

# Pathways to Health Equity in One of the Nation's Least Healthy Counties

Analyzing Cause of Death in Poinsett County, AR

# Learning Objectives

By the end of this presentation, participants will be able to:

1. State three facts about Poinsett County, AR that are relevant to public health.
2. Describe life expectancy in Poinsett County, AR compared to the U.S. as a whole.
3. Explain the impact of cause-specific (heart disease, cancer and accidents) and age-specific death rates on life expectancy in Poinsett County.
4. Discuss implications for health policy and planning.

# Learning objective 1

State three facts about Poinsett County, AR that are relevant to public health.

# Location and Demographic of Poinsett County

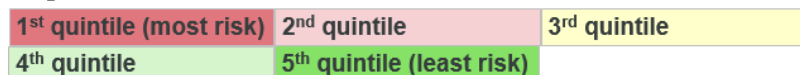


- Population = 24,583
- 87.2% non-Hispanic White
- 8.2% African American
- 2.9% Hispanic
- <1% Asian, Pacific Islander, American Indian
- 76% cropland

# Comparison of Health and Living Conditions – Poinsett and Benton Counties, 2008 – 2015

Indicator	Poinsett County	Benton County
Median household income (2011 – 2015)	\$33,070	\$56,239
People with less than 9th grade edu. (2011 – 2015)	10%	6%
Uninsured ages 18-64	14%	14%
Adults meeting moderate physical activity recommendation (2009)	37%	52%
Adult smokers (2015)	33%	18%
Adults reporting being obese (2015)	46%	26%
Adults reporting being overweight (2015)	31%	36%
Adults reporting coronary heart disease (2010)	6%	3%
Adults with diabetes (2015)	23%	8%
Adults with hypertension (2015)	56%	28%
Low birth weight births (2008 – 2014)	9%	7%
Teen suicide rate (2008-2013)	16 per 100,000	15 per 100,000
Travel time to work 60 minutes or more (2009-2013)	7%	2%

Legend\*:



\*Based on ranking of all counties in Arkansas

Source: Public Health in Arkansas' Communities Search

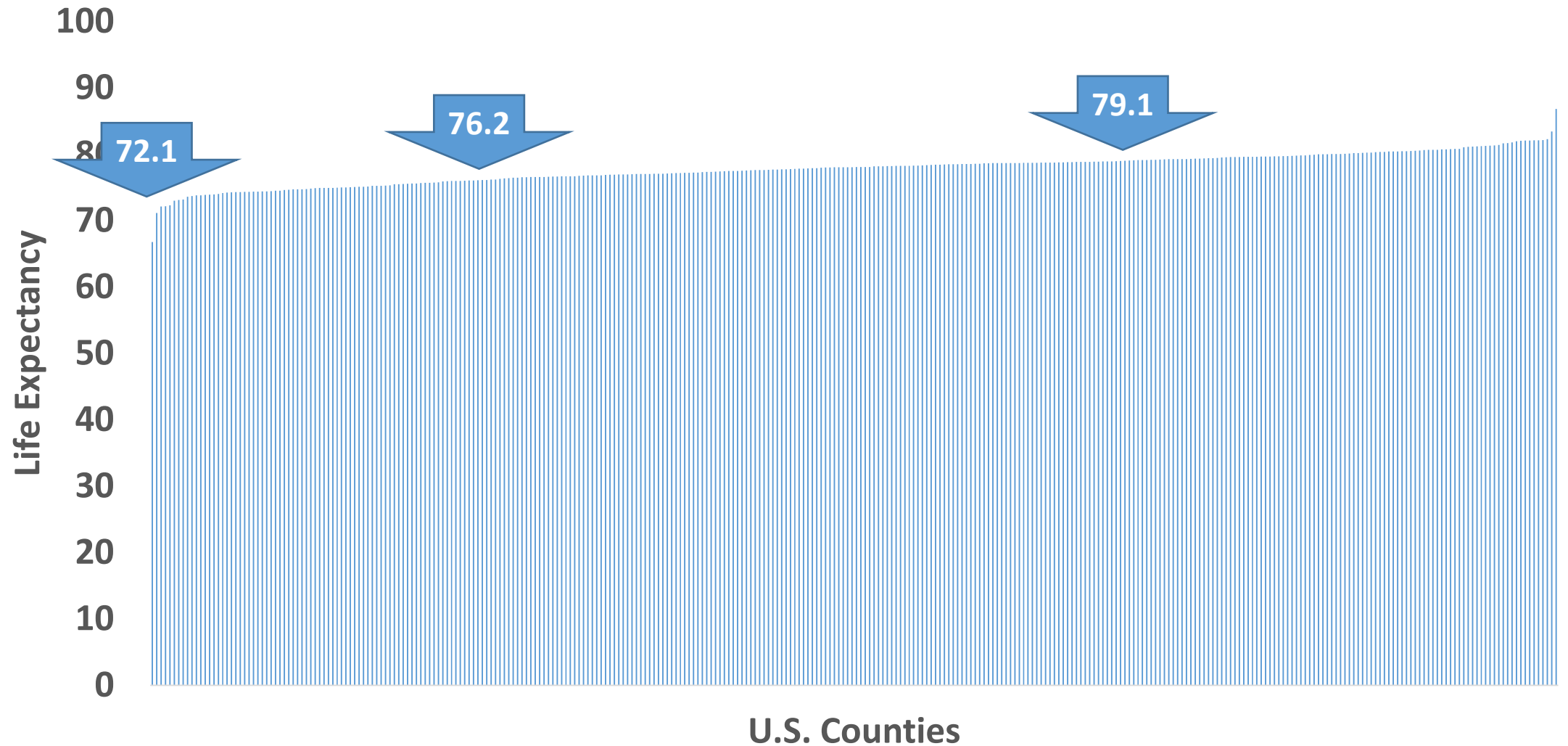
# Review: Learning objective 1

State three facts about Poinsett County, AR that are relevant to public health.

# Learning objective 2

Describe life expectancy in Poinsett County, AR compared to the U.S. as a whole.

# U.S. Life Expectancy by County - 2014





# Review: Learning objective 2

Describe life expectancy in Poinsett County, AR compared to the U.S. as a whole.

# Learning objective 3

Explain the impact of cause-specific (heart disease, cancer and accidents) and age-specific death rates on life expectancy in Poinsett County.

# Poinsett County Life Table

Abridged Life Table (0, 1 – 4, then 5-year age intervals to 90 +)						
Age Interval ID	Age at Start of Interval	Age Interval	Interval Width	Fraction of Last Age Interval Survived	Population Years at Risk	Number of Deaths in Interval
$i$	$x_i$	$x_i \leq X < x_{i+1}$	$n_i$	$a_i$	$P_i$	$D_i$
1	0	0	1.0	0.10	7,060	17
2	1	1 – 4	4.0	0.50	35,059	9
3	5	5 – 9	5.0	0.50	46,974	4
4	10	10 – 14	5.0	0.50	48,489	8
5	15	15 – 19	5.0	0.50	43,219	20
6	20	20 – 24	5.0	0.50	38,561	15
7	25	25 – 29	5.0	0.50	46,009	24
8	30	30 – 34	5.0	0.50	57,208	33

# Poinsett County Life Table

Public Health England			LIFE EXPECTANCY TEMPLATE																
Public Health England			LIFE TABLE																
Technical Notes			This sheet calculates life expectancy for a single area and shows every stage of the calculations. For multiple areas use <a href="#">the Batch Calculator</a> . Paste the numbers of deaths and the population years at risk for your area into columns H and G respectively.																
Abridged Life Table (0, 1 – 4, then 5-year age intervals to 90+)																			
Age Interval ID	Age at Start of Interval	Age Interval	Interval Width	Fraction of Last Age Interval Survived	Population Years at Risk	Number of Deaths in Interval	Death Rate in Interval	Probability of Dying in Interval	Number Alive at Start of Interval	Number Dying in Interval	Person-Years Lived in Interval	Person-Years Lived Beyond Start of Interval	Observed Life Expectancy at Start of Interval	Sample Variance of Proportion Surviving in Interval	Weighted Variance of Proportion Surviving in Interval	Sample Variance of Person-Years Lived Beyond Start of Interval	Sample Variance of Observed Life Expectancy at Start of Interval	95% Confidence Interval for Observed Life Expectancy at Start of Interval	
$i$	$x_j$	$x_j \leq x < x_{j+1}$	$n_j$	$a_j$	$P_j$	$D_j$	$M_j$	$q_j$	$l_j$	$d_j$	$L_j$	$T_j$	$e_j$	$S_{pi}^2$	Weighted $S_{pi}^2$	$S_{Tj}^2$	$S_{e_j}^2$	Lower	Upper
1	0	0	1.0	0.10	7,060	17	0.0024	0.0024	100,000	240	99,784	8,016,961	80.2	3.39E-07	21,824,251	213,281,744	0.02	79.9	80.5
2	1	1 – 4	4.0	0.50	35,059	9	0.0003	0.0010	99,760	102	398,834	7,917,177	79.4	1.17E-07	6,978,058	191,457,493	0.02	79.1	79.6
3	5	5 – 9	5.0	0.50	46,974	4	0.0001	0.0004	99,657	42	498,181	7,518,343	75.4	4.53E-08	2,394,739	184,479,435	0.02	75.2	75.7
4	10	10 – 14	5.0	0.50	48,489	8	0.0002	0.0008	99,615	82	497,869	7,020,162	70.5	8.49E-08	3,900,006	182,084,697	0.02	70.2	70.7
5	15	15 – 19	5.0	0.50	43,219	20	0.0005	0.0023	99,533	230	497,089	6,522,293	65.5	2.66E-07	10,535,025	178,184,691	0.02	65.3	65.8
6	20	20 – 24	5.0	0.50	38,561	15	0.0004	0.0019	99,303	193	496,031	6,025,204	60.7	2.51E-07	8,416,508	167,649,666	0.02	60.4	60.9
7	25	25 – 29	5.0	0.50	46,009	24	0.0005	0.0026	99,110	258	494,904	5,529,173	55.8	2.82E-07	7,906,135	159,233,158	0.02	55.5	56.0
8	30	30 – 34	5.0	0.50	57,208	33	0.0006	0.0029	98,852	285	493,546	5,034,269	50.9	2.51E-07	5,776,884	151,327,023	0.02	50.7	51.2
9	35	35 – 39	5.0	0.50	61,435	50	0.0008	0.0041	98,567	400	491,834	4,540,723	46.1	3.29E-07	6,107,535	145,550,139	0.01	45.8	46.3
10	40	40 – 44	5.0	0.50	55,601	71	0.0013	0.0064	98,167	625	489,271	4,048,889	41.2	5.67E-07	8,306,118	139,442,604	0.01	41.0	41.5
11	45	45 – 49	5.0	0.50	50,209	100	0.0020	0.0099	97,542	967	485,293	3,559,618	36.5	9.72E-07	10,903,215	131,136,486	0.01	36.3	36.7
12	50	50 – 54	5.0	0.50	56,416	163	0.0029	0.0143	96,575	1,385	479,414	3,074,325	31.8	1.24E-06	10,275,524	120,233,271	0.01	31.6	32.1
13	55	55 – 59	5.0	0.50	46,411	263	0.0057	0.0279	95,190	2,659	469,302	2,594,911	27.3	2.88E-06	16,960,414	109,957,747	0.01	27.0	27.5
14	60	60 – 64	5.0	0.50	39,820	304	0.0076	0.0375	92,531	3,466	453,989	2,125,609	23.0	4.44E-06	17,205,148	92,997,333	0.01	22.8	23.2
15	65	65 – 69	5.0	0.50	37,978	536	0.0141	0.0682	89,065	6,071	430,147	1,671,620	18.8	8.08E-06	19,529,579	75,792,185	0.01	18.6	19.0
16	70	70 – 74	5.0	0.50	37,039	872	0.0235	0.1112	82,994	9,226	391,904	1,241,472	15.0	1.26E-05	17,048,087	56,262,606	0.01	14.8	15.1
17	75	75 – 79	5.0	0.50	33,288	1,390	0.0418	0.1890	73,767	13,946	333,973	849,569	11.5	2.09E-05	14,027,408	39,214,519	0.01	11.4	11.7
18	80	80 – 84	5.0	0.50	23,306	1,605	0.0689	0.2938	59,822	17,573	255,176	515,595	8.6	3.80E-05	10,200,142	25,187,111	0.01	8.5	8.8
19	85	85 – 89	5.0	0.50	11,936	1,936	0.1622	0.5770	42,249	24,378	150,298	260,419	6.2	7.27E-05	9,742,460	14,986,969	0.01	6.0	6.3
20	90	90 +	12.3	0.50	11,936	1,937	0.1623	1.0000	17,871	17,871	110,121	110,121	6.2	1.14E-05	5,244,508	5,244,508	0.02	5.9	6.4

# Poinsett County Life Table

Area name	Deaths			
	20 – 24	25 – 29	30 – 34	...
Poinsett County 2008 - 2015 (All deaths)			33	

# Poinsett County Life Table

Area name	Deaths			
	20 – 24	25 – 29	30 – 34	...
Poinsett County 2008 - 2015 (All deaths)			33	
Poinsett County 2008 - 2015 Heart disease deaths (100%)			4	

# Poinsett County Life Table

Area name	Deaths			
	20 – 24	25 – 29	30 – 34	...
Poinsett County 2008 - 2015 (All deaths)			33	
<del>Poinsett County 2008 - 2015 Heart disease deaths (100%)</del>			<del>4</del>	

# Poinsett County Life Table

Area name	Deaths			
	20 – 24	25 – 29	30 – 34	...
Poinsett County 2008 - 2015 (All deaths)				
<del>Poinsett County 2008 - 2015 Heart disease deaths (100%)</del>			4	
Poinsett County 2008 - 2015 Heart disease deaths (-25%)			3	



# Poinsett County Life Table

Area name	Deaths			
	20 – 24	25 – 29	30 – 34	...
Poinsett County 2008 - 2015 (All deaths)			32	
<del>Poinsett County 2008 - 2015 Heart disease deaths (100%)</del>			<del>4</del>	
Poinsett County 2008 - 2015 Heart disease deaths (-25%)			3	

# Poinsett County Life Table

Area name	Deaths			
	20 – 24	25 – 29	30 – 34	...
Poinsett County 2008 - 2015 (All deaths)			32	
<del>Poinsett County 2008 - 2015 Heart disease deaths (100%)</del>			4	
<del>Poinsett County 2008 - 2015 Heart disease deaths (-25%)</del>			3	

# Poinsett County Life Table

Area name	Deaths			
	20 – 24	25 – 29	30 – 34	...
Poinsett County 2008 - 2015 (All deaths)				
<del>Poinsett County 2008 - 2015 Heart disease deaths (100%)</del>			4	
<del>Poinsett County 2008 - 2015 Heart disease deaths (-25%)</del>			3	
Poinsett County 2008 - 2015 Heart disease deaths (-50%)			2	

# Poinsett County Life Table

Area name	Deaths			
	20 – 24	25 – 29	30 – 34	...
Poinsett County 2008 - 2015 (All deaths)			31	
<del>Poinsett County 2008 - 2015 Heart disease deaths (100%)</del>			4	
<del>Poinsett County 2008 - 2015 Heart disease deaths (-25%)</del>			3	
Poinsett County 2008 - 2015 Heart disease deaths (-50%)			2	

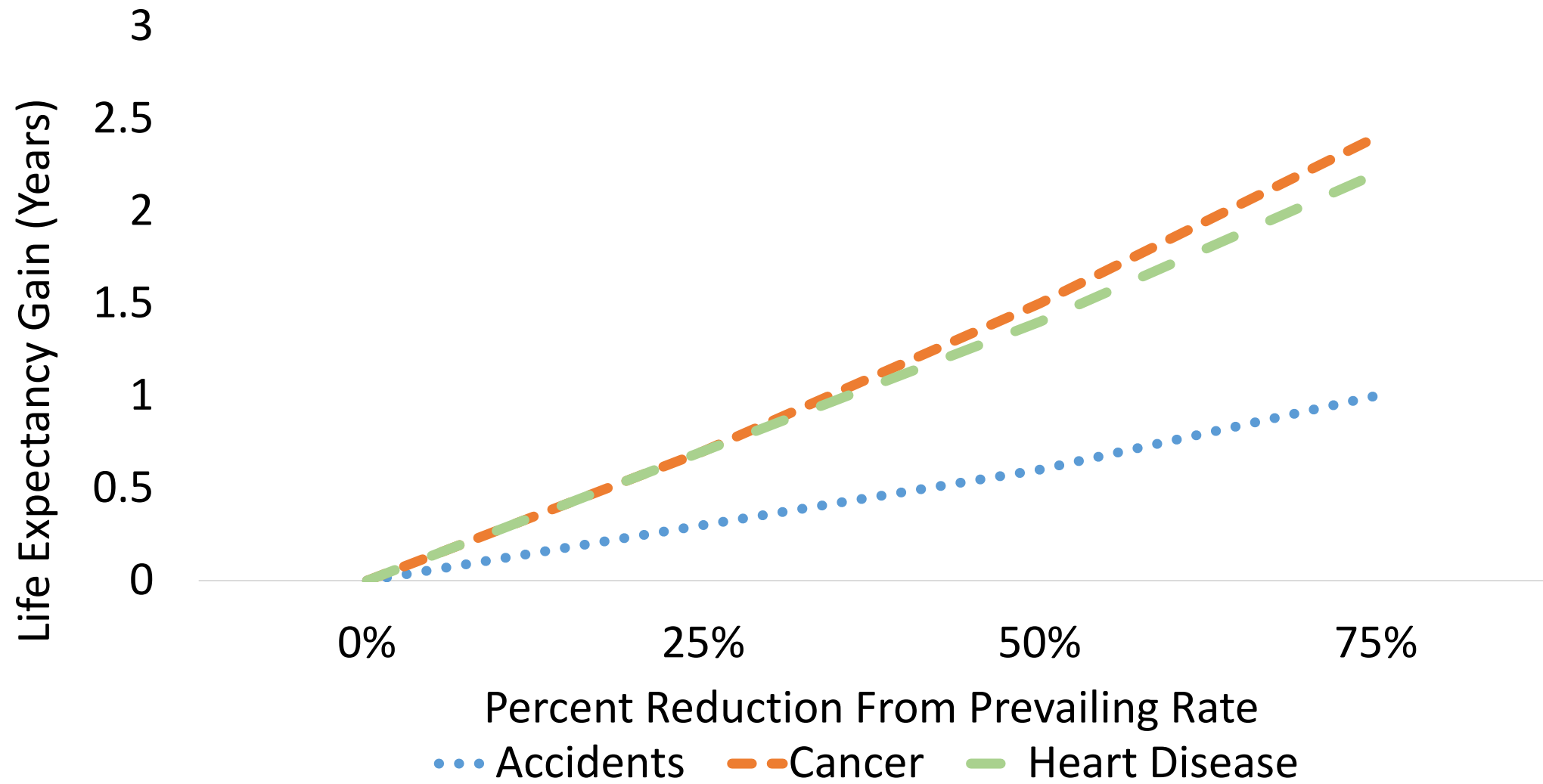
# Poinsett County Life Table

Area name	Deaths			
	20 – 24	25 – 29	30 – 34	...
Poinsett County 2008 - 2015 (All deaths)				
<del>Poinsett County 2008 - 2015 Heart disease deaths (100%)</del>			4	
<del>Poinsett County 2008 - 2015 Heart disease deaths (-25%)</del>			3	
<del>Poinsett County 2008 - 2015 Heart disease deaths (-50%)</del>			2	
Poinsett County 2008 - 2015 Heart disease deaths (-75%)			1	

# Poinsett County Life Table

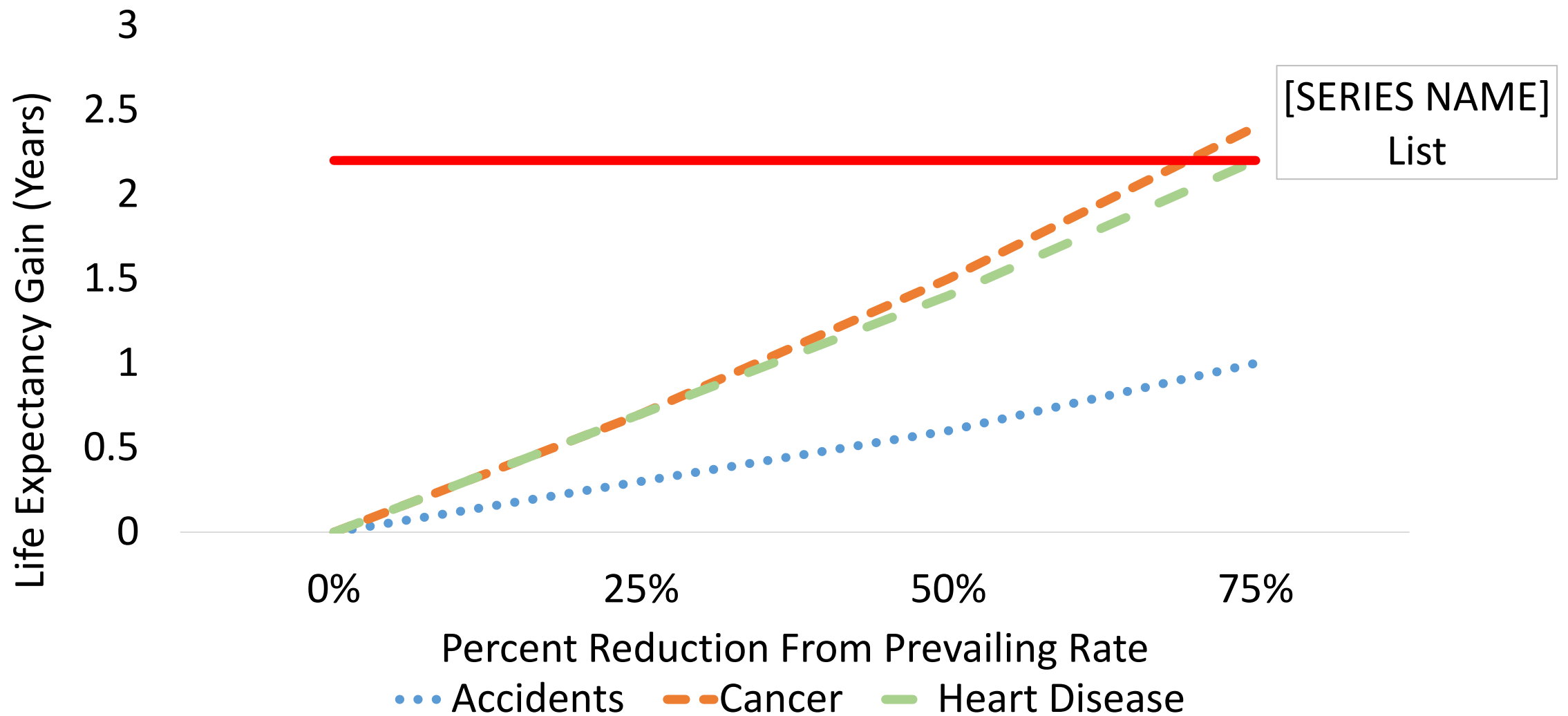
Area name	Deaths			
	20 – 24	25 – 29	30 – 34	...
Poinsett County 2008 - 2015 (All deaths)			30	
<del>Poinsett County 2008 - 2015 Heart disease deaths (100%)</del>			4	
<del>Poinsett County 2008 - 2015 Heart disease deaths (-25%)</del>			3	
<del>Poinsett County 2008 - 2015 Heart disease deaths (-50%)</del>			2	
Poinsett County 2008 - 2015 Heart disease deaths (-75%)			1	

# Estimated Life Expectancy Assuming Various Reductions in Cause-Specific Death Rates – Poinsett County, AR – 2000 - 2015



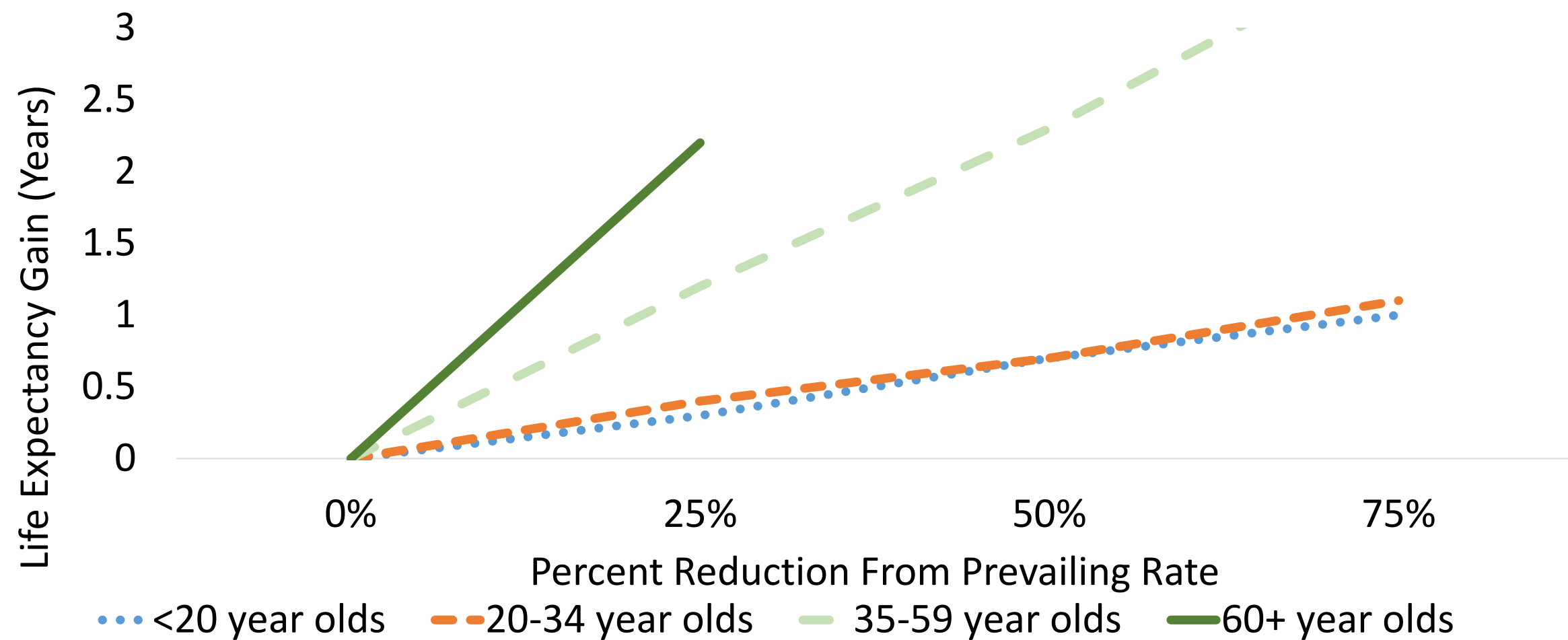
Source: CDC WONDER/ ADH Vital Statistics, Analysis by Jonathan Aram, MPH

# Estimated Life Expectancy Assuming Various Reductions in Cause-Specific Death Rates – Poinsett County, AR – 2000 - 2015



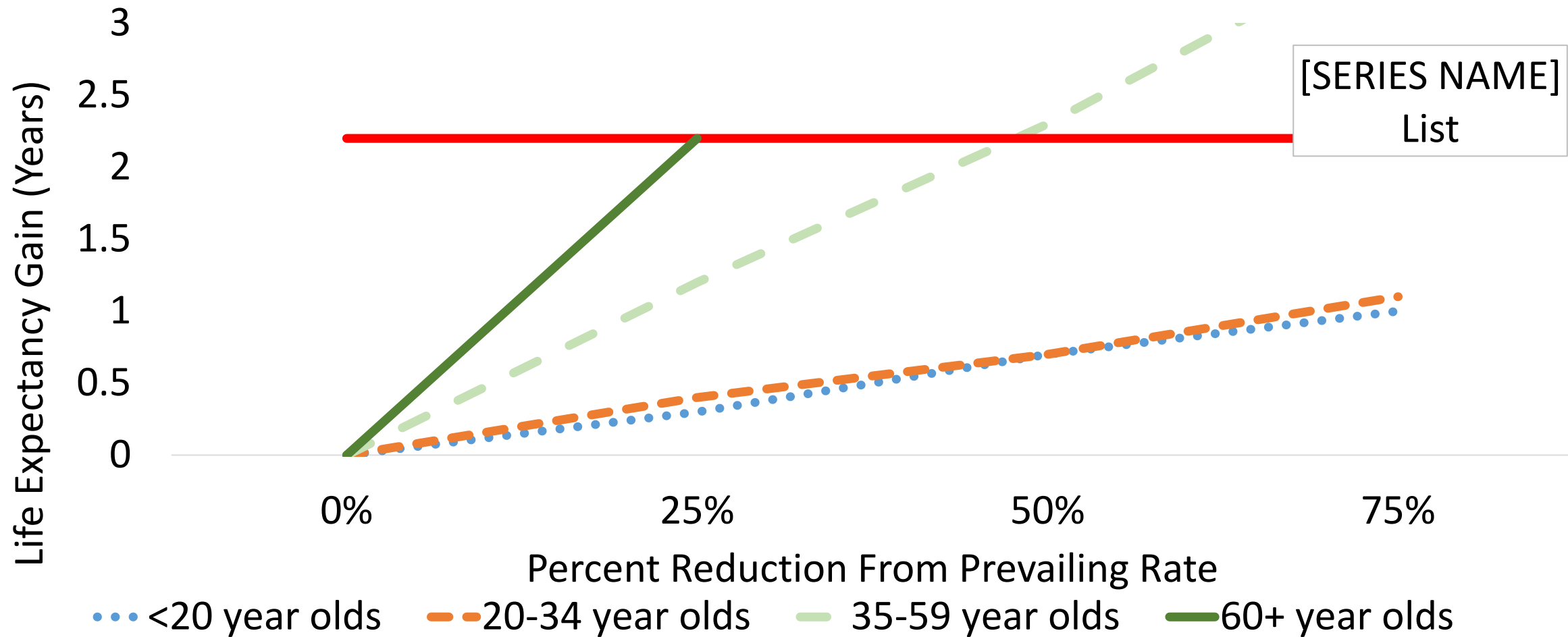


# Estimated Life Expectancy Assuming Various Reductions in Age-Specific Death Rates – Poinsett County, AR – 2000 - 2015



Source: CDC WONDER/ ADH Vital Statistics, Analysis by Jonathan Aram, MPH

# Estimated Life Expectancy Assuming Various Reductions in Age-Specific Death Rates – Poinsett County, AR – 2000 - 2015



Source: CDC WONDER/ ADH Vital Statistics, Analysis by Jonathan Aram, MPH

# Review: Learning objective 3

Explain the impact of cause-specific (heart disease, cancer and accidents) and age-specific death rates on life expectancy in Poinsett County.

# Learning objective 4

Discuss implications for health policy and planning.

# Implications

- Commitment
- Nuance
- Novel approaches

# Review: Learning objective 4

Discuss implications for health policy and planning.