



Hoosier Health

Indiana Rural Health Association Fall Forum: Harvesting Rural Solutions

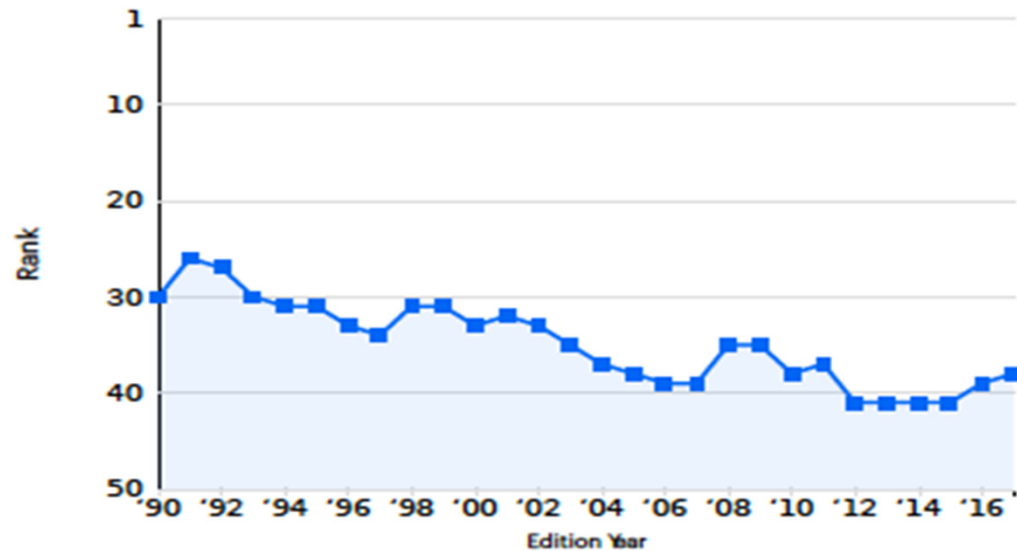
Paul K. Halverson, Founding Dean

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IUPUI

Indiana is #38

Rank has trended downward from a high of 26 in 1991.



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Room for Improvement

Indiana ranks at the bottom in many important health metrics including tobacco use, obesity, infant mortality and opioid abuse — and these are just a few critical examples. Our progress toward improvement is impeded by Indiana’s low public health spending per capita.



34th

worst in drug
deaths



40th

worst in
obesity



41st

worst in
percentage
of smokers



42nd

worst in
infant
mortality

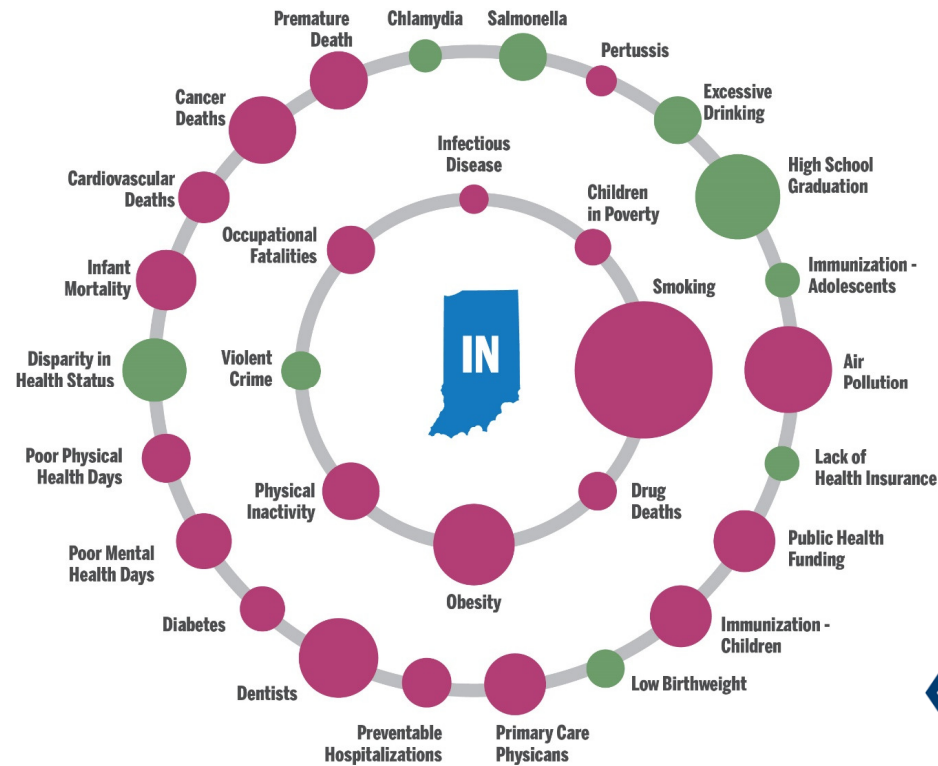


49th

worst in
public health
funding



Core Measure Impact



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Changes in Health Rankings

Behaviors							
	2016 value	2017 value	Change in value	2016 rank	2017 rank	Change in rank	No. 1 State
Drug Deaths (deaths per 100,000 pop.)	16.7	17.9	↑1.2	35	34	↑1	5.7
Excess Drinking (% of adults)	16.8	18.6	↑1.8	17	28	↓11	11.8
Obesity (% of adults)	31.3	32.5	↑1.2	36	40	↓4	22.3
Physical Inactivity (% of adults)	29.4	26.8	↓2.6	40	38	↑2	15.7
Smoking (% of adults)	20.6	21.1	↑0.5	39	41	↓2	8.8
Behavior Total				35	40	↓5	



Changes in Health Rankings

Community & Environment							
	2016 value	2017 value	Change in value	2016 rank	2017 rank	Change in rank	No. 1 State
Children in Poverty (% of children)	19.7	13.9	↓5.8	32	13	↑19	7.6
Infectious Disease (mean z score of chlamydia, pertussis and salmonella)	-0.473	-0.653	↓0.18	12	6	↑6	-1.107
Pertussis (cases per 100,000 pop.)	7.5	3.4	↓5.8	25	16	↑9	0.4
Salmonella (cases per 100,000 pop.)	11.0	10.1	↓0.9	10	4	↑6	9.3
Community & Environment Total				35	27	↑8	



Changes in Health Rankings

Policy							
	2016 value	2017 value	Change in value	2016 rank	2017 rank	Change in rank	No. 1 State
Immunizations- Adolescents (mean z score of HPV, meningococcal and Tdap)	.305	-.03	↓.308	14	22	↓8	1.72
HPV Females (% of females aged 13 to 17)	30.9	43.5	↑12.6	46	37	↑9	73
HPV Males (% of males aged 13 to 17)	27.5	24.7	↓2.8	25	46	↓21	68.7
Meningococcal (% of adolescents aged 13 to 17)	92.3	88.0	↓4.3	6	13	↓7	96.4
Tdap (% of adolescents aged 13 to 17)	89.7	89.5	↓0.2	14	22	↓7	96.7
Immunizations- Children (% of children aged 19 to 35 months)	74.7	68.8	↓5.9	18	34	↓16	80.6
Public Health Funding (\$ per person)	41	49	↑8	49	49	-	506
Uninsured (% of population)	10.8	8.9	↓1.9	31	28	↑3	2.7
Policy Total				26	32	↓6	



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Changes in Health Rankings

Clinical Care

	2016 value	2017 value	Change in value	2016 rank	2017 rank	Change in rank	No. 1 State
Dentists (# per 100,000 pop.)	47.7	46.8	↓0.9	45	45	-	88.5
Low Birthweight (% of live births)	8.0	8.0	-	25	25	-	5.8
Mental Health Providers (# per 100,000 pop.)	N/A	144.2	-	N/A	42	-	547.3
Preventable Hospitalizations (discharges per 1,000 Medicare enrollees)	57.0	56.8	↓0.2	41	41	-	23.3
Primary Care Physicians (# per 100,000 pop.)	121.3	123.4	↑2.1	38	39	↓1	451.1
Clinical Care Total				40	41	↓1	



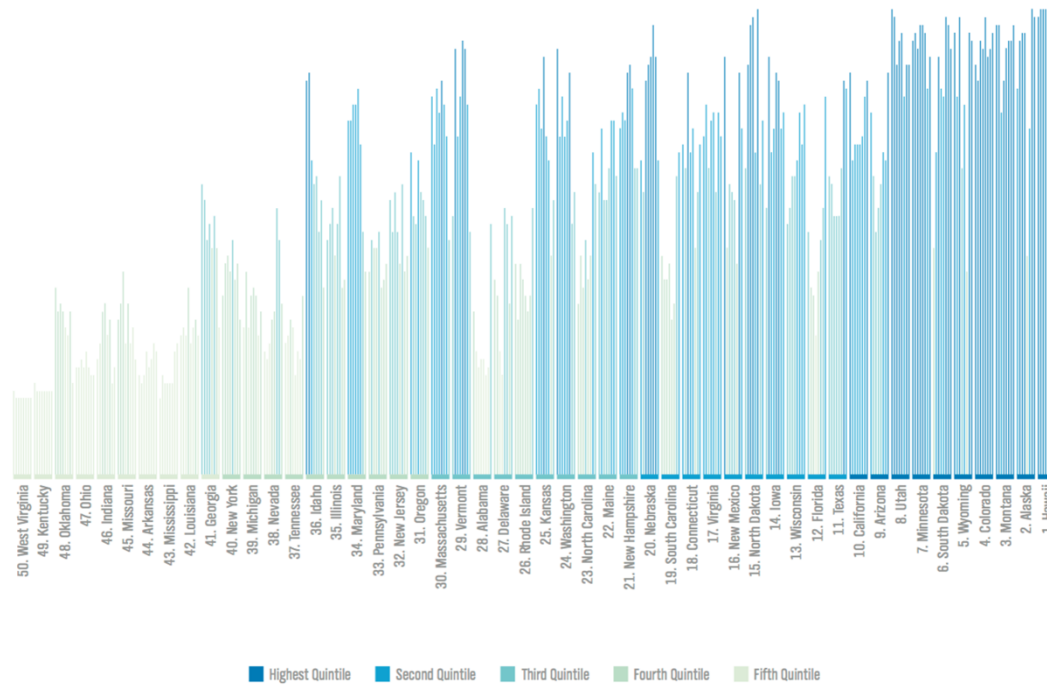
Changes in Health Rankings

Outcomes							
	2016 value	2017 value	Change in value	2016 rank	2017 rank	Change in rank	No. 1 State
Cancer Deaths (deaths per 100,000 pop.)	210.5	210.5	-	42	42	-	150.5
Cardiovascular deaths (deaths per 100,000 pop.)	277.1	277.5	↑0.4	38	37	↑1	189.7
Diabetes (% of adults)	11.4	11.5	↑0.1	37	37	-	6.6
Disparity in Health Status (% difference by high school education)	22.4	25.5	↑3.1	7	16	↓9	8.1
Frequent Mental Distress (% of adults)	12.4	13.2	↑0.8	37	38	↓1	8.3
Frequent Physical Distress (% of adults)	13.5	12.6	↓0.9	38	32	↑6	8.2
Infant Mortality (deaths per 1,000 live births)	7.2	7.2	-	43	42	↑1	4.2
Premature Death (years lost per 100,000 pop.)	8,208	8,471	↑263	39	38	↑1	5,555
Outcomes Total				41	41	-	



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Wellbeing Index 2016 – IN #47

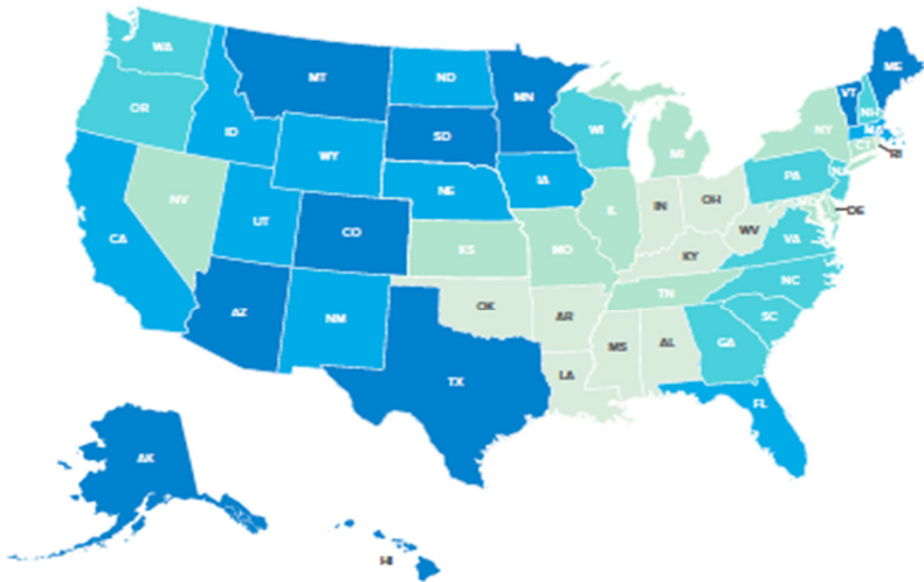


The above graph arranges states from lowest well-being in 2015 to highest well-being in 2015 (left to right). Each state is comprised of eight individual lines, representing its historical well-being rank from 2008 - 2015.



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Wellbeing Index 2016 – IN 5th Quintile



Top Quintile	2 nd Quintile	3 rd Quintile	4 th Quintile	5 th Quintile
1 Hawaii	11 Florida	21 Virginia	31 Maryland	41 Mississippi
2 Alaska	12 Wyoming	22 New Hampshire	32 Kansas	42 Rhode Island
3 South Dakota	13 California	23 Washington	33 New York	43 Louisiana
4 Maine	14 Massachusetts	24 Oregon	34 Nevada	44 Alabama
5 Colorado	15 Nebraska	25 New Jersey	35 Connecticut	45 Ohio
6 Vermont	16 North Dakota	26 North Carolina	36 Missouri	46 Arkansas
7 Arizona	17 Utah	27 South Carolina	37 Illinois	47 Indiana
8 Montana	18 Idaho	28 Wisconsin	38 Tennessee	48 Oklahoma
9 Minnesota	19 Iowa	29 Georgia	39 Michigan	49 Kentucky
10 Texas	20 New Mexico	30 Pennsylvania	40 Delaware	50 West Virginia

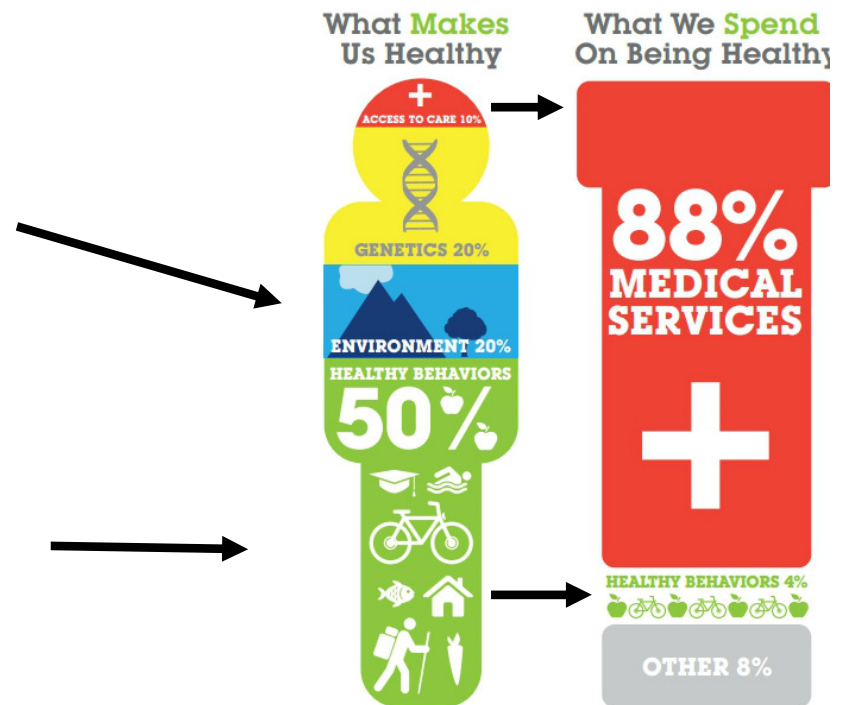


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Misalignment between what drives health outcomes and health expenditures

- The most consistent predictor of the likelihood of death in any given year is level of education...
- Poverty...has been estimated to account for 6 percent of U.S. mortality
- Behavior patterns represent the single most prominent domain of influence over health prospects in the United States....
- ...taken together, behavioral issues represent the greatest single domain of influence on the health of the U.S. population.

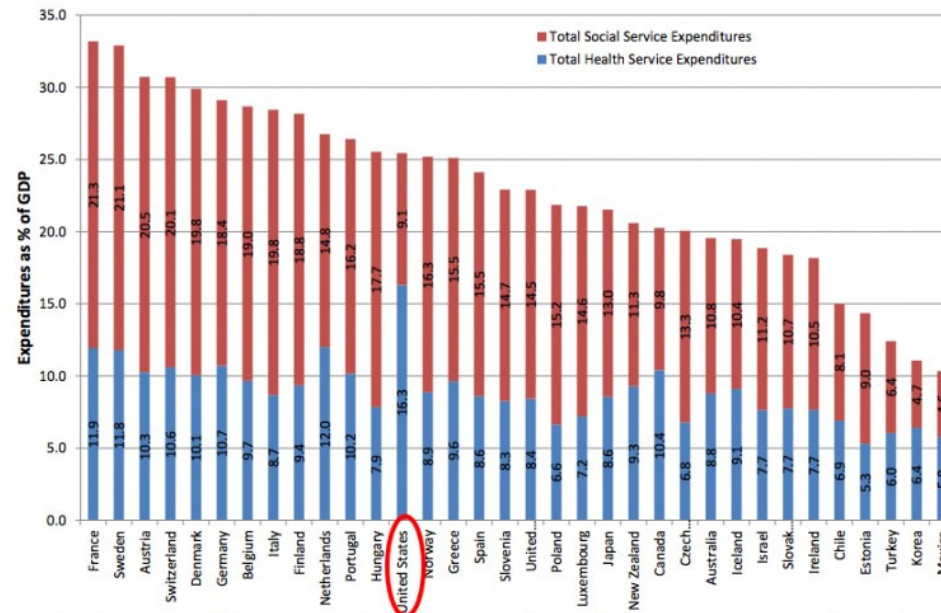
<http://content.healthaffairs.org/content/21/2/78.full>



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Health Care Investment in the U.S.

Total health care investment in US is *less*

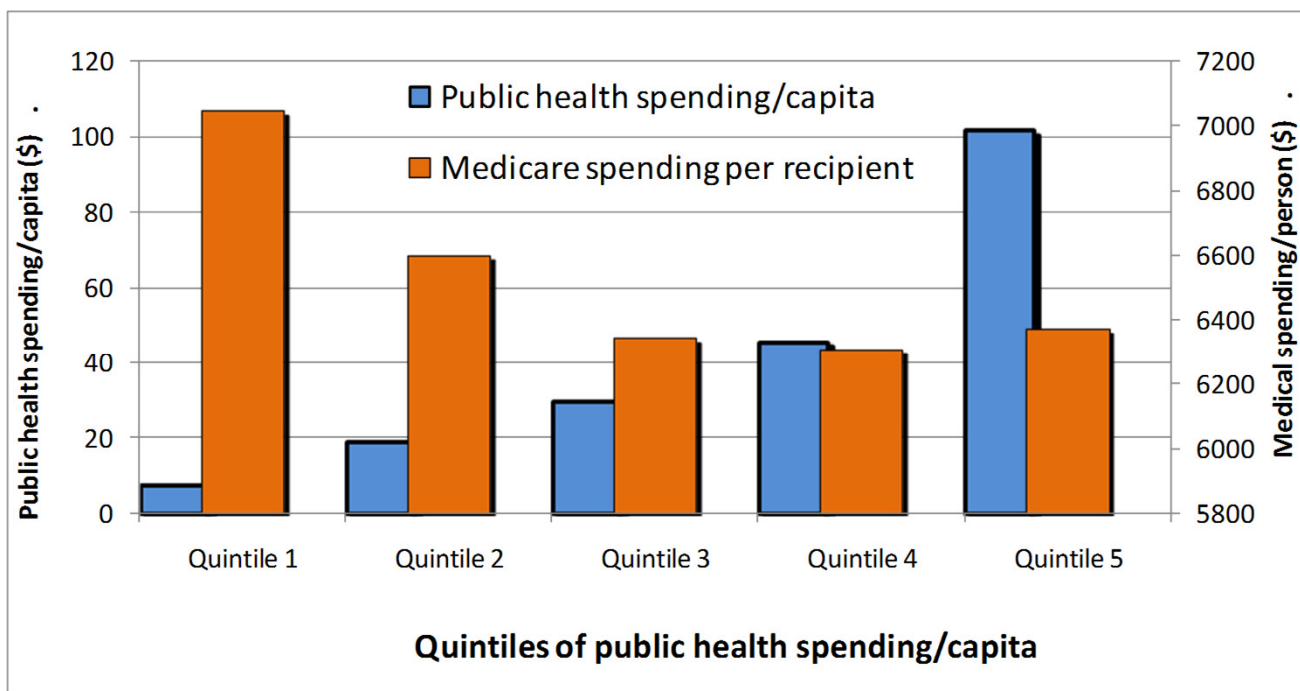


In OECD, for every \$1 spent on health care, about \$2 is spent on social services
 In the US, for \$1 spent on health care, about 55 cents is spent on social services

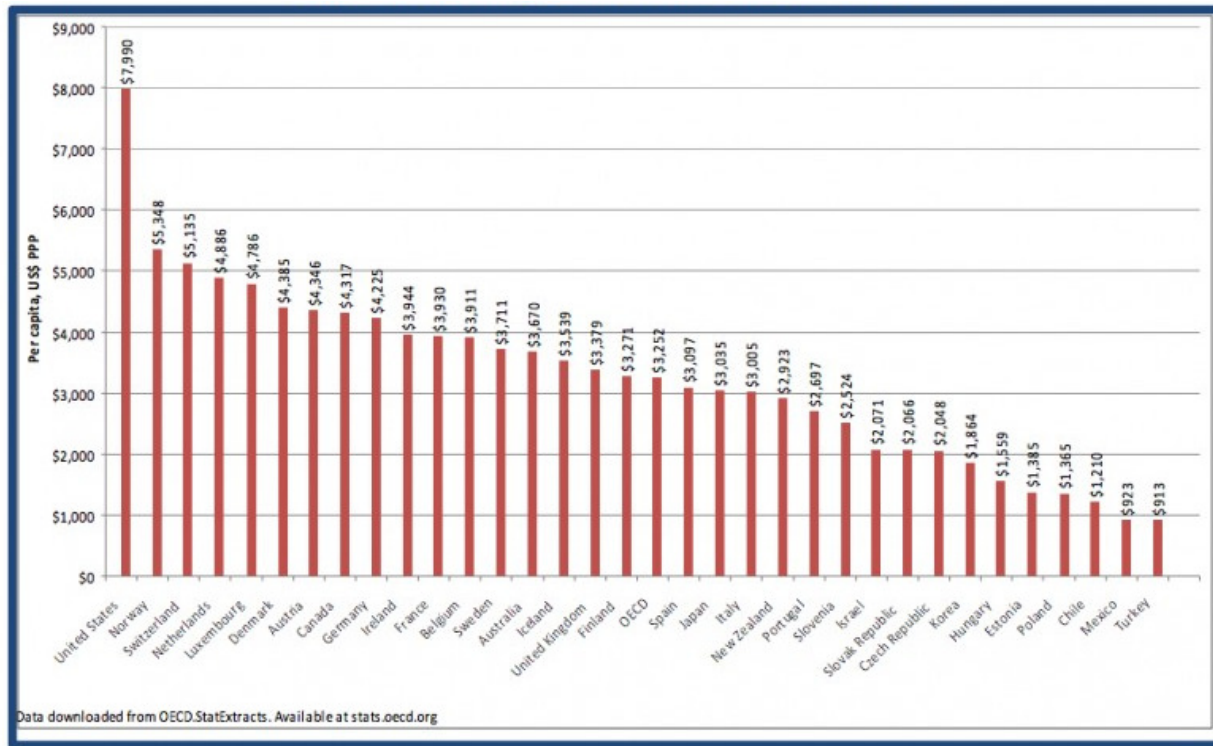


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Medical Care Offsets Attributable to Local Public Health Spending, 1993-2008



Health Care Spending



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Preventable Disease Burden and National Health Spending

- **>75%** of national health spending is attributable to chronic diseases that are largely preventable
 - 80% of cardiovascular disease
 - 80% of diabetes
 - 60% of lung diseases
 - 40% of cancers
- **<3%** of national health spending is allocated to public health and prevention



What do we mean by the “social” or “societal” determinants of health?

“Life-enhancing resources, such as food supply, housing, economic and social relationships, transportation, education and health care, *whose distribution across populations effectively determines length and quality of life.*”

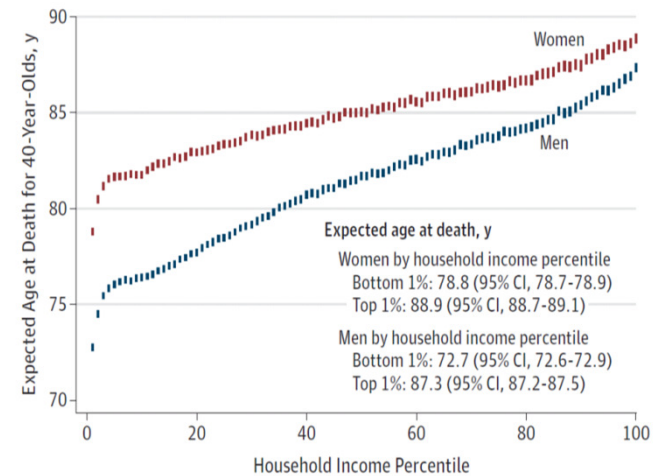
Reference: James S. (2002)



Evidence of the Social Determinants of Health

- Men in the bottom 1% of the income distribution at the age of 40 years in the United States have life expectancies similar to the mean life expectancy for 40-year-old men in Sudan and Pakistan.
- The 10-year gap in life expectancy between women in the top 1% and bottom 1% of the US income distribution is equivalent to the decrement in longevity from lifetime smoking.

Race- and Ethnicity-Adjusted Life Expectancy for 40-Year-Olds by Household Income Percentile, 2001-2014



Mean household income in thousands, \$ ^a	24	45	71	112	1.9 million
Women					
Men	26	50	77	119	2.0 million



Social Determinants of Health (SDH)

- Access to health care
- Access to resources
- Education
- Employment
- Environment
- Income/Poverty
- Insurance Coverage
- Housing
- Racism/Discrimination
- Segregation
- Transportation



Framework for organizing SDH

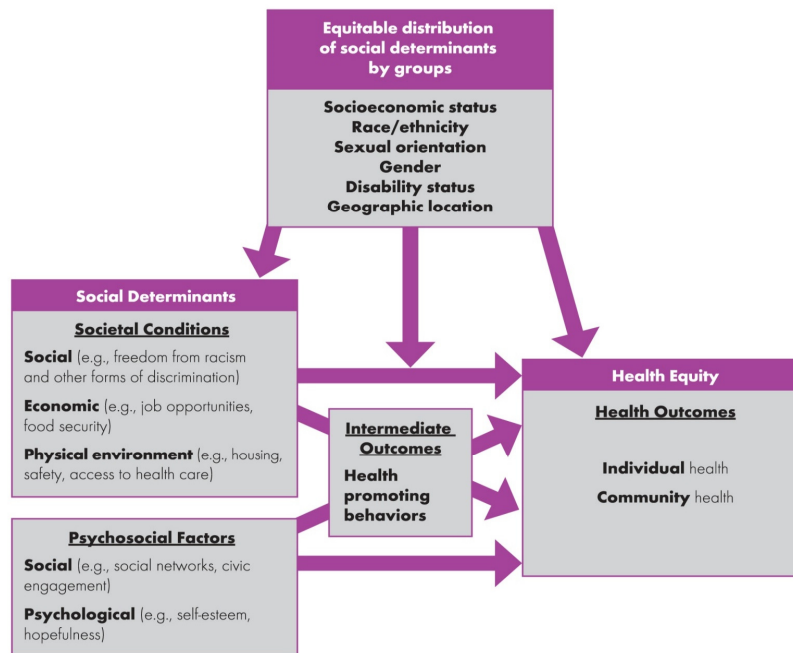
Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	Quality of care
Medical bills	Playgrounds	Higher education			
Support	Walkability				

Health Outcomes
 Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations



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A confluence of social determinants of health lead to health inequities!



LIFE EXPECTANCY, BY INCOME LEVEL



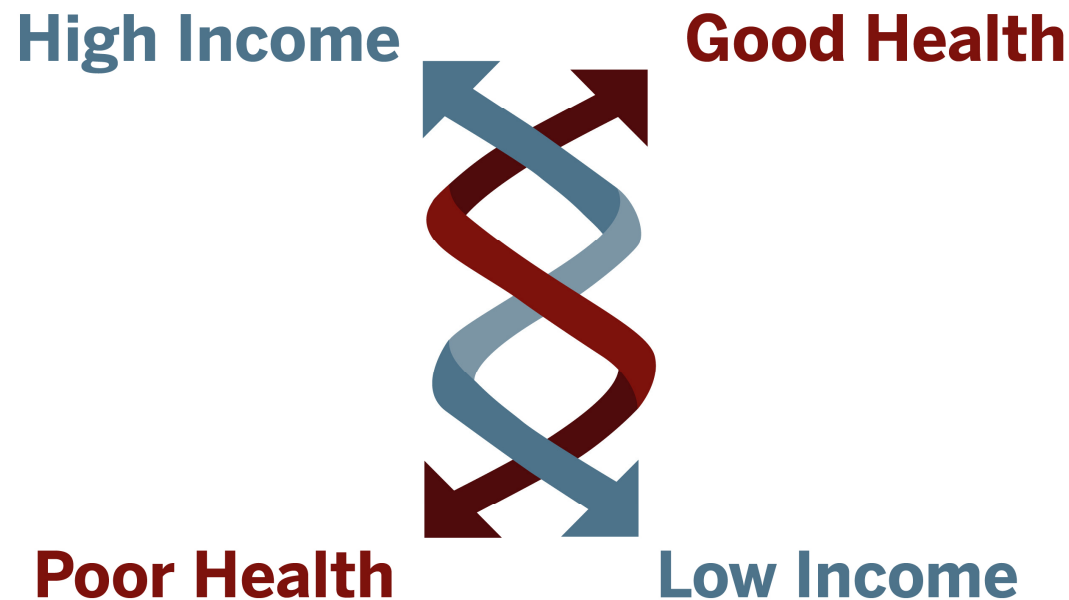
Source | <https://healthinequality.org/data/>

netQUOTE®



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The Virtuous Spiral

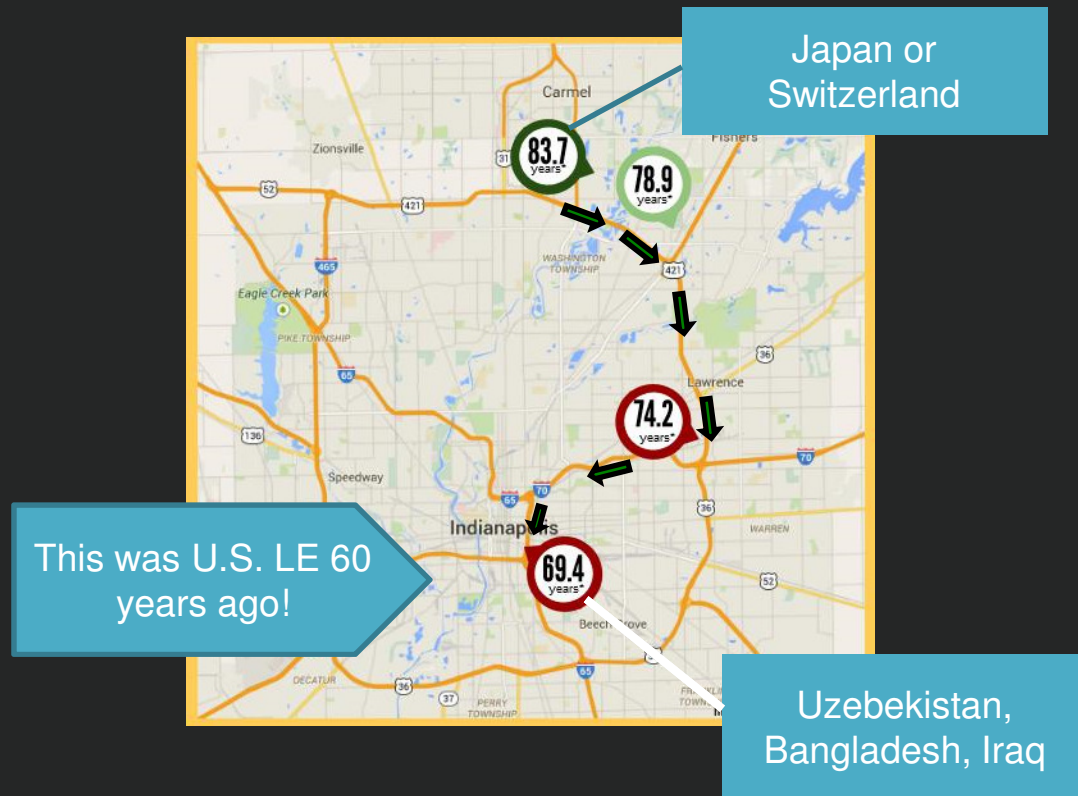


David Bloom David Canning; Science February 18, 2000

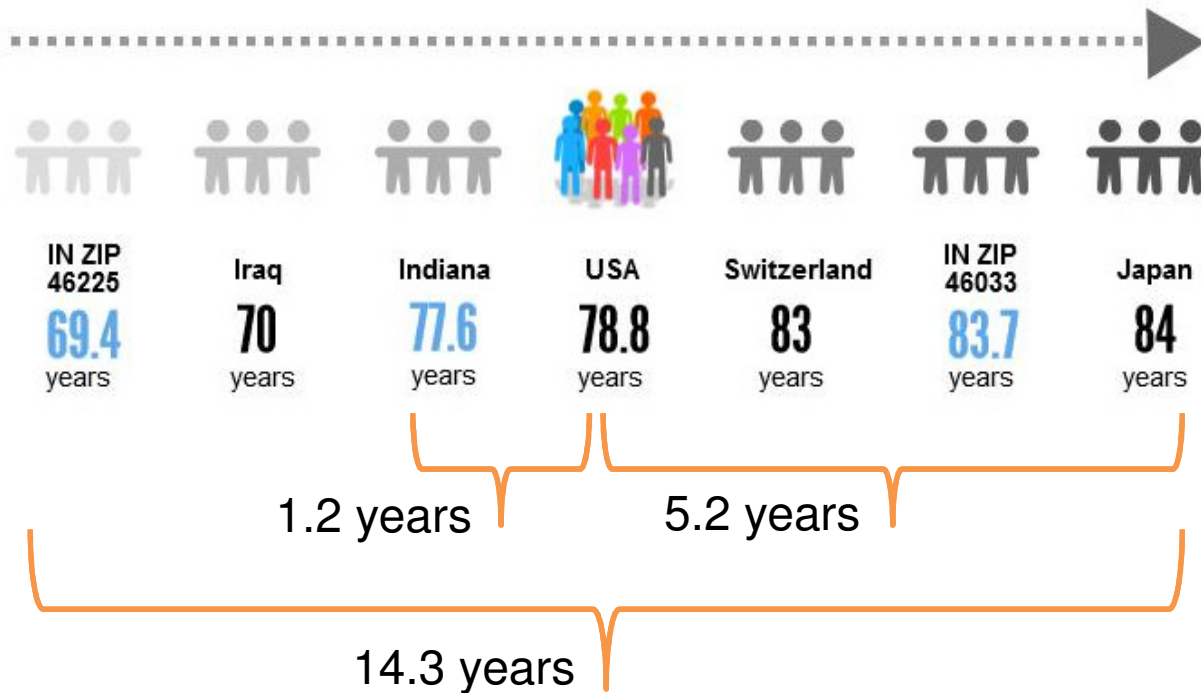


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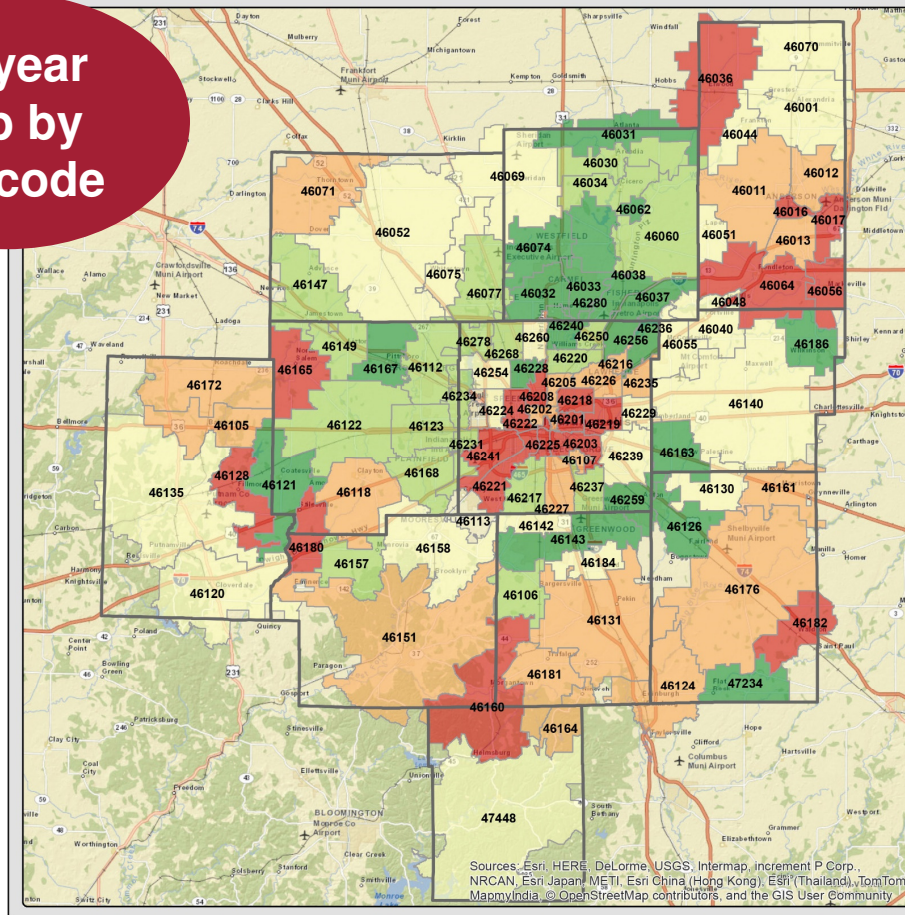
28 Miles. 14 Years. Worlds Apart.



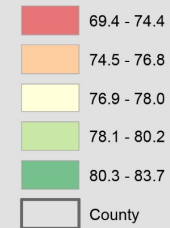
Life Expectancies: Indianapolis, Indiana and the World



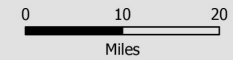
14 year gap by ZIP code



Life Expectancy in Central Indiana by ZIP Code



Sources: Indiana State Department of Health, ACS 2009-2013 5-year Averages



Map created 5/26/2015 by The Polis Center at IUPUI

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, Mapbox, OpenStreetMap contributors, and the GIS User Community



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Health Disparities in Indiana

- Blacks are more than twice as likely to die from diabetes, as compared to Whites.
- Stroke deaths among Blacks are 1.4 times higher as compared to Whites.
- Cancer and heart disease deaths among Blacks are 1.2 times higher as compared to Whites.
- Infant mortality rates for Blacks are nearly three times higher as compared to Whites.



Tobacco Use: Indiana's Largest Health Challenge

- Tobacco use causes some of the most deadly and costly diseases, including cancer, heart disease and emphysema.
- Tobacco causes harm to the reproductive health system, and damages nearly every organ in the human body.

Smoking causes:

9 out of 10 deaths from lung cancer

3 out of 10 deaths from all cancers

8 out of 10 cases of chronic obstructive pulmonary disease, such as emphysema

3 out of 10 deaths from heart disease



Tobacco Use: Indiana's Largest Health Challenge

Lives Lost:

- Adults who die each year from smoking: **11,100**
- Kids alive today who will die prematurely from smoking: **151,000**

Financial Costs:

- For **every pack** of cigarettes sold in the state, Indiana state spends **\$15.90** in health care costs related to smoking and lost productivity.
- Annual health care costs due to smoking: **\$2.93 billion**
- Medicaid costs: **\$589.8 million**
- State/federal annual tax burden: **\$982 per household**
- Smoking-caused productivity losses: **\$2.6 billion**
- Est. tobacco company marketing expenditures (IN): **\$294.9 million**

Campaign for Tobacco Free Kids, http://www.tobaccofreekids.org/facts_issues/toll_us/indiana
ISDH, Tobacco Prevention and Control, http://www.in.gov/isdh/tpc/files/Indianas_Tobacco_Burden_12_29_2014.pdf



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We Know How to Decrease Smoking

A large body of scientific evidence exists:

- Raise the price of tobacco products
- Enact comprehensive indoor air laws
- Restrict access - e.g. Tobacco21
- Adequately fund tobacco control programs (state and local)
- Implement counter-advertising campaigns



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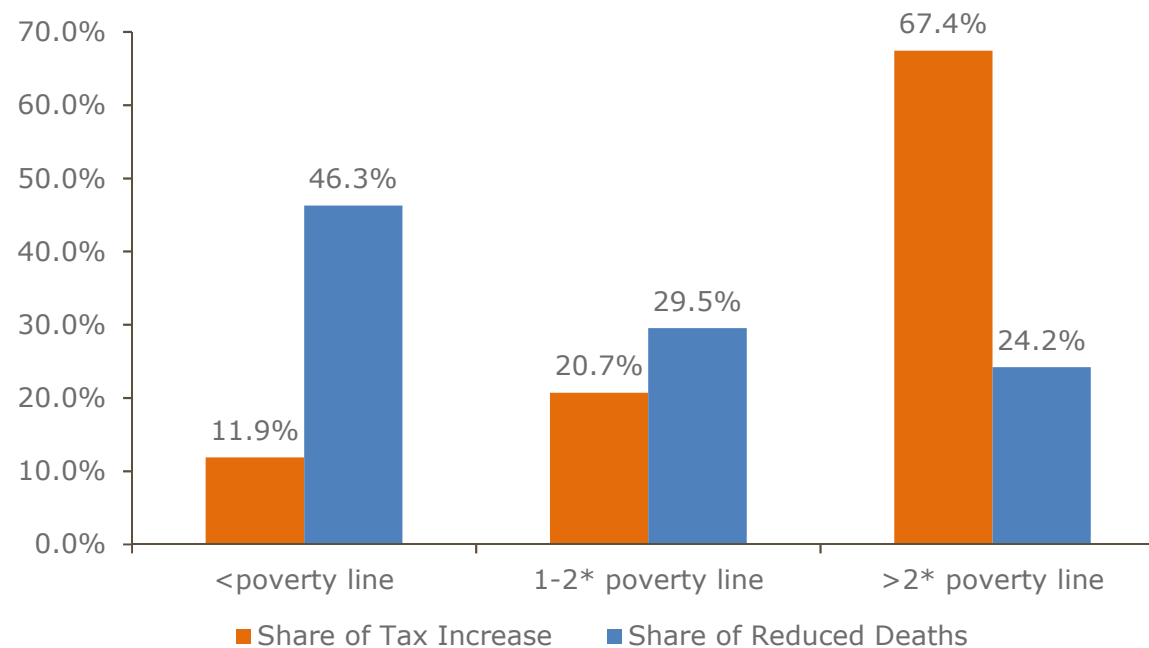
Price increase: Single most effective way to reduce tobacco use

- Hundreds of studies demonstrating effectiveness of cigarette price increases in reducing smoking
 - Reduced consumption
 - Lower prevalence
 - Increased quitting
- Particularly effective in reducing use among high risk populations
 - Deter initiation/uptake among young people
 - Greater impact on low-SES populations



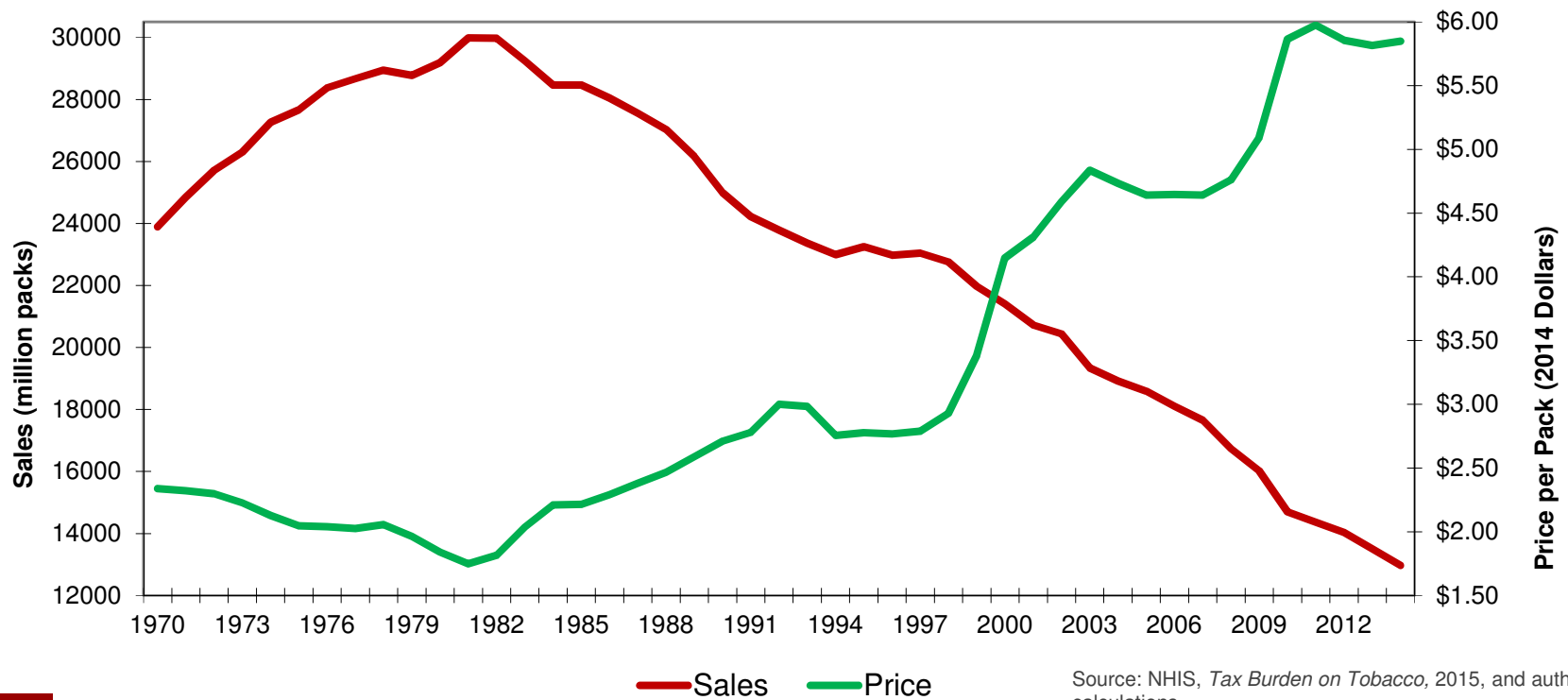
Who Pays & Who Benefits

Impact of Federal Tax Increase, U.S., 2009



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Cigarette Prices and Cigarette Sales United States, 1970-2014

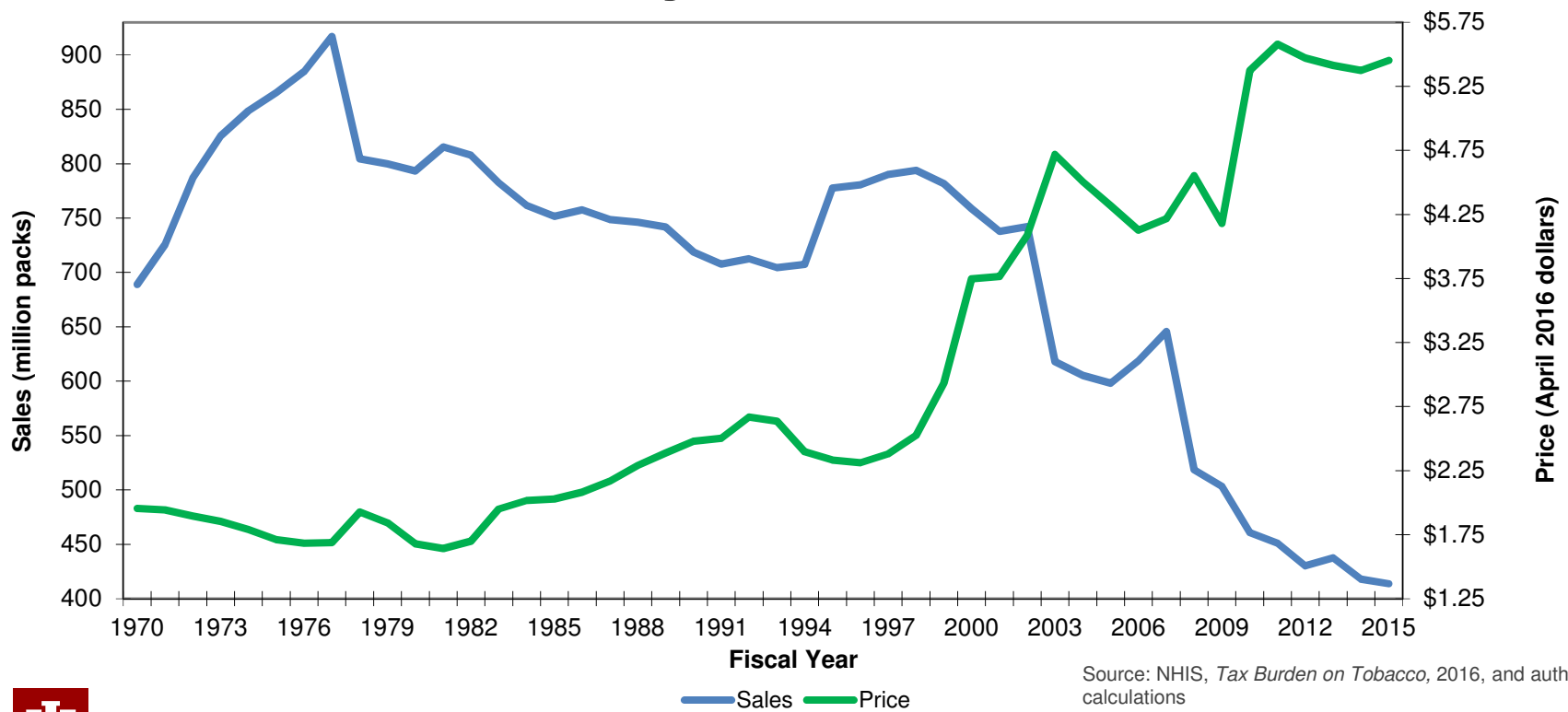


Source: NHIS, *Tax Burden on Tobacco*, 2015, and author's calculations



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Cigarette Prices and Sales Indiana, Inflation Adjusted, 1970-2015

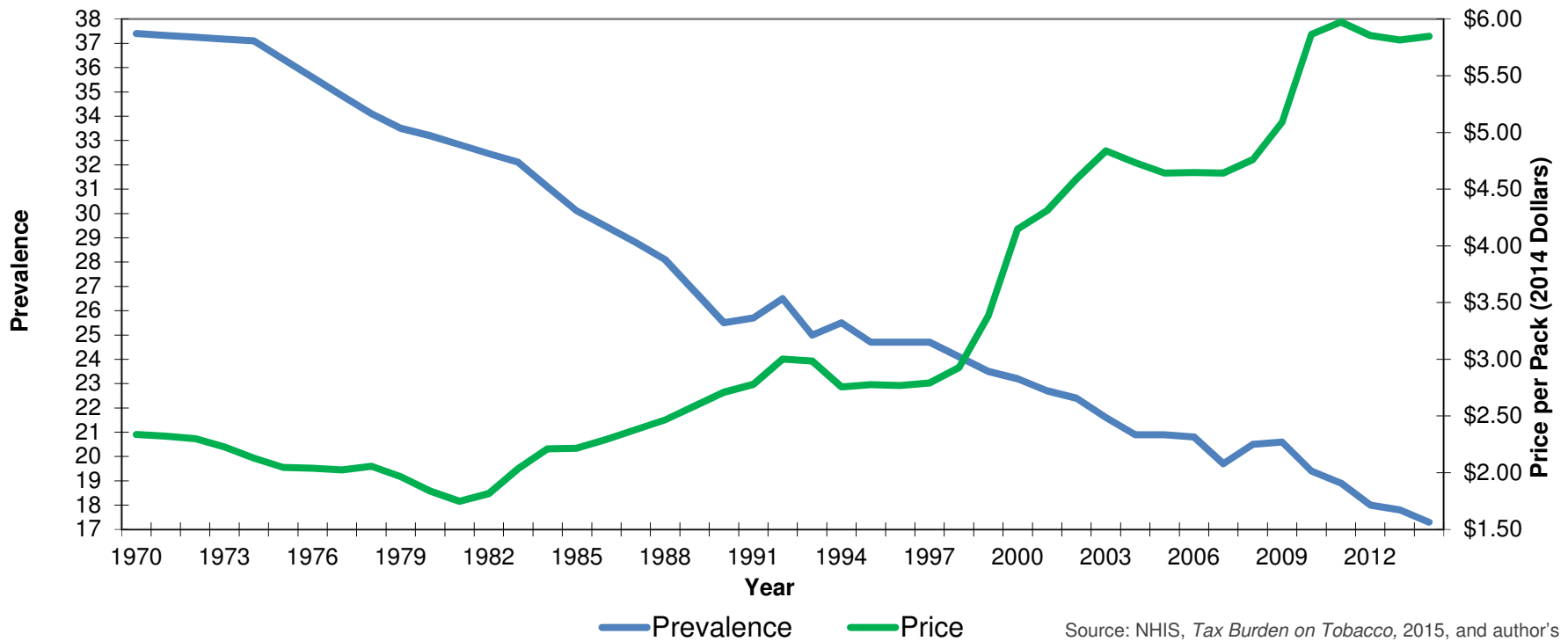


Source: NHIS, *Tax Burden on Tobacco*, 2016, and author's calculations



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Cigarette Prices and Adult Smoking Prevalence, United States, 1970-2014



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Source: NHIS, *Tax Burden on Tobacco*, 2015, and author's calculations

Tackling tobacco use

Tobacco 21

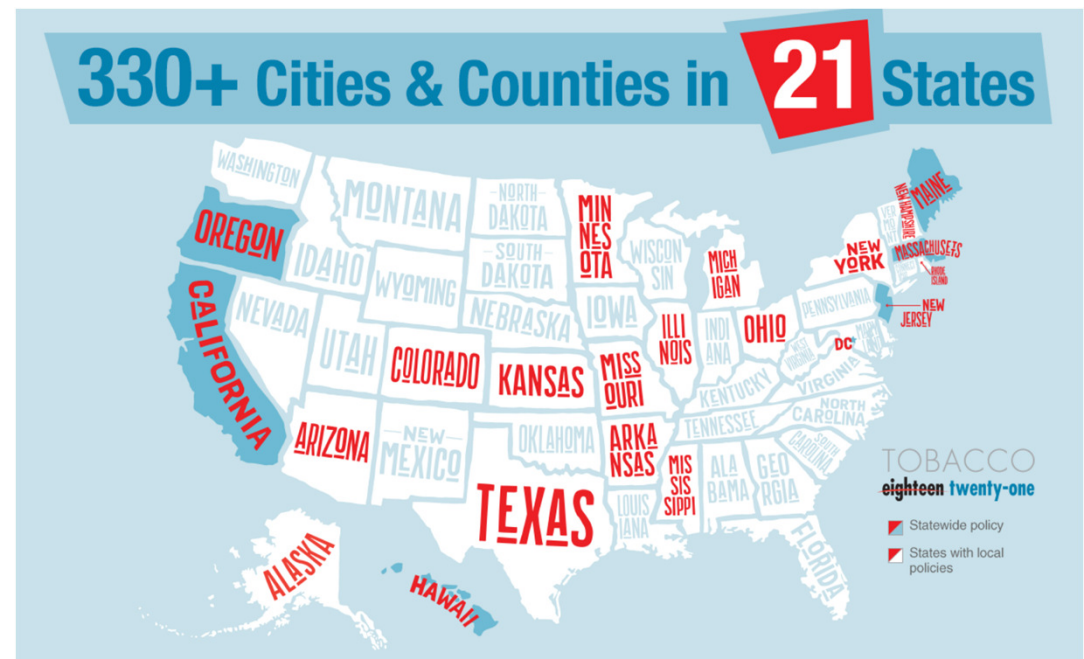
- Most smokers would never take up the habit if access were delayed until after 21
- 90% of daily smokers first use cigarettes before the age of 19
- Between 18 and 21, young smokers move from experimentation to regular daily use -- critical time of solidifying tobacco addiction
- **80% of smokers begin daily smoking before age 21**
- **90% of individuals who purchase tobacco for minors are between the ages of 18 and 21**



Tackling tobacco use

Tobacco 21

- More than 330 municipalities in 21 states have already raised the minimum legal age to 21.
- 6 states with state-level policy (OR, CA, NJ, ME, HI, MA)
- According to a 2015 CDC study:
 - 75% of adults favor raising the tobacco age to 21
 - 70% of current smokers agree
 - As well as 65% of those aged 18-24



Tackling tobacco use

Tobacco 21

The Institute of Medicine predicts in the first 5 years:

- **25% drop** in youth smoking initiation
- **12% drop** in overall smoking rates
- **16,000 cases** of preterm birth and low birth weight averted
- If MLA 21 adopted nationwide, **4.2 million years** of life lost prevented in kids alive today.

“If a man has never smoked by age 18, the odds are three-to-one he never will. By age 24, the odds are 20-to-one.”



Our other priorities.

- **Infant Mortality**
Currently, 7 out of every 1,000 infants die before their first birthday.
- **Opioid Abuse**
Hoosiers are more likely to die from drug overdose than a car accident.
- **Obesity**
Approximately 1 out of 3 adult Hoosiers is considered obese.

For too long, we have assumed that we can't change the health status of Hoosiers. It is our goal to bring together health care leaders, employers, policymakers, educators, funders, insurers and more to make Indiana healthier.



Poor Health is Bad for Business

POOR HEALTH IS BAD FOR BUSINESS

Chronic disease drives health care expenditures, which cuts into company profits and productivity.



67%
of our workforce is overweight or obese



1 IN 4
Americans has heart disease



1 IN 3
Americans has high blood pressure



\$73 B
annual cost of obesity among full-time employees



50%
of company profits go towards health care costs



\$153 B
loss to employers annually due to absenteeism from workers who are overweight or obese and have other chronic health conditions



450 M
additional work days missed every year by full-time

PREVENTION PAYS AT WORK

Even small investments in health within the workplace can create big returns:



WORKPLACE WELLNESS

For every **\$1** spent on workplace wellness programs, employers can save up to **\$6**

ADDRESS HEALTH RISKS

1% reduction in health risks would save as much as **= \$83-103** annually in medical costs, per person.

SAVE MONEY

Workplace wellness programs can reduce sick leave, medical costs and worker's comp claims by as much as:

25%

HEALTHY COMMUNITIES = HEALTHY BUSINESSES

Building a healthier community saves lives and money.



BIKING SAVES MILLIONS

Do you have bike racks? Are there bike lanes on your streets? Bicycle commuters saved Iowa \$13.2 million a year in health care costs and \$73.9 million for those who cycle recreationally.



SMOKE-FREE SPACES SAVE LIVES

Are your shared community spaces and workplace smoke-free? Smoke-free strategies and education prevented 800 thousand deaths related to lung cancer between 1975-2000.



WALKABLE SPACES + ECONOMIC GROWTH

Do your workplace and community make physical activity easier? In one California city, \$10 million spent on more walkable public outdoor spaces spurred a \$125 million economic investment in the local downtown area, which led to the creation of 40 new businesses and 800 new jobs.



HEALTHY OPTIONS. HEALTHY CHOICES.

Are healthy foods affordable and accessible at work meetings, in vending machines and in your community? Research shows that making the healthier option the default can lead to healthier choices.



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