


**The Burden of Lung Cancer  
in the Northeast Kentucky AHEC Region**

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Presented by:

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University of Kentucky



Northeast Kentucky AHEC  
St. Claire Regional Medical Center  
Lung Cancer & Smoking Cessation Symposium  
Morehead, KY–September 16, 2016, 2015

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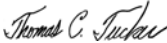
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**Disclaimer**

I have no affiliations or financial interests which should be disclosed and no off label products will be discussed as part of this presentation.



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**Topics to be Discussed**

- The association of poverty and literacy with risk behaviors (i.e. smoking)
- How poverty and literacy effect the cancer burden in the Northeast AHEC Region and the Appalachian area of KY
- The burden of lung cancer in the Northeast AHEC Region compared to Kentucky and the U.S.
- Trends in lung cancer Incidence and mortality, the Northeast AHEC compared to Kentucky
- Other considerations

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

**“Poverty is a carcinogen”**

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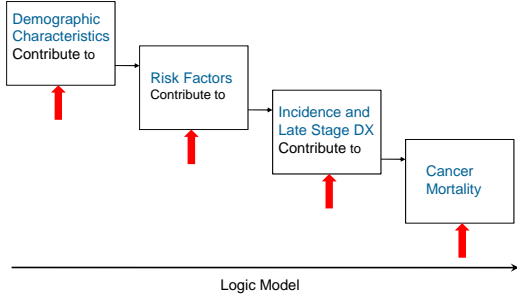
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### Logic Model for the Burden of Cancer



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### % Current Smokers by Level of Income U.S. Compared to Kentucky (2012)

Income Level	% of Population U.S.	% of Population Kentucky
Less than \$15,000	32.7	47.7
\$15,000- 24,999	27.3	37.7
\$25,000- 34,999	23.1	31.0
\$35,000- 49,999	20.1	23.1
\$50,000+	12.9	18.4

cdc.gov/brfss website. Prevalence and Trends Data, Accessed May12, 2014

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**% Current Smokers by Level of education  
U.S. Compared to Kentucky (2012)**

Education Level	% Smokers U.S.	% Smokers Kentucky
Less than H.S.	33.0	45.1
H.S. or G.E.D.	24.0	31.1
Some post-H.S.	19.6	25.3
College graduate	8.2	12.3

cdc.gov/brfss website. Prevalence and Trends Data, Accessed May12, 2014

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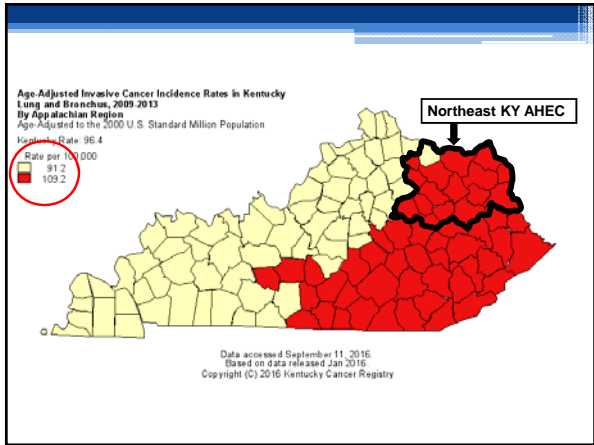
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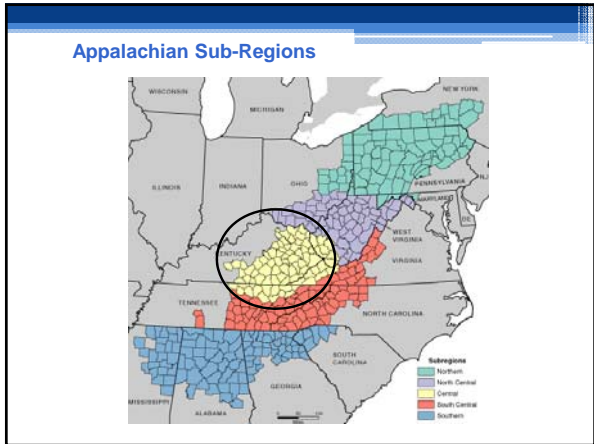
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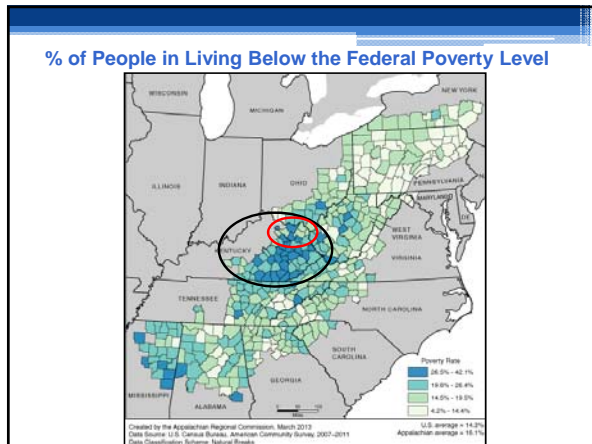
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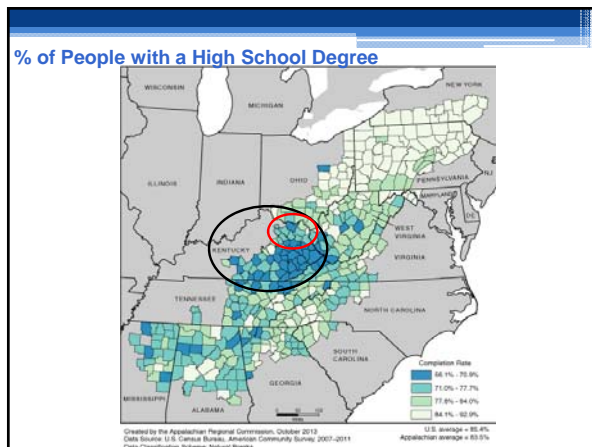
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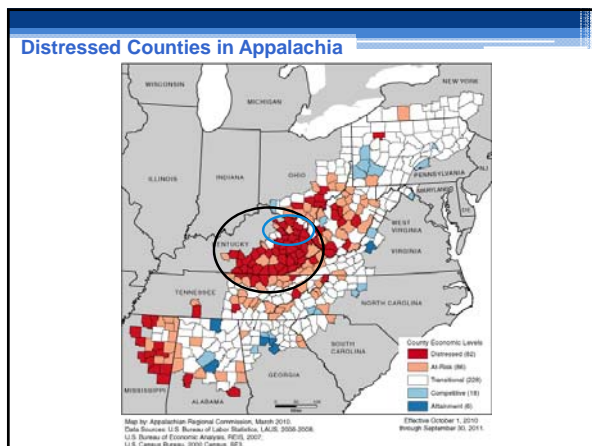
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### Age-Adjusted Incidence and Mortality Rates (2009-2013)

**Incidence: U.S., Kentucky, NE AHEC and Appalachian Kentucky**

	All Cancers	Lung
U.S.	439.0	59.4
Kentucky	520.9	96.4
Appalachian Kentucky	* 534.5	* 109.2

Source: CDC/USCS Database (SEER & NPCR Combined) and Kentucky Cancer Registry (KCR).  
\* = p<.05 vs Kentucky as a whole and the U.S.

**Mortality: U.S., Kentucky, NE AHEC and Appalachian Kentucky**

	All Cancers	Lung
U.S.	163.0	43.4
Kentucky	201.0	69.5
Appalachian Kentucky	* 226.6	* 82.1

Source: National Center for Health Statistics (NCHS) and KCR.  
\* = p<.05 vs Kentucky as a whole and the U.S.

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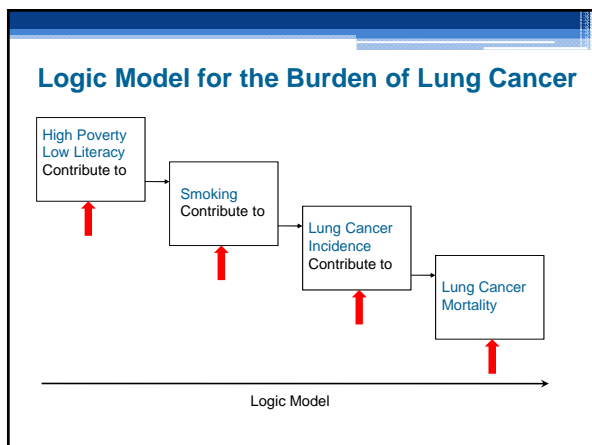
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### The Burden of Lung Cancer in the Northeast AHEC Region, Kentucky and the U.S.

	N.E. AHEC Region (17 KY Counties)	State of Kentucky	U.S.
→ Poverty	22.6%	18.8%	15.4%
→ Literacy	21.1%	17.0%	14.0%
→ Smoking	34.1%	26.5%	18.7%
→ Incidence	103.4	96.4	59.4
→ Mortality	74.4	69.5	43.4

\* Significantly higher than either Kentucky or the U.S. (P<.05)  
\* Significantly higher than the U.S. (P<.05)

Poverty: % living below the federal poverty level, U.S. Census Bureau (2009-2013)  
Literacy: % age 25+ with a high school diploma, U.S. Census Bureau (2009-2013)  
Smoking: % of Adult smokers in the Pop. (Prevalence Rate), CDC BRFSS (2006-2010)  
Incidence: Rate per 100,000 age adjusted to the U.S. 2000 Pop. KCR and CDC USCS (2009-2013)  
Mortality: Rate per 100,000 age adjusted to the U.S. 2000 Pop. KCR and CDC USCS (2009-2013)

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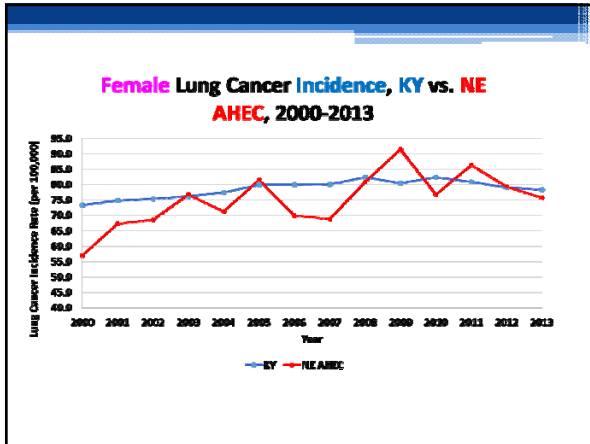
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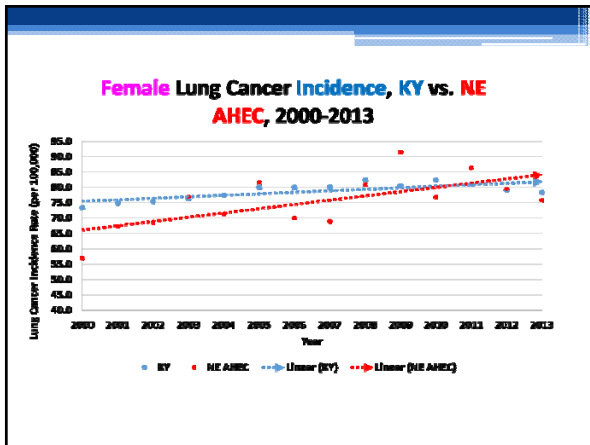
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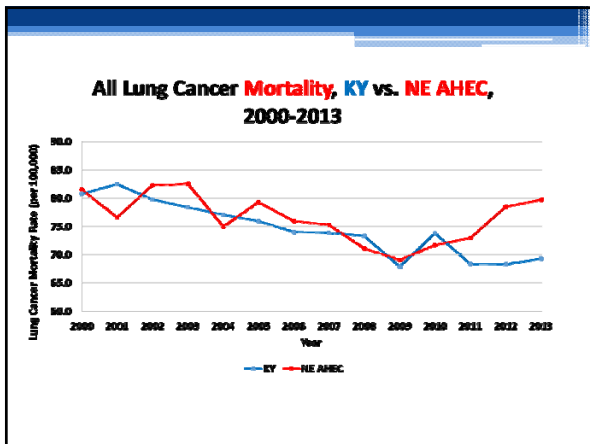
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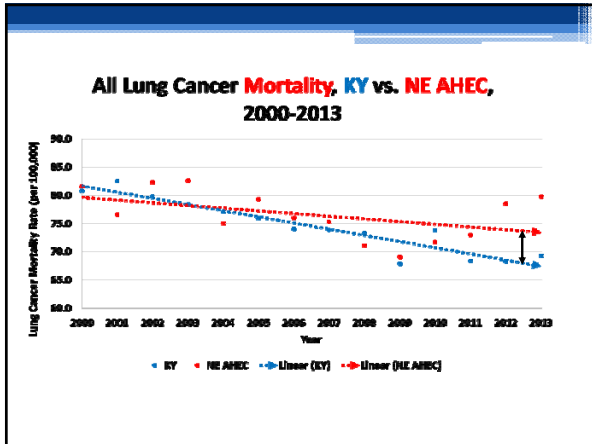
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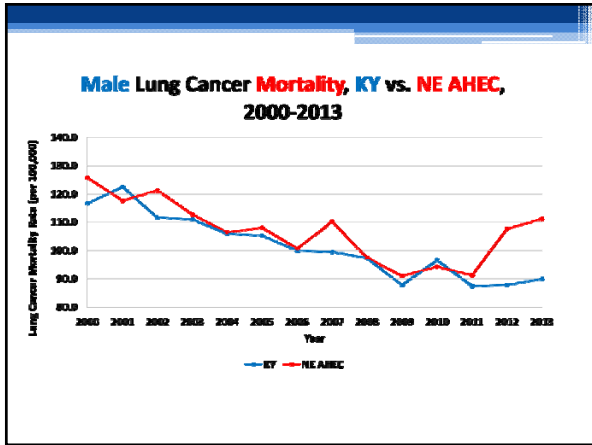
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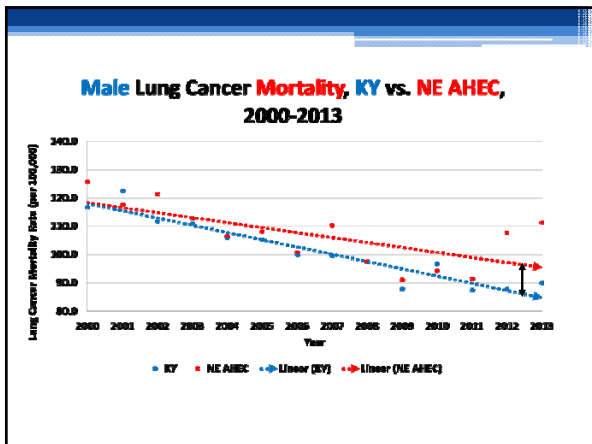
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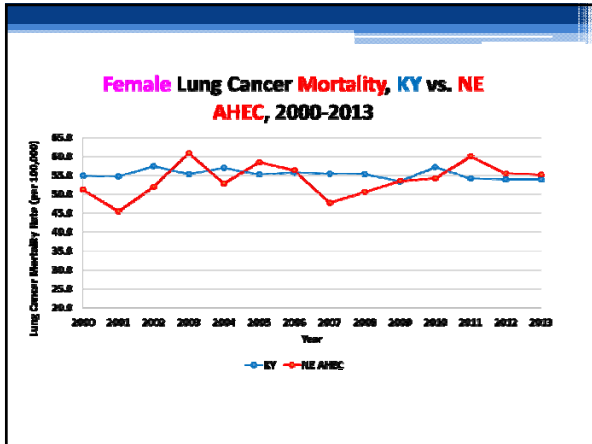
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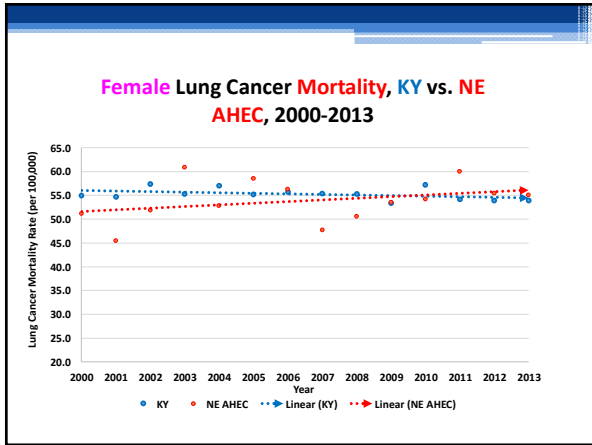
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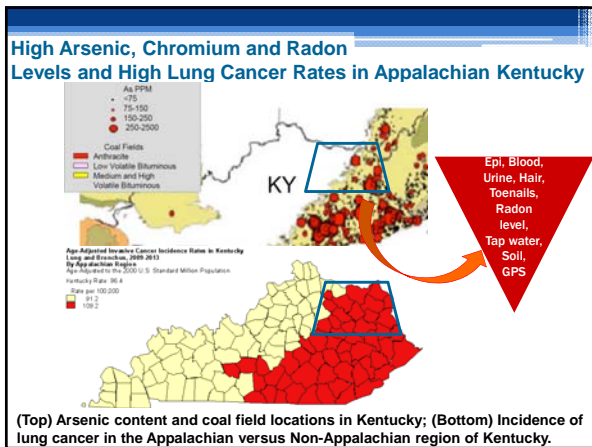
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**Summary and Conclusions**

- Higher rates of poverty and low educational attainment are associated with the high rates of lung cancer in the NE AHEC area.
- Males living in the NE AHEC area have significantly higher incidence and mortality rates compared to Kentucky males or U.S. males.
- Females living in the NE AHEC area have significantly higher incidence and mortality rates compared to the U.S. females. But, these rates are not significantly different compared to Kentucky females.
- Over the last 14 years, the lung cancer incidence rates have been trending down in Kentucky. But, the rates have been trending up in the NE AHEC area.
- Other factors such as exposure to arsenic or radon may be contributing the excessively high lung cancer incidence rates in the NE AHEC area.

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**Thank You!**



Contact Information:

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**Questions?**

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