

A Cancer Center Designated by the
National Cancer Institute

Defining the Cancer Burden in the Cancer Center Catchment Area

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Columbus, Ohio - February 24, 2017

Topics Covered

- **Characteristics of the Markey Cancer Center Catchment Area**
- The Cancer Burden within the Markey Cancer Center Catchment Area
- Our Cancer Prevention and Control Program Infrastructure
- Combining Population-Based Registry Data with Other Sources of Data to Better Define the Burden of Cancer in the Cancer Center Catchment Area

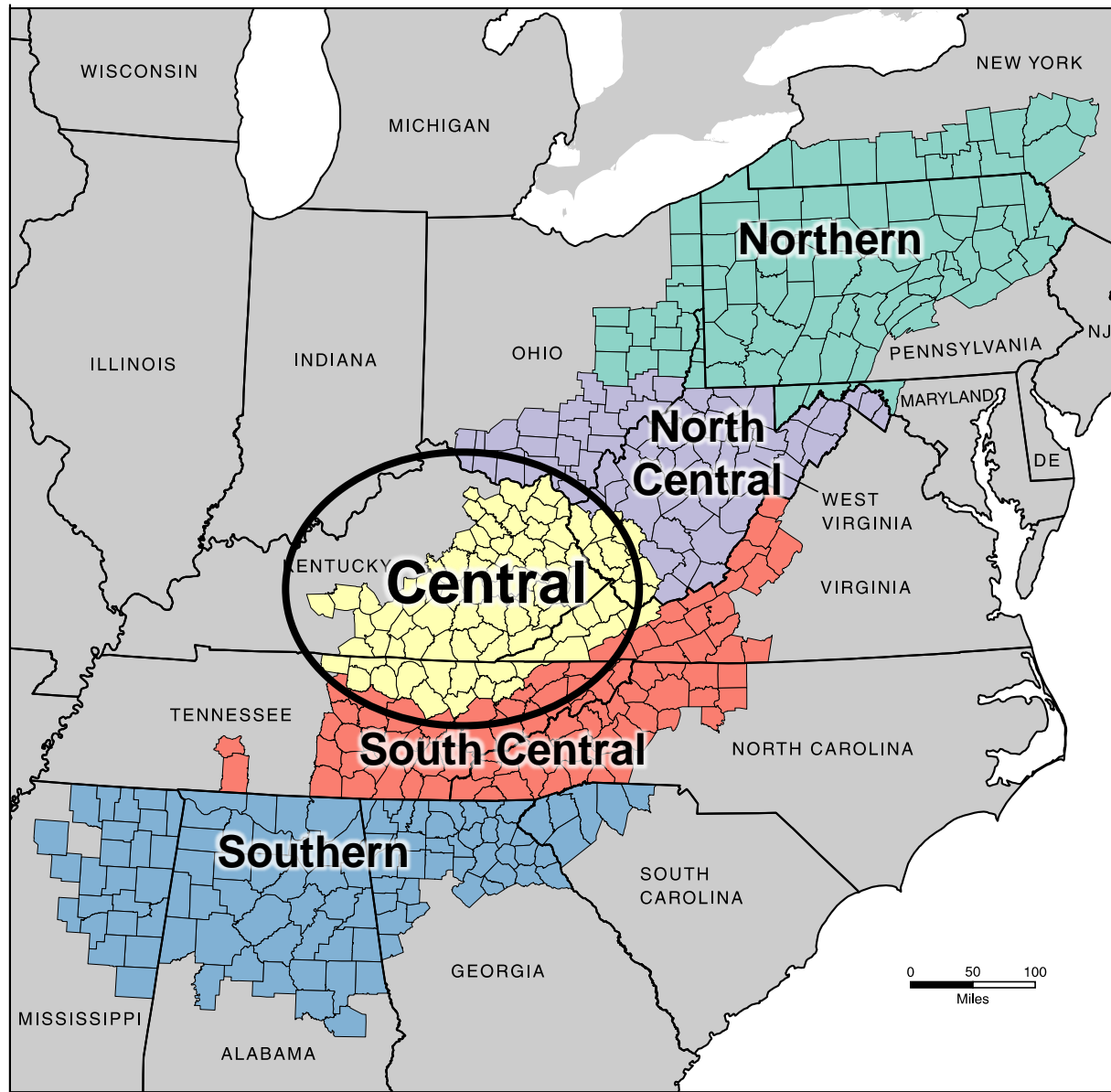
Characteristics of the Kentucky Population: The Markey Cancer Center (MCC) Catchment Area

Characteristic	Kentucky	United States
Population*	4,425,092	321,418,820
% White**	88.3	77.4
% African American**	8.2	13.2
% all Other Races**	3.2	9.4
% Below Poverty***	19.1	14.8
% Bachelor's Degree***	21.8	29.3
% Living in Rural Areas	41.0	18.3
% Living in Appalachia	26.7	NA
# of New Primary Cancers 2013	28,455	NA
* U.S. Census QuickFacts 2015 ** U.S. Census QuickFacts 2014 *** U.S. Census QuickFacts 2010-2014		

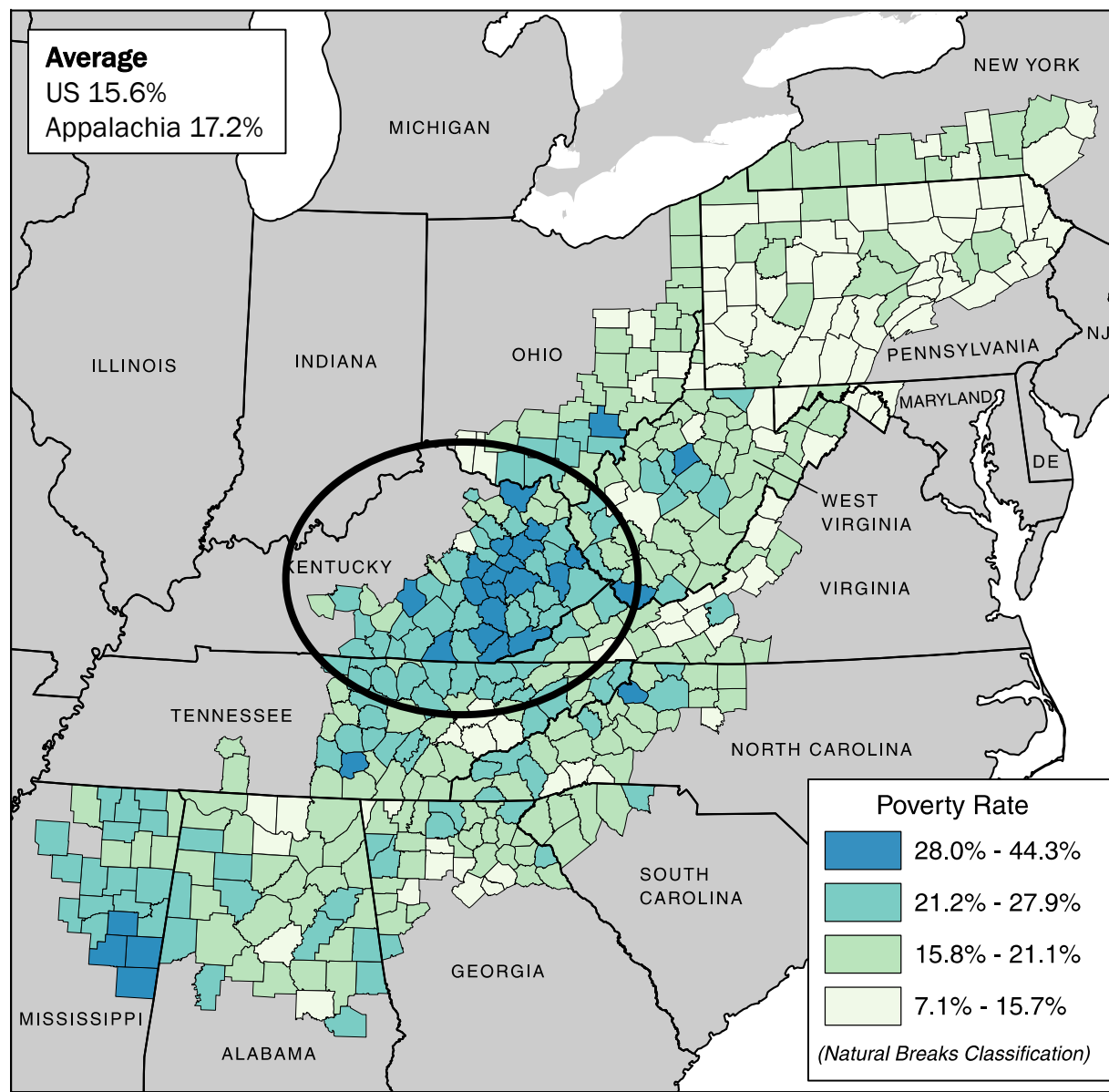
**In 1989, Dr. Samuel Broder, then the
Director of the National Cancer Institute,
made the following insightful and
provocative statement:**

“Poverty is a carcinogen”

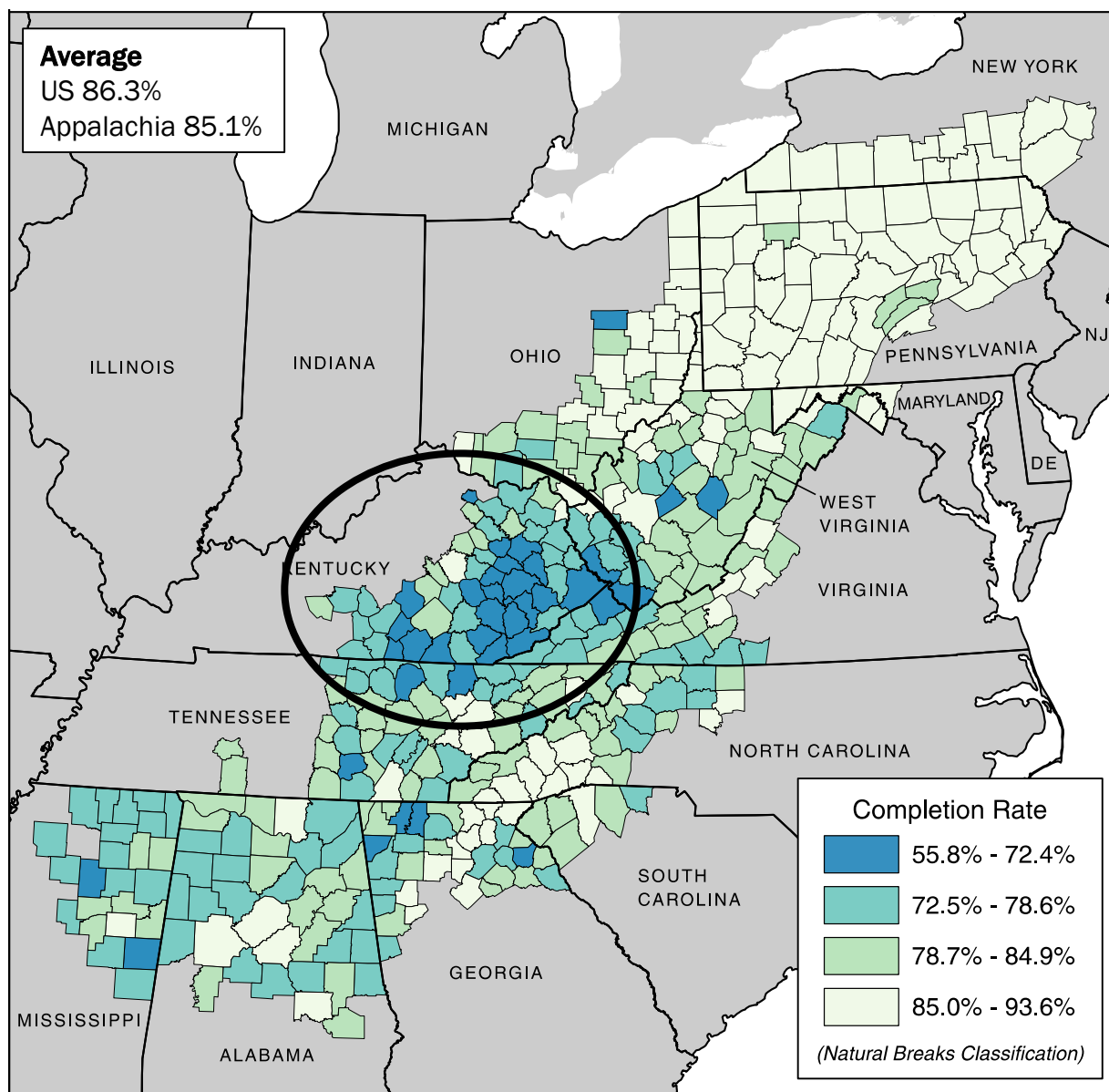
Appalachian Sub-regions



% Living Below Poverty Level (2010-2014)



% with a High School Diploma (2010-2014)



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Age-Adjusted Incidence and Mortality Rates (2009-2014)

U.S., Kentucky and Appalachian Kentucky Compared

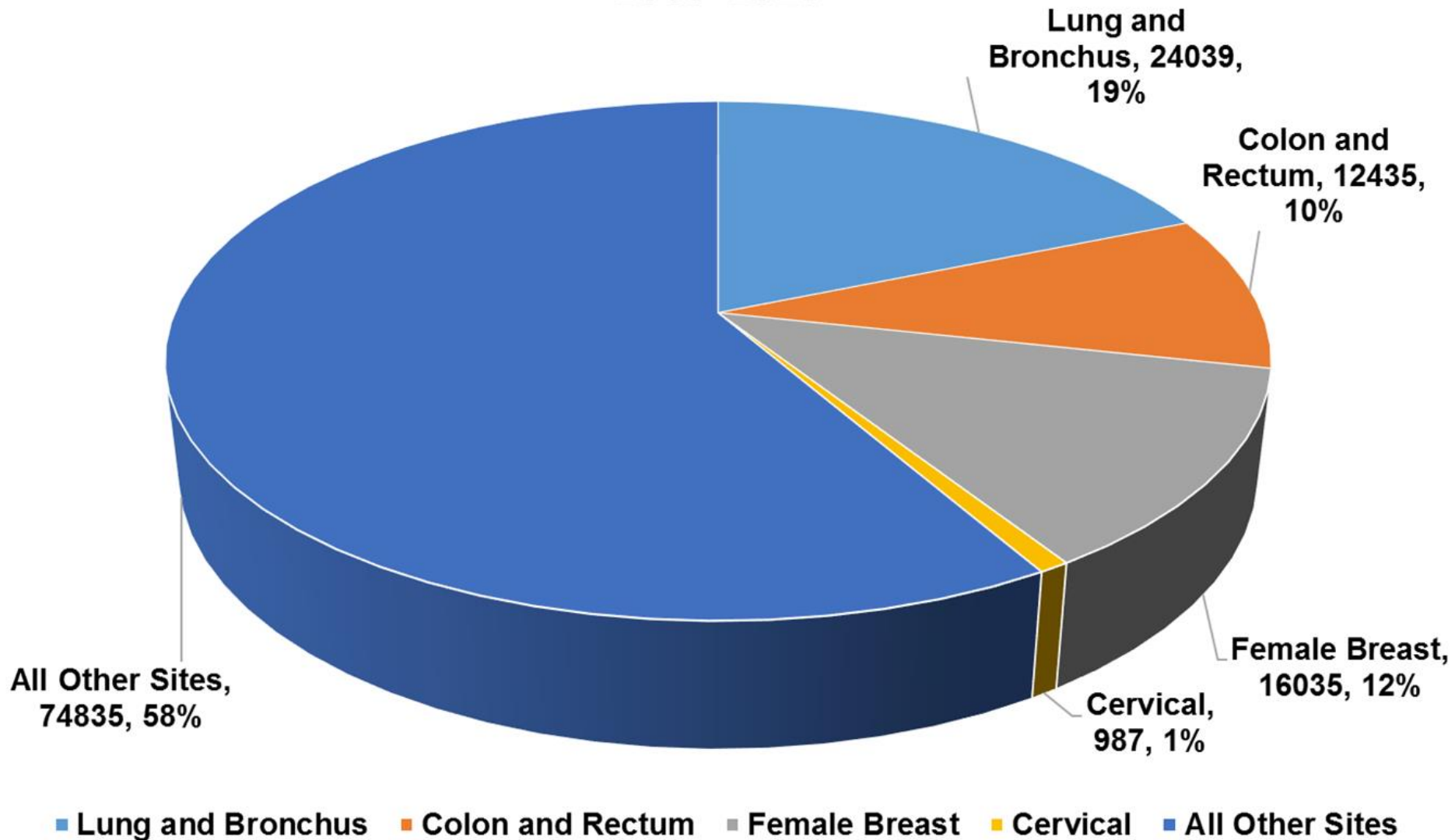
Incidence: U.S., Kentucky and Appalachian Kentucky

	All Cancers	Lung	Colorectal	Cervical	Breast
U.S.	456.7	62.5	40.6	7.6	123.4
Kentucky	520.9	96.4	50.8	8.7	122.2
Appalachian Kentucky	* 534.5	* 109.2	* 54.6	* 9.6	* 113.3 ↓
Source: CDC USCS Website (SEER & NPCR Combined) and Kentucky Cancer Registry (KCR). * = p<.05 vs Kentucky as a whole and the U.S.					

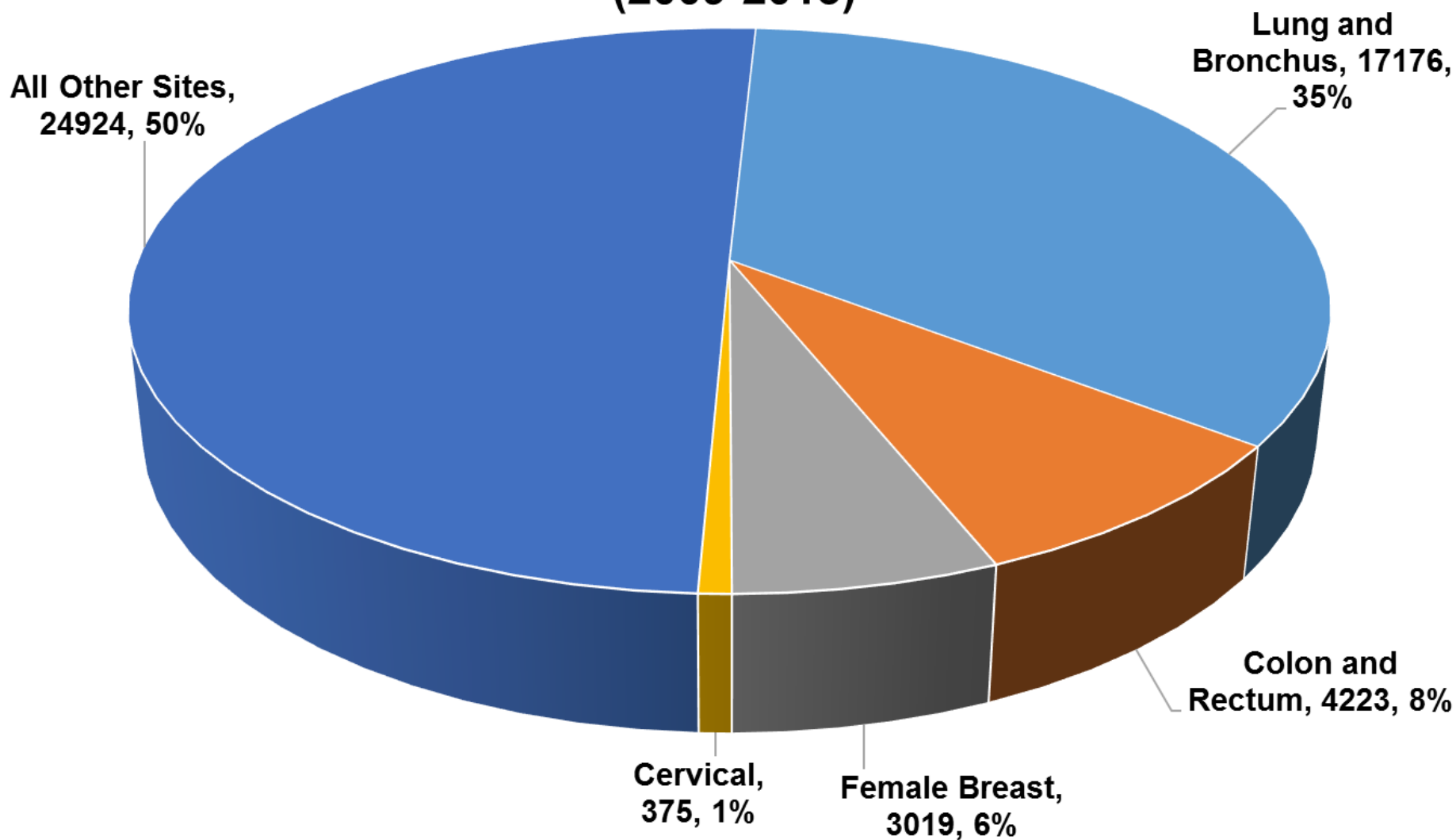
Mortality: U.S., Kentucky and Appalachian Kentucky

	All Cancers	Lung	Colorectal	Cervical	Breast
U.S.	168.5	46.0	15.1	2.3	21.5
Kentucky	201.0	69.5	17.6	3.0	22.2
Appalachian Kentucky	* 226.6	* 82.1	* 20.3	* 3.6	* 24.1 ↑
Source: CDC USCS Website (SEER & NPCR Combined) and Kentucky Cancer Registry (KCR). * = p<.05 vs Kentucky as a whole and the U.S.					

Lung, Colorectal, Breast and Cervical Cancers are **42% of
all Cancer Cases Diagnosed in Kentucky Annually
2009-2013**



Lung, Colorectal, Breast and Cervical Cancers are **50%** of all Cancer Deaths Occurring in Kentucky (2009-2013)



■ Lung and Bronchus ■ Colon and Rectum ■ Female Breast ■ Cervical ■ All Other Sites

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The MCC Model for Moving Evidence-based Cancer Research Findings into to the Population



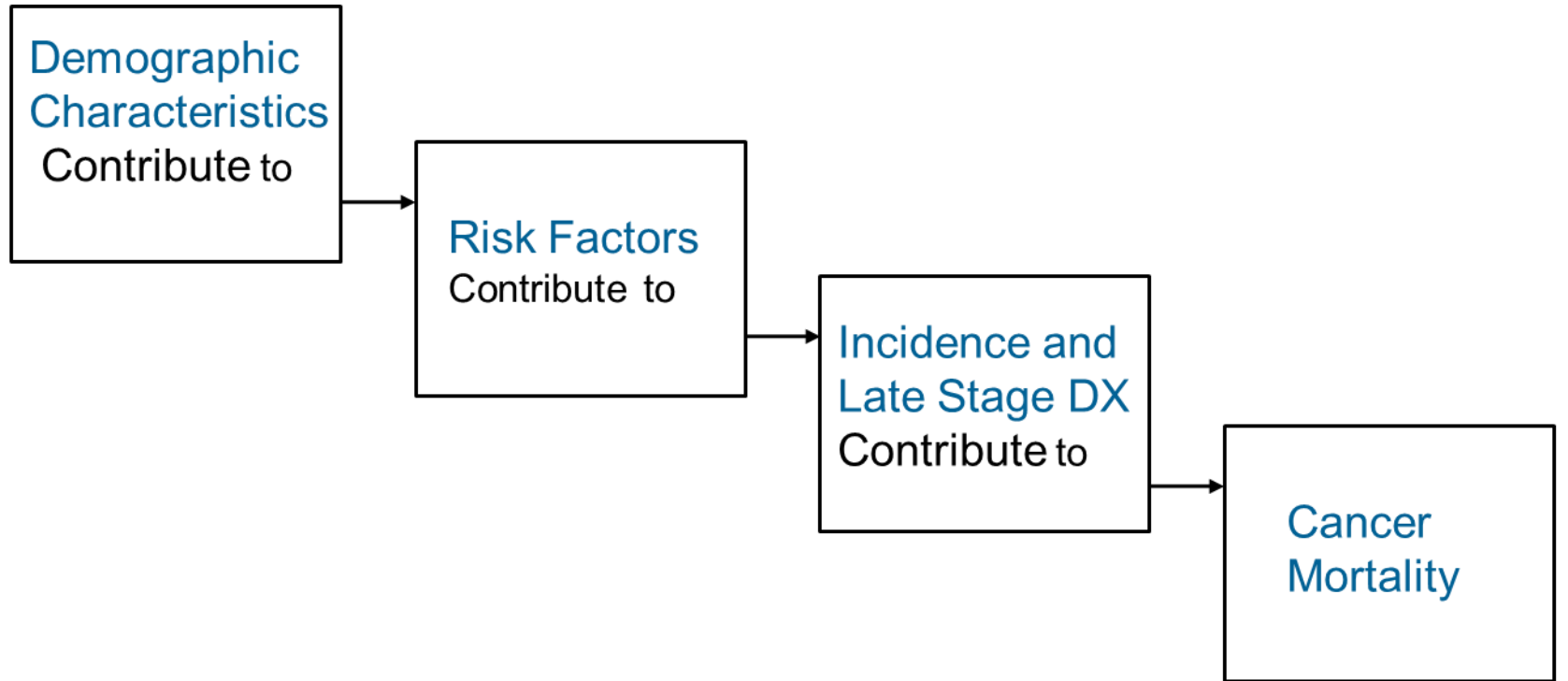
Lung Cancer by Area Development District in KY, 2005-2009

Area Development District	High School Education 2006-2010		Current Smokers 2001-2005		Age-Adjusted Incidence		Age-Adjusted Mortality		Overall Rank
	Percent	Rank	Percent	Rank	Rate	Rank	Rate	Rank	
Kentucky River	65.6	1	35.7	1	124.7	2	99.8	1	5
Big Sandy	69.0	3	35.5	2	131.7	1	96.2	2	8
Cumberland Valley	67.8	2	35.5	3	117.2	3	86.0	3	11
Gateway	73.7	6	32.0	6	102.1	6	79.9	4	22
Buffalo Trace	73.3	5	33.0	4	96.9	11	78.3	5	25
Barren River	78.6	8	31.8	7	105.8	4	78.0	6	25
Lake Cumberland	70.9	4	31.1	10	101.2	7	77.7	7	28
Fivco	78.2	7	32.5	5	99.9	8	71.0	10	30
Green River	83.0	11	30.3	11	105.0	5	76.1	8	35
Pennyrile	80.1	9	31.3	8	97.2	10	70.1	11	38
Lincoln Trail	82.7	10	31.1	9	96.3	12	66.4	15	46
Purchase	83.0	12	28.5	14	97.7	9	69.4	12	47
Northern Kentucky	86.4	15	29.0	12	96.2	13	71.4	9	49
Kipda	86.4	14	28.6	13	94.9	14	66.6	14	55
Bluegrass	84.7	13	28.2	15	92.6	15	68.0	13	56

Topics Covered

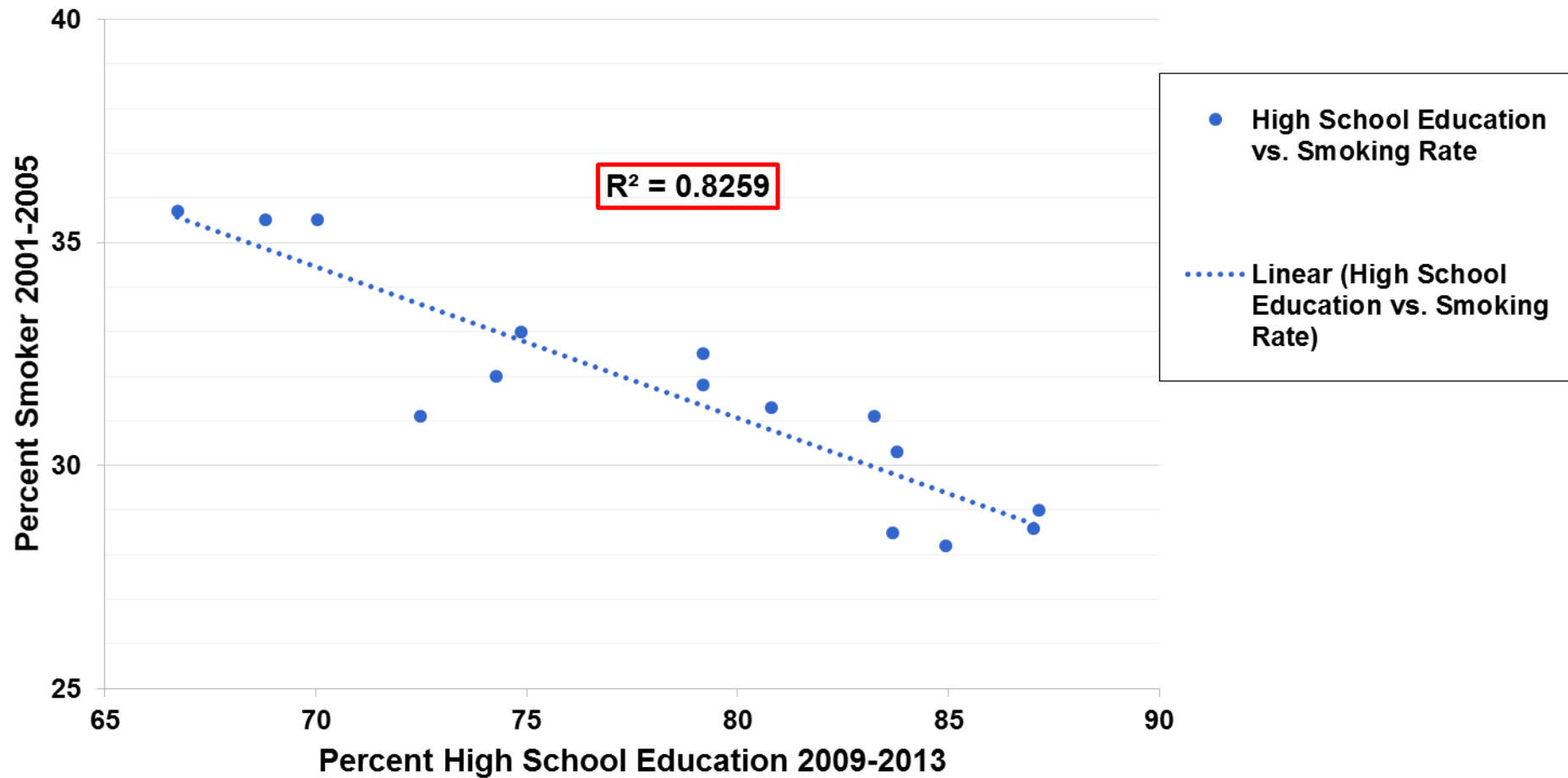
- Characteristics of the Markey Cancer Center Catchment Area
- The Cancer Burden in the Markey Cancer Center Catchment Area
- Our Cancer Prevention and Control Program Infrastructure
- **Combining Population-Based Registry Data with Other Sources of Data to Better Define the Burden of Cancer in the Cancer Center Catchment Area**

Combining Data from Multiple Sources of Data to Define the Burden of Cancer

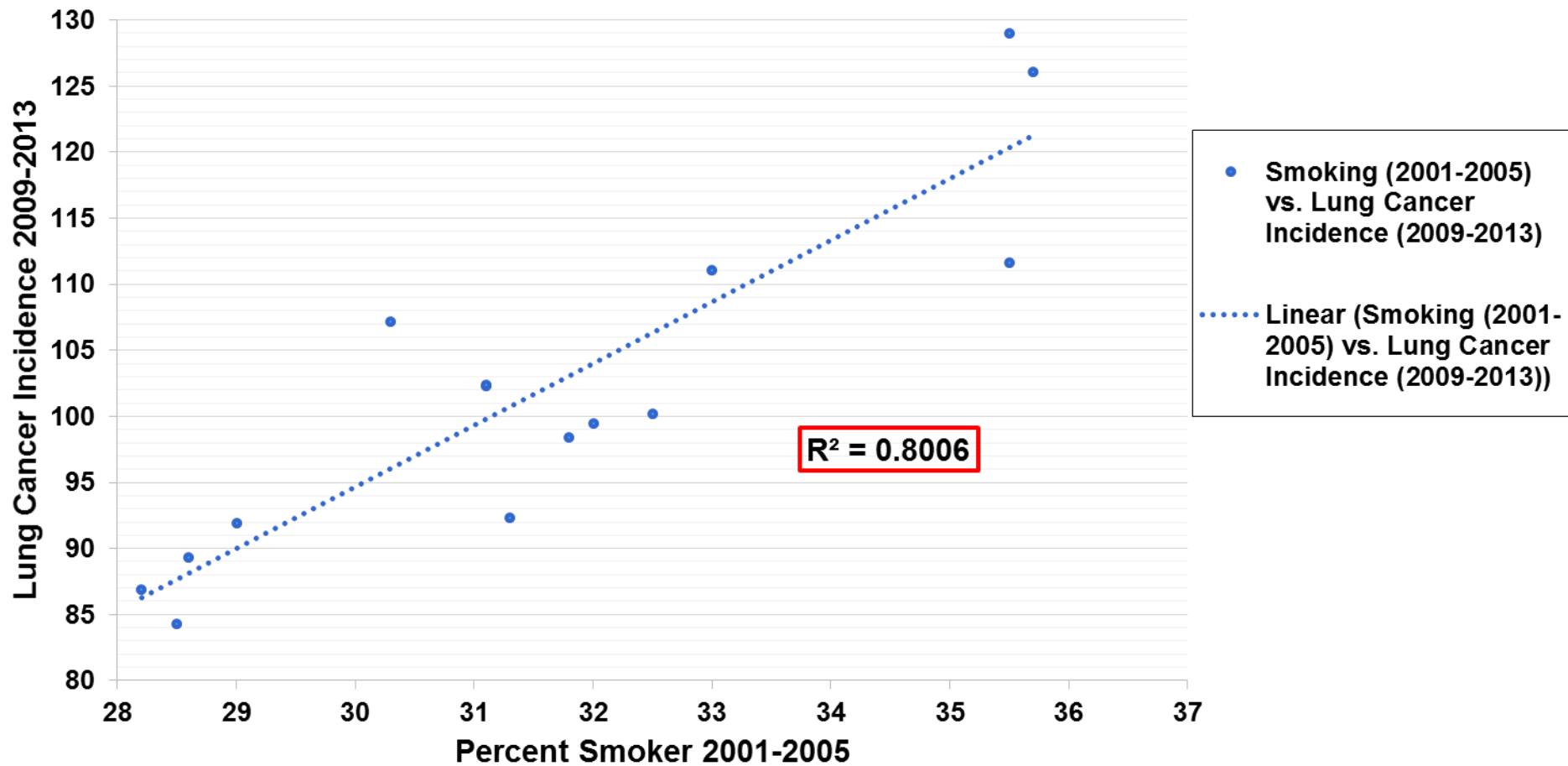


Logic Model

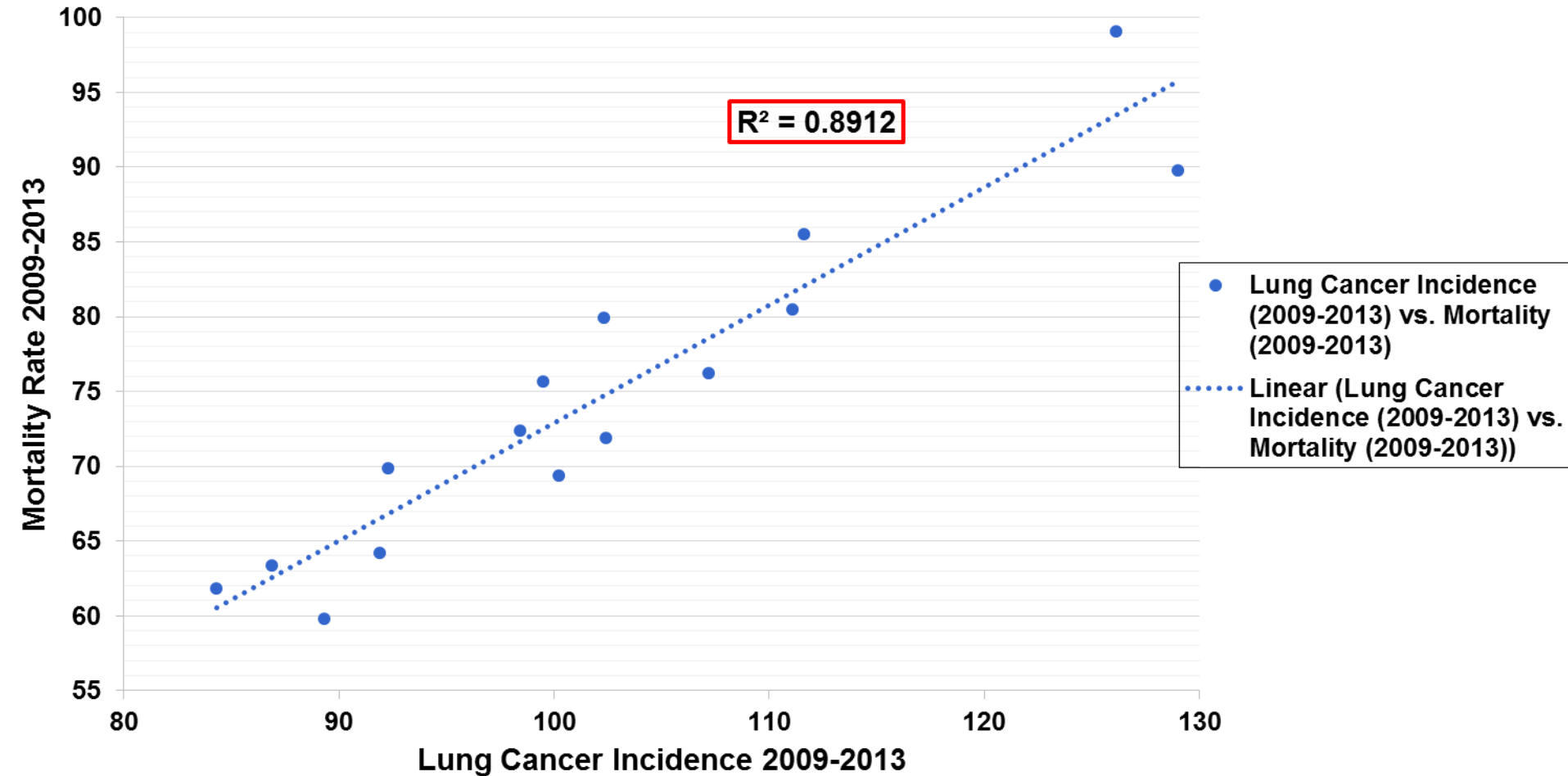
High School Education (2009-2013) vs. Smoking Rate (2001-2005)



Smoking (2001-2005) vs. Lung Cancer Incidence (2009-2013)



Lung Cancer Incidence (2009-2013) vs. Mortality (2009-2013)



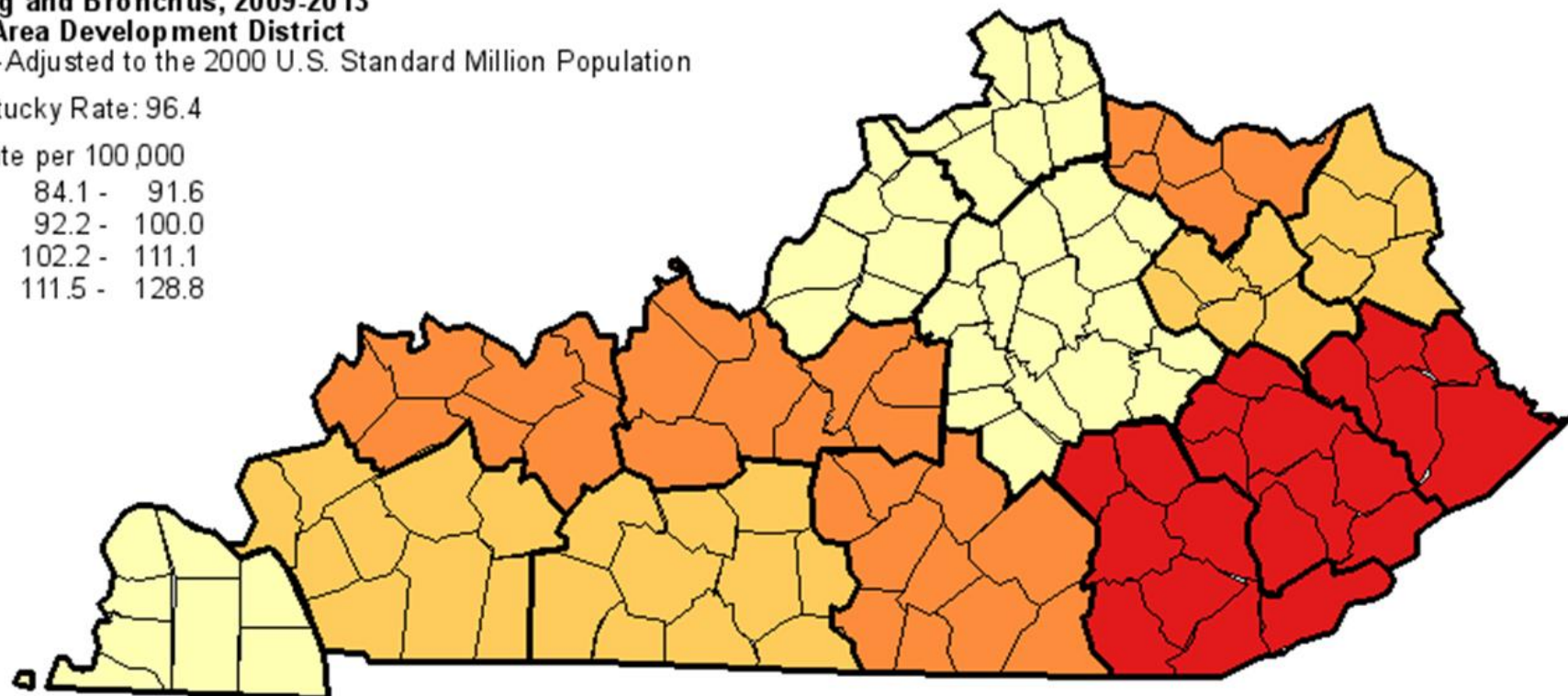
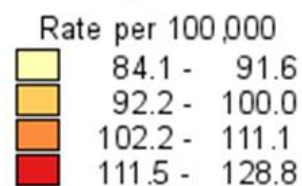
Lung Cancer by Area Development District in KY, 2009-2013

Area Development District	High School Education 2009-2013 ●		Current Smoker 2001-2005 ●		Age-Adjusted Incidence ●		Age-Adjusted Mortality ●		Overall Rank ●
	Percent	Rank	Percent	Rank	Rate	Rank	Rate	Rank	
Kentucky River	66.72	1	35.7	1	126.1	2	99.1	1	5
Big Sandy	70.03	3	35.5	2	129	1	89.8	2	8
Cumberland Valley	68.82	2	35.5	2	111.6	3	85.5	3	10
Buffalo Trace	74.88	6	33.0	4	111.1	4	80.5	4	18
Lake Cumberland	72.48	4	31.1	9	102.3	7	79.9	5	25
Gateway	74.28	5	32.0	6	99.5	9	75.7	7	27
Fivco	79.18	7	32.5	5	100.2	8	69.4	11	31
Barren River	79.19	8	31.8	7	98.4	10	72.4	8	33
Lincoln Trail	83.24	10	31.1	9	102.4	6	71.9	9	34
Green River	83.78	12	30.3	11	107.2	5	76.2	6	34
Pennyryle	80.81	9	31.3	8	92.3	11	69.9	10	38
Northern Kentucky	87.14	15	29.0	12	91.9	12	64.2	12	51
Purchase	83.67	11	28.5	14	84.3	15	61.8	14	54
Kipda	87.01	14	28.6	13	89.3	13	59.8	15	55
Bluegrass	84.93	13	28.2	15	86.9	14	63.4	13	55

**Age-Adjusted Invasive Cancer Incidence Rates in Kentucky
Lung and Bronchus, 2009-2013
By Area Development District**

Age-Adjusted to the 2000 U.S. Standard Million Population

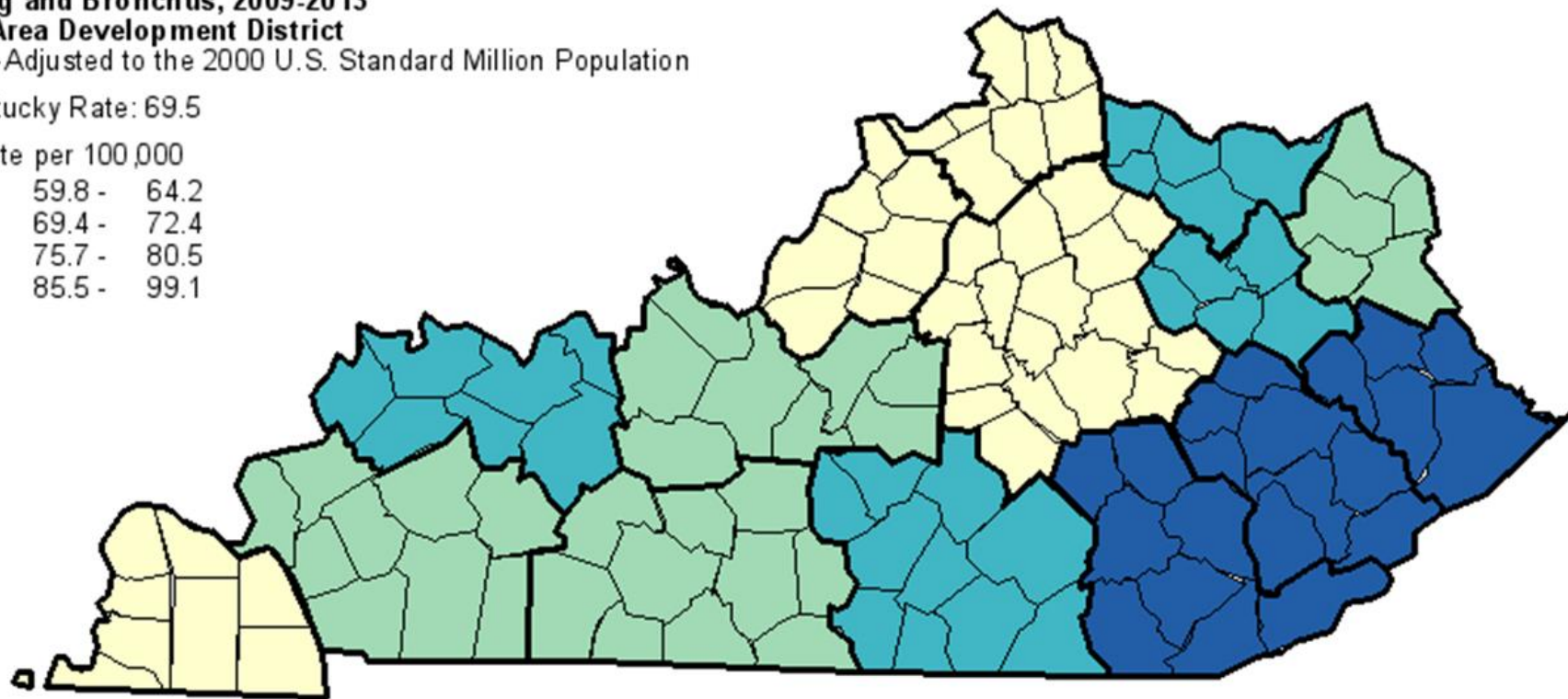
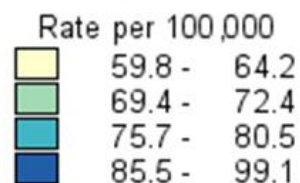
Kentucky Rate: 96.4



Data accessed July 18, 2016.
Based on data released Jan 2016.
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Age-Adjusted Cancer Mortality Rates in Kentucky
Lung and Bronchus, 2009-2013
By Area Development District
Age-Adjusted to the 2000 U.S. Standard Million Population

Kentucky Rate: 69.5

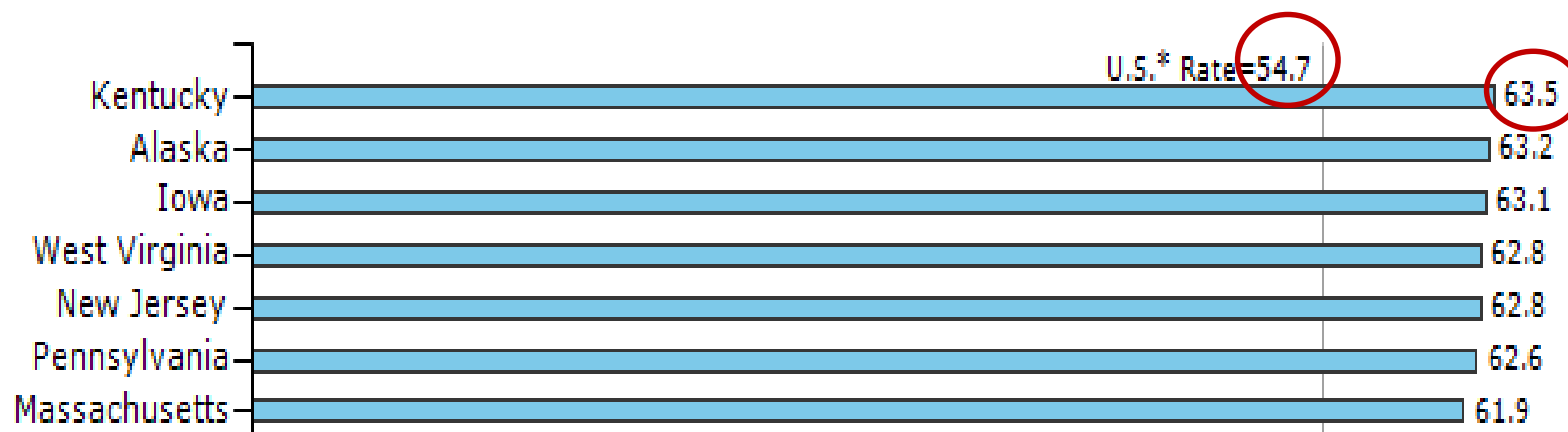


Data accessed July 18, 2016.
Based on data released Jun 2016.
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Example of Using this Approach to Focus Our Cancer Prevention and Control Efforts

In 2001, Kentucky had the highest colorectal cancer incidence rate in the U.S. compared to all of the other states

Rankings by State: 2001, Male and Female, Colon and Rectum

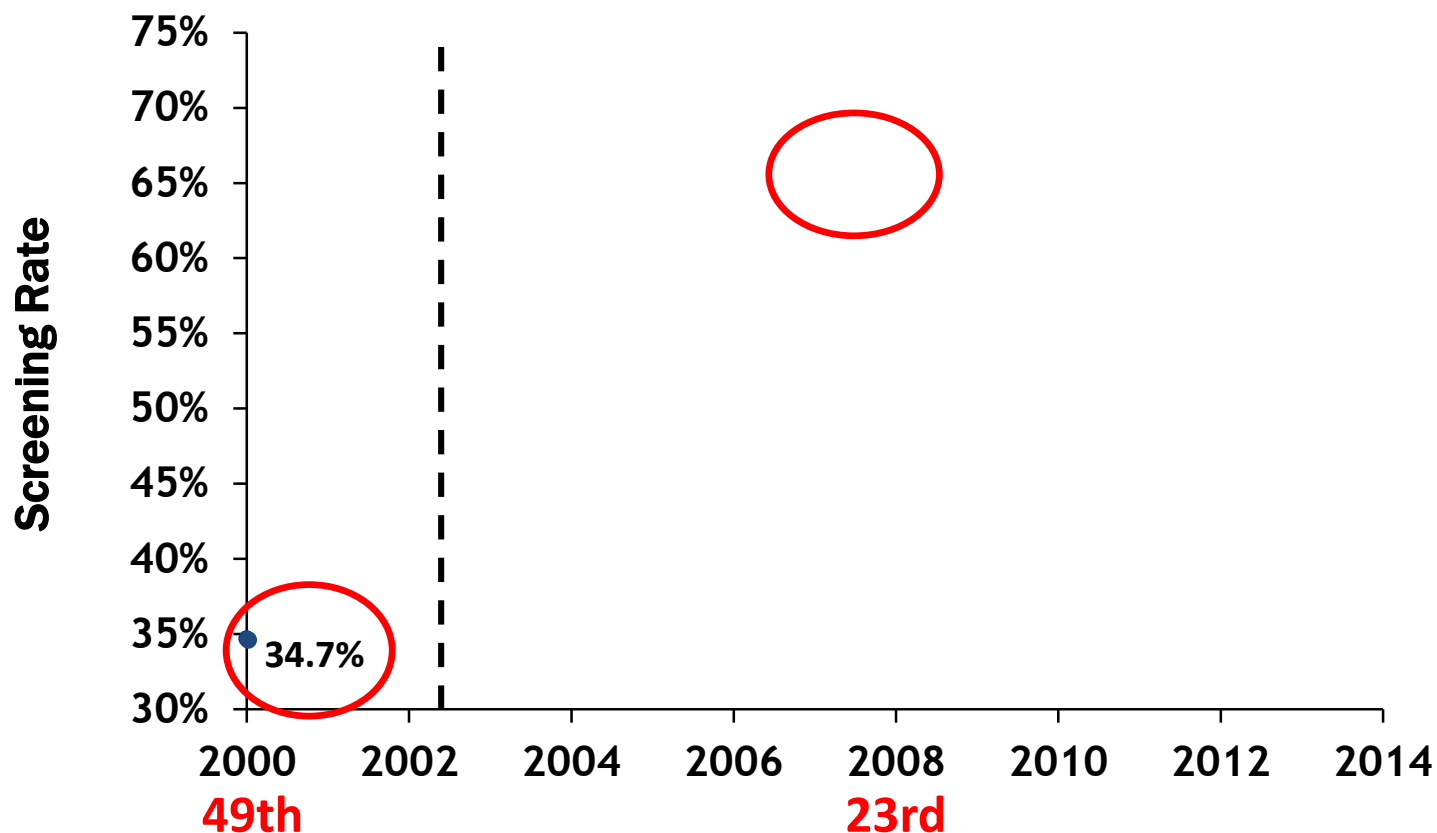


In 2001, it was also noted that Kentucky was ranked 49th in colorectal cancer screening compared to all other states, with the second to the lowest rate (34.7% of the age eligible population).

Using the process previously described, data about the burden of colorectal cancer were assembled and presented to both the Kentucky Cancer Consortium (KCC) and each of the 15 District Cancer Councils (DCCs). As a result:

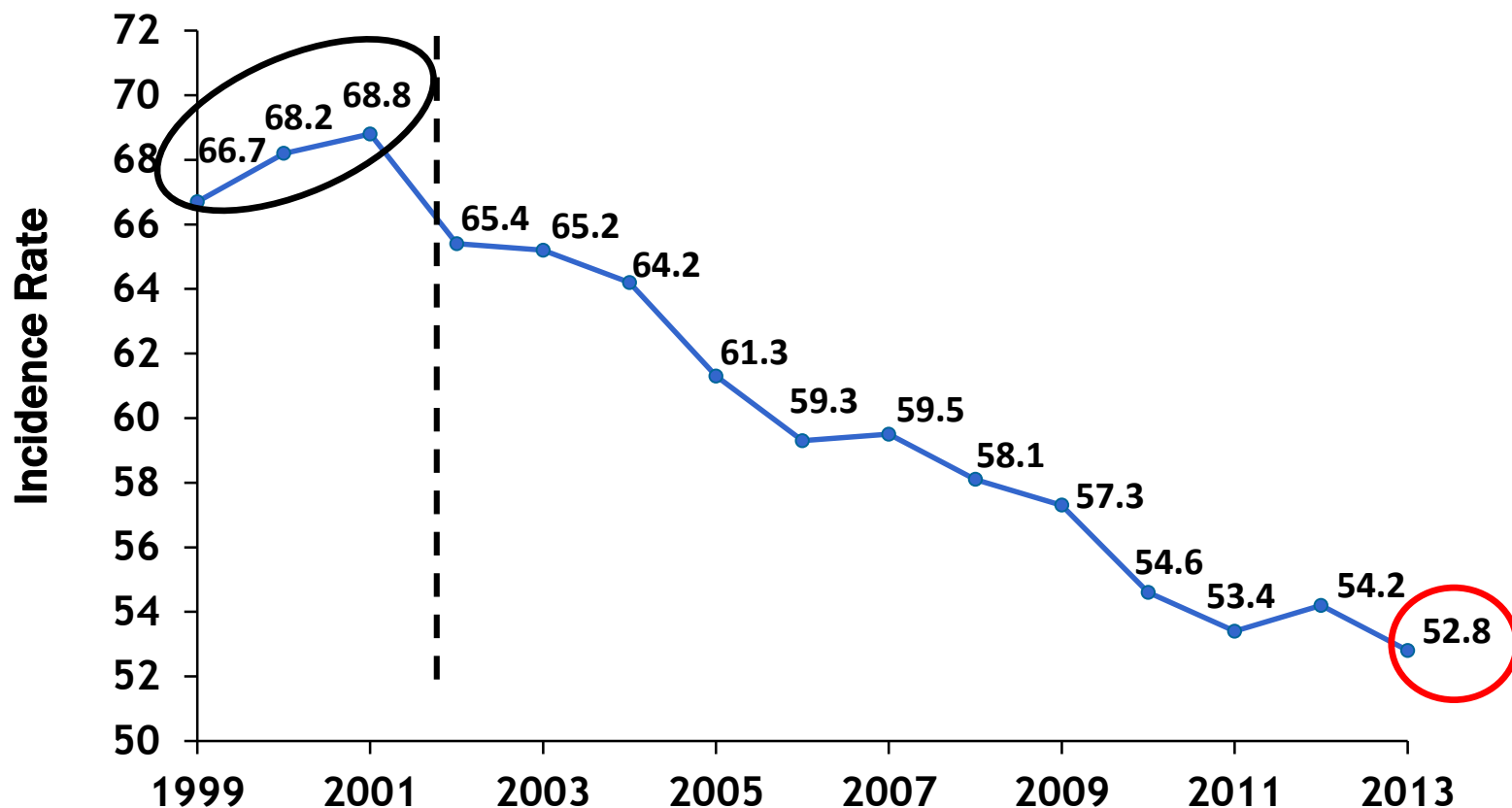
- 1. KCC used these data to convince policy makers to pass legislation requiring all health insurers to make screening colonoscopy a covered service.**
- 2. All of the DCCs implemented evidence based intervention programs aimed at increasing colorectal cancer screening.**

Colorectal Cancer Screening in Kentucky



Source: <http://cdc.gov/brfss>; Accessed June 2016.

Colorectal Cancer Incidence in Kentucky

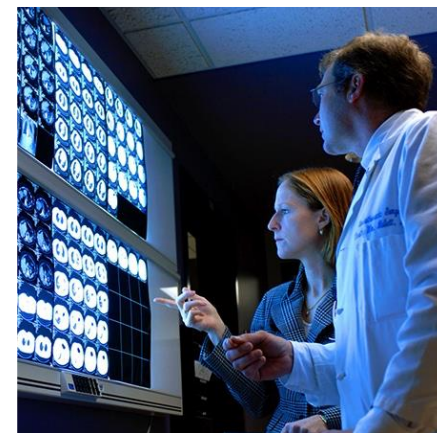


$P < .05$

Source: <http://www.kcr.uky.edu>; Accessed June 2016

A 24% reduction in colorectal cancer incidence and a 30% reduction in colorectal cancer mortality represent a significant public health success.

However, we are clearly not done. Over 30% of the age eligible Kentucky population have not been screened for colorectal cancer.



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Questions

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