, while breastfeeding on demand was positively associated with Black non-Hispanic and Hispanic mothers, but not with white non-Hispanics [5].

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## Objective

The purpose of this study was to examine breastfeeding initiation activity among Kansas resident births for 2011-2013 by population group in association with selected maternal and infant characteristics.

## Methods

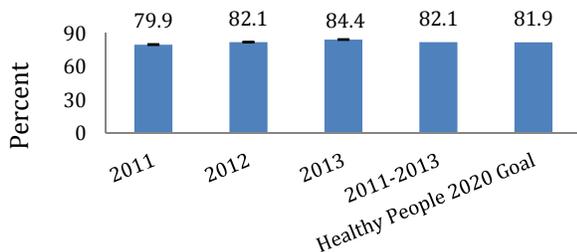
Data were obtained for live births to Kansas residents that occurred in years 2011, 2012 and 2013. Breastfeeding initiation was measured from a response to a specific question on the Kansas birth certificate asking if the infant was breastfeeding at the time of discharge from the hospital, with response options “yes”, “no” or “unknown”. If the “yes” box was checked, the birth record was included in the analysis. If “no” or “unknown” was checked or the question was left blank, the birth record was excluded. Unknown or missing data on maternal and infant characteristics were not included in the denominator of the percentage calculations. The three years of data were combined for cross tabulation analyses among the population groups. All cross tabulations were calculated for infants where breastfeeding had been initiated. Population groups: White, Black, Asian Pacific/Islander (Asian/PI) and Other are not of Hispanic origin. The Native American/ Alaska Native category was collapsed into the Other non-Hispanic category due to the small number of events.

Statistical significance was determined with non-overlapping confidence intervals calculated at 95 percent confidence. The poisson distribution was used to calculate confidence intervals when the number of events was less than 100. Data analysis was performed using SAS 9.3.

## Results

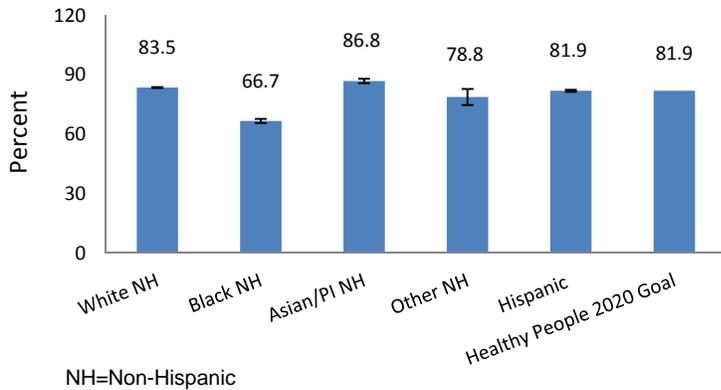
The percentages of breastfeeding initiation significantly increased from year to year from 2011-2013 with a 3-year rate above the Healthy People 2020 goal of 81.9 percent (Figure 1).

Figure 1. Breastfeeding Initiation among Kansas Resident Births at Hospital Discharge by Year Kansas, 2011-2013



Among the population groups, Asian/PI non-Hispanic mothers had a significantly higher percentage initiating breastfeeding than the other population groups, followed by White non-Hispanics. White non-Hispanics had a significantly higher percentage than Hispanics, and Hispanics had a significantly higher percentage of breastfeeding initiation than Black non-Hispanics (Figure 2.)

Figure 2. Breastfeeding Initiation among Kansas Resident Births at Hospital Discharge by Population Group, Kansas, 2011-2013



Analysis of breastfeeding initiation in various age groups shows Hispanics have a significantly higher percentage than other population groups initiating breastfeeding in ages less than 20 (Table 1). Black non-Hispanic and Other non-Hispanics had significantly higher breastfeeding initiation percentages between ages 20-29 years than the other groups, while Asian/PI non-Hispanics had a significantly higher percentage of breastfeeding initiations in the the 30-39 year range and the 40+ age group than the other population groups. The highest percentages of breastfeeding initiation among White non-Hispanics, Black non-Hispanics, Other non-Hispanics and Hispanics were in the 20-29 year age range.

Breastfeeding initiation by education level varied by population group. The highest percentage of Hispanics initiating breastfeeding had less than a high school education. Breastfeeding initiation among Hispanic mothers declined as education level increased. The highest percentage of breast feeding initiation among Black non-Hispanic and White non-Hispanic mothers were those who had some college experience or an associate degree. Asian/PI non-Hispanic mothers with a bachelors degree had a significantly higher percentage initiating breastfeeding than other levels of education.

Table 1. Breastfeeding Initiation among Kansas Resident Births by Selected Maternal and Infant Characteristics by Population Group, Kansas, 2011-2013.

Maternal and Infant Characteristics	White non-Hispanic	Black non-Hispanic	Asian/Pacific Islander non-Hispanic	Other non-Hispanic*	Hispanic
	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)
<b>Age</b>					
Less than 20	5.5 (5.3-5.6)	11.5 (10.5-12.5)	2.0 (1.6-2.6)	11.6 (10.2-13.0)	13.8 (13.2-14.5)
20-29	56.3 (55.6-56.9)	60.9 (58.2-63.6)	43.2 (40.4-46.0)	61.2 (57.4-65.0)	55.2 (53.8-56.7)
30-39	36.4 (35.9-36.9)	25.9 (24.3-27.4)	50.8 (47.7-53.9)	25.5 (23.3-27.6)	28.5 (27.6-29.5)
40+	1.9 (1.8-2.0)	1.7 (1.3-2.1)	4.0 (3.3-4.7)	1.7 (1.2-2.3)	2.4 (2.2-2.7)
<b>Education Level</b>					
8-12 <sup>th</sup> grade no diploma	6.5 (6.3-6.6)	13.9 (12.8-15.0)	7.5 (6.5-8.6)	17.2 (15.5-18.9)	40.2 (39.0-41.4)
HS diploma/GED	17.9 (17.6-18.3)	30.0 (28.3-31.7)	15.0 (13.5-16.5)	27.2 (25.0-29.5)	28.9 (27.9-29.8)
Some college or Associate degree	33.3 (32.8-33.8)	41.6 (39.5-43.7)	20.3 (18.6-22.1)	33.3 (30.7-35.8)	22.0 (21.2-22.9)
Bachelor's degree	29.4 (29.0-29.9)	9.6 (8.7-10.5)	30.6 (28.3-32.9)	14.7 (13.1-16.3)	6.7 (6.2-7.1)
Advanced degree	12.9 (12.6-13.2)	5.0 (4.3-5.6)	26.5 (24.5-28.6)	7.6 (6.5-8.6)	2.3 (2.0-2.5)
<b>Weeks Gestation at Birth</b>					
Less than 36 weeks	7.7 (7.5-7.9)	11.2 (10.2-12.1)	7.8 (6.8-8.9)	9.2 (8.0-10.5)	7.5 (7.1-8.0)
37-38 weeks	23.3 (22.9-23.7)	25.0 (23.5-26.5)	25.7 (23.7-27.7)	25.1 (22.9-27.2)	24.8 (23.9-25.7)
39+ weeks	68.9 (68.2-69.7)	61.9 (59.2-64.6)	66.3 (62.5-70.0)	67.2 (63.1-71.3)	67.7 (66.0-69.4)
<b>Birth Weight in Grams</b>					
Low (< 2499g)	5.7 (5.6-5.9)	11.3 (10.4-12.3)	7.7 (6.7-8.7)	6.9 (5.9-8.0)	5.7 (5.3-6.1)
Normal (2500g – 3999g)	84.7 (83.8-85.6)	83.8 (80.4-87.2)	88.5 (83.9-93.1)	86.2 (81.3-91.0)	86.3 (84.3-88.4)
Heavy (4000g+)	9.6 (9.3-9.8)	4.9 (4.3-5.5)	3.8 (3.1-4.5)	6.9 (5.8-7.9)	8.0 (7.5-8.4)
<b>Route of Delivery</b>					
Vaginal	70.0 (69.2-70.8)	66.3 (63.4-69.1)	70.0 (66.1-73.9)	71.0 (66.8-75.2)	74.0 (72.2-75.8)
Cesarean	30.0 (29.5-30.5)	33.7 (31.9-35.5)	30.0 (27.7-32.2)	29.0 (26.7-31.3)	26.0 (25.1-26.9)
<b>Principle Payor</b>					
Medicaid	23.9 (23.5-24.3)	58.7 (56.1-61.3)	14.8 (13.3-16.3)	43.5 (40.5-46.5)	37.0 (35.8-38.1)
Private insurance	65.3 (64.5-66.0)	26.2 (24.7-27.8)	70.5 (66.6-74.4)	36.3 (33.6-39.0)	27.5 (26.6-28.5)
Self-pay	3.7 (3.5-3.8)	4.4 (3.9-5.0)	7.8 (6.8-8.8)	7.8 (6.6-8.9)	27.6 (26.6-28.5)
CHAMPUS/TRICARE	6.0 (5.8-6.1)	9.0 (8.2-9.9)	5.3 (4.5-6.2)	8.5 (7.4-9.7)	4.4 (4.1-4.8)
Other government	0.4 (0.4-0.5)	0.4 (0.3-0.6)	0.5 (0.3-0.8)	0.8 (0.5-1.3)	1.3 (1.1-1.5)
Other†	0.8 (0.7-0.8)	1.2 (0.9-1.5)	1.1 (0.7-1.5)	3.5 (2.8-4.3)	2.1 (1.9-2.4)
WIC Participant	25.3 (24.9-25.7)	59.7 (57.1-62.4)	21.7 (19.9-23.5)	49.4 (46.1-52.7)	68.0 (66.3-69.7)
Married	74.0 (73.2-74.9)	35.6 (33.8-37.5)	88.7 (84.1-93.3)	56.1 (52.5-59.7)	50.2 (48.8-51.5)

\* Other non-Hispanic includes Native American/Alaska Native, Multi race non-Hispanic and other non-Hispanic.

† Other includes other payor and Indian Health Services.

Mothers from all population groups had the highest percentage initiating breastfeeding when their infants were delivered at term (39+ weeks gestation). For infants of 37-38 weeks gestation, no significant breastfeeding initiation differences were found among Black non-Hispanics, Asian PI non-Hispanics or Hispanics. White non-Hispanics had the lowest percentage initiating breastfeeding at 37-38 weeks among the population groups, although only significantly lower than Hispanic mothers. Black non-Hispanic mothers had a

significantly higher percentage of breastfeeding initiation when the infant was premature, i.e., less than 36 weeks gestation, than the other population groups.

Breastfeeding initiation percentages among the population groups were highest for infants born within a normal weight range. Black non-Hispanics had a significantly higher percentage initiating breastfeeding than the other population groups when the infant had low birth weight.

Black non-Hispanics had a significantly higher percentage of breastfeeding initiation after a cesarean birth than White non-Hispanics, Other non-Hispanics and Hispanics. There was no significant difference in breastfeeding initiation between Black non-Hispanics and Asian/PI non-Hispanics who had cesareans.

Black non-Hispanics initiating breastfeeding had the highest percentage receiving Medicaid, followed by Other non-Hispanics; while Asian PI non-Hispanics, followed by White non-Hispanics, had significantly higher percentages with private insurance than the other population groups. Hispanics had a significantly higher percentage of self-payers than the other population groups.

The percentage of WIC participation was highest among Hispanics, followed by Black non-Hispanics and Other non-Hispanics.

The percentage of married mothers initiating breastfeeding was highest among Asian PI non-Hispanics, followed by White non-Hispanics. At least half of Other non-Hispanics and Hispanics were married, while Black non-Hispanics initiating breastfeeding had the lowest percentage who were married.

## Discussion

While breastfeeding initiation has increased significantly over the three-year study period, Black non-Hispanics had a significantly lower percentage initiating breastfeeding than the other population groups, which is consistent with previous studies [4, 6] and requires further inquiry.

Many previous studies suggest that disparities exist in breastfeeding initiation among racial/ethnic groups. Findings in general show that older and highly educated women initiate breastfeeding at higher rates than less educated and younger mothers and that Black non-Hispanics and other minorities in the U.S. have lower breastfeeding initiation rates than White non-Hispanics [7]. Results of the cross-tabulations show that Hispanics had the highest percentage of breastfeeding initiation among all population groups when their age was less than 20 years, followed by Other non-Hispanics and Black non-Hispanics. The highest percentage of White non-Hispanic, Black non-Hispanic, Other non-Hispanics and Hispanics was between the ages of 20-29 years of age, while the highest percentage of Asian/PI non-Hispanics initiating breastfeeding was in the 30-39 year age range.

Similar results were found with education level. Hispanics had the highest percentage initiating breastfeeding when they had less than a high school diploma. In general, when education increased, breastfeeding initiation percentage declined among Hispanics. This

finding was not unexpected. Previous research has found breastfeeding initiation and duration among Hispanics is heavily influenced by their familial network when making feeding decisions, while White non-Hispanics, for example, tend to be influenced more by healthcare providers [8]. Among Asian/PI non-Hispanics, as education level increased, breastfeeding initiation percentage also increased through the bachelor's degree level.

While the highest percentages of breastfeeding initiation among all the population groups occurred when the infant was term (39+ weeks gestation) and of normal birth weight (2500g+), Black non-Hispanics had the highest percentage of breastfeeding initiation for premature and low birth weight infants. These last findings were not unexpected since it is well documented that Black non-Hispanic women in Kansas and the U.S. have higher percentages of infants born prematurely and with low birth weights compared with infants of other population groups [9, 10]. Poor birth outcomes are highly associated with disadvantage on many levels, with substantial variations within racial/ethnic subgroups.

This study showed evidence of Black non-Hispanic mothers at a disadvantage in socioeconomic status. Qualification for Medicaid and WIC services require low incomes to participate. Black non-Hispanic mothers initiating breastfeeding had a significantly higher percentage with Medicaid, WIC participation (with the exception of Hispanics) and the lowest percentage being married among the breastfeeding population groups, while Asian PI non-Hispanics and White non-Hispanics had the highest percentages with private insurance, the lowest percentages of WIC participation and the highest percentages being married.

While breastfeeding initiation is important, continued breastfeeding may be inhibited by factors such as mother's need to return to work, fear of insufficient milk supply, lack of support from significant others and the necessity of early introduction of complimentary feeding (solid foods). These issues should be examined in hospitals by promoting and supporting breastfeeding and in programs such as WIC, especially among Black non-Hispanic mothers.

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## Genetic Counseling and Genetic Testing for Cancer Among Kansans: Results from the 2013 Kansas BRFSS

### Background

Individuals who are at high risk for hereditary breast, ovarian, or colorectal cancer may reduce their risk through genetic testing and evidence-based interventions [1]. Options for managing hereditary cancer risk include: enhanced screening, prophylactic surgery, and chemoprevention [2]. Genetic testing is the process of using medical tests to check for mutations in a person's DNA [3]. Genetic counseling should be offered prior to genetic testing in order to help people understand and adapt to the medical, psychological and familial implications of genetic testing [4].

The U.S. Preventive Services Task Force (USPSTF) recommends genetic counseling for women if they have a family history of cancer associated with increased risk for harmful mutations in breast cancer susceptibility genes (BRCA1 or BRCA2) [5]. Healthy People 2020 includes an objective to increase the proportion of these women who receive genetic counseling, as well as an objective to increase genetic testing among individuals with newly diagnosed colorectal cancer to identify familial colorectal cancer syndromes [2]. Further, men with harmful BRCA1 or BRCA2 mutations are at increased risk for breast and prostate cancer, and may also benefit from genetic counseling in certain circumstances [6]. In order to increase use of these services among Kansans, the *Kansas Cancer Prevention and Control Plan 2012-2016* includes an objective to increase the percentage of adults with a family history of cancer who have discussed whether or not to receive genetic counseling [6].

In 2013, the Kansas Behavioral Risk Factor Surveillance System (BRFSS) implemented a state-added module comprised of three questions to assess family history related to breast, ovarian and colorectal cancer, and the prevalence of genetic counseling and testing for cancer among Kansas adults. This analysis assesses the prevalence of genetic counseling

and testing for cancer among Kansas adults with a family history of breast, ovarian, or colorectal cancer. Because genetic counseling and genetic testing for cancer should co-occur to address the medical and psychosocial implications of testing, we are also assessing the prevalence of genetic counseling among recipients of genetic testing for cancer.

## Objectives

1. To examine the prevalence of genetic counseling for cancer among Kansas women with a family history of breast, ovarian, or colorectal cancer and men with a family history of breast or colorectal cancer.
2. To examine the prevalence of genetic testing for cancer among Kansas women with a family history of breast, ovarian, or colorectal cancer and men with a family history of breast or colorectal cancer.
3. To examine the prevalence of genetic counseling for cancer among recipients of genetic testing for cancer in Kansas.

## Methods

Kansas BRFSS is an ongoing, annual, population-based random-digit-dial survey of non-institutionalized adults ages 18 years and older living in a private residence or college housing with landline or cell phone service in Kansas.

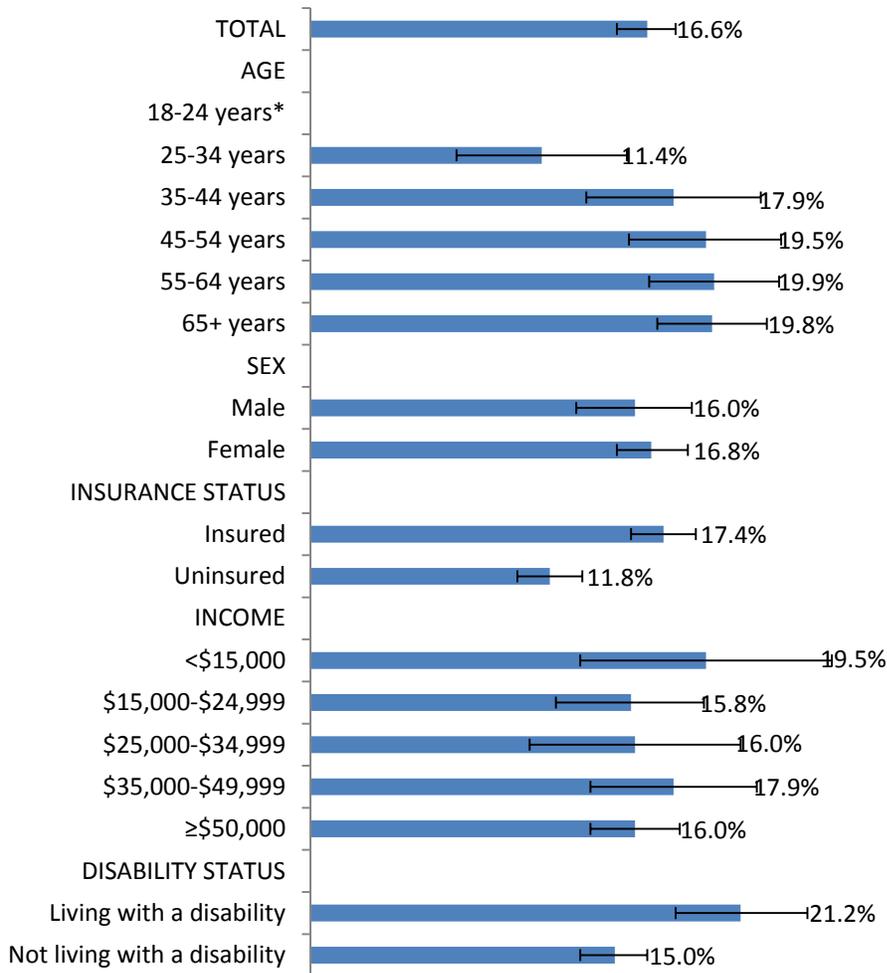
The 2013 Kansas BRFSS assessed family history of breast, ovarian, or colorectal cancer among Kansans ages 18 years and older with the question “Do you have a family history of [if female: breast, ovarian, or colorectal; if male: breast or colorectal] cancer? Include only blood relatives. Do not include adoptive or those related only by marriage.” Genetic counseling was assessed with the question “Have you ever received genetic counseling for cancer? This would include a conversation with an expert, a suitably trained health care provider, about your hereditary risk of cancer.” Genetic testing was assessed with the question “Have you ever had a blood or saliva test to determine your hereditary risk for cancer? A doctor or other health professional would have ordered this test and you would have received the results.”

Prevalence estimates and 95 percent confidence intervals were calculated using weighted survey data analysis procedures. Statistically significant differences in prevalence estimates across subpopulation groups were indicated by non-overlapping 95% confidence intervals. All analyses were conducted using SAS 9.3 software.

## Results

In 2013, an estimated 16.6 percent of Kansas adults with a family history of breast, ovarian or colorectal cancer reported ever receiving genetic counseling for cancer (Figure 1). Among these adults, the prevalence of genetic counseling was significantly higher among those with health insurance when compared with adults without insurance (17.4% [95% CI 15.8-19.0] and 11.8 [95% CI 8.0-15.5], respectively), and significantly higher among those living with a disability when compared with adults living without a disability (21.2% [95% CI 18.0-24.5] and 15.0% [95% CI 13.3-16.6], respectively).

Figure 1. Prevalence of Genetic Counseling for Cancer Among Adults with a Family History of Breast, Ovarian or Colorectal Cancer,<sup>†</sup> Kansas BRFSS 2013



An estimated 6.0 percent of Kansas adults with a family history of breast, ovarian or colorectal cancer reported ever receiving a genetic test to determine hereditary risk for cancer (Table 1). The prevalence of genetic testing did not vary significantly by any socio-demographic characteristics.

Table 1. Prevalence of Genetic Testing for Cancer Among Adults with a Family History of Breast, Ovarian or Colorectal Cancer<sup>†</sup>, Kansas BRFSS 2013

Subpopulation	Unweighted Frequency	Weighted Percentage	95% CI
Total	185	6.0	(4.9-7.0)
Age Group			
18-24	*	*	*
25-34	14	6.1	(2.4-9.7)
35-44	17	5.5	(2.7-8.2)
45-54	38	6.5	(4.3-8.8)
55-64	52	7.3	(5.1-9.5)
65+	60	5.7	(4.1-7.3)
Sex			
Male	57	6.1	(4.2-8.1)
Female	128	5.9	(4.7-7.1)
Health Insurance Status			
Insured	170	6.1	(5.0-7.2)
Uninsured	15	5.3	(2.3-8.2)
Income			
<\$15,000	21	8.7	(4.1-13.3)
\$15,000-\$24,999	21	5.9	(2.9-8.8)
\$25,000-\$34,999	18	8.1	(3.3-13)
\$35,000-\$49,999	24	4.6	(2.5-6.6)
≥\$50,000	78	5.4	(4.1-6.7)
Disability Status			
Living with a disability	60	7.2	(5.0-9.4)
Not living with a disability	124	5.5	(4.4-6.7)

Source: 2013 Kansas BRFSS, Bureau of Health Promotion, KDHE.

<sup>†</sup>For men: history of breast or colorectal cancer; For women: history of breast, ovarian, or colorectal cancer

\*Data suppressed due to small sample size

Among Kansas adults who reported ever receiving a genetic test for hereditary cancer risk, 41.4 percent also reported ever receiving genetic counseling (Table 2). The percent of genetic test recipients who also received genetic counseling was significantly higher among females when compared with males (55.6% [95% CI 47.1-64.0] and 31.2% [95% CI 23.6-38.8], respectively), and among those with a family history of breast, ovarian, or colorectal cancer compared with those without a family history (63.3% [95% CI 54.6-71.9] and 27.5% [95% CI 20.3-34.7], respectively).

Table 2. Prevalence of Adults Who Also Received Genetic Counseling among Those Who Received a Genetic Test for Hereditary Risk for Cancer, Kansas BRFSS 2013

Subpopulation	Unweighted Frequency	Weighted Percentage	95% CI
Total	193	41.4	(35.5-47.2)
Family History of Breast, Ovarian or Colorectal Cancer <sup>†</sup>			
Yes	122	63.3	(54.6-71.9)
No	70	27.5	(20.3-34.7)
Age			
18-24	*	*	*
25-34	11	34.0	(13.2-54.8)
35-44	15	38.0	(21.5-54.5)
45-54	42	45.6	(34.1-57.1)
55-64	52	41.4	(31.6-51.1)
65+	69	42.3	(33.5-51.2)
Sex			
Male	75	31.2	(23.6-38.8)
Female	118	55.6	(47.1-64.0)
Health Insurance Status			
Insured	179	43.6	(37.4-49.7)
Uninsured	14	28.8	(14.0-43.6)
Income			
<\$15,000	20	50.3	(31.5-69.0)
\$15,000-\$24,999	23	34.9	(18.5-51.2)
\$25,000-\$34,999	20	31.2	(14.9-47.6)
\$35,000-\$49,999	31	46.7	(33.0-60.4)
>=\$50,000	77	41.4	(33.1-49.8)
Disability Status			
Living with a disability	67	44.9	(35.5-54.3)
Not living with a disability	125	40.5	(33.3-47.6)

Source: 2013 Kansas BRFSS, Bureau of Health Promotion, KDHE.

<sup>†</sup>For men: history of breast or colorectal cancer; For women: history of breast, ovarian, or colorectal cancer

\*Data suppressed due to small sample size

## Discussion

The prevalence of genetic counseling for cancer among Kansas adults with a family history of breast, ovarian, or colorectal cancer was 16.6 percent and varied significantly by insurance and disability status. The prevalence of genetic testing among Kansas adults with a family history of breast, ovarian, or colorectal cancer was 6.0 percent and did not vary significantly by socio-demographic characteristics. Further, among all Kansas adults who ever received genetic testing for hereditary cancer risk, 41.4 percent also reported ever receiving genetic counseling.

This study is not without limitations. We were unable to assess the details of family history that would determine whether or not the respondent's family history of cancer matches Healthy People 2020 guidelines.

The low prevalence of genetic counseling for cancer among recipients of genetic testing for cancer may indicate a need to develop strategies to increase use of genetic counseling for cancer when individuals are tested in order to address the psychosocial and medical implications of testing. Our study found that genetic test recipients have a higher prevalence of genetic counseling for cancer when they have a family history of breast, ovarian, or colorectal cancer. Since genetic counseling is typically recommended when there is a family history of cancer [1], this suggests that genetic counseling is more common when testing according to Healthy People 2020 recommendations. Further investigation is warranted to identify the reasons for conducting genetic testing for cancer without providing genetic counseling, and to assess whether or not testing is being offered according to federal guidelines. Such investigation may identify barriers or opportunities to improve access to and appropriate use of genetic counseling for hereditary cancer risk prior to genetic testing.

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## Policy Notes

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The Kansas Department of Health and Environment (KDHE), along with its Kansas Health Matters Partners, makes available statistics and indicators based on a wide array of public health data analyses. These measures are provided through a number of web sites, [Kansas Health Matters](#), [Kansas Information for Communities](#), [the Kansas Behavioral Risk Factor Surveillance System Local Data System](#) and the [County Health Rankings and Roadmaps](#). In addition to these online tools, health data analytical results are available in reports and publications at [the KDHE web site](#). Most KDHE reports and analyses provide county level statistics. A directory of these resources is available through Kansas Health Matters. The directory, [Health Statistics and Resources for Kansas](#), is a 21-page compendium of sites and resources for analyses of Kansas health data.

One of the first steps in a community health assessment/community health improvement planning (CHA/CHIP) process is to collect and assess secondary health data for the community. These data play an important role in developing recommendations for public health policy, practices, and interventions: they provide an overview of the current health of a community, they empower communities to prioritize issues, and they are a component of the tracking and evaluation of the progress of the resulting CHIP.

Just having the data does not immediately translate into knowing how to use it. Communities involved in CHA/CHIP have performed their data gathering in a variety of ways. This is especially noteworthy. No two communities are alike, and each community has a different perspective on its health issues. Thus, there is no preferred way to use, interpret, and gather the data or how to prioritize the information.

There are a number of CHA approaches available online. While the Kansas Department of Health and Environment does not recommend one over the other, among the most popular are: [Mobilizing for Action through Planning and Partnerships](#) or MAPP from the National Association of County and City Health Officials, [Community Health Assessment and Group Evaluation](#) or CHANGE from the U.S. Centers for Disease Control and Prevention. The various approaches have been covered in technical assistance (TA) sessions provided by Kansas Health Matters partner Kansas Health Institute (KHI) and are available as a [KHM Resource](#).

In October, KHI announced the availability of accreditation readiness mini-grants. KHI has also established a TA network to provide focused assistance on CHA, CHIP, and strategic planning to address barriers to progress. See the [October Public Health Connections newsletter](#) for more details.

KDHE also provides support and technical assistance on health statistics and analyses to local health departments and hospitals involved in the CHA process, or the Community Health Needs Assessment process as it is known for hospitals. If you or your department have questions about specific public health statistics, indicators, or data prioritization, contact the Public Health Informatics group in the KDHE Bureau of Epidemiology and

Public Health Informatics at [kansas.health.statistics@kdheks.gov](mailto:kansas.health.statistics@kdheks.gov). Staff can answer questions, meet with community groups involved in health assessment, participate in conference calls about how to use the data, or supply additional information or statistics.

Greg Crawford  
Bureau of Epidemiology and Public Health Informatics

## Announcements

### 2013 Kansas Behavioral Risk Factors Surveillance System Survey Results

The Bureau of Health Promotion, Kansas Department of Health and Environment has released the 2013 Kansas Behavioral Risk Factor Surveillance System (BRFSS) state level survey results on the KS BRFSS website (<http://www.kdheks.gov/brfss/>).



Kansas BRFSS is an ongoing, annual, population-based random-digit-dial survey of non-institutionalized adults, ages 18 years and older, living in a private residence or college housing with landline and/or cell phone service in Kansas.

In 2013, Kansas BRFSS collected data on several diseases and health risk factors associated with leading causes of premature mortality and morbidity among adults, including but not limited to: diabetes, asthma, cardiovascular disease; and tobacco use, alcohol use, physical activity, diet, hypertension, vaccine and safety belt use. In addition, the 2013 Kansas BRFSS collected data on several unique topics, including but not limited to: cognitive impairment, genetic counseling, mental illness and stigma, parental attitude about vaccines, and radon awareness.

The Annual Kansas BRFSS Report highlighting health risk behaviors among Kansans, utilizing Healthy People 2020 leading health indicators as a gauge for Kansas progress, will be posted on the Kansas BRFSS website by the end of December 2014.

For questions please contact Jeanie Santaularia at [jsantaularia@kdheks.gov](mailto:jsantaularia@kdheks.gov)

### 2013 Annual Summary Released

The Bureau of Epidemiology and Public Health Informatics has posted the Annual Summary of Kansas Vital Statistics, 2013. The summary is available at <http://www.kdheks.gov/hci/annsumm.html>. The report, containing 82 tables and 41 figures, serves as a baseline to assess changes in health outcomes among Kansas residents.

Table 1. Selected Vital Events and Percent Change Kansas, 2013, 2012 and 1994

Vital Event	2013	2012	Percent Change 2012-2013	1994	Percent Change 1994-2013
Live Births	38,805	40,304	-3.7	37,269	4.1
Out-of-Wedlock Births	14,053	14,805	-5.1	9,653	45.6
Stillbirths	173	195	-11.3	231	-25.1
Hebdomadal Deaths	140	142	-1.4	140	0.0
Perinatal Period III Deaths	313	337	-7.1	371	-15.6
Neonatal Deaths	166	173	-4.0	177	-6.2
Infant Deaths	248	254	-2.4	285	-13.0
Maternal Deaths	10	4	150.0	2	400.0
Deaths	25,347	25,084	1.0	23,219	9.2
Marriages	17,328	18,154	-4.5	21,524	-19.5
Marriage Dissolutions	9,085	9,782	-7.1	11,659	-22.1
Abortions	3,765	3,802	-1.0	6,596	-42.9

Residence data are presented for births, deaths, abortions

Occurrence data are presented for marriages and marriage dissolutions

The number of infant deaths in 2013 decreased by six, to 248. The 2013 infant mortality rate, 6.4 infant deaths per 1,000 live births, is a 1.6 percent increase from a rate of 6.3 infant deaths per 1,000 live births in 2012.

Pregnancy-associated maternal deaths increased from 15 in 2012 to 25 in 2013.

There was a 15.6 percent decrease (505 deaths in 2012 to 426 deaths in 2013) in the number of Kansas resident suicides. The two age groups with the largest number of suicides were 45-54 (94 deaths) and 55-64 (76 deaths).

The number of Kansas resident deaths increased by 1.0 percent in 2013 (25,347 deaths). The 10 leading causes of death remained the same. Cancer, heart disease, and chronic lower respiratory diseases continued to be the top three leading causes of death. Unintentional injury deaths rose to the fourth leading cause, and cerebrovascular deaths took its place as the fifth leading cause. Tobacco use as reported on the death certificate contributed to almost one out of five deaths (23.8%). This is consistent with large-scale epidemiological studies that have estimated tobacco use to account for an estimated one in five deaths.

The 2013 birth rate is the lowest Kansas birth rate since 1912. The 38,805 births represent a 3.7 percent decrease from the 40,304 births in 2012. The birth rate decreased 4.3 percent, from 14.0 to 13.4 births per 1,000 population. Out of wedlock births, at 36.2 percent of all births, declined in 2013 for the third year in a row.

The state's teen pregnancy rates for women 15-17 and 18-19 remained better than the Healthy People 2020 targets. The AIDS/HIV age-adjusted mortality rate of 0.8 deaths per 100,000 population was markedly better than the Healthy People 2020 target of 3.3 deaths per 100,000 population. The state has also met the Healthy People 2020 targets for heart disease mortality and motor-vehicle crash but has not yet met the targets for cancer, unintentional falls, and cerebrovascular mortality.

No tables and figures in the Annual Summary were added or dropped from 2012 to 2013. Table and figure numbers remain unchanged from 2012. The cause of death code lists, previously included in several mortality tables, were moved to appendices to improve readability of the tables.

All statistical tables reporting county level information now include peer groups of counties, stratified by population density. Birth tables that report on gestation have been modified to reflect the establishment of a gestational age category called 'near term', which includes 37 and 38 weeks gestation. This will enable determination of near-term birth rates.

Bureau of Epidemiology and Public Health Informatics

## **KDHE Epidemiologists Publish on Adult Tobacco Survey Results**

Two KDHE epidemiologists collaborated on a Preventive Medicine Journal article, a profile of e-cigarette use and its relationship with cigarette quit attempts and abstinence in Kansas adults. Ericka Welsh and Trevor Christensen joined Babalola Faseru of the University of Kansas School of Medicine in authoring the article in the September 2014 issue.

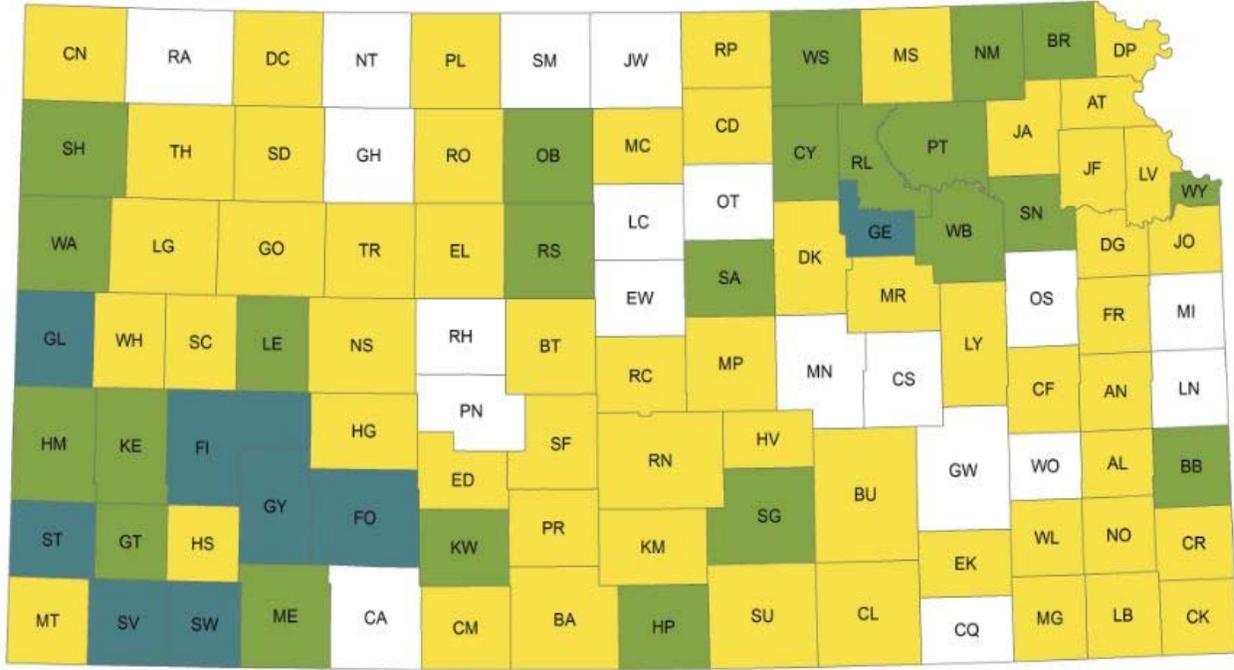
Their study aimed to describe electronic cigarette use in Kansas adults and its relationship with cigarette cessation. Using the 2012–2013 Kansas Adult Tobacco Survey (ATS), 9,656 non-institutionalized Kansas adults were contacted. The ATS was analyzed to create a profile of cigarette and e-cigarette users, and demonstrate associations between e-cigarette use and cigarette cessation attempts and cigarette abstinence.

In 2013, 45% of adult cigarette smokers had tried e-cigarettes and 14% had used e-cigarettes in the past month. The prevalence of current cigarette smoking was 76.5% among past-month e-cigarette users. Adults who only used e-cigarettes were younger and more affluent than adults who only smoked cigarettes. The prevalence of past-month e-cigarette use among smokers who made a quit attempt in the past year was more than double that of smokers who did not. E-cigarette use was negatively associated with past-month (aPOR = 0.21, 95% CI: 0.11–0.38) and past-year cigarette abstinence (aPOR = 0.14, 95% CI: 0.10–0.22).

The authors concluded E-cigarette use is common among cigarette smokers. E-cigarette use is more common among smokers who made a recent quit attempt, and many smokers report using smokeless tobacco or e-cigarettes to help quit. Recent cigarette abstinence, however, is negatively associated with e-cigarette use. The article is in PubMed at <http://www.ncbi.nlm.nih.gov/pubmed/25230365>.

## FastStats

### Birth Rates by County of Residence, 2013



#### Legend



Birth rates are calculated by dividing the total number of births in a year by the total population and expressing it as a rate per 1,000 population. In 2013 the resident birth rate for Kansas was 13.4. County birth rates ranged from 7.6 in Smith County to 27.5 in Geary County. Nineteen counties had birth rates less than 10.0 per 1,000 population. Eight counties, seven of which are in southwest Kansas, had birth rates of 17.0 per 1,000 population or higher.

Data Source – Kansas Annual Summary of Vital Statistics, 2013

# Kansas Health Statistics Report

The Public Health Informatics Unit (PHI) of the Kansas Department of Health and Environment's Bureau of Epidemiology and Public Health Informatics produces *Kansas Health Statistics Report* to inform the public about availability and uses of health data. Material in this publication may be reproduced without permission; citation as to source, however, is appreciated. Send comments, questions, address changes and articles on health data intended for publication to: PHI, 1000 SW Jackson, Suite 130 Topeka, KS, 66612-1354, [Kansas.Health.Statistics@kdheks.gov](mailto:Kansas.Health.Statistics@kdheks.gov), or 785-296-8627. Robert Moser, MD, Secretary KDHE; D. Charles Hunt, MPH, State Epidemiologist and Director, BEPHI; Elizabeth W. Saadi, PhD, State Registrar, Deputy Director, BEPHI; Greg Crawford, Editor.

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