

**Data Request for  
Kansas Immunization Program, KDHE**

**Data on flu shot or vaccination among pregnant women and  
non-pregnant women aged 18-44 years in Kansas**

**2015-2017 Kansas BRFSS**

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## **BACKGROUND**

Questions:

### **Pregnancy Question**

To your knowledge, are you now pregnant? (PREGNANT)

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

### **Immunization Question**

During the past 12 months, have you had either a flu shot or a flu vaccine that was sprayed in your nose?  
(FLUSHOT6)

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

## **Technical Notes**

### **95% Confidence Interval**

To account for sampling error and the accuracy of the estimate, a 95% confidence interval is calculated. A confidence interval gives an estimated range of values, which is likely to include an unknown population parameter, the estimated range being calculated from a given set of sample data. If independent samples are taken repeatedly from the same population, and a confidence interval calculated for each sample, then a certain percentage (confidence level) of the intervals will include the unknown population parameter.

Data results from the BRFSS survey are the estimate of actual population parameters. A 95% confidence interval is calculated for the estimate of an indicator obtained from the BRFSS sample, which is interpreted, as we are 95% confident that the interval contains the true population value of the indicator. The smaller the range between the lower limit and upper limit of the confidence interval, the more precise the estimated percentage is. In other words, the narrower the confidence interval, the better. BRFSS data produces highly reliable estimates and the interpretation of data is based on the application of 95% confidence intervals.

### **Data Years:**

Data results were obtained from combining three years of data (2015, 2016 and 2017) Kansas Behavioral Risk Factor Surveillance System.

### **Weighting of Information**

Weighting is a process by which the survey data are adjusted to account for unequal selection probability and response bias and to more accurately represent the population from which the sample was drawn to generate population-based estimates for the states. For this data analysis, the response of each person interviewed was assigned a weight, which accounted for the density stratum, the number of telephones in the household, the number of adults in the household, non-response, non-coverage of households without telephones and the demographic distribution of the population of Kansas. Since we were combining 2017, 2016 and 2015 years data and the sample sizes are different in 2016 than 2015 and 2017 we used a proportion to adjust the final weight for each year by a fraction of the total sample.

2015 factor to multiply times the final weight is  $23,236 / (23,236 + 12,188 + 21,843) = .406$

2016 factor to multiply times the final weight is  $12,188 / (23,282 + 13,743 + 23,236) = .213$

2017 factor to multiply times the final weight is  $21,843 / (23,282 + 13,743 + 23,236) = .381$

Sample sizes smaller than 50 respondents can provide unstable results and sample sizes below 25 should be considered highly unstable (subject to fluctuation depending on the sample draw). In the current analysis, the sample size is adequate; therefore, the issue of a small sample is not applicable here.

For more information on Survey Methodology, please visit the following links:

<http://www.kdheks.gov/brfss/newmethod.html>

<http://www.cdc.gov/surveillancepractice/reports/brfss/brfss.html>

## **Variables:**

### **Immunization:**

Percentage of pregnant women aged 18-44 years who had a flu shot or vaccination during the past 12 months

Percentage of non-pregnant women aged 18-44 years who had a flu shot or vaccination during the past 12 months

**Analysis and Interpretations:**

<b>Percentage of Pregnant and Non-Pregnant Women Aged 18-44 Years Who Had a Flu Shot or Vaccination During the Past 12 Months, 2015-2017 KS BRFSS</b>				
	<b>Unweighted Frequency</b>	<b>Weighted Percentage</b>	<b>Lower 95% Confidence Interval</b>	<b>Upper 95% Confidence Interval</b>
<b>Pregnant Women Aged 18-44 Years</b>	139	40.6%	34.3%	47.0%
<b>Non-pregnant Women Aged 18-44 Years</b>	2781	36.9%	35.5%	38.2%

Among women aged 18-44 years, excluding unknowns and refusals

Source: 2015-2017 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

**Interpretation:**

- 40.6% of pregnant women aged 18-44 years had a flu shot or vaccination during the past 12 months.
- 36.9% of non-pregnant women aged 18-44 years had a flu shot or vaccination during the past 12 months.