2019

Pulaski Memorial Hospital Community Health Needs Assessment

Prepared by the Indiana Rural Health Association

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Process

Pulaski Memorial Hospital (PMH) contracted with the Indiana Rural Health Association (IRHA) to conduct the Community Health Needs Assessment (CHNA).

IRHA first identified the community served by PMH through conversations with the hospital. Based on a review of patient zip codes, the hospital was able to define the community served as all postal codes within the geographic area of Pulaski and Starke Counties. The hospital provided a primary service area list of zip codes, which can be found in Appendix A.

To quantifiably describe the community, census reports were pulled from the United States Census Bureau Reports. Quantifiable statistics and reports for health-related community data were obtained from Pulaski Memorial Hospital and the Community Health Rankings & Roadmaps from the Robert Wood Johnson Foundation. The full versions of these reports can be viewed in Appendix A. Additional reports on chronic disease and overdose rates were pulled from the Centers for Disease Control website and the Indiana State Cancer Registry. Excerpts from these reports can also be found in Appendix A.

Next, a steering committee of Pulaski and Starke County representatives was organized with the help of the Pulaski Memorial Hospital CEO, Tom Barry, and Chief Nurse Executive, Linda Webb. Business owners, local officials, healthcare providers, minority leaders, clergy, student representatives, and any other interested parties were invited to attend the meeting to discuss the health-related needs of the county with a view to identifying the areas of greatest concern. The list of attendees, the organization they represent, and their contact information can be found in Appendix B.

From the information obtained during the steering committee meeting, a 47-question survey was developed to gain the perspective of the inhabitants of the community. Questions included queries about the effect of various factors (such as illegal drug use, mental health services, and affordability of insurance/care), as well as probes into the perceived need for various services and facilities in the county. The survey was widely disseminated to the residents of Pulaski and Starke Counties through inclusion on the Pulaski Memorial Hospital's website, face-to-face polling at the Pulaski County Public Library and the North Judson Library in Starke County. An online survey posted on SurveyMonkey.com was also made available to the public. The survey may be viewed in Appendix C.

To identify all healthcare facilities and resources that are currently responding to the healthcare needs of the community, the IRHA contacted PMH to ascertain the facilities that are currently available to the residents of their service area. The hospital was able to provide a listing of the facilities and resources, including, but not limited to, clinics, family practices, and nursing facilities. The list of existing community resources can be found in Appendix D.

At this point, the entirety of the collected data was submitted to Pulaski Memorial Hospital to explain how the needs identified by the CHNA are currently being met, as well as to write a plan of action for those needs that are not currently being met. PMH was also able to identify the information gaps limiting the hospital's ability to assess all of the community's health needs.

The completed CHNA was then publically posted on hospital's website. Hard copies of the full report were made available to the community upon request at the hospital, as well.

Community Served

The community served by Pulaski Memorial Hospital is defined as follows: All people living within Pulaski or Starke County, Indiana, at any time during the year. To be determined as living within the service area, a person must reside within one of the following postal zip codes: 46996, 47946, 46960, 46366, 46975, 47957, 46534, 47978, 47960, 46985, 46939, 46511, 46374, or 46947.

Description of Community

Physical

Pulaski and Starke County are located in the northwestern quadrant of Indiana. The counties are largely rural and are the 25th largest (Pulaski) and 65th largest (Starke) counties in Indiana at approximately 746.74 square miles combined.

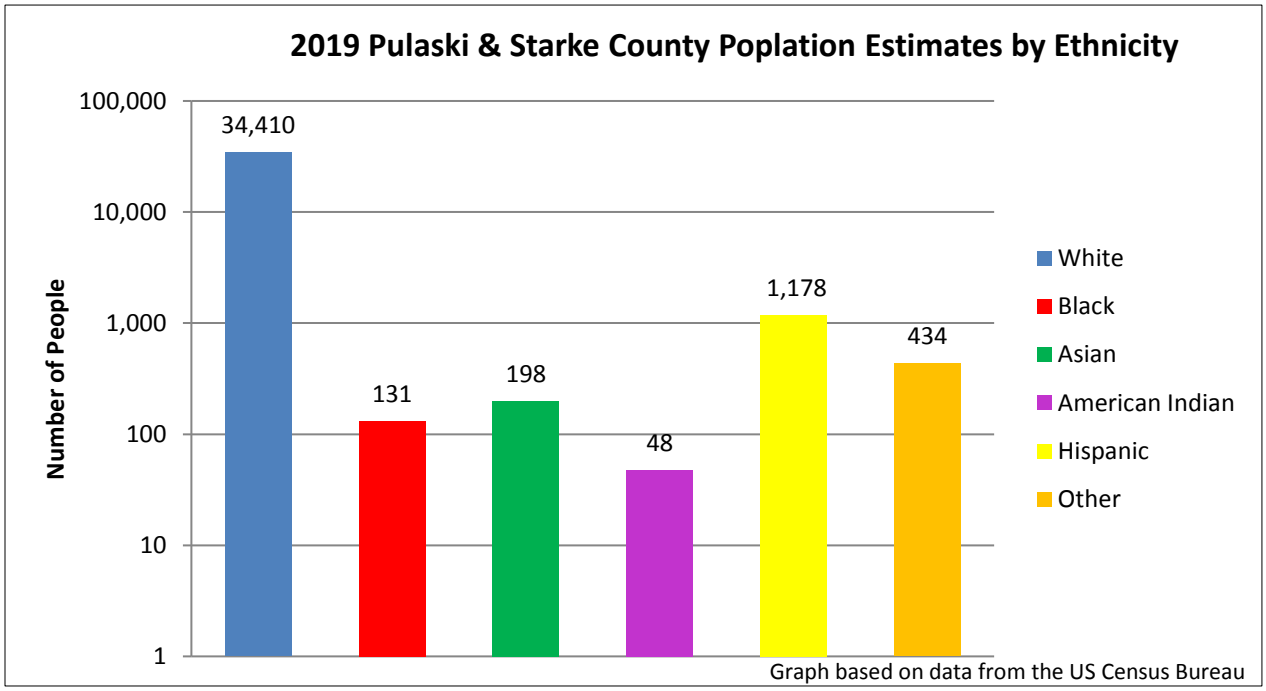
Population – Ethnicity, Age, Gender & Income

According to the U.S. Census Report estimates for 2017, the total population of the counties is approximately 35,727 and the median age in the county is 41.8 years old. Females make up 49.7% of the overall populace. Minority populations make up approximately 3.8% of the total inhabitants of the counties. The average household income is $48,450.

Subject	Pulaski County, Indiana			
	Estimate	Margin of Error	Percent	Percent Margin of Error
SEX AND AGE				
Total population	12,761	*****	12,761	(X)
Male	6,458	+/-87	50.6%	+/-0.7
Female	6,303	+/-87	49.4%	+/-0.7
Sex ratio (males per 100 females)	102.5	+/-2.8	(X)	(X)
Under 5 years	666	+/-24	5.2%	+/-0.2
5 to 9 years	773	+/-97	6.1%	+/-0.8
10 to 14 years	916	+/-120	7.2%	+/-0.9
15 to 19 years	842	+/-56	6.6%	+/-0.4
20 to 24 years	680	+/-9	5.3%	+/-0.1
25 to 34 years	1,365	+/-46	10.7%	+/-0.4
35 to 44 years	1,533	+/-52	12.0%	+/-0.4
45 to 54 years	1,731	+/-19	13.6%	+/-0.1
55 to 59 years	1,010	+/-126	7.9%	+/-1.0
60 to 64 years	929	+/-128	7.3%	+/-1.0
65 to 74 years	1,313	+/-24	10.3%	+/-0.2
75 to 84 years	756	+/-70	5.9%	+/-0.6
85 years and over	247	+/-68	1.9%	+/-0.5
Median age (years)	41.8	+/-1.0	(X)	(X)

Subject	Starke County, Indiana			
	Estimate	Margin of Error	Percent	Percent Margin of Error
SEX AND AGE				
Total population	22,966	*****	22,966	(X)
Male	11,295	+/-76	49.2%	+/-0.3
Female	11,671	+/-76	50.8%	+/-0.3
Sex ratio (males per 100 females)	96.8	+/-1.3	(X)	(X)
Under 5 years	1,264	+/-28	5.5%	+/-0.1
5 to 9 years	1,487	+/-180	6.5%	+/-0.8
10 to 14 years	1,641	+/-193	7.1%	+/-0.8
15 to 19 years	1,482	+/-82	6.5%	+/-0.4
20 to 24 years	1,304	+/-48	5.7%	+/-0.2
25 to 34 years	2,539	+/-45	11.1%	+/-0.2
35 to 44 years	2,721	+/-67	11.8%	+/-0.3
45 to 54 years	3,193	+/-89	13.9%	+/-0.4
55 to 59 years	1,782	+/-181	7.8%	+/-0.8
60 to 64 years	1,669	+/-185	7.3%	+/-0.8
65 to 74 years	2,343	+/-42	10.2%	+/-0.2
75 to 84 years	1,169	+/-101	5.1%	+/-0.4
85 years and over	372	+/-102	1.6%	+/-0.4
Median age (years)	41.7	+/-0.6	(X)	(X)

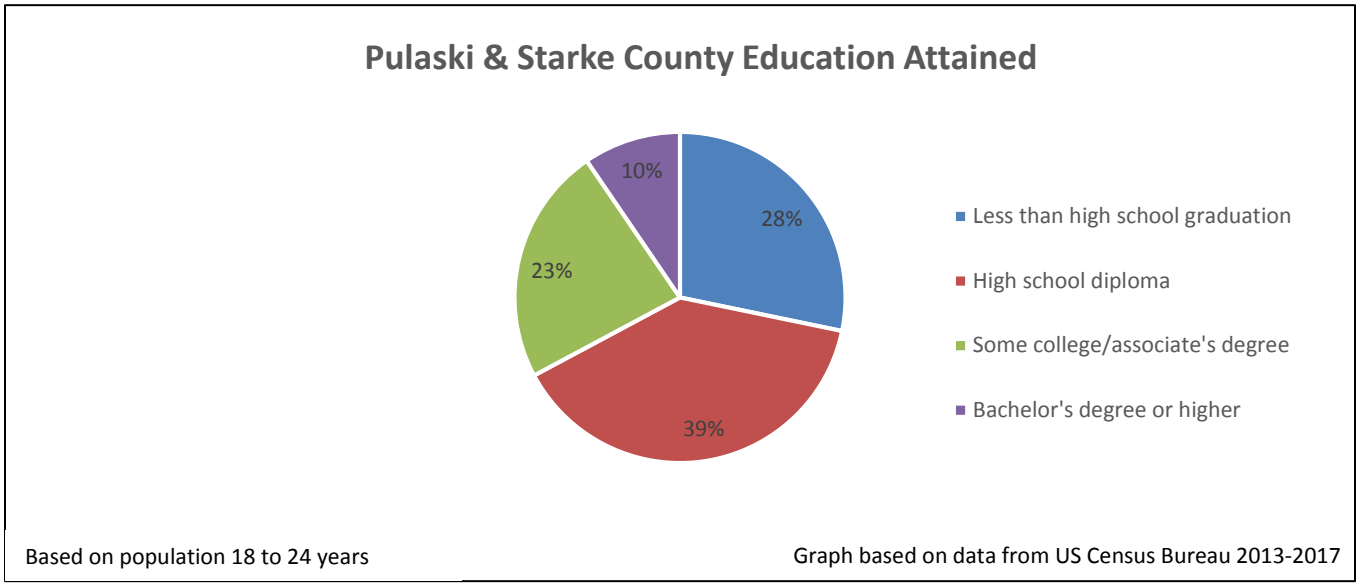
Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates



Graph based on data from the US Census Bureau

Education

The Robert Wood Johnson Foundation reports that approximately 93% of the counties' residents have high school diplomas compared with a statewide average of on 84%. However, 49% of the community has at least some college education compared with a statewide average of 62%.



The full reports from U.S. Census Bureau and the Robert Wood Johnson Foundation can be viewed in Appendix A.

Health Summary

Based on data from the 2018 County Health Rankings & Roadmaps report, Pulaski County ranks 66th in Health Outcomes and 51st in Health Factors and Starke County ranks 75th in Health Outcomes and 85th in Health Factors out of a total of 92 counties in the state.

The Health Outcomes ranking was based on a combined report of 4.1 days of poor physical health by Pulaski & Starke County residents compared to a statewide average of 3.9 and a combined report of 4.2 days of poor mental health days by Pulaski & Starke County residents compared to a statewide average of 4.3. The Health Factors ranking was based on Health Behaviors, Clinical Care, Social and Economic Factors, and Physical Environment.

A slightly higher instance of physical inactivity (at 28% compared to a statewide average of 25%), a high instance of adult obesity (at 34% compared to a statewide average of 31% and a rate of only 26% at the top performers in the U.S.), a high instance of deaths related to alcohol- impaired crashes in Starke County (at 35% of deaths compared to a statewide average of 21%), and a high rate of teen births in Starke County (34 compared to the state average of 28) all combined to earn PMH's service area varied set of rankings with Pulaski County earning a rank of 25 and Starke County earning a rank of 74 out of 92 counties in Health Behaviors.

Both counties ranked in the bottom tenth out of 92 counties on Clinical Care—Pulaski at 89 and Starke at 84. The largest detriment to the Clinical Care scoring was the high patient-to-provider ratios. The average ratio of patients to primary care physicians is 2495:1, compared to the state average of 1500:1. The average patient to dentist ratio is 5905:1, compared to the state average of 1810:1. Finally, average the patient to mental health provider ratio is 2680:1, compared to the state average of 670:1. However, the Clinical Care rankings also indicated that only approximately 10% of the population is uninsured, which is relatively on par compared the statewide rate of 9%.

Both counties exceed state averages for percentage of high school graduates (93% of the community compared to a statewide average of 84%), but a low percentage of residents with some college education (and average of 49% to the state's 60%) and both a high unemployment rate (4.4% compared to 3.5% statewide) and high rate of children in poverty (24% to Indiana's 18%) in Starke County led to a rank of 49 out of 92 for Pulaski County and 84 out of 92 for Starke County in Social and Economic Factors. Each county also had a significantly higher rate of injury deaths with Pulaski at 84 and Starke at 110 compared to Indiana at 74.

The Physical Environment score was higher for Pulaski County, with a ranking of 35 out of 92 Indiana counties, and somewhat lower for Starke County, with a ranking of 72 out of 92 counties. The disparity is due to a combination of air pollution-particulate matter (12.3 in Starke compared to 11.7 in Pulaski and a statewide average of 11.8) and long commutes to work alone (44% in Starke compared to only 27% in Pulaski and a state average of 31%).

The County Health Rankings measures the population living with limited access to healthy foods using the USDA Food Environment Atlas. Individuals are counted who have both low access to a supermarket or large grocery store and a low income. "Low access" is greater than ten miles away in a rural county. "Low income" individuals are classified if they fall into the government definition of poverty or have a median family income at or below 80% of the county's median family income.

Full copies of the Robert Wood Johnson County Health Rankings & Roadmaps reports for Pulaski and Starke counties can be found in Appendix A.

Primary and Chronic Diseases

Pulaski Memorial Hospital generated a report of the Top Diagnoses by Payer Mix for their inpatients for the previous calendar year, January 1, 2018 through December 31, 2018. From this report, the top ten most common diagnoses for their service area were identified. A further examination of the payer mix for each diagnosis resulted in additional data to identify the issues that were most often seen in low-income, disabled, and/or older populations. (*Note: It is important to understand the key characteristics of the PMH population. This includes identifying the low-income, disabled, and/or elderly population. The population trends help provide an indication of patterns within the residents of the community and assist in identifying the needs around this populace.)

The following list contains the top ten most common diagnoses and the percentage of Medicare and Medicaid patients for each diagnosis:

- Pneumonia – 55 cases (80% Medicare and Medicaid)
- Chronic Obstructive Pulmonary Disease with Acute Exacerbation – 37 cases (83.78% Medicare and Medicaid)
- Urinary Tract Infection – 21 cases (100% Medicare and Medicaid)
- Atrial Fibrillation – 14 cases (85.71% Medicare and Medicaid)
- Dehydration – 12 cases (83.33% Medicare and Medicaid)
- Chronic Obstructive Pulmonary Disease with Acute Lower Respiratory Infection – 11 cases (100% Medicare and Medicaid)
- Sepsis, Unspecified Organism – 10 cases (100% Medicare and Medicaid)

Hypertensive Heart and Chronic Kidney Disease with Heart Failure and Stage 1-4 Chronic Kidney Disease – 10 cases (100% Medicare and Medicaid)

Diverticulitis of Large Intestine without Perforation of Abscess without Bleeding – 10 cases (50% Medicare and Medicaid)

Acute Pancreatitis – 9 cases (77.78% Medicare and Medicaid)

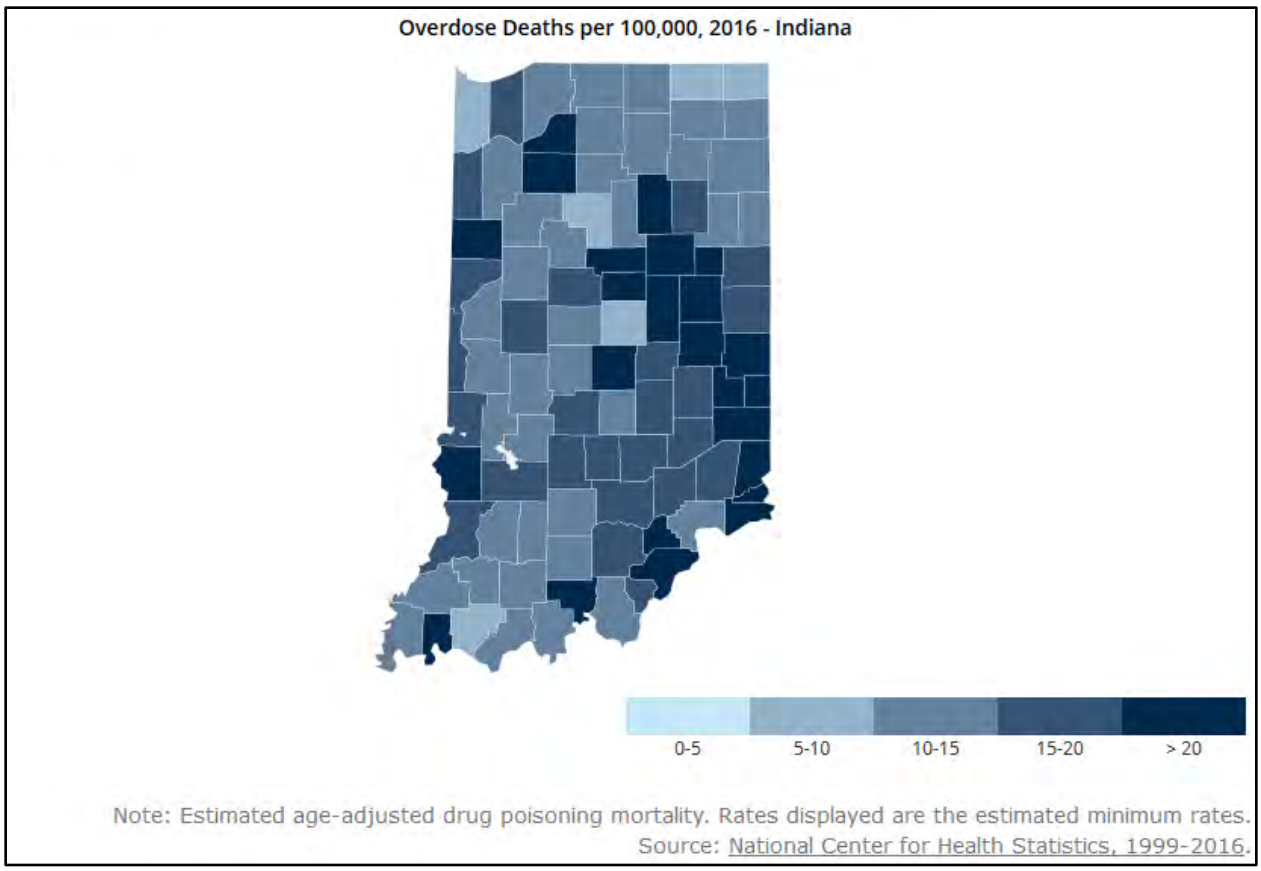
The list of top inpatient diagnoses and payer mix report can be found in Appendix A.

The most recent county-level cancer reports from the state of Indiana are from 2015, and the two counties within Pulaski Memorial Hospital's service area are again split when compared to the state average. The rate of cancer (per 100,000 people) in Pulaski County comes in below the statewide rate of 466.6 at a close 452.5 and Starke comes in above at 507.1. Both counties actually comes in above average on the rates of prostate cancer (an average of 117.8 versus a statewide rate of 106.9). Breast cancer rates are lower than the state average, with an average of 102.2 versus a statewide rate of 118.1. The counties split again for rates of lung and colon/rectal cancers. For lung cancer, Pulaski County comes in below the state average of 79 with a rate of only 69.6 whereas Starke County comes in above the state average with a rate of 85.9. However, the counties flip for colon/rectal cancer rates with Starke County slightly below the state average of 44.1 at a rate of 40.3 and Pulaski County able the state at a rate of 52.3. Cancer mortality rates for all types of cancer in the county are significantly above the state average at an average rate of 205.7 versus Indiana's overall rate of 187.3.

In instances of chronic disease, specifically heart disease and stroke, the CDC ranks Starke County 75th out of 92 Indiana counties in hospitalization rate. Pulaski County, however ranks all the way at 13th in the state for heart disease and stroke hospitalization rates. Additional data from the Centers for Disease Control and Prevention Division for Heart Disease and Stroke Prevention ranks Pulaski County very poorly at 80th out of Indiana's 92 counties in rate of deaths due to heart disease and stroke. Starke County ranks 53rd for the same statistic.

The CDC's Diabetes Data & Trends report also relates that PMH's service area comes in above the state average in rates of diabetes. The county has an age-adjusted rate of 12.9% compared to an Indiana-wide average of 10.4% and national rate of 8.7%.

The CDC's National Center for Health Statistics report on drug overdose deaths in the United States shows that the national average of overdose deaths per 100,000 is 21.7 for 2017. The Indiana average is 29.4. Pulaski County exceeds the national average with a rate of 23.8, but comes in under the state average. However, Starke County far exceeds both the state and national averages with a rate of 35.8.



Portions of the Indiana State Cancer Registry's Indiana Cancer Facts & Figures, as well as the four CDC reports, can be found in Appendix A.

Existing Healthcare Resources

Pulaski Memorial Hospital provided a complete listing of the currently available healthcare facilities and services that are accessed by those living in Pulaski or Starke County. This list includes, but is not limited to, a Critical Access Hospital, community-based physicians, a variety of specialty clinics, oral care providers, eye care providers, mental health services, nursing homes, assisted living facilities, fitness centers, and more. PMH will be able to use this listing when creating their action plan to fully incorporate all available resources.

Providers/Offices

IU La Porte Physicians
Knox Winamac Community Health Center
Dr. Majed Al-Hamwi
Knox Family Medical Center
Dr. Linda G. Munson, DO
Affiliated Ankle and Foot Clinic
Dr. Sara Christie

Dentists

Dr. Bradley Crawford

Dr. Charles Hutton

Advantage Dental and Dentures

Arch Family Dentistry

Badell Dental Clinic

Eye Care

Jennifer Gudas, OD, PC

Northwest Indiana Eye and Laser Center

Mental/Behavioral Health

Four County Counseling Center

HealthLink Community Health Center

Porter-Starke Services, Inc.

Pharmacies

CVS Pharmacy - Pulaski County

Walgreens Pharmacy

CVS Pharmacy - Starke County

Long-term Care/Assisted Living

Parkview Haven Retirement Home

Hickory Creek

Pulaski Health Care Center

Golden Living Center

Wintersong Village - Nursing and Rehab

Fitness Centers

Get Fit NonStop

Community Wellness Center of Winamac

Fit 'N Fabulous – Francesville

MBS Fitness

Max Effex

New Millennium

Go Figure

Pulaski Memorial Hospital Providers

Surgery:

Dr. Wade Hsu

Dr. Daniel Anderson

Family Medicine:

Dr. Rex Allman

Dr. Curtis Bejes

Dr. Elizabeth Curtis

Dr. F. Alan Utes
Family & Women's Health:
Dr. Clint Kauffman
Dr. Melissa Zahrt
Pediatrics:
Dr. Eileen Hsu
Orthopedics:
Dr. Gene Fedor
Nurse Practitioners:
Chantel Anderson, FNP-BC
Patricia Benedict, FNP
Tisha Fry, FNP-BC
Rebecca Jernstrom, FNP-BC
Valerie Leman, PNP
Warren Penrod, FNP
Samantha Pugh, FNP-BC
Beth Ruff, NP-C
Laura Wicker, FNP-BC
Specialists: (non-employed)
Cardiology:
Dr. Ryan Oeltgen
Dr. Robert Riddell
Dr. Mukesh Garg
Dr. Stanley Hillis
Audiology:
Dr. Rebecca Berger, AuD
Ophthalmology:
Dr. Kent Kirk
Dermatology:
Katrina Masterson, NP
Podiatry:
Dr. William Oliver, DPM
Urology:
Dr. Subba Rao Nagubadi

A complete listing of the facilities can also be found in Appendix D.

Identifying Health & Service Needs

A steering committee of Pulaski and Starke County representatives was organized with the help of the Pulaski Memorial Hospital CEO, Tom Barry, and Chief Nurse Executive, Linda Webb. Business owners, local officials, healthcare providers, minority leaders, clergy, student representatives, and any other interested parties were invited to attend the meeting to discuss the health-related needs of the county with

a view to identifying the areas of greatest concern. The invitation letter and list of attendees can be found in Appendix B.

The steering committee was encouraged to brainstorm all areas of need or concern in the health field in Pulaski and Starke counties in both large and small group settings. Once a master list of all concerns was agreed upon by the full group, attendees were separated into two smaller groups (Group A and Group B). The small groups were asked to list what they perceived to be the greatest strengths and values in their county. Then, they were asked to identify the highest priorities from the master list of challenges.

By analyzing both prioritized lists from the small groups, the IRHA was able to detect the items that appeared most frequently and identified the community's areas of greatest concern:

Mental health services
Non-emergent transportation
Drug use/abuse
Tobacco use
Affordable healthcare and insurance
Senior services
Parenting skills and education

The master list, each group's priority list, and the list of areas that were determined to be of the greatest need can be found in Appendix B.

The identified areas of greatest need were used to create a 47-question survey, addressing demographics, county issues, and community services and amenities, which can be found in Appendix C. The survey was widely disseminated via internet access, community bulletins, and the local newspaper to the residents of both Pulaski and Starke County through inclusion on the Pulaski Memorial Hospital's website and a publically available survey posted on SurveyMonkey.com. Face-to-face polling was also implemented at the Pulaski County Public Library in Winamac and the North Judson Library in Starke County. To conduct the in-person survey, two members of the IRHA staff greeted all county residents as they entered the libraries and asked for their participation in the survey. Hard copies of the survey were also left at some of the locations, as well as PMH, for anyone who preferred to complete a paper copy of the survey. The general public was alerted to the face-to-face and online polls through PMH newsletters and social media, as well as appearances by PMH staff on the local radio stations. At the end of polling, there was a total of 248 total responses, including 62 face-to-face responses. The majority (57.87%) of the respondents were from zip code 46996, nearly half (45.57%) of the respondents were 55 years of age or older, 80.65% of respondents identified as female, and 97.58% of respondents identified as White.

After basic demographics, respondents were asked to assess the effect of various factors on their community by selecting "very negative effect, some negative effect, no effect, some positive effect, or very positive effect." The second portion of the survey required respondents to assess the need for various services and facilities in their community by selecting "no need, slight need, definite need, or extreme need." In the needs section, respondents were also able to select "no opinion."

There was also a section for open comments at the end of the survey for any additional information the respondents wanted to share.

When asked "how do these issues affect your county," the standout answers by all respondents were:

1. Opioid drug use – 80.17% responded some negative effect or very negative effect
2. Methamphetamine use – 78.88% responded some negative effect or very negative effect
3. Tobacco use – 75.75% responded some negative effect or very negative effect
4. Vaping and electronic cigarettes – 70.87% responded some negative effect or very negative effect
5. Availability of drug treatment facilities – 65.65% responded some negative effect or very negative effect
6. Cost of health insurance – 63.2% responded some negative effect or very negative effect
7. Cost of health care– 63.2% responded some negative effect or very negative effect

Interestingly, some items that were raised as potential concerns by the steering committee are perceived in a positive light by the community members. It is worth noting that nearly half of all respondents were over the age of 55 and the positively perceived programs deal overwhelmingly with the senior population. Positive responses included:

1. Availability of health care services for the elderly – 50.64% responded some positive effect or very positive effect
2. Availability of health care – 49.35% responded some positive effect or very positive effect
3. Availability of support services for the elderly – 45.11% responded some positive effect or very positive effect
4. Availability of specialists – 46.25% responded some positive effect or very positive effect

When asked "do you see a need for the following services/facilities in your community," the standout responses were:

1. Drug treatment programs – weighted average of 3.47 on a 4 point scale
2. Drug treatment facilities – weighted average of 3.41 on a 4 point scale
3. Illegal drug prevention education – weighted average of 3.39 on a 4 point scale
   Affordable insurance – weighted average of 3.39 on a 4 point scale
4. Affordable health insurance – weighted average of 3.31 on a 4 point scale
5. Mental health services – weighted average of 3.18 on a 4 point scale
   Parenting support services – weighted average of 3.18 on a 4 point scale
6. Parenting skills education – weighted average of 3.17 on a 4 point scale

The full summary of the survey results can be found in Appendix C.

A sampling of the comments from the survey that recurred most often by topic is below. All comments have been left as originally submitted unless they have been edited for length.

Open comments regarding illegal drugs:

"Definitely need drug control and support for users!"
"Need a free needle drop off site anonymous"
"People need a place to dispose of syringes."
"Need a place to available to be able to dispose of medicine, needles and syringes"
"Transition housing for returning substance offenders."
"Drug use is rampant. Need treatment facilities and programs. This county/town needs a public sharps drop off."

Open comments regarding transportation:

"Ambulance service needed that goes out to country. We had to wait 2 hours for an ambulance to come from indy to take my husband to indy with a paramedic. Ridiculous! We also need transportation for people from our county to other counts for appointments, etc.."
"transportation service is a joke, nothing after 3 pm or weekends!"
"I am an indepently living disabled female in my own home. Due to medical issues in 2017, I can not drive and I still have to have home health for my daily living. Finding public transportation is a big factor and struggle in this area. I am also a wheelchair user."
"WE NEED BETTER TRANSPORTATION FOR OUT PATIENTS"

Open comments regarding affordability of care/insurance:

"Need affordable care, cost containment."
"Costly health insurance and premiums make preventable medical care nearly impossible to come by. A healthy community starts with affordable preventative care."
"I also feel like insurance is extremely priced to high. Very hard to afford if your job does not provide it for you."
"Healthcare is outrageous price!"

Open comments regarding Pulaski Memorial Hospital:

"Love your facility. I take my family there for everything, but I wish you had a gynecologist. I hate having to drive."
"Our hospital and physicians might cost a little more than surrounding counties, but I feel that having that level of care nearby is a tremendous asset to the community."
"The hospital has come a long way and are always adding new and improved ideas to the community, just need to see more of an outreach for mental health of all ages. This is a growing area of concern."
"Great hospital with robust services. Wish the doctors clinic was open later and on Saturdays
"We have a great hospital and medical staff. I believe we need to be have a succession plan over the next 5-10 for dental care when our current dentist may retire. Concern of attracting a professional workforce in the future as many young people are leaving the community. Availability of ALS and BLS ambulance to transport patients is problem when trying to get patients to a higher level of care."

A complete summary of the survey results can be found in Appendix C.

Summary of Findings

Based on the information gathered as part of the Community Health Needs Assessment, the Indiana Rural Health Association has identified the areas of greatest need in Pulaski and Starke Counties. Through the collection of health data and community input on the county's strengths, values, and challenges within the hospital's service area, the following needs were identified as being of the highest importance:

Identified Areas of Need

- Education, prevention, and treatment - opioids, methamphetamine, tobacco
- Mental health and drug treatment options
- Affordable health insurance/care - education and navigation
- Transportation - medical, non-medical, and non-emergent
- Parenting and family support and education

Additionally, to aid Pulaski Memorial Hospital in the creation of an action plan, the IRHA has made preliminary suggestions for addressing the defined areas of need. ***Please note these are opportunities for improvement and in no way constitute required actions, but rather are recommendations for further attention.

Recommendations:

The team from IRHA is pleased to serve the needs of Pulaski Memorial Hospital. We have worked with the Leadership team of PMH for many years and highly respect the accomplishments made in many areas of healthcare services that greatly contribute to the health needs of the residents in Pulaski County.

Based on the findings of this project, we would like to offer recommendations to respond to the areas identified by members of the community. These are only suggestions and should not be considered requirements nor complete solutions. Those recommendations are below:

Education, prevention, and treatment - opioids, methamphetamine, tobacco:

- PMH has developed a strong recruiting network of physicians and other providers, which is uncommon success in rural communities. We recommend involving those providers to hold "town hall" style meetings with community members to address these specific concerns.
  - Discuss constructive activities to develop a modified lifestyle.
  - Ask healthcare providers to share "lack of quality of life" stories for those impacted.
  - Give examples of changed lives.
  - Discuss negative impact on families of addicts.
- Coordinate prevention and education efforts with local schools.
- Coordinate with service groups and faith-based community to publicize, create, and host recovery and support groups such as Narcotics Anonymous, Al-Anon, etc.

Mental health and drug treatment options

- Collaborate with mental health providers, locally or regionally to develop programs.
- Provide facilities where patients can be seen that are not publically labeled "Mental Health Facility."
- Consider implementing or expanding Peer Recovery Coach programs and Medication Assisted Treatments for Substance Use Disorders.
- Evaluate insurance coverage with local major employers to determine what plans are available.
- Evaluate insurance coverage with state programs for the indigent with mental health issues.
- Explore telemedicine opportunities for mental health, including Federal, State, or Private organization grants.

Affordable health insurance/care – education to reduce costs

- Explore programs that emphasize healthy living means lower healthcare costs.
- Evaluate Chronic Care Management programs.
- Utilize marketplace and insurance navigators.

- Create (if necessary) and publicize tobacco cessation programs and highlighted associated insurance savings.
- Collaborate with nutrition specialists and organize dietary refinement meetings.
- Hold special events to recognize success stories of patients.
- Work with local schools to encourage better nutrition in school foods.
- Collaborate with local restaurants, offer healthy menus, get hospital logo on menus.
- Develop a gardening program, promote organic foods, healthy diets.
- Develop physical activity classes, Zumba, aerobics, yoga, etc.
    - Include hospital employees and give health insurance credits.
    - Work with local businesses to send employees and offer insurance credits.
    - Collaborate with local clubs for support such as a YMCA or similar organizations.

Transportation – medical, non-medical, and non-emergent

- Collaborate with local churches and civic organizations for support groups.
- Organize neighborhood "Ride Share" programs to organize localized solutions to assist with transportation needs for non-emergency medical appointments.
- Explore telehealth programs where applicable to avoid the need of transportation.
- Seek grant dollars to support transportation for non-emergency care.

Family and parenting support and education

- Develop Community Outreach programs to connect with applicable patients about available services.
- Explore a "Mentoring for Moms" program to support the emotional and educational needs of new mothers.
- Work with social service organizations to develop group classes on healthy living.
- Collaborate with local churches and civic organizations for support groups.
- Partner with providers, host events where they can speak about the benefits of health living.
- Seek financial support or materials from any local or regional organizations who manufacture or distribute family household goods.

Pulaski Memorial Hospital has earned the trust and respect of many local residents. This can be leveraged with providers and local business and community service organizations to explore the suggested and other ideas to enhance the quality of life of Pulaski and Starke County residents.

Appendix A

Resources & Reference Materials

Pulaski Memorial Hospital Market Area

Town	Zip Code
Winamac, IN	46996
Francesville, IN	47946
Monterey, IN	46960
North Judson, IN	46366
Rochester, IN	46975
Knox, IN	46534
Rensselear, IN	47978
Monticello, IN	47960
Star City, IN	46985
Kewanna, IN	46939
Culver, IN	46511
San Pierre, IN	46374
Logansport, IN	46947
Medaryville, IN	46957

DP05

ACS DEMOGRAPHIC AND HOUSING ESTIMATES

2013-2017 American Community Survey 5-Year Estimates

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Subject	Pulaski County, Indiana			
	Estimate	Margin of Error	Percent	Percent Margin of Error
SEX AND AGE				
Total population	12,761	*****	12,761	(X)
Male	6,458	+/-87	50.6%	+/-0.7
Female	6,303	+/-87	49.4%	+/-0.7
Sex ratio (males per 100 females)	102.5	+/-2.8	(X)	(X)
Under 5 years	666	+/-24	5.2%	+/-0.2
5 to 9 years	773	+/-97	6.1%	+/-0.8
10 to 14 years	916	+/-120	7.2%	+/-0.9
15 to 19 years	842	+/-56	6.6%	+/-0.4
20 to 24 years	680	+/-9	5.3%	+/-0.1
25 to 34 years	1,365	+/-46	10.7%	+/-0.4
35 to 44 years	1,533	+/-52	12.0%	+/-0.4
45 to 54 years	1,731	+/-19	13.6%	+/-0.1
55 to 59 years	1,010	+/-126	7.9%	+/-1.0
60 to 64 years	929	+/-128	7.3%	+/-1.0
65 to 74 years	1,313	+/-24	10.3%	+/-0.2
75 to 84 years	756	+/-70	5.9%	+/-0.6
85 years and over	247	+/-68	1.9%	+/-0.5
Median age (years)	41.8	+/-1.0	(X)	(X)
Under 18 years	2,912	+/-69	22.8%	+/-0.5
16 years and over	10,235	+/-90	80.2%	+/-0.7
18 years and over	9,849	+/-69	77.2%	+/-0.5
21 years and over	9,412	+/-107	73.8%	+/-0.8
62 years and over	2,856	+/-109	22.4%	+/-0.9
65 years and over	2,316	+/-34	18.1%	+/-0.3
18 years and over	9,849	+/-69	9,849	(X)
Male	4,969	+/-75	50.5%	+/-0.6
Female	4,880	+/-60	49.5%	+/-0.6
Sex ratio (males per 100 females)	101.8	+/-2.4	(X)	(X)

Subject	Pulaski County, Indiana			
	Estimate	Margin of Error	Percent	Percent Margin of Error
65 years and over	2,316	+/-34	2,316	(X)
Male	1,097	+/-20	47.4%	+/-0.3
Female	1,219	+/-18	52.6%	+/-0.3
Sex ratio (males per 100 females)	90.0	+/-1.2	(X)	(X)
RACE				
Total population	12,761	*****	12,761	(X)
One race	12,552	+/-84	98.4%	+/-0.7
Two or more races	209	+/-84	1.6%	+/-0.7
One race	12,552	+/-84	98.4%	+/-0.7
White	12,243	+/-78	95.9%	+/-0.6
Black or African American	59	+/-60	0.5%	+/-0.5
American Indian and Alaska Native	19	+/-21	0.1%	+/-0.2
Cherokee tribal grouping	12	+/-18	0.1%	+/-0.1
Chippewa tribal grouping	0	+/-18	0.0%	+/-0.2
Navajo tribal grouping	0	+/-18	0.0%	+/-0.2
Sioux tribal grouping	0	+/-18	0.0%	+/-0.2
Asian	81	+/-55	0.6%	+/-0.4
Asian Indian	0	+/-18	0.0%	+/-0.2
Chinese	49	+/-54	0.4%	+/-0.4
Filipino	17	+/-25	0.1%	+/-0.2
Japanese	0	+/-18	0.0%	+/-0.2
Korean	15	+/-23	0.1%	+/-0.2
Vietnamese	0	+/-18	0.0%	+/-0.2
Other Asian	0	+/-18	0.0%	+/-0.2
Native Hawaiian and Other Pacific Islander	0	+/-18	0.0%	+/-0.2
Native Hawaiian	0	+/-18	0.0%	+/-0.2
Guamanian or Chamorro	0	+/-18	0.0%	+/-0.2
Samoan	0	+/-18	0.0%	+/-0.2
Other Pacific Islander	0	+/-18	0.0%	+/-0.2
Some other race	150	+/-83	1.2%	+/-0.7
Two or more races	209	+/-84	1.6%	+/-0.7
White and Black or African American	83	+/-74	0.7%	+/-0.6
White and American Indian and Alaska Native	82	+/-21	0.6%	+/-0.2
White and Asian	0	+/-18	0.0%	+/-0.2
Black or African American and American Indian and Alaska Native	0	+/-18	0.0%	+/-0.2
Race alone or in combination with one or more other races				
Total population	12,761	*****	12,761	(X)
White	12,445	+/-114	97.5%	+/-0.9
Black or African American	142	+/-59	1.1%	+/-0.5
American Indian and Alaska Native	101	+/-18	0.8%	+/-0.2
Asian	88	+/-54	0.7%	+/-0.4
Native Hawaiian and Other Pacific Islander	0	+/-18	0.0%	+/-0.2
Some other race	194	+/-83	1.5%	+/-0.7
HISPANIC OR LATINO AND RACE				
Total population	12,761	*****	12,761	(X)
Hispanic or Latino (of any race)	366	*****	2.9%	*****
Mexican	327	+/-36	2.6%	+/-0.3
Puerto Rican	20	+/-27	0.2%	+/-0.2
Cuban	5	+/-10	0.0%	+/-0.1
Other Hispanic or Latino	14	+/-19	0.1%	+/-0.1
Not Hispanic or Latino	12,395	*****	97.1%	*****
White alone	12,078	+/-18	94.6%	+/-0.2
Black or African American alone	45	+/-58	0.4%	+/-0.5
American Indian and Alaska Native alone	19	+/-21	0.1%	+/-0.2

Subject	Pulaski County, Indiana			
	Estimate	Margin of Error	Percent	Percent Margin of Error
Asian alone	81	+/-55	0.6%	+/-0.4
Native Hawaiian and Other Pacific Islander alone	0	+/-18	0.0%	+/-0.2
Some other race alone	0	+/-18	0.0%	+/-0.2
Two or more races	172	+/-75	1.3%	+/-0.6
Two races including Some other race	7	+/-12	0.1%	+/-0.1
Two races excluding Some other race, and Three or more races	165	+/-76	1.3%	+/-0.6
Total housing units	6,096	+/-39	(X)	(X)
CITIZEN, VOTING AGE POPULATION				
Citizen, 18 and over population	9,794	+/-75	9,794	(X)
Male	4,925	+/-78	50.3%	+/-0.6
Female	4,869	+/-62	49.7%	+/-0.6

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

For more information on understanding race and Hispanic origin data, please see the Census 2010 Brief entitled, Overview of Race and Hispanic Origin: 2010, issued March 2011. (pdf format)

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.

DP05

ACS DEMOGRAPHIC AND HOUSING ESTIMATES

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Subject	Starke County, Indiana			
	Estimate	Margin of Error	Percent	Percent Margin of Error
SEX AND AGE				
Total population	22,966	*****	22,966	(X)
Male	11,295	+/-76	49.2%	+/-0.3
Female	11,671	+/-76	50.8%	+/-0.3
Sex ratio (males per 100 females)	96.8	+/-1.3	(X)	(X)
Under 5 years	1,264	+/-28	5.5%	+/-0.1
5 to 9 years	1,487	+/-180	6.5%	+/-0.8
10 to 14 years	1,641	+/-193	7.1%	+/-0.8
15 to 19 years	1,482	+/-82	6.5%	+/-0.4
20 to 24 years	1,304	+/-48	5.7%	+/-0.2
25 to 34 years	2,539	+/-45	11.1%	+/-0.2
35 to 44 years	2,721	+/-67	11.8%	+/-0.3
45 to 54 years	3,193	+/-89	13.9%	+/-0.4
55 to 59 years	1,782	+/-181	7.8%	+/-0.8
60 to 64 years	1,669	+/-185	7.3%	+/-0.8
65 to 74 years	2,343	+/-42	10.2%	+/-0.2
75 to 84 years	1,169	+/-101	5.1%	+/-0.4
85 years and over	372	+/-102	1.6%	+/-0.4
Median age (years)	41.7	+/-0.6	(X)	(X)
Under 18 years	5,382	+/-60	23.4%	+/-0.3
16 years and over	18,297	+/-110	79.7%	+/-0.5
18 years and over	17,584	+/-60	76.6%	+/-0.3
21 years and over	16,872	+/-102	73.5%	+/-0.4
62 years and over	4,826	+/-156	21.0%	+/-0.7
65 years and over	3,884	+/-40	16.9%	+/-0.2
18 years and over	17,584	+/-60	17,584	(X)
Male	8,657	+/-61	49.2%	+/-0.3
Female	8,927	+/-52	50.8%	+/-0.3
Sex ratio (males per 100 females)	97.0	+/-1.1	(X)	(X)

Subject	Starke County, Indiana			
	Estimate	Margin of Error	Percent	Percent Margin of Error
65 years and over	3,884	+/-40	3,884	(X)
Male	1,853	+/-34	47.7%	+/-0.6
Female	2,031	+/-24	52.3%	+/-0.6
Sex ratio (males per 100 females)	91.2	+/-2.0	(X)	(X)
RACE				
Total population	22,966	*****	22,966	(X)
One race	22,669	+/-107	98.7%	+/-0.5
Two or more races	297	+/-107	1.3%	+/-0.5
One race	22,669	+/-107	98.7%	+/-0.5
White	22,167	+/-144	96.5%	+/-0.6
Black or African American	72	+/-63	0.3%	+/-0.3
American Indian and Alaska Native	29	+/-30	0.1%	+/-0.1
Cherokee tribal grouping	0	+/-21	0.0%	+/-0.1
Chippewa tribal grouping	0	+/-21	0.0%	+/-0.1
Navajo tribal grouping	0	+/-21	0.0%	+/-0.1
Sioux tribal grouping	0	+/-21	0.0%	+/-0.1
Asian	117	+/-93	0.5%	+/-0.4
Asian Indian	1	+/-4	0.0%	+/-0.1
Chinese	78	+/-97	0.3%	+/-0.4
Filipino	38	+/-55	0.2%	+/-0.2
Japanese	0	+/-21	0.0%	+/-0.1
Korean	0	+/-21	0.0%	+/-0.1
Vietnamese	0	+/-21	0.0%	+/-0.1
Other Asian	0	+/-21	0.0%	+/-0.1
Native Hawaiian and Other Pacific Islander	0	+/-21	0.0%	+/-0.1
Native Hawaiian	0	+/-21	0.0%	+/-0.1
Guamanian or Chamorro	0	+/-21	0.0%	+/-0.1
Samoan	0	+/-21	0.0%	+/-0.1
Other Pacific Islander	0	+/-21	0.0%	+/-0.1
Some other race	284	+/-135	1.2%	+/-0.6
Two or more races	297	+/-107	1.3%	+/-0.5
White and Black or African American	98	+/-63	0.4%	+/-0.3
White and American Indian and Alaska Native	104	+/-74	0.5%	+/-0.3
White and Asian	35	+/-40	0.2%	+/-0.2
Black or African American and American Indian and Alaska Native	0	+/-21	0.0%	+/-0.1
Race alone or in combination with one or more other races				
Total population	22,966	*****	22,966	(X)
White	22,464	+/-169	97.8%	+/-0.7
Black or African American	170	+/-21	0.7%	+/-0.1
American Indian and Alaska Native	133	+/-80	0.6%	+/-0.3
Asian	152	+/-77	0.7%	+/-0.3
Native Hawaiian and Other Pacific Islander	0	+/-21	0.0%	+/-0.1
Some other race	344	+/-142	1.5%	+/-0.6
HISPANIC OR LATINO AND RACE				
Total population	22,966	*****	22,966	(X)
Hispanic or Latino (of any race)	812	*****	3.5%	*****
Mexican	671	+/-91	2.9%	+/-0.4
Puerto Rican	64	+/-74	0.3%	+/-0.3
Cuban	0	+/-21	0.0%	+/-0.1
Other Hispanic or Latino	77	+/-52	0.3%	+/-0.2
Not Hispanic or Latino	22,154	*****	96.5%	*****
White alone	21,702	+/-4	94.5%	+/-0.1
Black or African American alone	72	+/-63	0.3%	+/-0.3
American Indian and Alaska Native alone	23	+/-27	0.1%	+/-0.1

Subject	Starke County, Indiana			
	Estimate	Margin of Error	Percent	Percent Margin of Error
Asian alone	117	+/-93	0.5%	+/-0.4
Native Hawaiian and Other Pacific Islander alone	0	+/-21	0.0%	+/-0.1
Some other race alone	0	+/-21	0.0%	+/-0.1
Two or more races	240	+/-89	1.0%	+/-0.4
Two races including Some other race	3	+/-4	0.0%	+/-0.1
Two races excluding Some other race, and Three or more races	237	+/-89	1.0%	+/-0.4
Total housing units	11,088	+/-30	(X)	(X)
CITIZEN, VOTING AGE POPULATION				
Citizen, 18 and over population	17,420	+/-120	17,420	(X)
Male	8,584	+/-97	49.3%	+/-0.3
Female	8,836	+/-65	50.7%	+/-0.3

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S1501

EDUCATIONAL ATTAINMENT

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Subject	Pulaski County, Indiana				
	Total		Percent		Male
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
Population 18 to 24 years	965	+/-31	(X)	(X)	532
Less than high school graduate	296	+/-73	30.7%	+/-7.4	181
High school graduate (includes equivalency)	344	+/-89	35.6%	+/-9.3	228
Some college or associate's degree	228	+/-78	23.6%	+/-8.0	94
Bachelor's degree or higher	97	+/-50	10.1%	+/-5.2	29
Population 25 years and over	8,884	+/-79	(X)	(X)	4,437
Less than 9th grade	334	+/-112	3.8%	+/-1.3	193
9th to 12th grade, no diploma	667	+/-144	7.5%	+/-1.6	321
High school graduate (includes equivalency)	4,127	+/-261	46.5%	+/-3.0	2,250
Some college, no degree	2,192	+/-249	24.7%	+/-2.8	1,025
Associate's degree	519	+/-130	5.8%	+/-1.4	182
Bachelor's degree	727	+/-125	8.2%	+/-1.4	328
Graduate or professional degree	318	+/-73	3.6%	+/-0.8	138
Percent high school graduate or higher	(X)	(X)	88.7%	+/-1.9	(X)
Percent bachelor's degree or higher	(X)	(X)	11.8%	+/-1.8	(X)
Population 25 to 34 years	1,365	+/-46	(X)	(X)	674
High school graduate or higher	1,179	+/-86	86.4%	+/-5.1	597
Bachelor's degree or higher	149	+/-61	10.9%	+/-4.5	58
Population 35 to 44 years	1,533	+/-52	(X)	(X)	820
High school graduate or higher	1,382	+/-82	90.2%	+/-4.5	747
Bachelor's degree or higher	334	+/-88	21.8%	+/-5.8	124
Population 45 to 64 years	3,670	+/-68	(X)	(X)	1,846
High school graduate or higher	3,408	+/-100	92.9%	+/-2.2	1,688
Bachelor's degree or higher	358	+/-87	9.8%	+/-2.4	149
Population 65 years and over	2,316	+/-34	(X)	(X)	1,097
High school graduate or higher	1,914	+/-98	82.6%	+/-4.0	891
Bachelor's degree or higher	204	+/-73	8.8%	+/-3.2	135

Subject	Pulaski County, Indiana				
	Total		Percent		Male
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
RACE AND HISPANIC OR LATINO ORIGIN BY EDUCATIONAL ATTAINMENT					
White alone	8,601	+/-51	(X)	(X)	4,297
High school graduate or higher	7,681	+/-166	89.3%	+/-1.8	3,798
Bachelor's degree or higher	1,023	+/-159	11.9%	+/-1.8	451
White alone, not Hispanic or Latino	8,481	+/-18	(X)	(X)	4,244
High school graduate or higher	7,564	+/-157	89.2%	+/-1.9	3,747
Bachelor's degree or higher	1,016	+/-157	12.0%	+/-1.9	451
Black alone	52	+/-60	(X)	(X)	45
High school graduate or higher	52	+/-60	100.0%	+/-39.5	45
Bachelor's degree or higher	0	+/-18	0.0%	+/-39.5	0
American Indian or Alaska Native alone	19	+/-21	(X)	(X)	13
High school graduate or higher	19	+/-21	100.0%	+/-65.4	13
Bachelor's degree or higher	0	+/-18	0.0%	+/-65.4	0
Asian alone	32	+/-32	(X)	(X)	15
High school graduate or higher	15	+/-23	46.9%	+/-53.1	15
Bachelor's degree or higher	15	+/-23	46.9%	+/-53.1	15
Native Hawaiian and Other Pacific Islander alone	0	+/-18	(X)	(X)	0
High school graduate or higher	0	+/-18	-	**	0
Bachelor's degree or higher	0	+/-18	-	**	0
Some other race alone	79	+/-52	(X)	(X)	28
High school graduate or higher	49	+/-48	62.0%	+/-40.9	23
Bachelor's degree or higher	0	+/-18	0.0%	+/-30.6	0
Two or more races	101	+/-42	(X)	(X)	39
High school graduate or higher	67	+/-45	66.3%	+/-28.1	29
Bachelor's degree or higher	7	+/-12	6.9%	+/-11.3	0
Hispanic or Latino Origin	230	+/-12	(X)	(X)	88
High school graduate or higher	180	+/-42	78.3%	+/-17.8	81
Bachelor's degree or higher	7	+/-14	3.0%	+/-6.0	0
POVERTY RATE FOR THE POPULATION 25 YEARS AND OVER FOR WHOM POVERTY STATUS IS DETERMINED BY EDUCATIONAL ATTAINMENT					
Less than high school graduate	(X)	(X)	27.8%	+/-8.1	(X)
High school graduate (includes equivalency)	(X)	(X)	9.3%	+/-2.4	(X)
Some college or associate's degree	(X)	(X)	12.2%	+/-3.9	(X)
Bachelor's degree or higher	(X)	(X)	4.2%	+/-2.9	(X)
MEDIAN EARNINGS IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS)					
Population 25 years and over with earnings	32,600	+/-3,007	(X)	(X)	41,376
Less than high school graduate	-	**	(X)	(X)	30,438
High school graduate (includes equivalency)	32,094	+/-2,559	(X)	(X)	41,414
Some college or associate's degree	31,396	+/-1,647	(X)	(X)	40,226
Bachelor's degree	41,316	+/-2,930	(X)	(X)	58,289
Graduate or professional degree	61,625	+/-12,626	(X)	(X)	70,694

Subject	Pulaski County, Indiana				
	Male	Percent Male		Female	
	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population 18 to 24 years	+/-30	(X)	(X)	433	+/-8
Less than high school graduate	+/-69	34.0%	+/-12.9	115	+/-45
High school graduate (includes equivalency)	+/-64	42.9%	+/-12.0	116	+/-50
Some college or associate's degree	+/-49	17.7%	+/-8.9	134	+/-53
Bachelor's degree or higher	+/-36	5.5%	+/-6.8	68	+/-34
Population 25 years and over	+/-78	(X)	(X)	4,447	+/-63
Less than 9th grade	+/-78	4.3%	+/-1.8	141	+/-61
9th to 12th grade, no diploma	+/-86	7.2%	+/-1.9	346	+/-105
High school graduate (includes equivalency)	+/-193	50.7%	+/-4.4	1,877	+/-160
Some college, no degree	+/-158	23.1%	+/-3.6	1,167	+/-169
Associate's degree	+/-76	4.1%	+/-1.7	337	+/-94
Bachelor's degree	+/-84	7.4%	+/-1.9	399	+/-88
Graduate or professional degree	+/-50	3.1%	+/-1.1	180	+/-50
Percent high school graduate or higher	(X)	88.4%	+/-2.4	(X)	(X)
Percent bachelor's degree or higher	(X)	10.5%	+/-2.4	(X)	(X)
Population 25 to 34 years	+/-5	(X)	(X)	691	+/-46
High school graduate or higher	+/-52	88.6%	+/-7.8	582	+/-71
Bachelor's degree or higher	+/-36	8.6%	+/-5.4	91	+/-49
Population 35 to 44 years	+/-51	(X)	(X)	713	+/-23
High school graduate or higher	+/-65	91.1%	+/-5.5	635	+/-50
Bachelor's degree or higher	+/-49	15.1%	+/-5.9	210	+/-65
Population 45 to 64 years	+/-61	(X)	(X)	1,824	+/-39
High school graduate or higher	+/-78	91.4%	+/-2.5	1,720	+/-54
Bachelor's degree or higher	+/-51	8.1%	+/-2.8	209	+/-62
Population 65 years and over	+/-20	(X)	(X)	1,219	+/-18
High school graduate or higher	+/-71	81.2%	+/-6.3	1,023	+/-61
Bachelor's degree or higher	+/-59	12.3%	+/-5.3	69	+/-39
RACE AND HISPANIC OR LATINO ORIGIN BY EDUCATIONAL ATTAINMENT					
White alone	+/-38	(X)	(X)	4,304	+/-59
High school graduate or higher	+/-108	88.4%	+/-2.4	3,883	+/-122
Bachelor's degree or higher	+/-104	10.5%	+/-2.4	572	+/-102
White alone, not Hispanic or Latino	+/-18	(X)	(X)	4,237	+/-18
High school graduate or higher	+/-105	88.3%	+/-2.5	3,817	+/-102
Bachelor's degree or higher	+/-104	10.6%	+/-2.4	565	+/-100
Black alone	+/-57	(X)	(X)	7	+/-10
High school graduate or higher	+/-57	100.0%	+/-42.5	7	+/-10
Bachelor's degree or higher	+/-18	0.0%	+/-42.5	0	+/-18
American Indian or Alaska Native alone	+/-15	(X)	(X)	6	+/-9
High school graduate or higher	+/-15	100.0%	+/-79.0	6	+/-9
Bachelor's degree or higher	+/-18	0.0%	+/-79.0	0	+/-18
Asian alone	+/-23	(X)	(X)	17	+/-25
High school graduate or higher	+/-23	100.0%	+/-73.6	0	+/-18
Bachelor's degree or higher	+/-23	100.0%	+/-73.6	0	+/-18
Native Hawaiian and Other Pacific Islander alone	+/-18	(X)	(X)	0	+/-18
High school graduate or higher	+/-18	-	**	0	+/-18
Bachelor's degree or higher	+/-18	-	**	0	+/-18

Subject	Pulaski County, Indiana				
	Male	Percent Male		Female	
	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Some other race alone	+/-33	(X)	(X)	51	+/-35
High school graduate or higher	+/-36	82.1%	+/-58.3	26	+/-23
Bachelor's degree or higher	+/-18	0.0%	+/-53.8	0	+/-18
Two or more races	+/-30	(X)	(X)	62	+/-32
High school graduate or higher	+/-32	74.4%	+/-33.2	38	+/-30
Bachelor's degree or higher	+/-18	0.0%	+/-45.6	7	+/-12
Hispanic or Latino Origin	+/-47	(X)	(X)	142	+/-51
High school graduate or higher	+/-49	92.0%	+/-13.0	99	+/-56
Bachelor's degree or higher	+/-18	0.0%	+/-28.2	7	+/-14
POVERTY RATE FOR THE POPULATION 25 YEARS AND OVER FOR WHOM POVERTY STATUS IS DETERMINED BY EDUCATIONAL ATTAINMENT					
Less than high school graduate	(X)	20.7%	+/-9.0	(X)	(X)
High school graduate (includes equivalency)	(X)	8.6%	+/-3.4	(X)	(X)
Some college or associate's degree	(X)	9.8%	+/-4.1	(X)	(X)
Bachelor's degree or higher	(X)	3.2%	+/-4.9	(X)	(X)
MEDIAN EARNINGS IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS)					
Population 25 years and over with earnings	+/-1,703	(X)	(X)	25,615	+/-3,094
Less than high school graduate	+/-14,926	(X)	(X)	12,596	+/-7,613
High school graduate (includes equivalency)	+/-1,975	(X)	(X)	21,200	+/-1,329
Some college or associate's degree	+/-2,666	(X)	(X)	27,039	+/-2,430
Bachelor's degree	+/-7,473	(X)	(X)	36,755	+/-2,771
Graduate or professional degree	+/-25,586	(X)	(X)	61,000	+/-33,013

Subject	Pulaski County, Indiana	
	Percent Female	
	Estimate	Margin of Error
Population 18 to 24 years	(X)	(X)
Less than high school graduate	26.6%	+/-10.4
High school graduate (includes equivalency)	26.8%	+/-11.6
Some college or associate's degree	30.9%	+/-12.3
Bachelor's degree or higher	15.7%	+/-8.0
Population 25 years and over	(X)	(X)
Less than 9th grade	3.2%	+/-1.4
9th to 12th grade, no diploma	7.8%	+/-2.4
High school graduate (includes equivalency)	42.2%	+/-3.6
Some college, no degree	26.2%	+/-3.7
Associate's degree	7.6%	+/-2.1
Bachelor's degree	9.0%	+/-2.0
Graduate or professional degree	4.0%	+/-1.1
Percent high school graduate or higher	89.0%	+/-2.6
Percent bachelor's degree or higher	13.0%	+/-2.3
Population 25 to 34 years	(X)	(X)
High school graduate or higher	84.2%	+/-8.3
Bachelor's degree or higher	13.2%	+/-7.4
Population 35 to 44 years	(X)	(X)
High school graduate or higher	89.1%	+/-7.0
Bachelor's degree or higher	29.5%	+/-9.1
Population 45 to 64 years	(X)	(X)
High school graduate or higher	94.3%	+/-2.9
Bachelor's degree or higher	11.5%	+/-3.4
Population 65 years and over	(X)	(X)
High school graduate or higher	83.9%	+/-4.7
Bachelor's degree or higher	5.7%	+/-3.2
RACE AND HISPANIC OR LATINO ORIGIN BY EDUCATIONAL ATTAINMENT		
White alone	(X)	(X)
High school graduate or higher	90.2%	+/-2.4
Bachelor's degree or higher	13.3%	+/-2.4
White alone, not Hispanic or Latino	(X)	(X)
High school graduate or higher	90.1%	+/-2.4
Bachelor's degree or higher	13.3%	+/-2.4
Black alone	(X)	(X)
High school graduate or higher	100.0%	+/-100.0
Bachelor's degree or higher	0.0%	+/-100.0
American Indian or Alaska Native alone	(X)	(X)
High school graduate or higher	100.0%	+/-100.0
Bachelor's degree or higher	0.0%	+/-100.0
Asian alone	(X)	(X)
High school graduate or higher	0.0%	+/-69.1
Bachelor's degree or higher	0.0%	+/-69.1
Native Hawaiian and Other Pacific Islander alone	(X)	(X)
High school graduate or higher	-	**
Bachelor's degree or higher	-	**

Subject	Pulaski County, Indiana	
	Percent Female	
	Estimate	Margin of Error
Some other race alone	(X)	(X)
High school graduate or higher	51.0%	+/-42.6
Bachelor's degree or higher	0.0%	+/-39.9
Two or more races	(X)	(X)
High school graduate or higher	61.3%	+/-35.2
Bachelor's degree or higher	11.3%	+/-16.8
Hispanic or Latino Origin	(X)	(X)
High school graduate or higher	69.7%	+/-26.4
Bachelor's degree or higher	4.9%	+/-9.6
POVERTY RATE FOR THE POPULATION 25 YEARS AND OVER FOR WHOM POVERTY STATUS IS DETERMINED BY EDUCATIONAL ATTAINMENT		
Less than high school graduate	35.2%	+/-13.1
High school graduate (includes equivalency)	10.1%	+/-3.2
Some college or associate's degree	14.0%	+/-4.7
Bachelor's degree or higher	5.0%	+/-3.6
MEDIAN EARNINGS IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS)		
Population 25 years and over with earnings	(X)	(X)
Less than high school graduate	(X)	(X)
High school graduate (includes equivalency)	(X)	(X)
Some college or associate's degree	(X)	(X)
Bachelor's degree	(X)	(X)
Graduate or professional degree	(X)	(X)

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.

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EDUCATIONAL ATTAINMENT

2013-2017 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Subject	Starke County, Indiana				
	Total		Percent		Male
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
Population 18 to 24 years	1,796	+/-45	(X)	(X)	915
Less than high school graduate	484	+/-129	26.9%	+/-6.9	250
High school graduate (includes equivalency)	731	+/-115	40.7%	+/-6.7	392
Some college or associate's degree	415	+/-120	23.1%	+/-6.8	222
Bachelor's degree or higher	166	+/-72	9.2%	+/-4.0	51
Population 25 years and over	15,788	+/-77	(X)	(X)	7,742
Less than 9th grade	822	+/-170	5.2%	+/-1.1	400
9th to 12th grade, no diploma	1,846	+/-212	11.7%	+/-1.3	940
High school graduate (includes equivalency)	6,326	+/-305	40.1%	+/-1.9	3,347
Some college, no degree	3,431	+/-309	21.7%	+/-1.9	1,622
Associate's degree	1,571	+/-189	10.0%	+/-1.2	588
Bachelor's degree	1,193	+/-186	7.6%	+/-1.2	592
Graduate or professional degree	599	+/-128	3.8%	+/-0.8	253
Percent high school graduate or higher	(X)	(X)	83.1%	+/-1.7	(X)
Percent bachelor's degree or higher	(X)	(X)	11.4%	+/-1.6	(X)
Population 25 to 34 years	2,539	+/-45	(X)	(X)	1,247
High school graduate or higher	2,077	+/-157	81.8%	+/-5.8	1,033
Bachelor's degree or higher	378	+/-112	14.9%	+/-4.4	125
Population 35 to 44 years	2,721	+/-67	(X)	(X)	1,366
High school graduate or higher	2,258	+/-160	83.0%	+/-5.1	1,152
Bachelor's degree or higher	328	+/-103	12.1%	+/-3.7	158
Population 45 to 64 years	6,644	+/-113	(X)	(X)	3,276
High school graduate or higher	5,741	+/-161	86.4%	+/-2.2	2,776
Bachelor's degree or higher	700	+/-140	10.5%	+/-2.1	348
Population 65 years and over	3,884	+/-40	(X)	(X)	1,853
High school graduate or higher	3,044	+/-147	78.4%	+/-3.8	1,441
Bachelor's degree or higher	386	+/-110	9.9%	+/-2.8	214

Subject	Starke County, Indiana				
	Total		Percent		Male
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
RACE AND HISPANIC OR LATINO ORIGIN BY EDUCATIONAL ATTAINMENT					
White alone	15,392	+/-77	(X)	(X)	7,561
High school graduate or higher	12,856	+/-270	83.5%	+/-1.6	6,287
Bachelor's degree or higher	1,712	+/-240	11.1%	+/-1.6	805
White alone, not Hispanic or Latino	15,125	+/-4	(X)	(X)	7,422
High school graduate or higher	12,656	+/-247	83.7%	+/-1.6	6,175
Bachelor's degree or higher	1,712	+/-240	11.3%	+/-1.6	805
Black alone	28	+/-21	(X)	(X)	24
High school graduate or higher	27	+/-21	96.4%	+/-8.3	24
Bachelor's degree or higher	9	+/-19	32.1%	+/-58.0	9
American Indian or Alaska Native alone	24	+/-24	(X)	(X)	4
High school graduate or higher	24	+/-24	100.0%	+/-58.2	4
Bachelor's degree or higher	0	+/-21	0.0%	+/-58.2	0
Asian alone	48	+/-58	(X)	(X)	24
High school graduate or higher	48	+/-58	100.0%	+/-41.1	24
Bachelor's degree or higher	48	+/-58	100.0%	+/-41.1	24
Native Hawaiian and Other Pacific Islander alone	0	+/-21	(X)	(X)	0
High school graduate or higher	0	+/-21	-	**	0
Bachelor's degree or higher	0	+/-21	-	**	0
Some other race alone	182	+/-90	(X)	(X)	75
High school graduate or higher	51	+/-29	28.0%	+/-17.2	9
Bachelor's degree or higher	0	+/-21	0.0%	+/-15.2	0
Two or more races	114	+/-76	(X)	(X)	54
High school graduate or higher	114	+/-76	100.0%	+/-22.9	54
Bachelor's degree or higher	23	+/-31	20.2%	+/-21.5	7
Hispanic or Latino Origin	455	+/-43	(X)	(X)	214
High school graduate or higher	257	+/-57	56.5%	+/-13.8	121
Bachelor's degree or higher	0	+/-21	0.0%	+/-6.4	0
POVERTY RATE FOR THE POPULATION 25 YEARS AND OVER FOR WHOM POVERTY STATUS IS DETERMINED BY EDUCATIONAL ATTAINMENT					
Less than high school graduate	(X)	(X)	22.9%	+/-5.3	(X)
High school graduate (includes equivalency)	(X)	(X)	13.5%	+/-2.6	(X)
Some college or associate's degree	(X)	(X)	12.0%	+/-3.3	(X)
Bachelor's degree or higher	(X)	(X)	5.4%	+/-3.0	(X)
MEDIAN EARNINGS IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS)					
Population 25 years and over with earnings	31,335	+/-942	(X)	(X)	37,470
Less than high school graduate	22,104	+/-5,335	(X)	(X)	25,284
High school graduate (includes equivalency)	30,972	+/-1,153	(X)	(X)	37,241
Some college or associate's degree	30,570	+/-2,288	(X)	(X)	39,009
Bachelor's degree	35,385	+/-5,657	(X)	(X)	53,594
Graduate or professional degree	58,382	+/-3,587	(X)	(X)	64,226

Subject	Starke County, Indiana				
	Male	Percent Male		Female	
	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population 18 to 24 years	+/-43	(X)	(X)	881	+/-23
Less than high school graduate	+/-88	27.3%	+/-9.1	234	+/-72
High school graduate (includes equivalency)	+/-90	42.8%	+/-10.2	339	+/-71
Some college or associate's degree	+/-89	24.3%	+/-9.8	193	+/-66
Bachelor's degree or higher	+/-36	5.6%	+/-3.9	115	+/-53
Population 25 years and over	+/-75	(X)	(X)	8,046	+/-55
Less than 9th grade	+/-110	5.2%	+/-1.4	422	+/-112
9th to 12th grade, no diploma	+/-173	12.1%	+/-2.2	906	+/-140
High school graduate (includes equivalency)	+/-214	43.2%	+/-2.8	2,979	+/-218
Some college, no degree	+/-202	21.0%	+/-2.6	1,809	+/-194
Associate's degree	+/-133	7.6%	+/-1.7	983	+/-161
Bachelor's degree	+/-126	7.6%	+/-1.6	601	+/-123
Graduate or professional degree	+/-70	3.3%	+/-0.9	346	+/-93
Percent high school graduate or higher	(X)	82.7%	+/-2.4	(X)	(X)
Percent bachelor's degree or higher	(X)	10.9%	+/-1.9	(X)	(X)
Population 25 to 34 years	+/-42	(X)	(X)	1,292	+/-21
High school graduate or higher	+/-102	82.8%	+/-7.4	1,044	+/-96
Bachelor's degree or higher	+/-58	10.0%	+/-4.6	253	+/-87
Population 35 to 44 years	+/-39	(X)	(X)	1,355	+/-42
High school graduate or higher	+/-106	84.3%	+/-6.8	1,106	+/-88
Bachelor's degree or higher	+/-62	11.6%	+/-4.4	170	+/-67
Population 45 to 64 years	+/-77	(X)	(X)	3,368	+/-67
High school graduate or higher	+/-139	84.7%	+/-4.0	2,965	+/-103
Bachelor's degree or higher	+/-89	10.6%	+/-2.7	352	+/-84
Population 65 years and over	+/-34	(X)	(X)	2,031	+/-24
High school graduate or higher	+/-104	77.8%	+/-5.8	1,603	+/-89
Bachelor's degree or higher	+/-70	11.5%	+/-3.8	172	+/-61
RACE AND HISPANIC OR LATINO ORIGIN BY EDUCATIONAL ATTAINMENT					
White alone	+/-46	(X)	(X)	7,831	+/-46
High school graduate or higher	+/-191	83.2%	+/-2.4	6,569	+/-164
Bachelor's degree or higher	+/-143	10.6%	+/-1.9	907	+/-154
White alone, not Hispanic or Latino	+/-4	(X)	(X)	7,703	+/-21
High school graduate or higher	+/-180	83.2%	+/-2.4	6,481	+/-151
Bachelor's degree or higher	+/-143	10.8%	+/-1.9	907	+/-154
Black alone	+/-21	(X)	(X)	4	+/-5
High school graduate or higher	+/-21	100.0%	+/-58.2	3	+/-4
Bachelor's degree or higher	+/-19	37.5%	+/-62.5	0	+/-21
American Indian or Alaska Native alone	+/-7	(X)	(X)	20	+/-22
High school graduate or higher	+/-7	100.0%	+/-100.0	20	+/-22
Bachelor's degree or higher	+/-21	0.0%	+/-100.0	0	+/-21
Asian alone	+/-29	(X)	(X)	24	+/-30
High school graduate or higher	+/-29	100.0%	+/-58.2	24	+/-30
Bachelor's degree or higher	+/-29	100.0%	+/-58.2	24	+/-30
Native Hawaiian and Other Pacific Islander alone	+/-21	(X)	(X)	0	+/-21
High school graduate or higher	+/-21	-	**	0	+/-21
Bachelor's degree or higher	+/-21	-	**	0	+/-21

Subject	Starke County, Indiana				
	Male	Percent Male		Female	
	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Some other race alone	+/-53	(X)	(X)	107	+/-46
High school graduate or higher	+/-13	12.0%	+/-21.6	42	+/-27
Bachelor's degree or higher	+/-21	0.0%	+/-31.7	0	+/-21
Two or more races	+/-53	(X)	(X)	60	+/-56
High school graduate or higher	+/-53	100.0%	+/-38.8	60	+/-56
Bachelor's degree or higher	+/-11	13.0%	+/-21.7	16	+/-28
Hispanic or Latino Origin	+/-43	(X)	(X)	241	+/-30
High school graduate or higher	+/-43	56.5%	+/-22.3	136	+/-40
Bachelor's degree or higher	+/-21	0.0%	+/-13.1	0	+/-21
POVERTY RATE FOR THE POPULATION 25 YEARS AND OVER FOR WHOM POVERTY STATUS IS DETERMINED BY EDUCATIONAL ATTAINMENT					
Less than high school graduate	(X)	13.7%	+/-5.8	(X)	(X)
High school graduate (includes equivalency)	(X)	8.9%	+/-2.9	(X)	(X)
Some college or associate's degree	(X)	13.4%	+/-4.4	(X)	(X)
Bachelor's degree or higher	(X)	4.9%	+/-3.3	(X)	(X)
MEDIAN EARNINGS IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS)					
Population 25 years and over with earnings	+/-2,335	(X)	(X)	22,987	+/-2,999
Less than high school graduate	+/-5,488	(X)	(X)	16,281	+/-7,936
High school graduate (includes equivalency)	+/-2,225	(X)	(X)	17,580	+/-2,796
Some college or associate's degree	+/-4,137	(X)	(X)	25,860	+/-1,612
Bachelor's degree	+/-14,573	(X)	(X)	31,543	+/-2,048
Graduate or professional degree	+/-4,808	(X)	(X)	52,292	+/-7,730

Subject	Starke County, Indiana	
	Percent Female	
	Estimate	Margin of Error
Population 18 to 24 years	(X)	(X)
Less than high school graduate	26.6%	+/-8.0
High school graduate (includes equivalency)	38.5%	+/-7.9
Some college or associate's degree	21.9%	+/-7.5
Bachelor's degree or higher	13.1%	+/-6.0
Population 25 years and over	(X)	(X)
Less than 9th grade	5.2%	+/-1.4
9th to 12th grade, no diploma	11.3%	+/-1.8
High school graduate (includes equivalency)	37.0%	+/-2.7
Some college, no degree	22.5%	+/-2.4
Associate's degree	12.2%	+/-2.0
Bachelor's degree	7.5%	+/-1.5
Graduate or professional degree	4.3%	+/-1.2
Percent high school graduate or higher	83.5%	+/-2.0
Percent bachelor's degree or higher	11.8%	+/-1.9
Population 25 to 34 years	(X)	(X)
High school graduate or higher	80.8%	+/-7.2
Bachelor's degree or higher	19.6%	+/-6.8
Population 35 to 44 years	(X)	(X)
High school graduate or higher	81.6%	+/-5.7
Bachelor's degree or higher	12.5%	+/-4.8
Population 45 to 64 years	(X)	(X)
High school graduate or higher	88.0%	+/-2.6
Bachelor's degree or higher	10.5%	+/-2.5
Population 65 years and over	(X)	(X)
High school graduate or higher	78.9%	+/-4.4
Bachelor's degree or higher	8.5%	+/-3.0
RACE AND HISPANIC OR LATINO ORIGIN BY EDUCATIONAL ATTAINMENT		
White alone	(X)	(X)
High school graduate or higher	83.9%	+/-1.9
Bachelor's degree or higher	11.6%	+/-2.0
White alone, not Hispanic or Latino	(X)	(X)
High school graduate or higher	84.1%	+/-2.0
Bachelor's degree or higher	11.8%	+/-2.0
Black alone	(X)	(X)
High school graduate or higher	75.0%	+/-75.0
Bachelor's degree or higher	0.0%	+/-100.0
American Indian or Alaska Native alone	(X)	(X)
High school graduate or higher	100.0%	+/-63.7
Bachelor's degree or higher	0.0%	+/-63.7
Asian alone	(X)	(X)
High school graduate or higher	100.0%	+/-58.2
Bachelor's degree or higher	100.0%	+/-58.2
Native Hawaiian and Other Pacific Islander alone	(X)	(X)
High school graduate or higher	-	**
Bachelor's degree or higher	-	**

Subject	Starke County, Indiana	
	Percent Female	
	Estimate	Margin of Error
Some other race alone	(X)	(X)
High school graduate or higher	39.3%	+/-20.1
Bachelor's degree or higher	0.0%	+/-24.1
Two or more races	(X)	(X)
High school graduate or higher	100.0%	+/-36.7
Bachelor's degree or higher	26.7%	+/-37.1
Hispanic or Latino Origin	(X)	(X)
High school graduate or higher	56.4%	+/-13.8
Bachelor's degree or higher	0.0%	+/-11.7
POVERTY RATE FOR THE POPULATION 25 YEARS AND OVER FOR WHOM POVERTY STATUS IS DETERMINED BY EDUCATIONAL ATTAINMENT		
Less than high school graduate	32.2%	+/-7.1
High school graduate (includes equivalency)	18.7%	+/-3.6
Some college or associate's degree	10.9%	+/-3.7
Bachelor's degree or higher	5.8%	+/-3.8
MEDIAN EARNINGS IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS)		
Population 25 years and over with earnings	(X)	(X)
Less than high school graduate	(X)	(X)
High school graduate (includes equivalency)	(X)	(X)
Some college or associate's degree	(X)	(X)
Bachelor's degree	(X)	(X)
Graduate or professional degree	(X)	(X)

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.

County Health Rankings & Roadmaps
Building a Culture of Health, County by County

Pulaski (PU)

County Demographics

	County	State
Population	12,534	6,666,818
% below 18 years of age	22.2%	23.6%
% 65 and older	19.2%	15.4%
% Non-Hispanic African American	0.9%	9.4%
% American Indian and Alaskan Native	0.5%	0.4%
% Asian	0.2%	2.4%
% Native Hawaiian/Other Pacific Islander	0.0%	0.1%
% Hispanic	2.9%	7.0%
% Non-Hispanic white	94.5%	79.2%
% not proficient in English	0%	2%
% Females	48.9%	50.7%
% Rural	80.9%	27.6%

	Pulaski County	Error Margin	Top U.S. Performers	Indiana	Rank (of 92)
Health Outcomes					66
Length of Life					73
Premature death	9,600	7,600-11,700	5,400	8,200	
Quality of Life					58
Poor or fair health **	17%	17-18%	12%	18%	
Poor physical health days **	3.9	3.7-4.1	3.0	3.9	
Poor mental health days **	4.1	3.9-4.3	3.1	4.3	
Low birthweight	8%	6-9%	6%	8%	
Additional Health Outcomes (not included in overall ranking)					
Life expectancy	75.8	74.2-77.5	81.0	77.1	
Premature age-adjusted mortality	450	390-510	280	400	
Child mortality			40	60	
Frequent physical distress	12%	11-12%	9%	12%	
Infant mortality			4	7	
Frequent mental distress	12%	12-13%	10%	13%	
Diabetes prevalence	12%	9-16%	9%	12%	
HIV prevalence	65		49	196	
Health Factors					51
Health Behaviors					25
Adult smoking **	20%	19-21%	14%	21%	
Adult obesity	31%	25-38%	26%	33%	
Food environment index	8.4		8.7	7.1	
Physical inactivity	28%	21-36%	19%	25%	
Access to exercise opportunities	36%		91%	75%	
Excessive drinking **	17%	16-18%	13%	19%	
Alcohol-impaired driving deaths	18%	4-37%	13%	21%	
Sexually transmitted infections	263.8		152.8	466.0	
Teen births	27	21-34	14	28	
Additional Health Behaviors (not included in overall ranking)					
Food insecurity	12%		9%	14%	
Limited access to healthy foods	1%		2%	7%	
Drug overdose deaths	34	18-58	10	23	
Motor vehicle crash deaths	19	11-30	9	12	
Insufficient sleep	34%	33-35%	27%	36%	
Clinical Care					89
Uninsured	10%	9-12%	6%	9%	
Primary care physicians	2,110:1		1,050:1	1,500:1	
Dentists	4,180:1		1,260:1	1,810:1	
Mental health providers	2,090:1		310:1	670:1	
Preventable hospital stays	6,211		2,765	5,023	
Mammography screening	33%		49%	40%	
Flu vaccinations	31%		52%	47%	
Additional Clinical Care (not included in overall ranking)					
Uninsured adults	11%	9-13%	6%	11%	
Uninsured children	8%	5-10%	3%	6%	
Other primary care providers	2,089:1		726:1	1,245:1	

	Pulaski County	Error Margin	Top U.S. Performers	Indiana	Rank (of 92)
Social & Economic Factors					49
High school graduation	92%		96%	84%	
Some college	50%	42-59%	73%	62%	
Unemployment	3.5%		2.9%	3.5%	
Children in poverty	19%	14-25%	11%	18%	
Income inequality	4.0	3.4-4.6	3.7	4.4	
Children in single-parent households	27%	18-36%	20%	34%	
Social associations	23.7		21.9	12.3	
Violent crime			63	385	
Injury deaths	84	63-110	57	74	
Additional Social & Economic Factors (not included in overall ranking)					
Disconnected youth			4%	7%	
Median household income	$50,000	$44,600-55,500	$67,100	$54,100	
Children eligible for free or reduced price lunch	47%		32%	47%	
Residential segregation - black/white			23	68	
Residential segregation - non-white/white	22		15	55	
Homicides			2	6	
Firearm fatalities			7	14	
Physical Environment					35
Air pollution - particulate matter **	11.7		6.1	11.8	
Drinking water violations	No				
Severe housing problems	14%	11-17%	9%	14%	
Driving alone to work	80%	77-84%	72%	83%	
Long commute - driving alone	27%	22-32%	15%	31%	
Additional Physical Environment (not included in overall ranking)					
Homeownership	76%	74-79%	61%	69%	
Severe housing cost burden	13%	9-16%	7%	12%	

Areas to Explore Areas of Strength

^ 10th/90th percentile, i.e., only 10% are better.
Note: Blank values reflect unreliable or missing data
** Data should not be compared with prior years

2019

Starke (ST)

County Demographics

	County	State
Population	22,893	6,666,818
% below 18 years of age	22.8%	23.6%
% 65 and older	18.0%	15.4%
% Non-Hispanic African American	0.4%	9.4%
% American Indian and Alaskan Native	0.5%	0.4%
% Asian	0.2%	2.4%
% Native Hawaiian/Other Pacific Islander	0.0%	0.1%
% Hispanic	3.8%	7.0%
% Non-Hispanic white	94.2%	79.2%
% not proficient in English	1%	2%
% Females	50.0%	50.7%
% Rural	82.4%	27.6%

	Starke County	Error Margin	Top U.S. Performers	Indiana	Rank (of 92)
Health Outcomes					75
Length of Life					79
Premature death	10,200	8,600-11,700	5,400	8,200	
Quality of Life					71
Poor or fair health **	19%	18-20%	12%	18%	
Poor physical health days **	4.3	4.0-4.5	3.0	3.9	
Poor mental health days **	4.2	4.0-4.5	3.1	4.3	
Low birthweight	7%	6-8%	6%	8%	
Additional Health Outcomes (not included in overall ranking)					
Life expectancy	75.0	73.8-76.1	81.0	77.1	
Premature age-adjusted mortality	480	430-530	280	400	
Child mortality	70	40-120	40	60	
Infant mortality			4	7	
Frequent physical distress	13%	12-13%	9%	12%	
Frequent mental distress	13%	13-13%	10%	13%	
Diabetes prevalence	13%	10-18%	9%	12%	
HIV prevalence	36		49	196	
Health Factors					85
Health Behaviors					74
Adult smoking **	22%	21-23%	14%	21%	
Adult obesity	36%	29-43%	26%	33%	
Food environment index	8.1		8.7	7.1	
Physical inactivity	28%	22-35%	19%	25%	
Access to exercise opportunities	55%		91%	75%	
Excessive drinking **	16%	16-17%	13%	19%	
Alcohol-impaired driving deaths	35%	23-47%	13%	21%	
Sexually transmitted infections	126.3		152.8	466.0	
Teen births	34	29-39	14	28	
Additional Health Behaviors (not included in overall ranking)					
Food insecurity	13%		9%	14%	
Limited access to healthy foods	3%		2%	7%	
Drug overdose deaths	44	29-62	10	23	
Motor vehicle crash deaths	28	20-37	9	12	
Insufficient sleep	36%	35-38%	27%	36%	
Clinical Care					84
Uninsured	10%	9-12%	6%	9%	
Primary care physicians	2,880:1		1,050:1	1,500:1	
Dentists	7,630:1		1,260:1	1,810:1	
Mental health providers	3,270:1		310:1	670:1	
Preventable hospital stays	4,568		2,765	5,023	
Mammography screening	26%		49%	40%	
Flu vaccinations	36%		52%	47%	
Additional Clinical Care (not included in overall ranking)					
Uninsured adults	12%	10-14%	6%	11%	
Uninsured children	6%	4-8%	3%	6%	
Other primary care providers	3,816:1		726:1	1,245:1	
Social & Economic Factors					84
High school graduation	93%		96%	84%	
Some college	48%	42-54%	73%	62%	
Unemployment	4.4%		2.9%	3.5%	

	Starke County	Error Margin	Top U.S. Performers	Indiana	Rank (of 92)
Children in poverty	24%	18-30%	11%	18%	
Income inequality	4.0	3.6-4.4	3.7	4.4	
Children in single-parent households	27%	20-33%	20%	34%	
Social associations	10.9		21.9	12.3	
Violent crime	97		63	385	
Injury deaths	110	91-130	57	74	
Additional Social & Economic Factors (not included in overall ranking)					
Disconnected youth	10%	3-16%	4%	7%	
Median household income	$46,900	$41,300-52,600	$67,100	$54,100	
Children eligible for free or reduced price lunch	54%		32%	47%	
Residential segregation - black/white			23	68	
Residential segregation - non-white/white	33		15	55	
Homicides			2	6	
Firearm fatalities	18	11-28	7	14	
Physical Environment					**72**
Air pollution - particulate matter **	12.3		6.1	11.8	
Drinking water violations	No				
Severe housing problems	13%	11-16%	9%	14%	
Driving alone to work	81%	78-83%	72%	83%	
Long commute - driving alone	44%	38-50%	15%	31%	
Additional Physical Environment (not included in overall ranking)					
Homeownership	80%	78-83%	61%	69%	
Severe housing cost burden	10%	7-12%	7%	12%	

Areas to Explore Areas of Strength

^ 10th/90th percentile, i.e., only 10% are better.
Note: Blank values reflect unreliable or missing data
** Data should not be compared with prior years

2019

Pulaski Memorial Hospital - Top Diagnoses by Payer Mix - Inpatient
01/01/2018 -12/31/2018

A419 Count	**10**	**SEPSIS, UNSPECIFIED ORGANISM**
Medicare	8	
Medicare Advantage	2	
Medicaid	-	
BlueCross	-	
Commerical	-	
Private Pay	-	
E860 Count	**12**	**DEHYDRATION**
Medicare	5	
Medicare Advantage	3	
Medicaid	2	
BlueCross	-	
Commerical	2	
Private Pay	-	
I110 Count	**9**	**HYPERTENSIVE HEART DISEASE WITH HEART FAILURE**
Medicare	8	
Medicare Advantage	-	
Medicaid	1	
BlueCross	-	
Commerical	-	
Private Pay	-	
I130 Count	**10**	**HYPERTENSIVE HEART AND CHRONIC KIDNEY DISEASE WITH HEART**
Medicare	7	**FAILURE AND STAGE 1 THROUGH STAGE 4 CHRONIC KIDNEY DISEASE**
Medicare Advantage	2	
Medicaid	1	
BlueCross	-	

Commerical	-	
Private Pay	-	
I4891 Count	**14**	**UNSPECIFIED ATRIAL FIBRILLATION**
Medicare	10	
Medicare Advantage	2	
Medicaid	-	
BlueCross	-	
Commerical	2	
Private Pay	-	
J189 Count	**55**	**PNEUMONIA, UNSPECIFIED ORGANISM**
Medicare	41	
Medicare Advantage	3	
Medicaid	-	
BlueCross	6	
Commerical	4	
Private Pay	1	
J440 Count	**11**	**CHRONIC OBSTRUCTIVE PULMONARY DISEASE WITH ACUTE LOWER**
Medicare	7	**RESPIRATORY INFECTION**
Medicare Advantage	2	
Medicaid	2	
BlueCross	-	
Commerical	-	
Private Pay	-	
J441 Count	**37**	**CHRONIC OBSTRUCTIVE PULMONARY DISEASE WITH (ACUTE)**
Medicare	24	**EXACERBATION**
Medicare Advantage	5	
Medicaid	2	
BlueCross	-	

Commerical	6	
Private Pay	-	
K5732 Count	**10**	**DIVERTICULITIS OF LARGE INTESTINE WITHOUT PERFORATION OR ABSCESS WITHOUT BLEEDING**
Medicare	3	
Medicare Advantage	2	
Medicaid	-	
BlueCross	3	
Commerical	2	
Private Pay	-	
K8590 Count	**9**	**ACUTE PANCREATITIS WITHOUT NECROSIS OR INFECTION, UNSPECIFIED**
Medicare	2	
Medicare Advantage	1	
Medicaid	4	
BlueCross	-	
Commerical	1	
Private Pay	1	
N390 Count	**21**	**URINARY TRACT INFECTION, SITE NOT SPECIFIED**
Medicare	19	
Medicare Advantage	2	
Medicaid	-	
BlueCross	-	
Commerical	-	
Private Pay	-	
O34211 Count	**10**	**MATERNAL CARE FOR LOW TRANSVERSE SCAR FROM PREVIOUS CESAREAN DELIVERY**
Medicare	-	
Medicare Advantage	-	
Medicaid	5	
BlueCross	3	
Commerical	2	

Private Pay	-	
Z3800 Count	**51**	**SINGLE LIVEBORN INFANT, DELIVERED VAGINALLY**
Medicare	-	
Medicare Advantage	-	
Medicaid	40	
BlueCross	5	
Commerical	4	
Private Pay	2	
Z3801 Count	**21**	**SINGLE LIVEBORN INFANT, DELIVERED BY CESAREAN**
Medicare	-	
Medicare Advantage	-	
Medicaid	13	
BlueCross	4	
Commerical	3	
Private Pay	1	

Indiana Cancer Facts and Figures

2015

A Sourcebook for Planning and Implementing Programs for Cancer Prevention and Control

Introduction Letter

Dear Hoosiers,

The *Indiana Cancer Facts and Figures 2015* is the fourth iteration of our state's only comprehensive report on the burden of cancer. This report provides the most recent and accurate data available for the state of Indiana, covering a wide variety of current cancer issues and trends, including cancer incidence, mortality, and survival statistics as well as information on decreasing the risk of cancer, cancer symptoms, risk factors, early detection, and treatment.

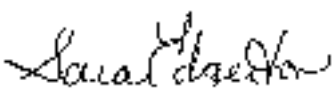
The Indiana Cancer Consortium (ICC) is proud to promote the message that this report sends from the Indiana cancer community to Hoosiers across the state. The *Indiana Cancer Facts and Figures 2015* perfectly demonstrates the willingness and the passion that Hoosiers have to work together to improve and overcome our state's cancer burden. We know that we can only make a real difference through collective effort and action.

The size and scope of this report becomes that much more admirable when considering that nearly 100 percent of it is completed voluntarily by ICC members. As such, we trust that the collaborative efforts of our contributing partners will benefit all Indiana residents and serve as a rallying call for us to move forward as a single cancer control alliance.

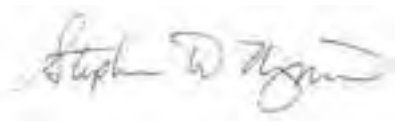
From the ICC, we thank the American Cancer Society and the Indiana State Department of Health for their organizational partnership in the development of this report. We also thank all those who helped make this report a reality. The time, the resources, and the expertise shared will establish this report as a leading tool for Indiana's cancer prevention and control efforts. Furthermore, we also recognize the value of all those who will now take this report and act according to its findings.

Finally, to all Indiana residents, the ICC promises to continue convening partners, identifying cancer burdens, and developing and implementing evidence-based interventions that will improve the health of all citizens of Indiana.

Sincerely,



Sara Edgerton
Co-Chair
Indiana Cancer Consortium



Steve Tharp, M.D.
Co-Chair
Indiana Cancer Consortium

Table of Contents

Acknowledgments

Lead Content Editors
- Caleb Levell — Indiana Cancer Consortium
- Dawn Swindle — Cancer Control Section, Indiana State Department of Health

Lead Data Analysts
- Amanda Raftery, M.P.H., R.D. — Cancer Control Section, Indiana State Department of Health
- Linda Stemnock — Epidemiology Resource Center, Indiana State Department of Health

Edit and Review Committee
- Katie Crawford — American Cancer Society
- Emily Jones — Cancer Control Section, Indiana State Department of Health
- Anita Ohmit, M.P.H. — Indiana Minority Health Coalition
- Laura Ruppert, M.H.A. — Cancer Control Section, Indiana State Department of Health
- Teasa Thompson, M.P.H. — Indiana Cancer Consortium Member
- Keylee Wright, M.A. — Cancer Control Section, Indiana State Department of Health

Maps
- Chris Waldron — Epidemiology Resource Center, Indiana State Department of Health

Breast Cancer
- Robert Goulet, M.D. — Community Health Network
- Wendy Noe — Indiana Cancer Consortium Member
- Natalie Sutton, M.P.A. — Komen for the Cure Central Indiana

Cervical Cancer
- Dave McCormick — Immunization Division, Indiana State Department of Health
- Kate Tewanger, M.P.H. — Cancer Control Section, Indiana State Department of Health
- Gregory Zimet, Ph.D. — Department of Pediatrics, Indiana University School of Medicine

Childhood Cancer
- Indra Frank, M.D., M.P.H. — Hoosier Environmental Council
- Amanda Raftery, M.P.H., R.D. — Cancer Control Section, Indiana State Department of Health

Colorectal Cancer
- Sue Rawl, Ph.D., R.N. — Indiana University School of Nursing
- Linda Stemnock — Epidemiology Resource Center, Indiana State Department of Health

Lung Cancer
- Lisa Carter Harris, Ph.D., A.P.R.N. — Indiana University School of Nursing
- Latoija Snodgrass, M.P.H. — Indiana Cancer Consortium Member
- Miranda Spitznagle, M.P.H. — Tobacco Prevention and Cessation Commission, Indiana State Department of Health

Melanoma and Skin Cancer
- Anita Day — Outrun the Sun
- Jiali Han, Ph.D. — Fairbanks School of Public Health, Indiana University Purdue University Indianapolis
- Hongmei Nan, M.D., Ph.D. — Fairbanks School of Public Health, Indiana University Purdue University Indianapolis
- Doug Schwartzentruber, M.D., Indiana University Melvin and Bren Simon Cancer Center

Prostate Cancer
- William Dugan, M.D. — Community Cancer Care, Inc.
- Linda Stemnock — Epidemiology Resource Center, Indiana State Department of Health
- Teasa Thompson, M.P.H. — Indiana Cancer Consortium Member

Cancer Facts and Figures for African Americans
- Adrienne Durham, M.P.H. — Office of Minority Health, Indiana State Department of Health
- Anita Ohmit, M.P.H. — Indiana Minority Health Coalition
- Calvin Roberson, M.H.A., M.P.H. — Indiana Minority Health Coalition
- Priscilla Ryder, M.P.H., Ph.D. — Butler University

Cancer Facts and Figures for Hispanics
- Adrienne Durham, M.P.H. — Office of Minority Health, Indiana State Department of Health
- Anita Ohmit, M.P.H. — Indiana Minority Health Coalition
- Calvin Roberson, M.H.A., M.P.H. — Indiana Minority Health Coalition
- Priscilla Ryder, M.P.H., Ph.D. — Butler University

Survivorship
- Amanda Raftery, M.P.H., R.D. — Cancer Control Section, Indiana State Department of Health
- Tanya Shelburne, M.P.H. — Little Red Door Cancer Agency
- Dawn Swindle — Cancer Control Section, Indiana State Department of Health

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Collaborating to Conquer Cancer

The Comprehensive Cancer Control National Partnership is a movement of states, tribes, territories, US Pacific Island Jurisdictions, and local communities working together to reduce the burden of cancer for all people. In the Hoosier state, the Indiana Cancer Consortium (ICC) serves as that comprehensive cancer control coalition, responsible for developing, implementing, and evaluating a statewide cancer control plan, which address cancer from prevention through palliation.

Collaborating to Conquer Cancer is the underlying philosophy, vision, and model that directs the ICC, as well as our partners across the nation. In Indiana, we are proud to say that *Collaborating to Conquer Cancer* represents the more than 200 organizational and individual members of the ICC who work to bring together Indiana's cancer community, identify disease challenges facing both state and local communities, and develop evidence-based solutions that make a difference.

The ICC membership plans, contributes, and takes advantage of a full range of free services — including professional trainings, educational publications, mini-grants, and guidance. By listening to our partners, public health and medical experts, and other interested Hoosiers, we continually evolve to better address the gaps in cancer prevention and control across the state. The larger our coalition grows, the bigger impact we have. Become a member at IndianaCancer.org.

The Plan

The collaborative process is best reflected through the development and implementation of Indiana's current cancer control plan, our roadmap to coordinate cancer control efforts. The plan is comprised of six focus areas, including primary prevention, early detection, treatment, quality of life, data, and advocacy. Within those six areas, experts in the fields of public health, cancer research, and treatment identified the most important activities that, when implemented, can reduce cancer in Indiana. Day by day, as more partners engage in strategies from this plan, extraordinary accomplishments are made. *This* is the power of our unique cancer control alliance. Together we are stronger than cancer.

Key Activities

- Lead in the ongoing development, implementation, and evaluation of an Indiana-focused comprehensive cancer control plan that addresses cancer across the continuum.
- Provide guidance to members on current issues in cancer advocacy, research, detection, and treatment.
- Provide a forum for a multi-sectored and diverse membership to discuss the cancer issues challenging Indiana.
- Strengthen communication, resource sharing, and collaboration in the cancer community, and reduce duplication and inefficiency.
- Educate Indiana health workers and cancer advocates on current evidence-based strategies and best practices.
- Support and inform Indiana on policy, system, and environmental changes that decrease risk factors which impact Hoosier communities.

Indiana Cancer Facts and Figures 2015

The *Indiana Cancer Facts and Figures 2015* includes the most up-to-date cancer information available and identifies current cancer trends and their potential impact on Indiana residents. This report significantly helps the ICC measure Indiana's progress toward meeting the goals and objectives outlined in the *Indiana Cancer Control Plan*. This publication is an exemplary application of collaboration in public health. We hope that the sharing of knowledge, resources, and expertise among the many participating organizations to produce this tool will inspire organizations across the state to tackle the cancer burden together.

Understanding Cancer Data

Cancer data can sometimes be difficult to interpret. Here is some information about common terms and methods used to better understand cancer data so that it can be effectively used to guide interventions and policy decisions.

Incidence (New cases)

Incidence refers to annual or average annual incidence. Annual incidence is the number of new cases of cancer diagnosed during a calendar year. Average annual incidence is the number of new cases diagnosed during a specified number of years. Indiana resident incidence data in this report, unless otherwise noted, were obtained from the Indiana State Cancer Registry (ISCR). Because there are delays in health care providers reporting cancer cases to the ISCR and the ISCR has to make sure data are complete and accurate before publishing them, the most current data available for this report were from 2012. Visit www.in.gov/isdh/24360.htm to see if more up-to-date data are available.

Mortality (Deaths)

Mortality refers to annual or average annual mortality. Annual mortality is the number of deaths from cancer during a calendar year (Note: the cancer was not necessarily diagnosed in the same year). Average annual mortality is the average number of deaths during a specified number of years. Mortality data reflect the underlying cause of death as recorded on the death certificate. Indiana resident mortality data in this report, unless otherwise noted, are from the ISCR who obtains annual death certificate record information from the Indiana State Department of Health Vital Records Department. Data from 2012 were the most current mortality data available for this report. Visit www.in.gov/isdh/24360.htm to see if more up-to-date data are available.

Cancer Rates

In this document, cancer rates represent the number of new cases of cancer per 100,000 people (incidence) or the number of cancer deaths per 100,000 people (mortality) during a specific period [see example below]. Typically, incidence rates are calculated based only on the number of invasive cancer cases that occurred during a period and do not include in situ cases. Invasive cancer is cancer that has spread beyond the layer of tissue in which it developed and is growing into surrounding, healthy tissues. See page 9 for additional information about in situ cancer.

Example: If a county's lung cancer incidence rate is 40.0 cases per 100,000 people that means 40 new cases of invasive lung cancer were diagnosed for every 100,000 people. If the county's population is 25,000, then an incidence rate of 40.0 means 10 new cases of invasive lung cancer were diagnosed in that county during that year. Rates provide a useful way to compare cancer burden irrespective of the actual population size. Rates can be used to compare demographic groups (males have higher lung cancer rates than females), race/ethnic groups (African American males have higher prostate cancer rates than white males), or geographic areas (Indiana has higher lung cancer incidence rates than California). Population data to calculate the incidence rates were obtained from www.seer.cancer.gov/popdata.

Age-Adjusted Rates

Older age groups generally have higher cancer rates than younger age groups. For example, in Indiana, more than 60 percent of new lung cancer cases occur in those ages 60 and older. As a result, if one county's lung cancer incidence rate is higher than another, the first question asked is whether the county with a higher rate has an older population.

To address this issue, all mortality and incidence rates presented in this report, unless otherwise noted, have been age-adjusted. This removes the impact of different age distributions between populations and allows for direct comparisons of those populations. Additionally, age-adjustment allows for a comparison of rates within a single population over time. An age-adjusted rate is not a real measure of the burden of the disease on a population, but rather an artificial measure that is used for comparison purposes. All mortality and incidence rates in this publication were age-adjusted using the direct method. This method weights the age-specific rates (*i.e.*, rates calculated for each age group) for a given sex, race, or geographic area by the age distribution of the standard population. The 2000 US standard million population and five-year age group population numbers were used to calculate all of the age-adjusted rates in this report.

Confidence Intervals and Statistical Significance

Because the ISCR collects information on all reportable cancer cases that occur in Indiana, the incidence and mortality rates in this report are not subject to sampling error (*i.e.*, error in estimating rates because one is working with sample rather than population data). However, cancer rates are often impacted by random variation, especially when looking at rates for rare types of cancer or among small geographic areas. Because of this random variation, confidence intervals (CIs) are used to describe the range of that variation. Most typically, 95% CIs are calculated, which provide a range of values in which one is 95% confident that the true rate exists, or, more technically, a 95% CI is such that if one repeated a study 100 times, 95 of the intervals would include the true rate.

For this report, CIs for the age-adjusted rates were calculated with a method based on the gamma distribution.[1] This method produces valid CIs even when the number of cases is very small. When the number of cases is large, the CIs produced with the gamma method are equivalent to those produced with the more traditional methods. The formulas for computing CIs can be found at www.in.gov/isdh/24360.htm

(click "Help" then "Index"). Generally, when the 95% CI for the area of interest does not overlap with the 95% CI for the comparison area, we would say that the two areas are statistically significantly different at the $P<.05$ level (*i.e.*, the difference between the two rates is more than that expected by random variation). The limitation of this method, though, is that if two rates have overlapping CIs, they are probably not significantly different, but there is a chance that they still could be. Therefore, some of the rates in this report (*e.g.*, county rates) not designated as being significantly above or below the comparison rate (*e.g.*, Indiana rate) could still be significantly different.

Other Common Terms Used and Groups Referenced in this Report:

Adults. Used in this report to refer to people ages 18 years and older.

Age-specific Rate. The total number of new cases or deaths among residents in a specific age group divided by the population of that age group then multiplied by 100,000.

American Cancer Society (ACS). A nationwide, community-based voluntary health organization dedicated to eliminating cancer as a major health problem by preventing cancer, saving lives, and diminishing suffering from cancer, through research, education, advocacy, and service. Additional information is available at www.cancer.org.

Burden. The number of new cases or deaths from cancer or overall impact of cancer in a community.

Carcinogen. Any chemical, physical, or viral agent that is known to cause cancer.

Centers for Disease Control and Prevention (CDC). The CDC's mission is the following: "Collaborating to create the expertise, information, and tools that people and communities need to protect their health — through health promotion, prevention of disease, injury and disability, and preparedness for new health threats." Additional information is available at www.cdc.gov.

Five-year Survival. The percentage of people who are alive five years after their cancer is diagnosed. While statistically valid, these percentages are based on historical data and might not reflect current advances in treatment. Therefore, five-year survival rates should not be seen as a predictor in an individual case.

Lifetime Risk. The probability that an individual, over the course of a lifetime, will develop or die from cancer.

Malignant. Cancer that has spread beyond the location in which it started.

Metastasis. Movement of cancer from part of the body to a separate area of the body.

Morbidity. The number of people who have a disease.

National Center for Health Statistics (NCHS). Contained within the CDC, the NCHS is the nation's principal health statistics agency. They compile statistical information to guide actions and policies to improve health. Additional information is available at www.cdc.gov/nchs.

Prevalence. A calculation of the proportion of people with a certain disease at a given time.

Risk Factor. Anything that increases a person's probability of getting a disease. Risk factors can be lifestyle-related, environmental, or genetic (inherited).

Surveillance, Epidemiology, and End Results (SEER) Program. Contained within the National Cancer Institute, SEER works to provide information on cancer statistics in an effort to reduce the burden of cancer among the US population. Additional information is available at www.seer.cancer.gov.

Staging. The process of finding out whether cancer has spread and, if so, how far. There is more than one system for staging (see page 9 for additional information).

References are provided throughout this report to provide readers with additional information. Web addresses are provided for online information.

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Common Questions about Cancer

What is cancer?

Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells. The cancer cells form tumors that destroy normal tissue. If cancer cells break away from a tumor, they can travel through the blood stream or the lymph system to other areas of the body, where they might form new tumors (metastases). If this growth is not controlled, cancer might be fatal.

Are all growths and tumors cancerous?

Not all irregular growths of abnormal cells lead to cancer. A tumor can be either benign (non-cancerous) or malignant (cancerous). Benign tumors do not metastasize and, with very rare exceptions, are not life threatening. Benign tumors usually grow slowly, remain localized, and do not destroy surrounding normal tissue.

What causes cancer?

All cancers develop because of damage to or mutation of genes that control cell growth and division. These genetic changes can be caused by exposure to external factors (*e.g.*, tobacco, poor diet, alcohol, chemicals, sunlight, radiation, infectious organisms) or internal factors (*e.g.*, inherited mutations, hormones, immune conditions, mutations that occur from metabolism). Only about five to ten percent of all cancers are the result of inherited gene mutations.[1]

External and internal factors often act together or in sequence to initiate or promote cancer development. Many years often pass between exposures or mutations and detectable cancer. Because of this, it is often difficult to directly identify causes of specific cancer cases.

Who gets cancer?

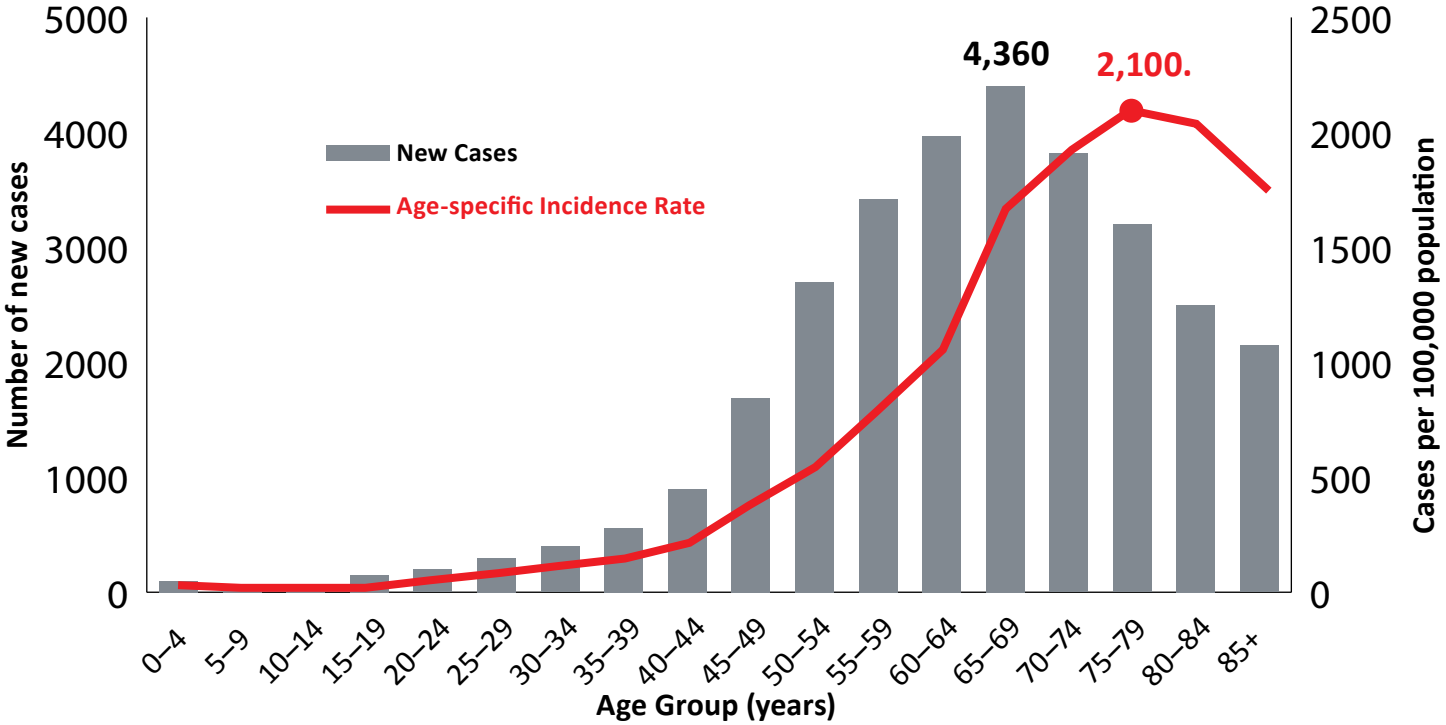
Anyone can get cancer at any age; however, middle and older aged people are most likely to develop cancer. In Indiana, during 2012, 66 percent of all cancers cases occurred among people ages 55–84, including 23 percent among people ages 55–64, 26 percent among people ages 65–74, and 18 percent among people ages 75–84 [Figure 1].

Additionally, individuals who have been exposed to certain external and internal risk factors have an increased risk of developing cancer. For example, male smokers are about 23 times more likely to develop lung cancer than nonsmokers.[2] Also, females who have a first degree relative (*i.e.*, mother, sister, or daughter) with a history of breast cancer have about twice the risk of developing breast cancer, compared to females who do not have this family history.[2]

Can cancer be prevented?

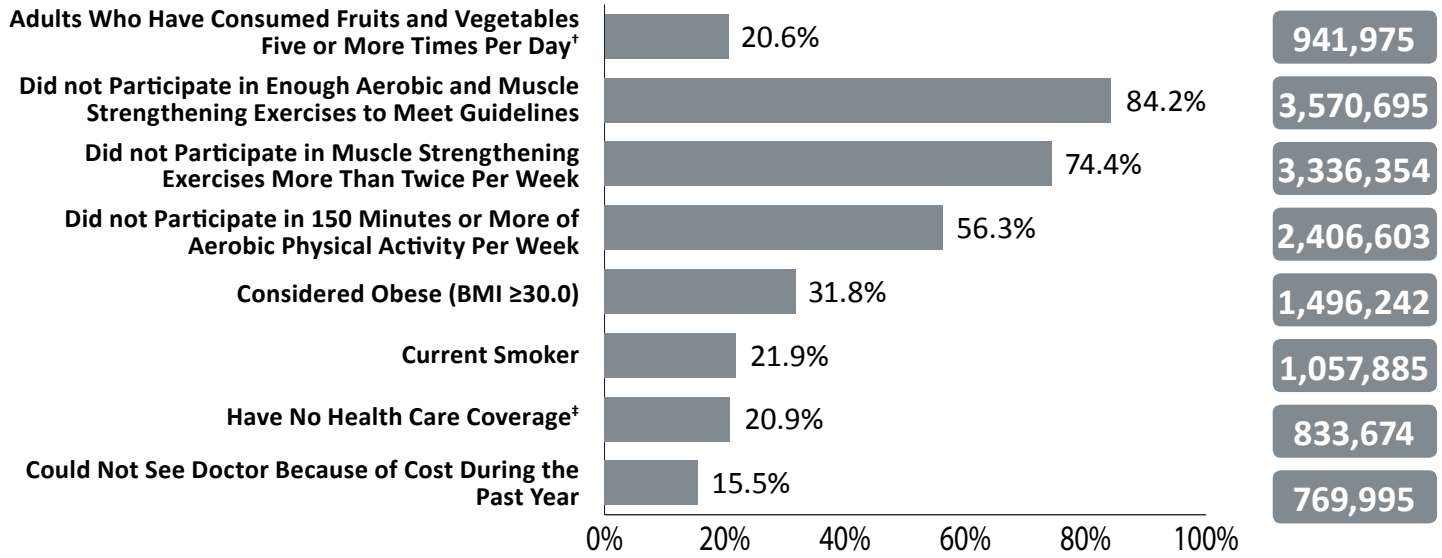
Many cancers can be prevented by modifying external risk factors and making lifestyle changes, such as eliminating tobacco use, improving dietary habits, increasing physical

Figure 1. Number and Rate of New Cancer Diagnoses among Residents — Indiana, 2012



Data are provided for the age groups with the largest number of cases and highest rate. Source: Indiana State Cancer Registry

Figure 2. Preventive Cancer Behaviors and Access to Medical Care among Adults* — Indiana, 2013



** Adults are people ages 18 years and older*

† Data from 2009

‡ Adults ages 18–64

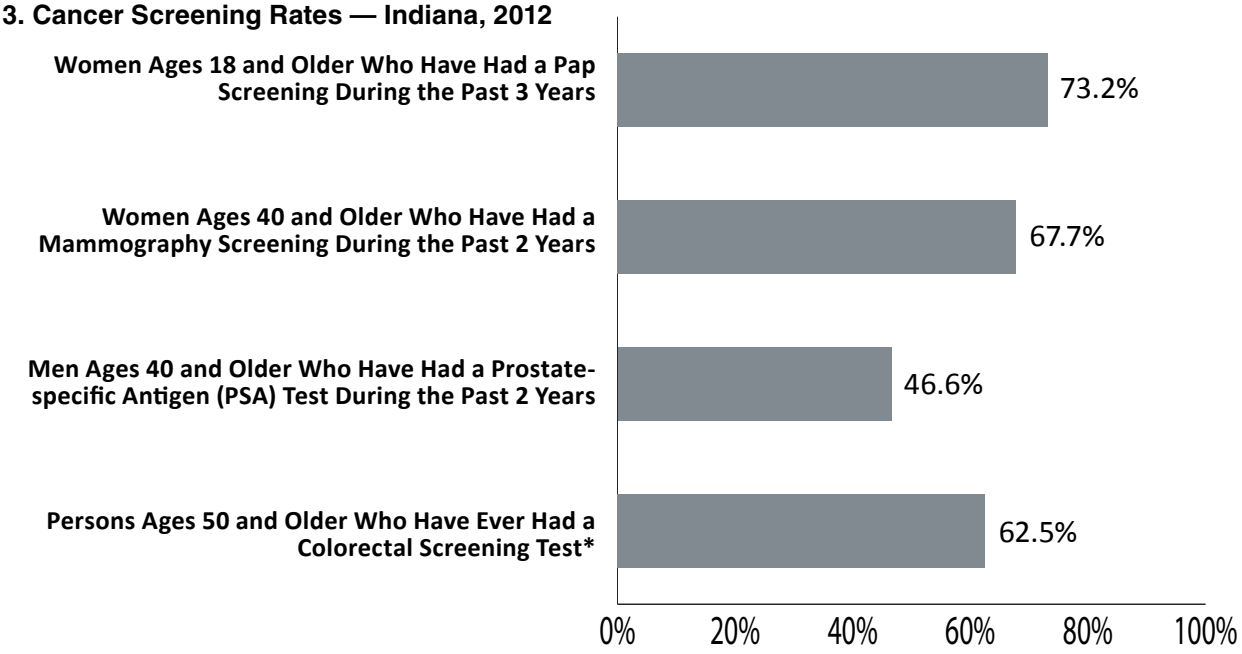
Source: Indiana Behavioral Risk Factor Surveillance System

activity, losing weight, and avoiding excessive sun and infectious disease exposures. Additionally, many cancers can be prevented or identified at an early stage if people receive regular medical care and obtain early detection cancer screenings. Figure 2 describes the burden of some lifestyle and external factors among Indiana adults and Figure 3 describes cancer screening rates among Indiana adults.

Additional information about cancer risk factors include:

- **Tobacco.** All cancers caused by the use of tobacco products could be prevented. The American Cancer Society (ACS) estimates that, during 2014, almost 176,000 cancer deaths were caused by tobacco use.[2] During 2013, 21.9 percent of Indiana adults were current smokers.[3]
- **Body Weight, Diet, and Physical Activity.** The World Cancer Research Fund estimates that about one-third of the 585,720 cancer deaths expected to have occurred during 2014 were related to overweight or obesity, physical inactivity, and poor nutrition.[2] During 2013, 31.8 percent of Indiana adults were considered obese.[3] Additionally, during 2013, 56.3 percent of Indiana adults did not get the recommended 150 minutes of exercise per week (recommendations available at www.cdc.gov/physicalactivity/everyone/guidelines/index.html).[3] During 2009, approximately 80 percent failed to eat fruits and vegetables five or more times each day.[3] Diets low in animal fat and high in fruits and vegetables could help prevent certain cancers.
- **Infection with HPV and Other Infectious Diseases.** The human papillomavirus (HPV) is the single greatest risk factor for cervical cancer.[4] The Centers for Disease Control and Prevention (CDC) estimates that 21,000 cancer cases each year could potentially be prevented with HPV vaccines. In all, an estimated 15 to 20 percent of cancers worldwide are related to infectious exposures, such as hepatitis B virus (HBV), human papillomavirus (HPV), human immunodeficiency virus (HIV), *Helicobacter* bacteria, and others.[5] Many of these infections can be prevented through behavioral changes or the use of vaccines or antibiotics.[5]
- **Sun Exposure.** Excessive exposure to ultraviolet (UV) radiation from the sun or other sources, like tanning beds, is the greatest risk factor for developing skin cancer. The US Department of Health and Human Services and the International Agency of Research on Cancer panel has found that exposure to sunlamps or sun beds is a known carcinogen.[6]
- **Health Care Coverage**. Uninsured and underinsured patients are substantially more likely to be diagnosed with cancer at a later stage, when treatment can be more extensive and costly.[2] According to the US Census Bureau, almost 48.6 million Americans were uninsured in 2011 — including one-third of Hispanics and one in 10 children (18 years and younger).[2] In 2013, approximately 21 percent (20.9) of Indiana residents ages 18-64 reported to having no health care coverage.[3] The Affordable Care Act is expected to continue to reduce the number of uninsured people — improving the health care system for cancer patients.[2]
- **Screening.** Early diagnosis through regular screening examinations saves lives by identifying cancers when they are most curable and treatment is more successful. Cancers that can be detected by screening include breast, cervix, colon, lung, oral cavity, rectum, skin, and testicular cancers.

Figure 3. Cancer Screening Rates — Indiana, 2012



* *Sigmoidoscopy or colonoscopy*

Source: Indiana Behavioral Risk Factor Surveillance System

How is cancer staged?

A cancer's stage is based on the primary tumor's size and location in the body and whether it has spread from the site of origin to other areas of the body. There are two main staging systems used to classify tumors.

The ***TNM staging system*** assesses tumors in three ways: extent of the primary tumor (T), absence or presence of regional lymph node involvement (N), and absence or presence of distant metastases (M). Once the T, N, and M are determined, a stage is assigned. Stages are given numbers (I, II, III, IV) and represent a scale — stage I is the earliest possible diagnosis, and stage IV is advanced.

Summary staging is useful for descriptive and statistical analyses of cancer data and is used throughout this report. An in situ tumor is a tumor at the earliest possible stage — when cells have not invaded surrounding tissue. This stage can only be diagnosed by microscopic examination. A localized tumor is any tumor that has not spread beyond the primary organ. A regional or distant tumor is one that has spread to other parts of the body (this is also referred to as a tumor that has metastasized), either through the blood or lymph systems. With an unstaged/unknown tumor, there is insufficient information available to determine the stage of the disease.

What is the impact of stage at diagnosis on survival?

Staging is essential in determining the choice of therapy and assessing prognosis. It is a strong predictor of survival; generally, the earlier the stage, the better the prognosis. Locally and nationally, about half of newly diagnosed cases are either in situ or localized [Figure 4].

How is cancer treated?

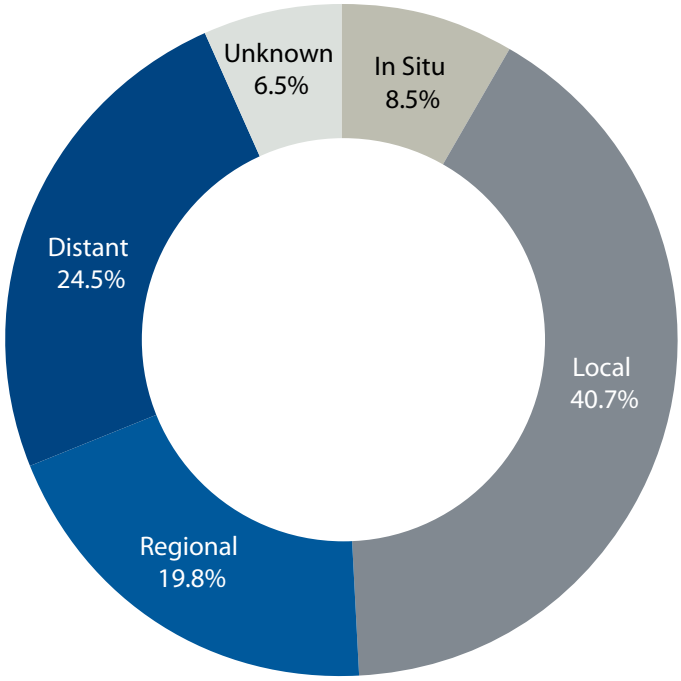
Treatment depends on the cancer type and stage, specific diagnosis, and overall health of the individual. Cancer is treated by one or more of the following therapies:

- **Surgery** removes the tumor by cutting out the cancerous mass; it is mostly used for localized tumors.
- **Chemotherapy** uses either intravenous or oral drugs to destroy cancer cells. It is used with the intention of curing or inducing remission in cancers in early stages.
- **Hormone therapy** might be given to block the body's natural hormones and to slow or stop the growth of certain cancers.
- **Immunotherapy or biologic therapies are** used to stimulate and strengthen a person's own immune system to destroy the cancer cells.
- **Radiation or radiotherapy** uses high-energy rays to destroy or slow the growth of cancer cells. It can be done with the intention of curing some cancers that have not spread too far from their site of origin or to relieve symptoms.

Can cancer be cured?

Many cancers can be cured if detected and promptly treated. For most types of cancer, if a person's cancer has been in remission (all signs and symptoms of the disease are absent) for five years, the cancer is considered cured. However, the length of remission at which a person is considered cured differs by cancer type. Certain skin cancers, such as a basal cell carcinoma, are considered cured as soon as the lesion is removed. For other cancers (*e.g.*, pancreatic), eight to ten years must pass before the person is considered cured.

Figure 4. Percent of Cancer Cases Diagnosed During Each Stage* — Indiana, 2008–2012



During 2008–2012, of the 169,378 Indiana residents who received an in situ or invasive cancer diagnosis, 83,269 (49.2%) were diagnosed in the in situ or local stage, 75,026 (44.3%) were diagnosed in the regional or distant stage, and 11,083 (6.5%) had unknown staging.

** Includes all in situ and invasive cancers except for basal and squamous cell skin cancers and in situ bladder, cervical, and prostate cancers, which are not reportable.*

Source: Indiana State Cancer Registry

What are the most common cancers?

The most commonly occurring cancers for both the state and the nation are the same. Excluding skin cancers, breast and prostate are the most prevalent cancers among females and males, respectively. Lung, including bronchus, and colon cancers are the next most common cancers among both sexes [Table 1]. Annually, lung cancer is responsible for the most cancer-related deaths among both sexes [Table 1].

How many people alive today will get cancer?

About 2.4 million Hoosiers, or 2 in 5 people now living in Indiana, will eventually develop cancer. Nationally, men have slightly less than a one in two chance of developing cancer in their lifetime; for women, the lifetime risk of developing cancer is a little more than one in three.[2]

How many people alive today have ever had cancer?

Approximately 13.7 million Americans with a history of cancer were alive on January 1, 2012.[2] Some of these individuals were cancer free, while others still had evidence of cancer and might have been undergoing treatment.

How many new cases of cancer are expected to occur this year?

The ACS estimated that approximately 35,620 Indiana residents will be diagnosed with cancer in 2015, amounting to almost four new cases of cancer diagnosed every hour of every day. Nationally, an estimated 1.6 million new cancer cases were diagnosed in 2014.[2] These estimates did not include cases of non-melanoma skin cancer and carcinoma in situ (except for in situ urinary bladder cancer cases).

How many people are expected to die from cancer this year?

During 2015, about 13,420 Indiana residents are expected to die of cancer, which translates to approximately 36 people every day.[2] Cancer is the second leading cause of death in Indiana following heart disease. Among children ages five to 14, cancer is the second leading cause of death following deaths from accidents.

How many people today survive cancer?

Using data from the Surveillance Epidemiology and End Results (SEER) registry, the five-year survival rate for

Table 1. Leading Sites of New Cancer Cases and Deaths among Indiana Residents by Sex, 2012

Number (%) of New Cases

Males	Count	%	Females	Count	%
Prostate	2,844	19.25%	Breast	4,366	27.83%
Lung and Bronchus	2,540	17.20%	Lung and Bronchus	2,134	13.60%
Colon and Rectum	1,447	9.80%	Colon and Rectum	1,378	8.78%
Urinary Bladder	1,071	7.25%	Corpus and Uterus, NOS	994	6.34%
Kidney and Renal Pelvis	688	4.66%	Brain and Other Nervous System	615	3.92%
Non-Hodgkin Lymphoma	657	4.45%	Thyroid	588	3.75%
Melanoma of the Skin	589	3.99%	Non-Hodgkin Lymphoma	545	3.47%
Oral Cavity and Pharynx	567	3.84%	Melanoma	502	3.20%
Brain and Other Nervous System	444	3.01%	Kidney and Renal Pelvis	429	2.73%
Pancreas	430	2.91%	Pancreas	420	2.68%
All Sites	**14,771**		**All Sites**	**15,689**	

Number (%) of Deaths

Males	Count	%	Females	Count	%
Lung and Bronchus	2,250	31.89%	Lung and Bronchus	1,708	27.29%
Colon and Rectum	613	8.69%	Breast	872	13.93%
Prostate	606	8.59%	Colon and Rectum	556	8.88%
Pancreas	395	5.60%	Pancreas	388	6.20%
Leukemia	308	4.37%	Leukemia	238	3.80%
Liver and Intrahepatic Bile Duct	294	4.17%	Non-Hodgkin Lymphoma	203	3.24%
Esophagus	280	3.97%	Corpus and Uterus, NOS	200	3.20%
Urinary Bladder	255	3.61%	Brain and Other Nervous System	161	2.57%
Non-Hodgkin Lymphoma	239	3.39%	Liver and Intrahepatic Bile Duct	156	2.49%
Kidney and Renal Pelvis	212	3.00%	Kidney and Renal Pelvis	118	1.89%
All Sites	**7,055**		**All Sites**	**6,258**	

Source: Indiana State Cancer Registry

Table 2. Cancer Incidence and Mortality (Death) Rate Comparisons between Indiana and the US, by Sex and Race, 2006–2010*

	Incidence rate per 100,000 people (2006–2010)			Mortality rate per 100,000 people (2006–2010)		
	Indiana	US	Difference (%)	Indiana	US	Difference (%)
Total	464.0†	469.1	-1.73	192.6†	176.4	9.18
Males	527.4†	541.1	-2.53	223.8†	215.3	3.95
Females	422.0†	417.8	1.01	161.5†	149.7	7.88
Whites	458.9†	469.3	-2.22	191.4†	175.8	8.87
African Americans	472.8	476.5	-0.78	221.4†	210.3	5.28

** Age-adjusted*

† Indiana rate is significantly higher (P<.05) than the US rate

Source: United States Cancer Statistics: 1999 — 2010 Mortality, WONDER Online Database. United States Department of Health and Human Services, Centers for Disease Control and Prevention; 2013. Accessed at http://wonder.cdc.gov/CancerMort-v2010.html on Mar 28, 2014 3:20:11 PM

2004–2010 from the 18 SEER geographic areas was 66.1 percent.[7] Factors such as early stage of disease at diagnosis can greatly improve the probability of survival after five years.

What are the costs of cancer?

During 2014, $1.83 billion was the estimated direct cost of treating Indiana residents with cancer. The estimated indirect costs totaled $11.12 billion for the same year.[8] The Milken Institute estimated that, should current trends continue, Indiana residents would spend $2.76 billion on direct costs for cancer care in 2023.[9]

How does cancer incidence and mortality in Indiana compare with the rest of the US?

Indiana's age-adjusted cancer incidence rate during 2006–2010 was 464.0 per 100,000 people. This was statistically higher than, but very similar to, the national rate of 469.1 per 100,000 people (<2% difference) [Table 2; Figure 5].

However, during the same period, Indiana's age-adjusted mortality rate was nine percent higher than the national rate (192.6 versus 176.4 deaths per 100,000 people). This included being almost four percent higher among Indiana males (223.8 versus 215.3 deaths per 100,000 males) and almost eight percent higher among Indiana females (161.5 versus 149.7 deaths per 100,000 females) [Table 2; Figure 6].

Lung cancer had the largest differences between the Indiana and US incidence and mortality rates, as the incidence rate among Indiana residents was almost 15 percent higher and the mortality rate was over 18 percent higher. This increase in risk is mostly attributable to Indiana having a high prevalence of smokers compared to the rest of the US. In 2013, Indiana had the 12th highest adult smoking rate in the country.[3]

Is the cancer burden in the US and Indiana lessening?

The burden of specific cancer types among US residents has changed over the years [Figures 7 and 8]. For example, with the gradual decrease in smoking rates among Americans over the past several decades, lung cancer mortality rates have begun to decrease, especially among US males.

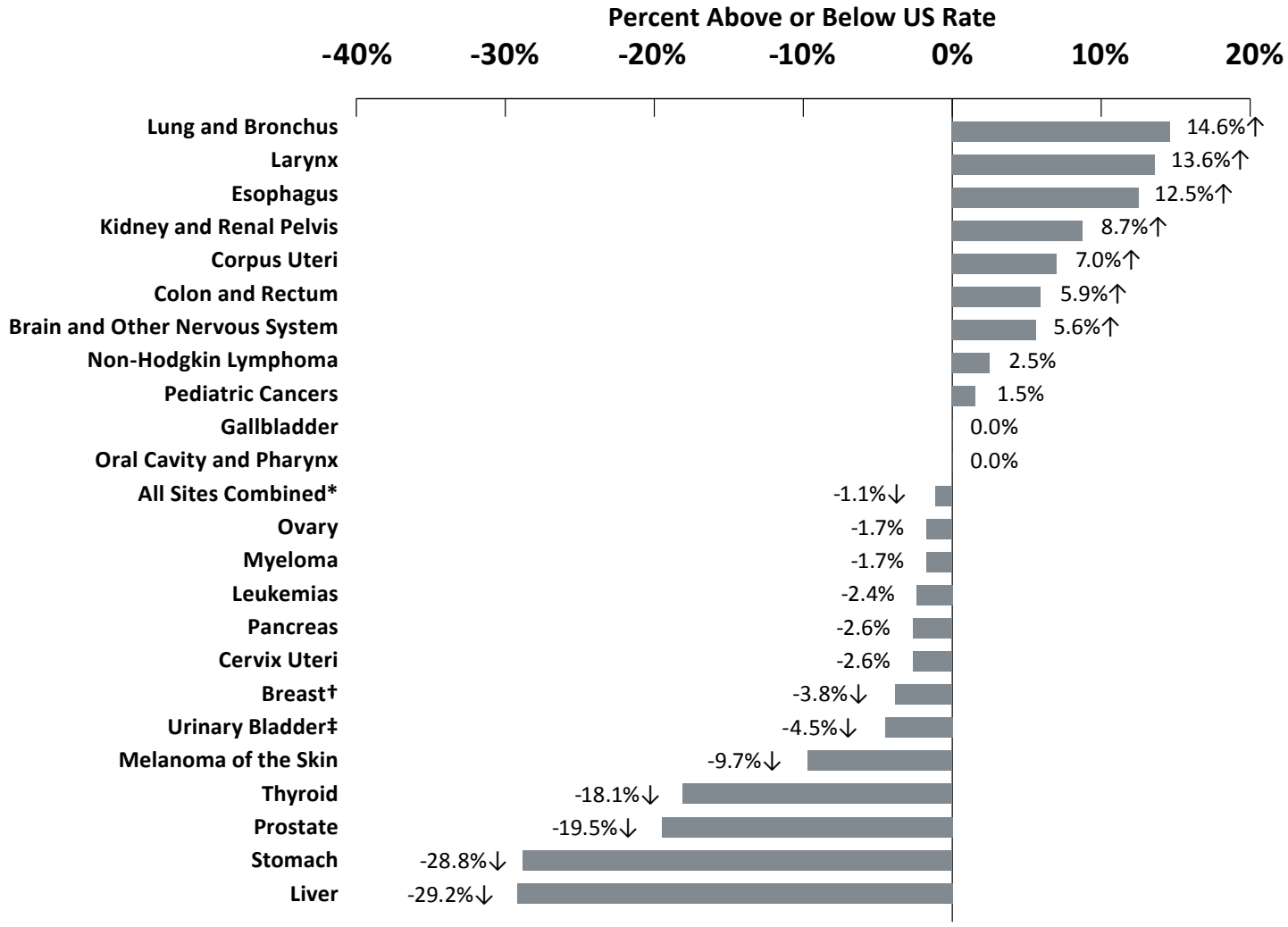
In Indiana, from 2003 to 2012, the age-adjusted incidence rates for all cancers combined decreased 13 percent from 490.2 to 428.0 cases per 100,000 people. Likewise, the age-adjusted mortality rates decreased 9.4 percent from 206.0 to 186.7 deaths per 100,000 people. However, trends varied among the different cancer types.

These statistics indicate that progress continues to be made in the early detection and treatment of certain cancers, and that the incidence and mortality of some cancers is declining. However, a significant cancer burden still exists among Indiana residents that require continued and more targeted cancer control efforts.

How does Indiana track changes in cancer risk and risk behavior data?

The Indiana State Cancer Registry was established in 1987 to compile information on cancer cases and other related data necessary to conduct epidemiological studies of cancer and develop appropriate preventive and control programs. The data in this registry allows for the evaluation of cancer prevention

Figure 5. How Do Indiana Cancer Incidence Rates Compare to US Rates?* (2006–2010)



** Age-adjusted*

† Female breast cancers only

‡ Urinary Bladder includes invasive and in situ.

Note: ↑↓ symbols denote whether Indiana's rate is significantly different than the US rate based on the 95% confidence interval overlap method (see Page 4 for description). ↑ = significantly higher; ↓ = significantly lower.

Source: United States Cancer Statistics: 1999–2010 Incidence, WONDER Online Database. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2013. Accessed at http://wonder.cdc.gov/cancer-v2010.html on Jul 14, 2014 3:56:43 PM

efforts and the measurement of progress toward reaching the state goal of reducing cancer incidence and mortality among Indiana residents.

Additionally, several data sources are used to describe the burden of risk factors (*e.g.*, obesity) and cancer screening rates among Indiana residents. The Behavioral Risk Factor Surveillance System (BRFSS) is the main source utilized to do this because it provides yearly data that can be used to generate Indiana-specific estimates for a large number of cancer risk and preventative factors. These findings can then be tracked over time and compared to other states to evaluate how Indiana is progressing in those areas. Additional local, state, and national data resources can be found in the Indiana Community Health Information Resource Guide (www.indianactsi.org/chep/resourceguide).

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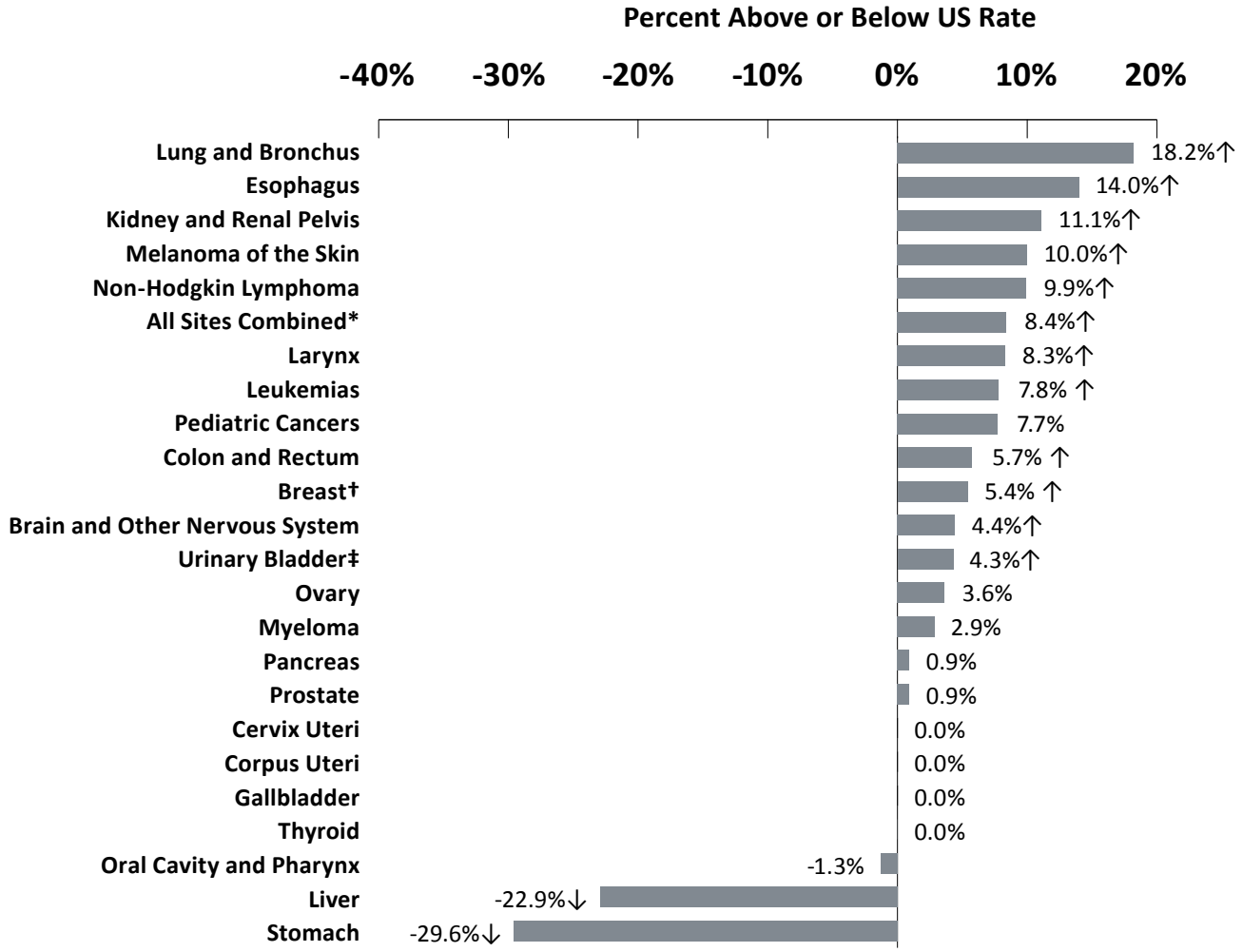
Figure 6. How Do Indiana Cancer Mortality (Death) Rates Compare to US Rates?* (2006–2010)



** Age-adjusted*

† Female breast cancers only

‡ Urinary Bladder includes invasive and in situ.

Note: ↑↓ symbols denote whether Indiana's rate is significantly different than the US rate based on the 95% confidence interval overlap method (see Page 4 for description). ↑ = significantly higher; ↓ = significantly lower.

Source: United States Cancer Statistics: 1999–2010 Incidence, WONDER Online Database. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2013. Accessed at http://wonder.cdc.gov/cancer-v2010.html on Jul 14, 2014 3:56:43 PM

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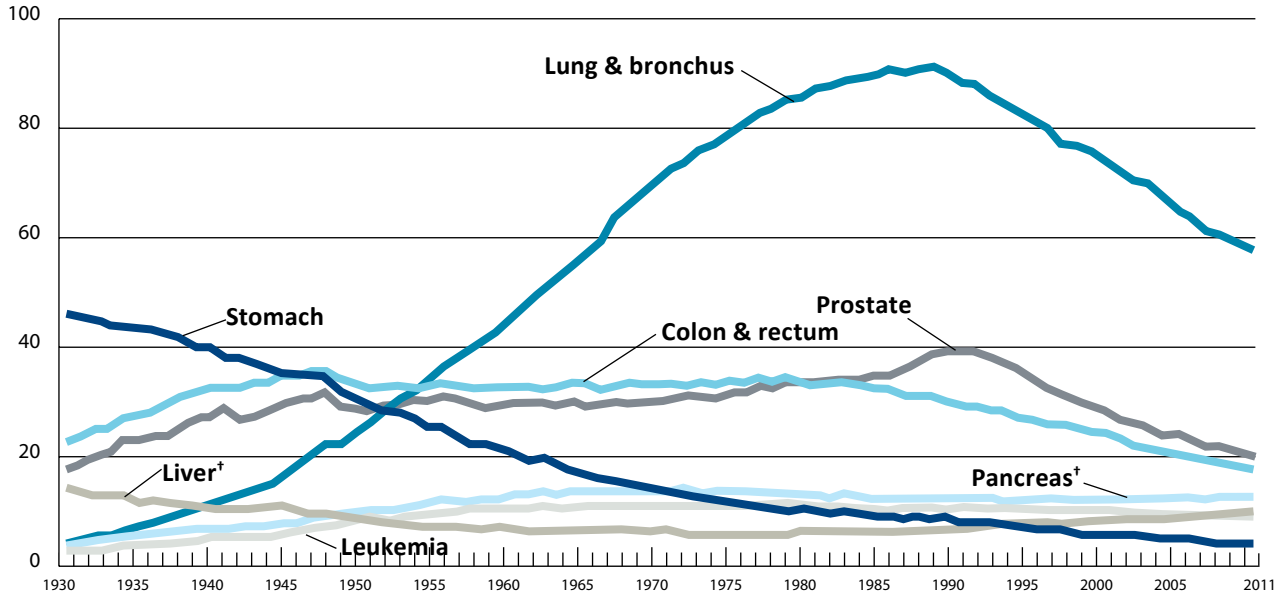
Figure 7. Cancer Mortality (Death) Rates among Males by Site* — US, 1930–2011



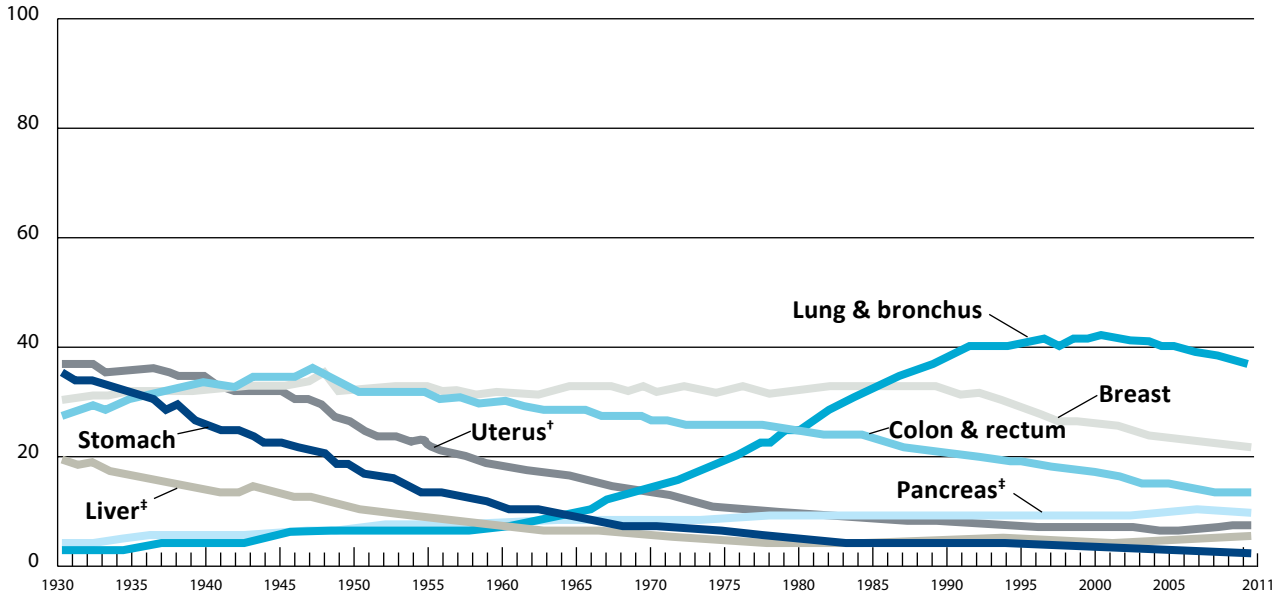
** Per 100,000 age adjusted to the 2000 US standard population.*

† Mortality rates for pancreatic and liver cancers are increasing.

Note: Due to changes in IDC coding, numerator information has changed over time. Rates for cancer of the liver, lung and bronchus, and colon and rectum are affected by these coding changes.

Source: US Mortality Volumes 1930 to 1959 and US Mortality Data 1960 to 2011, National Center for Health Statistics, Centers for Disease Control and Prevention. ©2015, American Cancer Society, Inc., Surveillance Research.

Figure 8. Cancer Mortality (Death) Rates among Females by Site* — US, 1930–2011



** Per 100,000 age adjusted to the 2000 US standard population.*

† Uterus refers to uterine cervix and uterine corpus combined.

‡ Mortality rates for pancreatic and liver cancers are increasing.

Note: Due to changes in IDC coding, numerator information has changed over time. Rates for cancer of the liver, lung and bronchus, and colon and rectum are affected by these coding changes.

Source: US Mortality Volumes 1930 to 1959 and US Mortality Data 1960 to 2011, National Center for Health Statistics, Centers for Disease Control and Prevention. ©2015, American Cancer Society, Inc., Surveillance Research.

Table 3. Indiana Cancer Incidence Rates by County*, 2008–2012

County	All Cancers		Prostate (Male-only disease)		Female Breast		Lung		Colon and Rectum	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Indiana	163,104	466.6	17,643	106.9	22,073	118.1	25,837	73.9	15,483	44.4
Adams	821	440.7	98	115.0	112	113.6	92	48.5	102	55.7 ↑
Allen	8,121	447.7 ↓	865	101.6	1,142	116.2	1,117	62.5 ↓	780	42.8
Bartholomew	2,028	467.7	180	87.9 ↓	283	122.3	331	76.0 ↓	178	41.1
Benton	226	424.8	X	X	X	X	46	83.0	26	51.8
Blackford	427	493.9	53	129.2	54	116.0	69	78.9	44	48.7
Boone	1,246	428.0 ↓	134	95.9	213	133.8	176	63.7	110	38.1
Brown	470	448.9	57	96.4	57	96.1	66	63.3	44	44.0
Carroll	530	431.2	71	107.9	65	96.6	78	61.9	52	42.0
Cass	970	422.1 ↓	119	112.7	121	102.1	192	82.9	98	42.1
Clark	2,825	468.3	198	66.2 ↓	376	110.9 ↑	512	86.1 ↑	261	43.5
Clay	807	505.9 ↑	94	119.1	93	110.6	118	69.7	91	57.7 ↑
Clinton	854	454.7	94	104.4	108	112.4	150	80.9	98	49.6
Crawford	309	479.5	29	80.4	45	138.1	56	83.7	25	37.7
Daviess	774	438.9	82	98.5	84	89.4 ↓	120	67.2	88	48.3
Dearborn	1,237	439.1	152	107.7	167	113.2	216	76.0	125	46.0
Decatur	660	443.8	81	114.8	68	84.8 ↓	108	72.0	57	37.8
DeKalb	1,044	458.9	109	97.7	151	124.1	167	72.1	104	46.8
Delaware	3,228	492.6 ↑	394	128.5 ↑	406	118.2	553	82.9 ↑	312	46.0
Dubois	1,092	445.0	132	114.1	144	110.9	138	55.5 ↓	111	44.7
Elkhart	4,695	468.3	506	110.5	600	113.2	700	69.8	420	42.1
Fayette	669	426.8 ↑	73	95.4	63	78.3	138	84.7	61	37.7
Floyd	1,992	481.4	162	81.4 ↓	282	122.3	338	82.2	166	39.2
Fountain	521	459.0	64	114.4	71	122.8	92	76.9	60	51.3
Franklin	523	386.3 ↓	71	115.6	62	92.4	84	60.1	41	30.2 ↓
Fulton	625	473.3	69	104.9	76	110.3	110	81.2	72	54.0
Gibson	908	450.3	111	116.6	133	125.3	141	68.2	109	53.7
Grant	2,265	519.5 ↑	284	139.1 ↑	287	124.8	357	78.9	235	53.6 ↑
Greene	949	463.6	87	85.3	110	101.6	172	79.6	90	43.9
Hamilton	4,895	412.3 ↓	548	93.1 ↓	888	129.6 ↑	484	47.2 ↓	414	36.2 ↓
Hancock	1,827	480.6	142	74.5 ↓	242	118.7	312	82.8	153	40.2
Harrison	1036	457.9	85	71.9 ↓	140	118.1	186	82.0	77	33.8 ↓
Hendricks	3,398	485.0	361	105.1	500	129.2	482	72.0	269	38.6
Henry	1,479	475.9	159	107.5	172	102.3	250	79.3	166	52.1
Howard	2,263	437.0 ↓	219	86.3 ↓	291	106.5	398	75.3	205	39.0
Huntington	1,038	475.5	110	106.1	129	111.1	136	62.3	102	46.3
Jackson	1,232	504.9 ↑	121	105.9	170	134.8	200	78.5	116	48.5
Jasper	913	488.1	109	116.7	122	126.3	166	88.1 ↑	88	46.6
Jay	628	496.1	67	110.7	98	140.2	91	71.0	77	60.6 ↑
Jefferson	873	459.7	89	94.5	91	89.4 ↓	145	75.3	80	42.6
Jennings	757	499.5	63	84.8	94	115.3	148	97.3 ↑	50	35.5
Johnson	3,279	453.8	267	75.5 ↓	446	114.5	522	73.2	329	45.4
Knox	1,182	510.4 ↑	142	131.9 ↑	154	123.8	171	71.4	121	53.0
Kosciusko	1,953	460.3	227	112.1	261	119.5	302	69.8 ↓	188	44.1
LaGrange	703	401.2 ↓	66	78.3 ↓	93	104.2	110	62.2	63	35.1
Lake	13,516	494.8 ↑	1,714	136.4 ↑	1,840	124.7	1,978	72.2	1,435	52.5 ↑
LaPorte	3,179	486.9 ↑	432	140.0 ↑	398	115.9	508	77.1	308	47.7
Lawrence	1,385	470.7	135	90.3	171	111.0	250	82.7	149	50.6

County	All Cancers		Prostate (Male-only disease)		Female Breast		Lung		Colon and Rectum	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Madison	3,779	476.6	505	133.9 ↑	468	112.7	636	79.0	350	44.1
Marion	19,952	462.5	1,802	91.7 ↓	2,926	122.2	3,357	80.1 ↑	1,715	40.1 ↓
Marshall	1,281	470.8	167	131.4	163	111.8	167	60.0 ↓	121	44.7
Martin	344	541.9 ↑	40	120.7	48	148.9	49	75.3	47	73.4 ↑
Miami	913	428.1 ↓	103	95.1	103	98.4	167	78.4	66	32.1 ↓
Monroe	2,644	450.7	257	93.3	368	116.1	374	63.8 ↓	235	41.2
Montgomery	955	419.1 ↓	93	86.3	109	91.4 ↓	176	77.1	92	40.1
Morgan	1,952	503.2 ↑	213	109.4	275	131.7	307	80.2	201	52.5 ↑
Newton	388	432.2	46	100.8	46	101.0	66	70.4	41	46.9
Noble	1,056	417.3 ↓	107	91.0	152	113.9	161	64.9	103	40.5
Ohio	206	542.2	X	X	29	147.0	43	109.0 ↑	24	66.5
Orange	608	493.9	48	75.0 ↓	74	110.9	119	93.8 ↑	69	57.3
Owen	677	515.3 ↓	73	95.7	72	106.4	120	92.0 ↑	68	54.7
Parke	474	441.2	56	99.2	57	99.5	96	86.0	39	35.8
Perry	527	443.2	46	81.4	72	111.3	106	90.7	49	40.4
Pike	363	425.1	38	91.8	53	120.5	56	62.1	43	49.6
Porter	4,315	486.7 ↑	618	141.5 ↑	606	126.6	663	76.0	393	46.2
Posey	735	468.9	99	129.7	101	120.1	94	62.2	69	44.4
Pulaski	390	452.5	49	110.7	41	93.2	63	69.6	45	52.3
Putnam	998	473.8	82	80.0 ↓	121	114.6	200	94.0 ↑	100	47.7
Randolph	846	502.2	106	130.7	104	120.2	143	81.4	87	51.2
Ripley	768	462.9	78	97.7	100	113.6	133	78.2	73	43.3
Rush	527	500.7	45	86.1	61	115.3	87	78.1	46	42.8
Scott	647	479.5	31	47.2 ↓	77	108.1	124	89.5	71	51.3
Shelby	1,304	509.7 ↑	130	105.2	184	138.4	206	80.4	131	49.8
Spencer	573	448.5	63	100.5	78	120.5	100	75.7	63	50.4
St. Joseph	6,805	469.3	827	122.6 ↑	937	121.9	1,050	71.8	688	47.1
Starke	725	507.1 ↑	91	124.9	81	111.1	129	85.9	57	40.3
Steuben	840	411.9 ↓	91	87.3	99	93.0 ↓	139	65.5	76	37.7
Sullivan	583	454.0	55	92.0	70	105.7	101	75.6	64	50.0
Switzerland	285	472.3	27	85.2	22	72.4 ↓	51	84.4	38	66.5 ↑
Tippecanoe	3,355	477.7	356	113.2	469	125.3	472	68.5	293	42.9
Tipton	464	443.0	41	76.2	72	129.8	76	72.2	61	56.0
Union	207	457.3	31	150.5	20	86.9	34	67.7	X	X X
Vanderburgh	4,617	445.3 ↓	491	102.2	599	109.3	827	78.7	427	41.0
Vermillion	545	515.4 ↑	75	149.3 ↑	64	110.4	95	86.7	59	57.5
Vigo	2,971	506.2 ↑	312	117.9	409	131.3	477	81.0	270	45.2
Wabash	988	457.5	126	122.1	120	107.5	136	62.9	108	45.6
Warren	251	469.6	29	108.4	37	127.8	38	71.6	27	50.8
Warrick	1,611	476.2	201	115.3	252	137.7 ↓	215	64.4	143	42.7
Washington	815	518.8 ↑	60	76.8 ↓	112	137.5	158	97.8 ↑	74	48.6
Wayne	2,089	484.1	221	112.6	234	102.7	392	88.3 ↑	176	39.3
Wells	689	410.4 ↓	67	85.8	92	106.3	89	51.5 ↓	55	31.7 ↓
White	753	466.1	82	100.6	84	97.8	135	79.1	74	44.5
Whitley	913	470.2	106	114.7	120	119.8	132	67.2	83	42.5

** Rates are per 100,000 people and age-adjusted to the 2000 US Standard Population*

"x" Rate and comparison to state rate is suppressed if fewer than 20 cases occurred because rate is considered unstable.

Source: Indiana State Cancer Registry

Table 4. Indiana Cancer Mortality (Death) Rates by County*, 2008–2012

County	All Cancers		Prostate (Male-only disease)		Female Breast		Lung		Colon and Rectum	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Indiana	65,367	187.3	2,918	21.9	4,410	22.6	20,028	57.5	5,818	16.6
Adams	320	162.4 ↓	23	27.7	X	X	66	34.0 ↓	35	19.6
Allen	3,166	175.6 ↓	144	21.4	258	25.0	855	48.2 ↓	288	15.7
Bartholomew	804	185.2	33	19.4	53	21.6	257	58.7	63	15.1
Benton	98	178.3	X	X	X	X	44	82.2 ↑	X	X
Blackford	172	194.5	X	X	X	X	49	55.7	28	32.0 ↑
Boone	537	192.5	33	33.3 ↑	45	27.4	159	59.3	41	14.7
Brown	189	184.8	X	X	X	X	63	62.4	X	X
Carroll	229	181.0	X	X	X	X	54	41.8 ↓	22	17.5
Cass	450	192.0	X	X	28	22.8	162	69.3 ↑	34	14.9
Clark	1,158	195.4	36	17.8	50	15.1 ↓	414	70.5 ↑	102	17.0
Clay	311	189.9	X	X	22	24.6	96	58.2	36	22.1
Clinton	383	196.0	23	29.5	X	X	129	67.2	45	22.1
Crawford	110	171.1	X	X	X	X	43	63.7	X	X
Daviess	327	182.4	X	X	X	X	104	58.9	33	18.9
Dearborn	496	180.4	21	19.6	27	19.0	168	59.7	49	18.6
Decatur	301	199.5	X	X	X	X	96	64.1	20	13.5
DeKalb	439	193.4	X	X	25	20.5	122	53.4	41	17.4
Delaware	1,297	191.4	41	15.2 ↓	81	23.4	417	62.0	126	17.8
Dubois	434	173.7	23	24.7	32	22.6	97	39.0 ↓	49	19.4
Elkhart	1,720	171.3 ↓	81	21.4	112	19.9	492	49.7 ↓	155	15.8
Fayette	364	231.5 ↑	20	28.5	25	29.1	123	76.1 ↑	34	20.6
Floyd	761	186.2	21	13.1 ↓	56	23.0	252	60.7	51	12.2
Fountain	236	202.2	X	X	X	X	77	65.1	26	23.6
Franklin	255	186.4	X	X	X	X	79	57.1	29	21.4
Fulton	277	207.2	X	X	X	X	88	66.3	21	15.5
Gibson	357	174.3	X	X	28	25.7	97	46.9	47	22.7
Grant	893	201.3	30	18.0	62	25.2	284	63.1	73	16.5
Greene	413	194.6	X	X	X	X	144	67.5	34	16.0
Hamilton	1,618	154.2 ↓	75	19.4	141	22.1	375	36.4 ↓	124	11.4 ↓
Hancock	677	185.5	24	17.0	50	23.8	220	60.6	47	13.2
Harrison	385	173.6	X	X	23	19.2	132	59.7	25	11.3
Hendricks	1,121	169.5 ↓	44	18.6	81	20.7	329	50.8	83	12.1 ↓
Henry	624	196.4	24	20.2	32	18.5	213	68.0 ↑	50	15.4
Howard	936	176.3	31	15.9	61	20.8	299	56.3	74	13.7
Huntington	445	197.5	27	30.4	33	25.4	119	52.3	39	17.6
Jackson	512	207.5 ↑	26	26.2	25	18.7	171	68.1	46	18.9
Jasper	384	208.0	21	29.4	33	32.3	140	75.4 ↑	25	13.6
Jay	273	211.9	X	X	X	X	80	62.6	32	24.9
Jefferson	323	169.0	X	X	X	X	109	55.9	29	15.2
Jennings	318	217.3 ↑	X	X	X	X	110	71.5 ↑	23	16.9
Johnson	1,215	171.6 ↓	48	17.8	70	17.5	376	53.0	109	14.9
Knox	439	181.0	X	X	27	19.9	130	53.7	50	20.3
Kosciusko	800	188.3	40	25.5	50	21.2	242	56.7	66	15.0
LaGrange	295	168.9	X	X	X	X	80	45.7	29	15.6
Lake	5,333	194.8 ↑	245	22.4	403	26.2 ↑	1,497	54.8	546	20.1 ↑
LaPorte	1,278	195.5	67	27.4	91	25.8	362	55.7	133	19.7
Lawrence	570	188.9	X	X	40	24.0	185	60.8	55	18.1

County	All Cancers		Prostate (Male-only disease)		Female Breast		Lung		Colon and Rectum	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Madison	1,573	194.2	63	20.0	94	21.0	546	67.5 ↑	129	15.7
Marion	8,503	203.2 ↑	394	25.8 ↑	601	24.9	2719	65.4 ↑	704	16.7
Marshall	462	163.8 ↓	23	21.9	30	18.9	128	46.0 ↓	38	13.3
Martin	125	189.3	X	X	X	X	38	58.7	X	X
Miami	409	192.6	X	X	21	19.5	145	68.1	25	11.8
Monroe	1,014	172.1 ↓	49	21.8	68	20.5	292	49.7 ↓	79	13.7
Montgomery	415	177.7	20	19.9	20	14.8	131	57.1	36	15.3
Morgan	721	196.9	29	25.2	49	23.8	242	63.1	62	17.1
Newton	179	197.0	X	X	X	X	56	60.3	23	25.1
Noble	473	189.7	29	30.8	38	29.3	133	52.8	51	20.7
Ohio	77	198.2	X	X	X	X	32	81.0	X	X
Orange	257	206.6	X	X	X	X	94	73.7 ↑	20	15.4
Owen	269	214.2	X	X	20	29.1	86	65.4	21	18.4
Parke	200	188.6	X	X	X	X	68	61.1	X	X
Perry	257	212.7	X	X	X	X	93	79.4 ↑	31	24.6
Pike	155	180.3	X	X	X	X	54	60.8	X	X
Porter	1,567	180.6	76	23.4	119	24.2	468	53.8	150	17.4
Posey	255	165.2	X	X	X	X	64	41.5 ↓	21	13.5
Pulaski	170	192.4	X	X	X	X	50	55.4	X	X
Putnam	413	196.9	X	X	23	20.6	158	74.9 ↑	54	25.4 ↑
Randolph	335	193.1	20	26.2	X	X	100	56.9	32	18.7
Ripley	343	200.5	X	X	X	X	98	58.1	35	20.9
Rush	226	209.0	X	X	X	X	70	63.1	X	X
Scott	285	217.2 ↑	X	X	X	X	108	78.8 ↑	22	17.2
Shelby	478	186.9	X	X	28	20.2	151	58.6	40	14.9
Spencer	231	181.0	X	X	X	X	70	53.7	29	22.2
St. Joseph	2,717	180.5	143	23.5	178	20.9	780	52.4 ↓	245	16.3
Starke	306	219.0 ↑	X	X	23	31.4	108	72.7 ↑	21	15.0
Steuben	346	170.4	21	26.0	31	26.2	99	46.7	29	14.7
Sullivan	284	217.5 ↑	X	X	X	X	87	65.5	27	21.1
Switzerland	139	229.5 ↑	X	X	X	X	51	81.2 ↑	X	X
Tippecanoe	1,200	172.5 ↓	49	17.9	107	26.5	330	48.9 ↓	120	17.1
Tipton	177	163.6	X	X	X	X	46	42.9	23	20.3
Union	75	173.4	X	X	X	X	25	56.9	X	X
Vanderburgh	1,987	187.0	83	19.3	138	24.0	617	58.6	150	13.8
Vermillion	220	205.2	X	X	X	X	87	79.1 ↑	25	25.0
Vigo	1,200	202.1 ↑	39	17.2	82	24.3	398	68.1 ↑	101	16.7
Wabash	432	186.3	29	29.6	25	18.9	115	52.3	39	15.2
Warren	94	172.2	X	X	X	X	32	58.4	X	X
Warrick	554	167.5 ↓	33	27.2	44	24.1	153	46.0 ↓	40	12.3
Washington	323	206.4	X	X	X	X	117	73.7 ↑	23	15.6
Wayne	902	202.0 ↑	27	14.5	52	21.3	292	66.1 ↑	74	16.2
Wells	266	150.7 ↓	X	X	X	X	77	44.4 ↓	28	15.7
White	339	204.2	X	X	20	22.1	113	66.8	29	17.7
Whitley	371	189.8	32	44.1 ↑	24	21.8	107	54.1	30	15.7

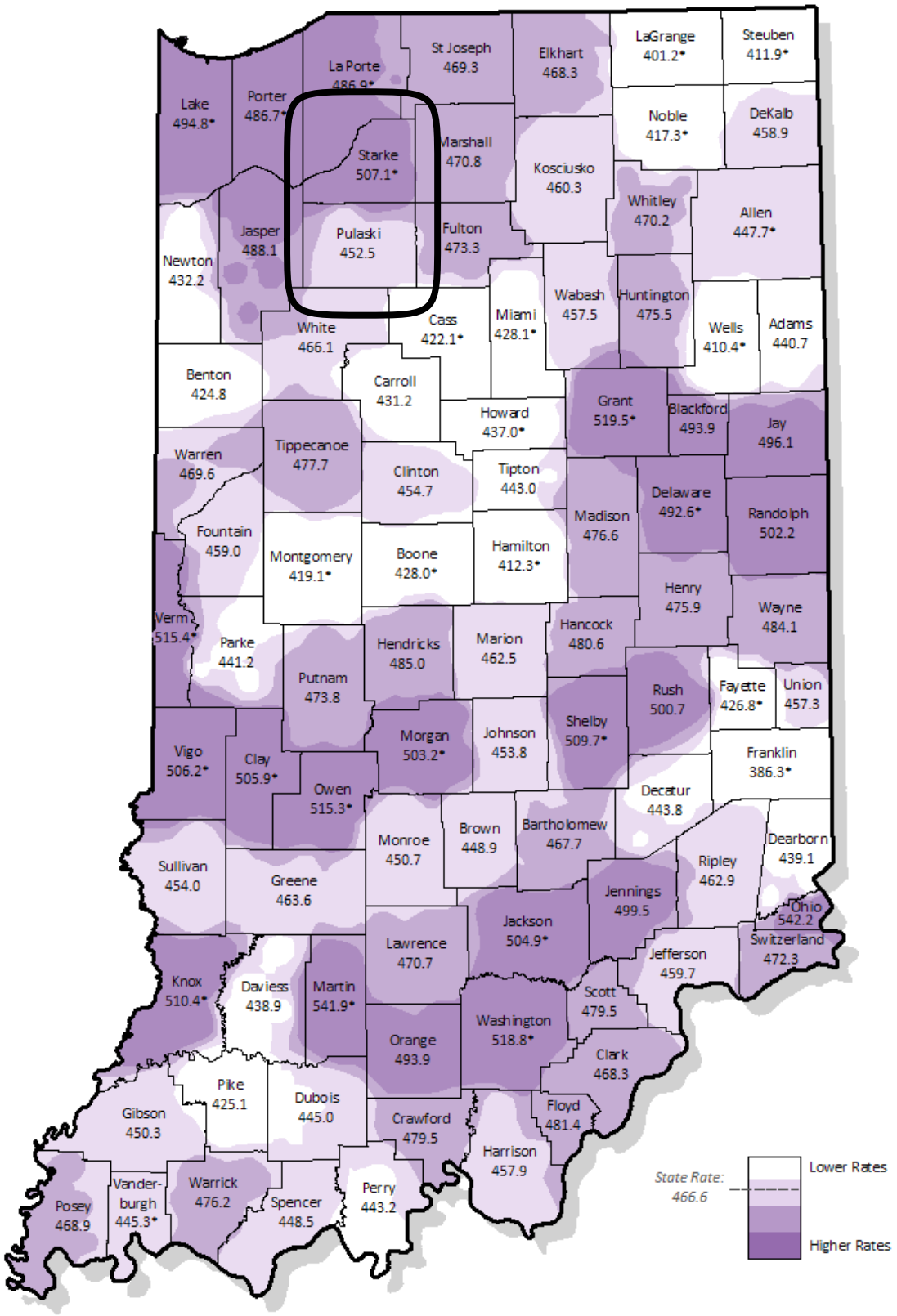
** Rates are per 100,000 people and age-adjusted to the 2000 US Standard Population*

† "↑↓" symbols denote whether the county's rate is significantly different than the Indiana rate based on the 95% confidence interval overlap method (see Page 4 for description). Because of limitations of this method, some of the counties without ↑↓ symbols could still have significantly different rates than the state.

"x" Rate and comparison to state rate is suppressed if fewer than 20 deaths occurred because rate is considered unstable; counts <5 are suppressed to maintain confidentiality.

Source: Indiana State Cancer Registry

Map 1. Incidence Rates for All Cancers Combined by County — Indiana, 2008-2012



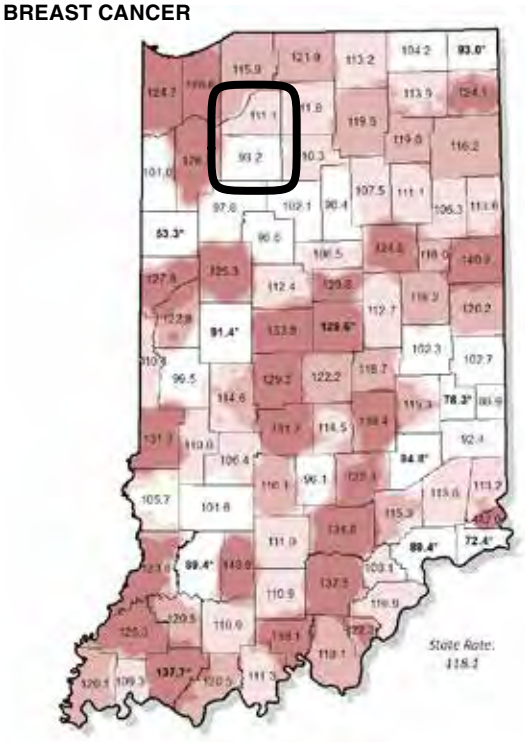
** Significantly different (higher or lower) than state rate (P<.05)*

Technical note: This map presents age-adjusted county incidence rates using a smoothed interpolated surface and is intended to provide a generalized depiction of rate variability throughout the state.

Source: Indiana State Cancer Registry

Map 2. Incidence Rates for Selected Cancer Types by County — Indiana, 2008-2012

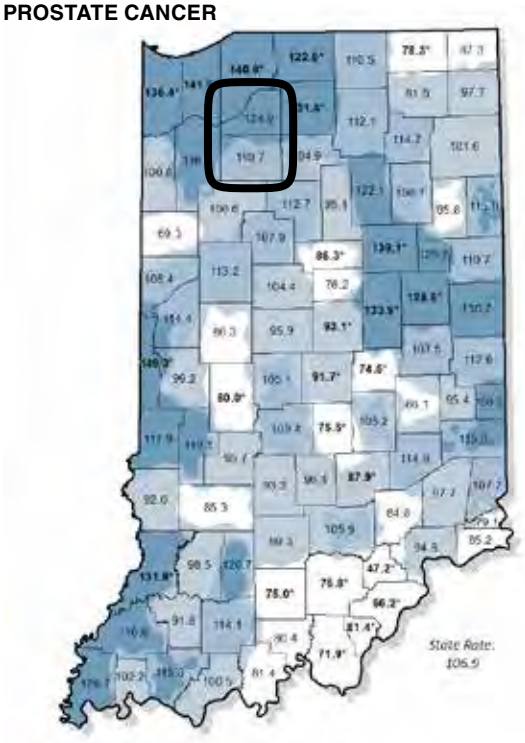
BREAST CANCER



COLON & RECTUM CANCER

Lower Rates → Higher Rates

PROSTATE CANCER



LUNG CANCER

** Significantly different (higher or lower) than state rate (P<.05)*

Technical note: This map presents age-adjusted county incidence rates using a smoothed interpolated surface and is intended to provide a generalized depiction of rate variability throughout the state.

Source: Indiana State Cancer Registry

What is the Impact on Indiana Residents?

Table 5. Burden of Invasive Female* Breast Cancer — Indiana, 2008–2012

	Average number of cases per year (2008–2012)	Rate per 100,000 females† (2008–2012)	Number of cases (2012)	Rate per 100,000 females† (2012)
Indiana Incidence	4,415	118.1	4,366	115.7
Indiana Deaths	882	22.6	872	21.9

** Fewer than 40 cases of breast cancer occur among Indiana males each year. The annual incidence rate (typically around 1.0 case per 100,000 males) remained stable during 2008-2012.*

† Age-adjusted

Source: Indiana State Cancer Registry

Bottom Line

Breast cancer is the second leading cause of cancer death and, excluding skin cancers, the most frequently diagnosed cancer among females in the US.[1] The lifetime risk of developing breast cancer among females is one in eight.[1] Breast cancer is typically diagnosed during a screening examination. An estimated 231,840 new cases of invasive breast cancer and 40,290 breast cancer-related deaths are expected to occur among females nationally in 2015.[1] White and African American females have similar incidence rates; however, African American females have significantly higher mortality rates.[2] This may be, in part, because of late diagnosis, diagnosis in younger individuals, and barriers to healthcare access [Figure 9].[2] Today, there are 3 million US females who are breast cancer survivors. Females should have frequent conversations with their health care provider about their risks for breast cancer and how often they should be screened. Breast cancer is rare among males as an estimated 2,350 cases will occur in 2015.[1] However, because males are prone to ignoring warning signs, they are often diagnosed at later stages and have poorer prognoses. During 2015, it is estimated that 440 males are expected to die nationally from breast cancer.

Who Gets Breast Cancer?

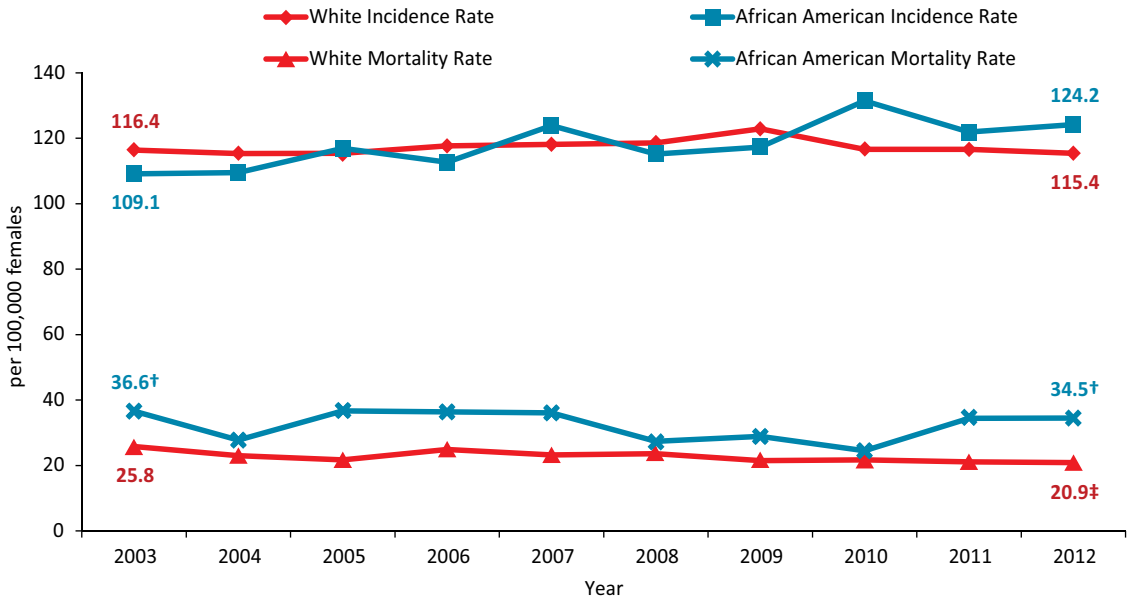
Sex and **age** are the two greatest risk factors for developing breast cancer. Females have a much greater risk of developing breast cancer (>99% of Indiana cases occur among females), and that risk increases with age. Overall, in Indiana, 79 percent of all breast cancer incidence and 88 percent of breast cancer deaths occur in females over the age of 50.

Factors associated with increased breast cancer risk include weight gain after the age of 18, being overweight or obese, use of menopausal hormone therapy, physical inactivity, and alcohol consumption. Research also indicates that long-term, heavy smoking increases breast cancer risk, particularly among females who start smoking before their first pregnancy.

Additional risk factors include:

- **Family history** — Females who have had one or more first degree relatives who have been diagnosed with breast cancer have an increased risk. Additionally, breast cancer risk increases if a woman has a family member who carries the breast cancer susceptibility genes (BRCA) 1 or 2, which accounts for five to ten percent of all female breast cancers. BRCA mutations also account for five to 20 percent of all male breast cancers, and 15 to 20 percent of familial breast cancers.[1]
- **Race** — In Indiana, during 2008-2012, the breast cancer incidence rates for African American and white females were similar, but the mortality rate for African American females was 39 percent higher than for whites.[3] African American females had significantly higher rates of diagnosis at the regional or distant stage [Figure 10].
- **Reproductive factors** — Females may have an increased risk if they have a long menstrual history (menstrual periods that start early and/or end later in life), have recently used oral contraceptives or Depo-Provera, have never had children, or had their first child after the age of 30.[1]
- **Certain medical findings** — High breast tissue density, high bone mineral density, type 2 diabetes, certain benign breast conditions, and lobular carcinoma in situ may increase risk

Figure 9. Female Breast Cancer Incidence and Mortality (Death) Rates Trends by Race* — Indiana, 2003–2012



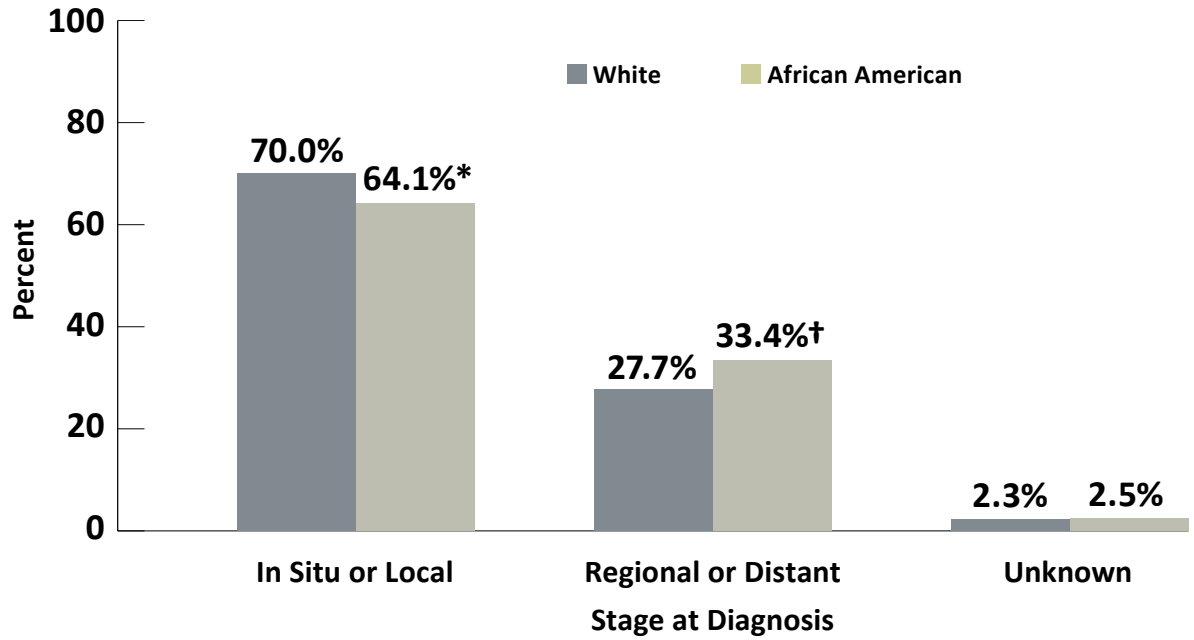
** Age-adjusted*

† Rate among African-Americans was significantly higher than rate among whites (P<.05)

‡ The breast cancer mortality rate among white females was significantly lower (P<.05) in 2012 compared to 2003

Source: Indiana State Cancer Registry

Figure 10. Percent of Female Breast Cancer Cases by Stage of Diagnosis and Race — Indiana, 2008–2012



* *Proportion of cases diagnosed in the local stage was significantly lower (P<.05) among African American females when compared to white females, but significantly higher than whites for the in situ stage.*

† *Proportion of cases diagnosed in the regional or distant stage was significantly higher (P<.05) among African American females when compared to white females*

Source: Indiana State Cancer Registry

BE AWARE!

Common Signs and Symptoms of Breast Cancer

- The most common symptom of breast cancer is a new lump or mass. It's important to have anything new or unusual checked by a doctor.
- Other symptoms of breast cancer may include:
  - Hard knots, or thickening
  - Swelling, warmth, redness, or darkening
  - Change in size or shape
  - Dimpling or puckering of the skin
  - Itchy, scaly sore, or rash on the nipple
  - Pulling in of the nipple or other parts of the breast
  - Nipple discharge that starts suddenly
  - New pain in one spot that doesn't go away

Although these symptoms can be caused by things other than breast cancer, it is important to have them checked out by your doctor.

for developing breast cancer. In addition, high dose radiation to the chest for cancer treatment increases risk.[1]

Factors associated with a decreased risk of breast cancer include breastfeeding, regular moderate or vigorous physical activity, and maintaining a healthy body weight. Two medications — tamoxifen and raloxifene — have been approved to reduce breast cancer risk in female at high risk.[1]

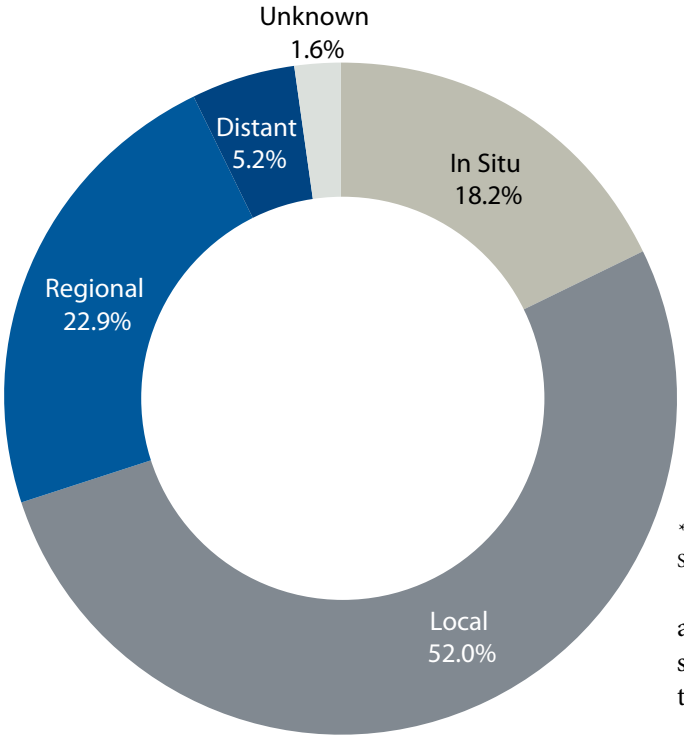
Can Breast Cancer Be Detected Early? — *see the "Be Aware" box for additional information*

Females should have frequent conversations with their health care provider about their risks for breast cancer and how often they should be screened. In general, females should follow these recommendations:

- **Breast Self-Awareness.** Females in their 20s should be aware of the normal look and feel of their breasts, so that they can identify potentially dangerous changes.
- **Clinical Breast Exams.** The American Cancer Society recommends that females in their 20s and 30s have a clinical breast exam by a health care professional every three years. Asymptomatic females in their 40s should have yearly clinical breast exams.
- **Screening Mammograms.** The United States Preventive Services Task Force recommends a screening mammogram every two years for females aged 50 to 74, which help detect cancers before a lump can be felt. Females between the ages of 40 to 49, especially those with a family history of breast cancer, should discuss the risks and benefits of mammography with their health provider to determine if it is right for them.

According to the 2012 Indiana Behavioral Risk Factor Surveillance System (BRFSS), only 69.5 percent of females ages

Figure 11. Percent of Female Breast Cancer Cases Diagnosed During Each Stage* — Indiana, 2008–2012



During 2008–2012, of the 26,996 female Indiana residents who received a breast cancer diagnosis, 18,969 (70%) were diagnosed in the in situ or local stage, 7,608 (28.2%) were diagnosed in the regional or distant stage, and 419 (1.6%) had unknown staging.

** Includes all in situ and invasive cases*
Source: Indiana State Cancer Registry

50 and older had a mammogram during the past two years. The Affordable Care Act requires preventive screening services to be included in most insurance policies. Often, these services are paid in full. Individuals should check with their individual insurance providers for specific plan information.

What Factors Influence Breast Cancer Survival?

Staging of breast cancer takes into account the number of lymph nodes involved and whether the cancer has moved to a secondary location [Figure 11]. When breast cancer is detected early, before it is able to be felt, the five-year survival rate is 99 percent.[1] During 2012, in Indiana, only 52 percent of breast cancer cases were diagnosed at the local stage. Approximately 18 percent were diagnosed in situ (the earliest stage possible for diagnosis).[3] During this same time, almost 30 percent of Indiana's breast cancer cases were diagnosed in the regional or distant stages.[3]

There are multiple treatment options available for breast cancer patients. Surgical treatment options include mastectomy (the medical term for the surgical removal of one or both breasts, either partially or completely) and lumpectomy (the removal of only the cancerous area of the breast). Local radiation can be used to treat the tumor without affecting the rest of the body. Other treatments include chemotherapy, hormone therapy, and targeted therapy. These can be given orally or intravenously in order to reach cancer cells anywhere in the body. An individual's treatment plan is personalized and based both on medical and personal choices. Individuals should partner with their medical providers and be active participants in the development of a treatment and care plan.

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TAKE CHARGE!

What You Can Do to Help Prevent Breast Cancer

- Know your risk! Talk to your doctor about your personal and family history, and screening.
- Get screened regularly.
- Be smoke free! Visit www.in.gov/quitline for free, evidence-based smoking cessation assistance.
- Maintain a healthy weight.
- Adopt a physically active lifestyle.
- Limit alcohol consumption.
- Limit postmenopausal hormone use. When evaluating treatment options for menopausal symptoms, consider the increased risk of breast cancer associated with the use of estrogen and progestin and discuss this with your physician.
- Breastfeed, if you can. Studies suggest that breastfeeding for one year or more slightly reduces a woman's overall risk of breast cancer.

What is the Impact on Indiana Residents?

Table 6. Burden of Invasive Cervical Cancer — Indiana, 2008–2012

	Average number of cases per year (2008–2012)	Rate per 100,000 females† (2008–2012)	Number of cases (2012)	Rate per 100,000 females† (2012)
Indiana Incidence	250	7.4	240	7.1
Indiana Deaths	86	2.4	100	2.7

† Age-adjusted

Source: Indiana State Cancer Registry

Cervical Cancer

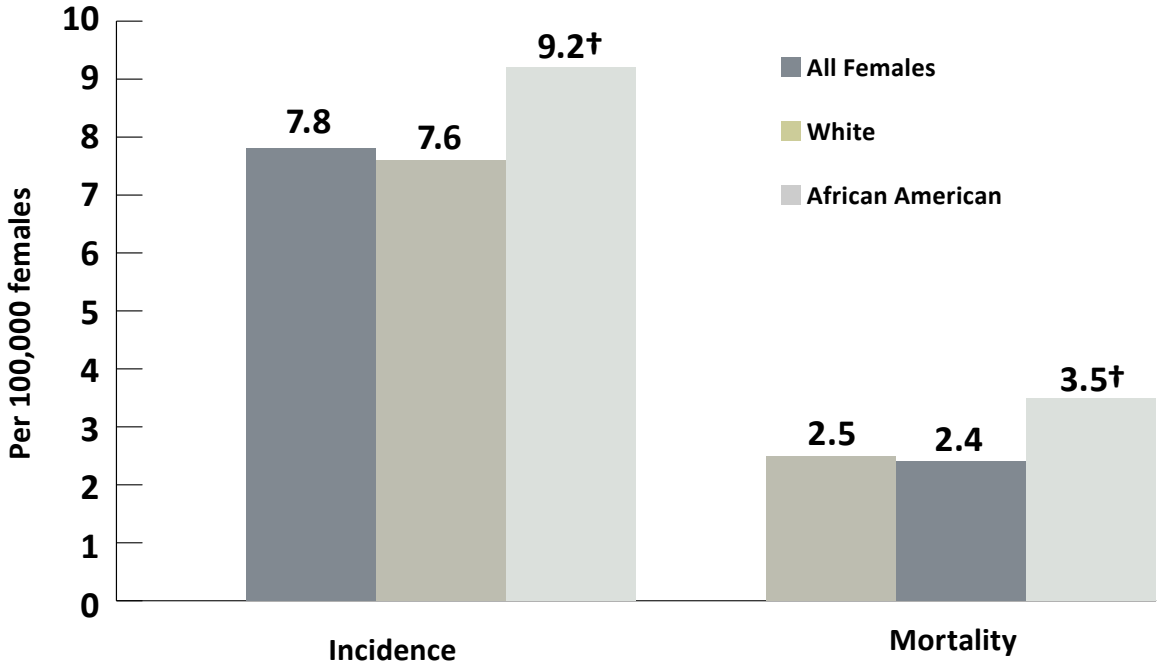
Bottom Line

Cervical cancer is almost 100 percent preventable through regular routine screening, avoidance of controllable risk factors, and vaccination against the human papillomavirus (HPV). In the US, an estimated 12,900 cases of invasive cervical cancer cases will be diagnosed in 2015 and 4,100 deaths will occur.[1] Large declines in incidence rates over most of the past several decades have begun to taper off, particularly among younger females; from 2006 to 2010, rates were stable in females younger than 50, and decreasing by only 3.1 percent in females ages 50 and older.[1] In Indiana, approximately 250 new cases of cervical cancer and 86 cervical cancer-related deaths occur annually among females [Table 6].

Who Gets Cervical Cancer?

- Infection with HPV is the single greatest risk factor for cervical cancer. Most cervical cancers are caused by persistent infection with certain types of HPV. The CDC estimates that at least 91 percent of cervical cancer cases are caused by HPV each year.[2] Other risk factors for cervical cancer include a compromised immune system and smoking.
- HPV is passed person-to-person through skin-to-skin sexual contact. Risk of transmission can be reduced by delaying first sexual activity, limiting the number of sexual partners, and using condoms.
- HPV vaccination is the best method of prevention. There are two vaccines (Cervarix and Gardasil) for females that are approved ages 9 through 26. HPV vaccination is routinely recommended for girls ages 11 and 12 and for females ages 13 through 26 who did not get any or all of the doses when they were younger. One vaccine (Gardasil) is approved for males ages 9 through 26. HPV vaccination is routinely recommended for males ages 11 and 12 and for males ages 13 through 21 who did not get any or all of the doses when they were younger. Vaccination is routinely recommended for immunocompromised males and for males who have sex with males who are ages 22-26.[3] A new vaccine, Gardasil 9, has recently been approved by the Food and Drug Administration, which would protect against nine strains of HPV and can prevent almost 90 percent of HPV-related cervical cancers. Due to the recent approval of Gardasil 9, it has not yet been included in vaccination recommendations.
- According to the National Immunization Survey (NIS), in 2013 only 54 percent of girls and 18 percent of boys ages 13 through 17 in Indiana received the first in the three dose series of HPV vaccine.[4] Only 71 percent of girls in Indiana who began the series got all three shots.[4]
- Indiana females are most often diagnosed with cervical cancer during their middle adult years. During 2012, 85 percent of cervical cancer cases occurred among Indiana females less than 65 years-old, including 38 percent of cases occurring among females ages 25 to 44 and 46 percent among females ages 45 to 64.[5]
- During 2003-2012, African American females in Indiana, compared to white females, had a 21 percent higher cervical cancer incidence rate (9.2 versus 7.6 cases per 100,000 females, respectively) and a 46 percent higher mortality

Figure 12. Cervical Cancer Incidence and Mortality (Death) Rates by Race* — Indiana, 2003–2012

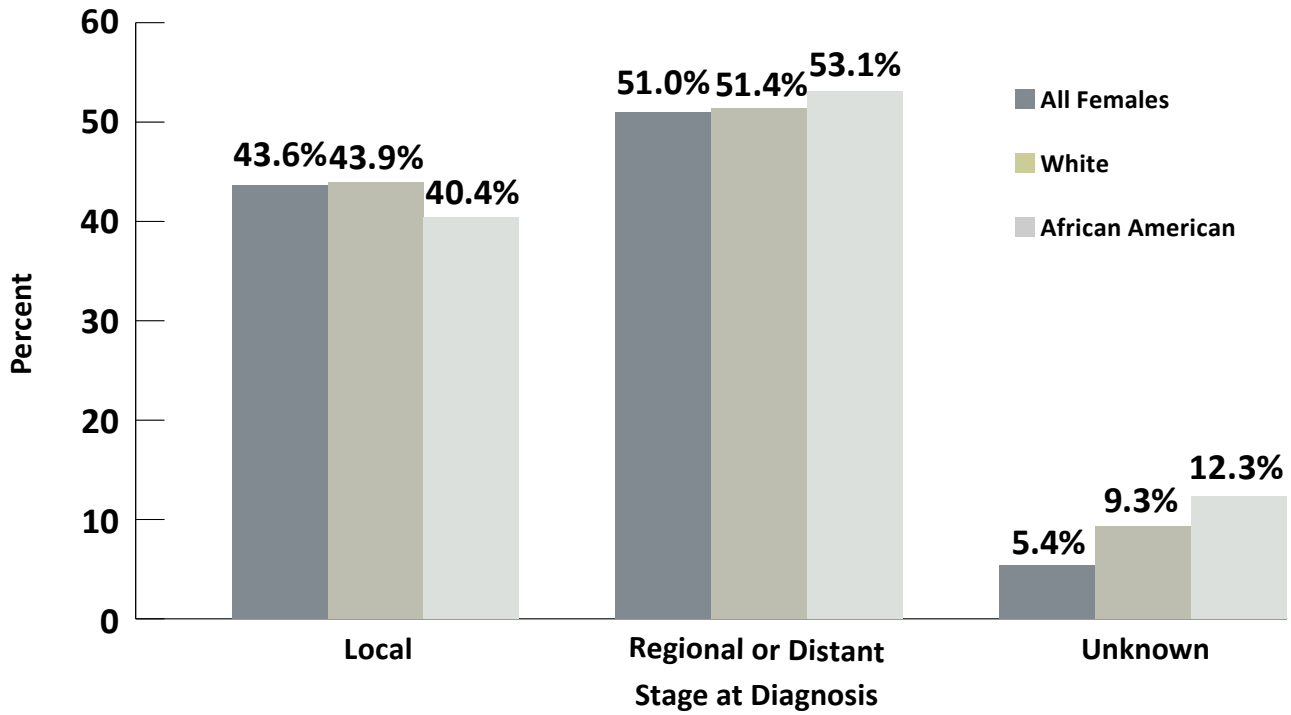


* *Age-adjusted*

† *Rate among African American females is significantly higher (P<.05) than the rate among white females*

Source: Indiana State Cancer Registry

Figure 13. Percent of Cervical Cancer Cases by Stage of Diagnosis and Race* — Indiana, 2003–2012



** Proportion of cases diagnosed in the regional or distant stage compared to the local stage is significantly higher (P<.05) among African American females than among white females*

Source: Indiana State Cancer Registry

rate (3.5 versus 2.4 deaths per 100,000 females, respectively) [Figure 12]. While many factors are probably impacting this disparity, one apparent issue is that African American females tend to be diagnosed more often after the cervical cancer is no longer localized [Figure 13].[5]

Can Cervical Cancer Be Detected Early?

In the US, the cervical cancer mortality rate declined by almost 70 percent between 1955 and 1992, mainly because of the effectiveness of Pap smear screening.[3] Pap screenings allow for early identification and treatment of abnormal cervical cells before they become cancerous. This is important because, typically, the pre-cancerous conditions do not cause pain or other symptoms and are only detected through Pap screenings.

The American Cancer Society, in collaboration with the American Society for Colposcopy and Cervical Pathology and the American Society for Clinical Pathology recommend all average-risk females ages 21 through 65 receive a routine Pap screening every three years. The preferred screening method for females ages 30 through 35 is a HPV and Pap test (called co-testing) every five years.[1]

In 2012, 73.2 percent of Indiana females ages 18 and older reported having had a Pap screen during the past three years. This rate was similar for all racial and ethnic groups.[5]

What Factors Influence Cervical Cancer Survival?

Figure 14 provides the percent of Indiana females diagnosed during each stage of cervical cancer during 2008-2012. The five-year survival rate for patients diagnosed with cervical cancer at the local stage is 91 percent.[1]

In Indiana, from 2003-2007 to 2008-2012, the incidence of cervical cancer decreased, but the mortality rate remained constant [Figure 15]. There is no clear reason for this finding; however, it might be because while routine screening is catching most cases of cervical cancer prior to it becoming invasive, there still remains a consistent group of females who are not being screened and are diagnosed after the cancer has spread. These females are at increased risk for poor health outcomes.

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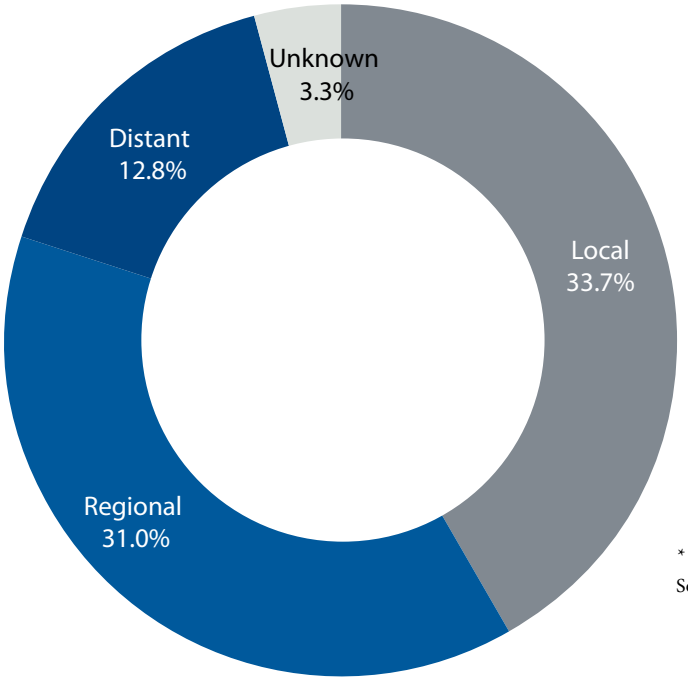
[3] Centers for Disease Control and Prevention. *Human Papillomavirus.* Atlanta, GA. 2011. Accessed at http://www.

Figure 14. Percent of Cervical Cancer Cases Diagnosed During Each Stage* — Indiana, 2008–2012

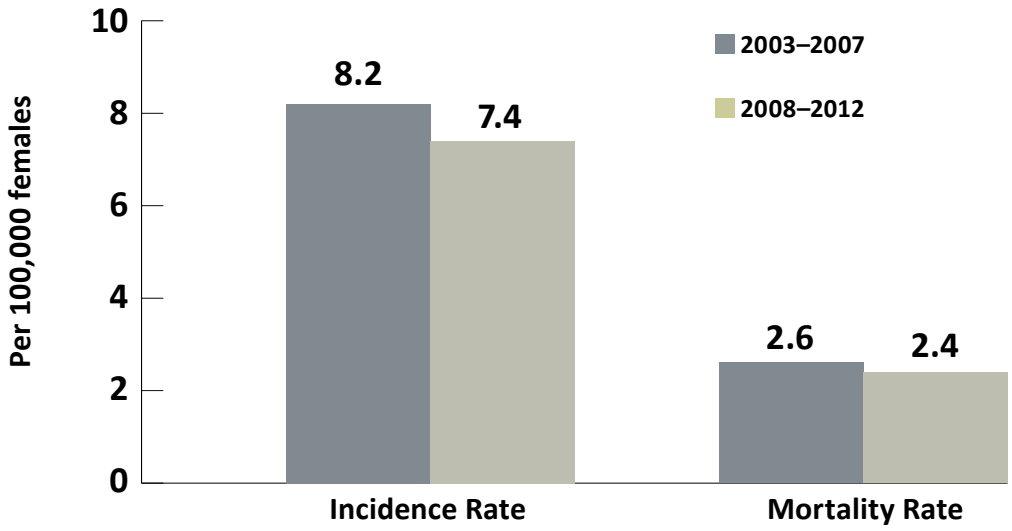


During 2008–2012, of the 1,547 Indiana females who received a diagnosis of invasive cervical cancer, 521 (33.7 percent) were diagnosed in the local stage, 677 (43.8 percent) were diagnosed in the regional or distant stage, and 51 (3.3 percent) had unknown staging.

** Only includes invasive cases; in situ cases are not reportable*

Source: Indiana State Cancer Registry

Figure 15. Changes in Cervical Cancer Incidence and Mortality (Death) Rates among Indiana Females between the Five-year Periods of 2003–2007 and 2008–2012*



** Age-adjusted*

Source: Indiana State Cancer Registry

cdc.gov/hpv/vaccine.html on April 16, 2014.

[4] Centers for Disease Control and Prevention, Immunization Managers. Accessed at http://www.cdc.gov/vaccines/imz-managers/coverage/nis/teen/figures/2013-map.html on January 12, 2015.

[5] Indiana State Cancer Registry Statistics Report Generator. Accessed at http://www.in.gov/isdh/24360.htm on June 16, 2014.

Take Charge!

What You Can Do to Help Prevent Cervical Cancer

- Get vaccinated — Protecting yourself from HPV decreases your risk for cervical and other cancers.
- Practice safe sex.
- Be smoke-free — Visit www.in.gov/quitline for free smoking cessation assistance.
- Have routine Pap screenings.
- Ask for an HPV test with your Pap smear if you are age 30 or older.
- Watch for abnormal vaginal discharge and bleeding.

What is the Impact on Indiana Residents?

Table 7. Burden of Cancer among Children Ages 0–19 Years — Indiana, 2008-2012

	Average number of cases per year (2008–2012)	Rate per 100,000 children* (2008–2012)	Number of cases (2012)	Rate per 100,000 children* (2012)
Indiana Incidence	368	20.5	378	21.1
Indiana Deaths	42	2.3	46	2.6

** Age-specific*

Source: Indiana State Cancer Registry

Bottom Line

The occurrence of cancer during childhood is rare, representing approximately one percent of all new cancer diagnoses in the US.[1] Although uncommon, cancer is the second leading cause of death among children ages five to 14, exceeded only by accidents.[1] Between 2008-2012, 368 cases of cancer and 42 cancer-related deaths occurred each year among Indiana children ages 0–19 [Table 7]. In general, childhood cancer trends in Indiana are similar to what is seen nationwide. For most cases of childhood cancer, the cause is unknown.

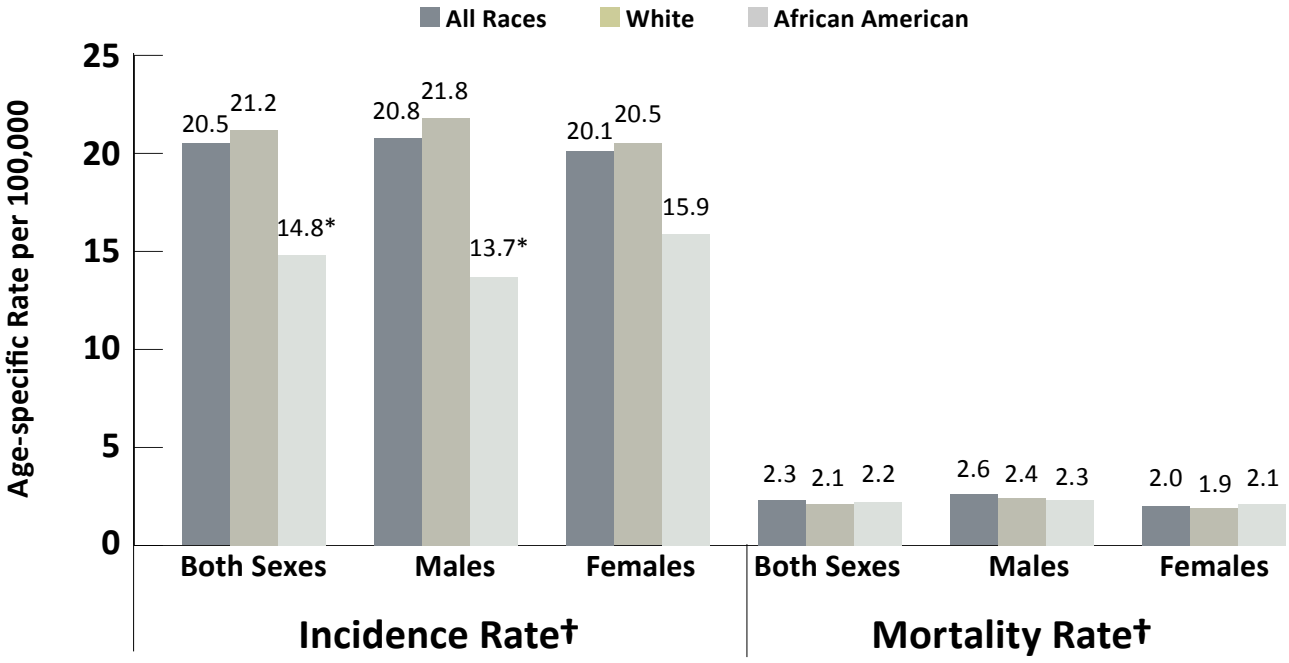
The incidence rate of cancer among Indiana children ages 0–19 during 2008-2012 was 20.5 cases per 100,000 children, which was similar to the national rate of 19.1 cases per 100,000 children for 2007–2011, the most recent years for which national data are available.[2] In Indiana, the childhood cancer mortality rate was 2.3 deaths per 100,000 children compared to the US mortality rate of 2.4 deaths per 100,000 children [Figure 16].[2]

Using the International Classification of Childhood Cancer system, the most common cancer types diagnosed among Indiana children ages 0–14 were leukemias and brain tumors. In children ages 15–19, the most common cancer types were lymphomas and a group of cancers that include epithelial cancers (cancers that develop from the cellular covering of internal and external body surfaces or related tissues in the skin, hollow viscera and other organs) and melanoma.

Who Most Often Gets Childhood Cancer?

- **White children.** During 2008-2012, in Indiana, white children had a significantly higher incidence rate than African American children (21.2 versus 14.8 per 100,000 children, respectively) [Figure 16]. This difference in rates between races is also seen nationally. The reasons for these differences are not known.[1]
- **Children born with certain genetic disorders or familial syndromes**. Children with a familial neoplastic syndrome, inherited immunodeficiency, certain genetic syndromes, and chromosomal abnormalities are at greater risk for developing various types of childhood cancer.[3]
- **Males born with undescended testes.** They are at greater risk for testicular cancer.[3]
- **Additional risk factors include:**[3]
  - Radiation exposure, especially prenatally (includes x-rays);
  - Tanning bed or sun exposure increases the risk of melanoma, one of the more common cancers among teenagers;
  - Prior chemotherapy with an alkylating agent or epipodophyllotoxin;
  - Infection with the Epstein-Barr virus is associated with certain types of lymphoma; and
  - Insecticide exposure, especially prenatally, is associated with leukemia.

Figure 16. Incidence and Mortality (Death) Rates among Children Ages 0–19 Years by Sex and Race — Indiana, 2008–2012

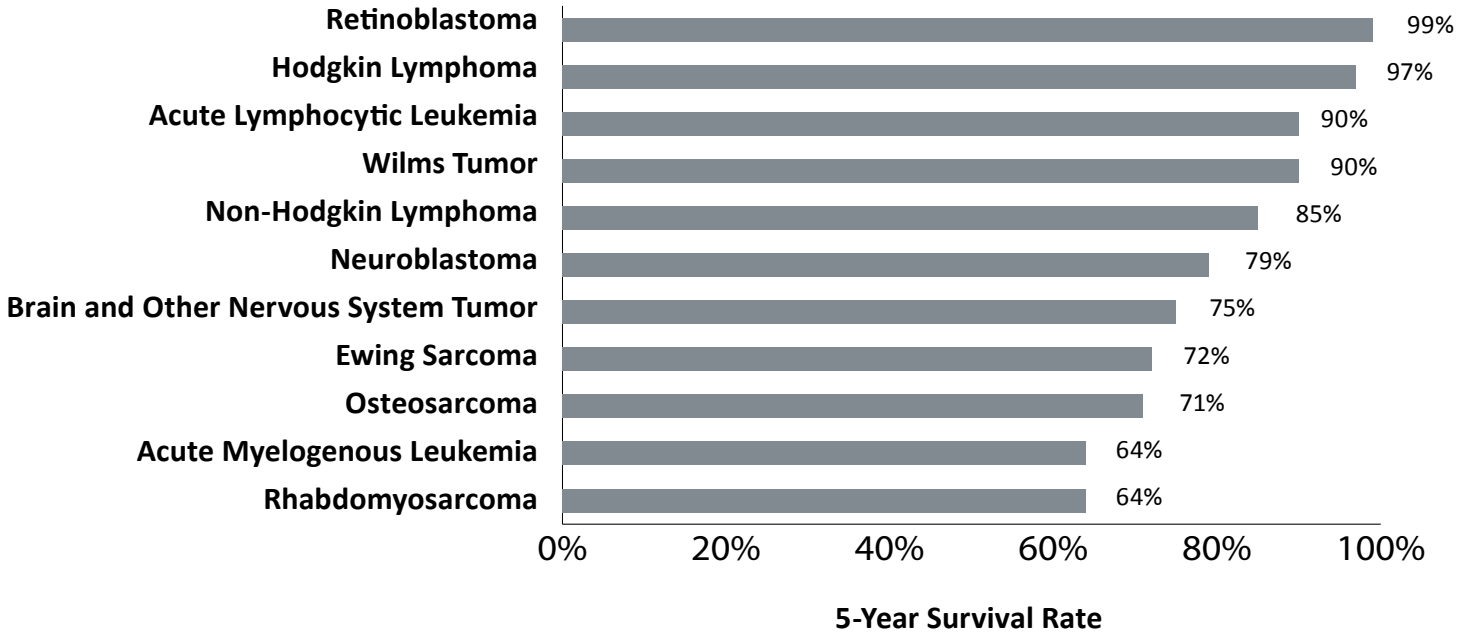


** Rate is significantly lower (P<.05) among African Americans than among whites*

† Age-specific rate per 100,000 children

Source: Indiana State Cancer Registry

Figure 17. Five-year Survival Rates for the Most Common Childhood Cancers — United States, 2003–2009



Source: American Cancer Society. Childhood Cancer. Atlanta, GA. 2011. Accessed at www.cancer.org/acs/groups/cid/documents/webcontent/002287-pdf.pdf on June 03, 2013.

Can Childhood Cancer Be Detected Early? — *see "Be Aware" box for additional information*

Early symptoms are usually nonspecific. Parents should ensure that children have regular medical checkups and should be aware of any unusual symptoms that persist.

What Factors Influence Childhood Cancer Survival?

Overall, US childhood deaths due to cancer have dropped more than 50 percent since 1975 because of improved treatment options. The five-year survival rate for childhood cancers is now 83 percent.[1] However, rates vary considerably depending on cancer type; moreover, within the major categories, cancer subtypes might vary in response to treatment or survival characteristics [Figure 17].

The earlier a cancer is diagnosed and treated, the better. Childhood cancers can be treated by a combination of therapies (surgery, radiation, and chemotherapy) chosen based on the type and stage of cancer. Treatment is coordinated by a team of experts, including pediatric oncologists, pediatric nurses, social workers, psychologists, and others. Because these cancers are uncommon, outcomes are more successful when treatment is managed by a children's cancer center.[1]

Survivors of childhood cancer might experience treatment-related side effects. Information for survivors of childhood cancer is available at www.survivorshipguidelines.org.

BE AWARE!

Common Signs and Symptoms of Childhood Cancer

Childhood cancer is rare, but your child should be examined by a health care provider if you notice any of these potential cancer-related signs and symptoms:

- Unusual mass or swelling
- Unexplained paleness or loss of energy
- Sudden tendency to bruise
- Persistent, localized pain
- Prolonged, unexplained fever or illness
- Frequent headaches, often with vomiting
- Sudden eye or vision changes
- Excessive, rapid weight loss

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What is the Impact on Indiana Residents?

Table 8. Burden of Invasive Colon and Rectum Cancer — Indiana, 2008–2012

	Average number of cases per year (2008–2012)	Rate per 100,000 people* (2008–2012)	Number of cases (2012)	Rate per 100,000 people* (2012)
Indiana Incidence (New cases)	3,097	44.4	2,825	39.6
Indiana Mortality (Deaths)	1,164	16.6	1,169	16.3

** Age-adjusted*

Source: Indiana State Cancer Registry

Colon and Rectum Cancer

Bottom Line

Colorectal cancer is the third most commonly diagnosed cancer and cause of cancer-related death among both males and females in the US and Indiana. The American Cancer Society (ACS) estimated that 2,890 Indiana residents will be diagnosed with colorectal cancer and 1,080 will die because of the disease during 2015.[1] The lifetime risk of developing colorectal cancer is 1 in 22 for females and 1 in 21 for males.[1] In Indiana, African Americans have higher colorectal cancer incidence and mortality rates than whites, and males have higher rates than females.

Who Gets Colon and Rectum Cancer?

Age and sex are the two greatest risk factors for developing colorectal cancer. During 2012, 91 percent of cases diagnosed were among Indiana residents age 50 and older. In addition, during 2008-2012, colorectal cancer incidence rates were 27 percent higher among Indiana males than females (50.3 versus 39.5 cases per 100,000 people) [Figure 18].

Additional risk factors for colorectal cancer include:

- **Race.** In Indiana, during 2008–2012, African Americans had an 18 percent higher incidence rate (51.5 versus 43.7 cases per 100,000 people) and a 37 percent higher mortality rate (22.0 versus 16.1 deaths per 100,000 people) when compared with whites [Figure 18].
- **Personal or family history.** Risk is increased by having a personal or family history of colorectal cancer or polyps, a personal history of chronic inflammatory bowel disease, or certain inherited genetic conditions (*e.g.,* Lynch syndrome, also known as hereditary nonpolyposis colorectal cancer, and familial adenomatous polyposis [FAP]).[2]
- **Smoking.** According to Surgeon General's Report, *The Health Consequences of Smoking — 50 Years of Progress*, smoking is a known cause of colorectal cancer. In addition, smoking increases the failure rates of treatment for all cancers.
- **Diabetes.** Studies have found that individuals with type 2 diabetes are at higher risk.[2] Although diabetes and colorectal cancer share similar risk factors, this increased risk remains even after those are taken into consideration.[2] Studies also suggest that the relationship may be stronger in males than in females. In addition, some research indicates that some diabetic medications independently affect colorectal cancer risk. In general, colorectal cancer patients with diabetes appear to have slightly poorer survival rates than non-diabetic patients.[2]
- **Modifiable risk factors.** Overweight and obesity, physical inactivity, a diet high in red or processed meat, and alcohol consumption have been found to increase colorectal cancer risk.[2] There are some factors that may help lower risk or even prevent colorectal cancer. Moderate daily fruit and vegetable intake has been shown to decrease risk. In addition, consumption of dairy products and higher blood levels of vitamin D appear to decrease risk.[2] Intake of dietary folate, dietary fiber, cereal fiber, and whole grains is associated with reduced risk; specifically, for every 10 grams of daily fiber consumption there is a 10 percent reduction in cancer risk.[2] Some studies suggest that long-term, regular use of non-steroidal anti-inflammatory drugs (such as aspirin), and use of postmenopausal hormones may reduce risk; however, these drugs and therapies are not recommended for the prevention of colorectal cancer because they can have serious adverse health effects.[2]

Can Colon and Rectum Cancer Be Detected Early? — *see the "Be Aware" box for additional information*

Colorectal cancer incidence rates increased from 1975 through the mid-1980s, but have been decreasing for the past two decades in the US.[2] Declines have accelerated during the past few years. From 2008 to 2010, incidence rates decreased by more than four percent per year in both males and females.[2] These declines are largely attributed to increases in the use of colorectal cancer screening tests that allow the detection and removal of colorectal polyps before they progress to cancer.[2] A similar trend has been seen in Indiana [Figure 19].

Symptoms of advanced disease include rectal bleeding, blood in the stool, a change in bowel habits, and cramping pain in the lower abdomen. In some cases, blood loss from cancer leads to anemia (low red blood cells), causing symptoms such as weakness and fatigue.

Beginning at age 50, both males and females with average risk for colorectal cancer should follow one of these testing schedules:

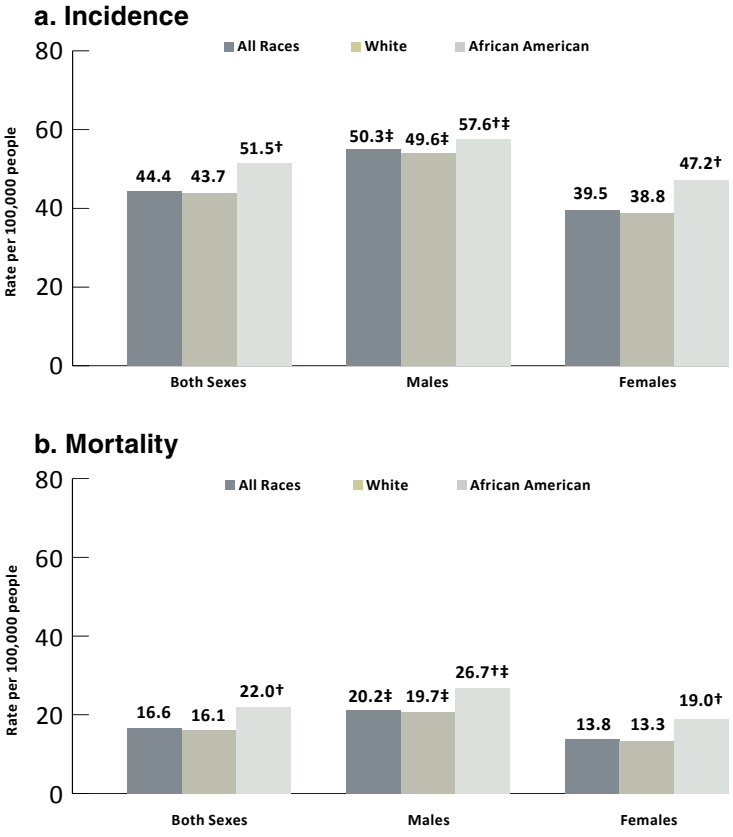
- Tests that find polyps and cancer:
  - Colonoscopy every ten years; or
  - Flexible sigmoidoscopy, double-contrast barium enema, or computed tomography (CT) colonography (also referred to as a "virtual colonoscopy") every five years. If any of these three tests are positive, a colonoscopy should be done.

BE AWARE!

Common Signs and Symptoms of Colorectal Cancer

- Early Stage: No symptoms
- Late Stage:
  - Rectal bleeding
  - Blood in stool
  - Change in bowel habits
  - Cramping pain in lower abdomen
  - Weakness
  - Extreme fatigue

Figure 18. Colorectal Cancer Incidence (a) and Mortality (Death) (b) Rates by Sex and Race* — Indiana, 2008–2012



** Age-adjusted*

† Rate among African Americans is significantly higher (P<.05) than rate among whites

‡ Rate among males is significantly higher (P<.05) than rate among females

Source: Indiana State Cancer Registry

TAKE CHARGE!

What You Can Do to Help Prevent Colorectal Cancer

- Get screened regularly
- Maintain a healthy weight
- Adopt a physically active lifestyle
- Avoid tobacco products
- Limit consumption of alcohol
- Consume a healthy diet that:
  - Emphasizes plant sources
  - Supports a healthy weight
  - Includes at least 2 ½ cups of a variety of vegetables and fruits each day
  - Includes whole grains rather than processed (refined) grains
  - Limits processed and red meats
- Tests that primarily find cancer
  - Yearly fecal occult blood test (FOBT) or fecal immunochemical test (FIT) or a stool DNA test (undetermined interval). If any of these three tests are positive, a colonoscopy should be done.
- Individuals who have an increased risk should talk to their health care provider about whether they should be screened at a younger age, more frequently, or with colonoscopy.

In recent years, colorectal cancer incidence rates have increased among younger adults in the US. Therefore, timely evaluation of symptoms consistent with colorectal cancer in adults under age 50 is important.

What Factors Influence Colorectal Cancer Survival?

Nationally, mortality rates for colorectal cancer have declined in both males and females over the past two decades.[2] In Indiana, mortality rates decreased 31 percent from 2002 to 2012 (from 21.3 to 16.6 deaths per 100,000 people) [Figure 19]. This included a 32 percent decrease among both males (from 25.9 to 19.7 deaths per 100,000) and females (from 17.9 to 13.6 deaths per 100,000).

In the US, the five- and ten-year relative survival rates for people with colorectal cancer are 65 percent and 58 percent, respectively.[2] When colorectal cancers are detected early, at the local stage, the five-year survival rate is 90 percent. In Indiana, during 2008–2012, 44.2 percent of colorectal cancers were identified early, in the in situ or local stage [Figure 20]. If the cancer has spread regionally beyond the colon or rectum, the five-year survival rate decreases to 70 percent. The five-year survival rate for colorectal cancer that is diagnosed late, or in the distant stage, is 13 percent.

Surgery is the most common treatment for colorectal cancer. Chemotherapy alone, or in combination with radiation, is given before or after surgery to patients whose cancer has deeply penetrated the bowel wall or spread to lymph nodes. Three targeted monoclonal antibody therapies, which block growth of blood vessels to the tumor or the effects of hormone-like factors that promote cancer cell growth, are approved to treat metastatic colorectal cancer.

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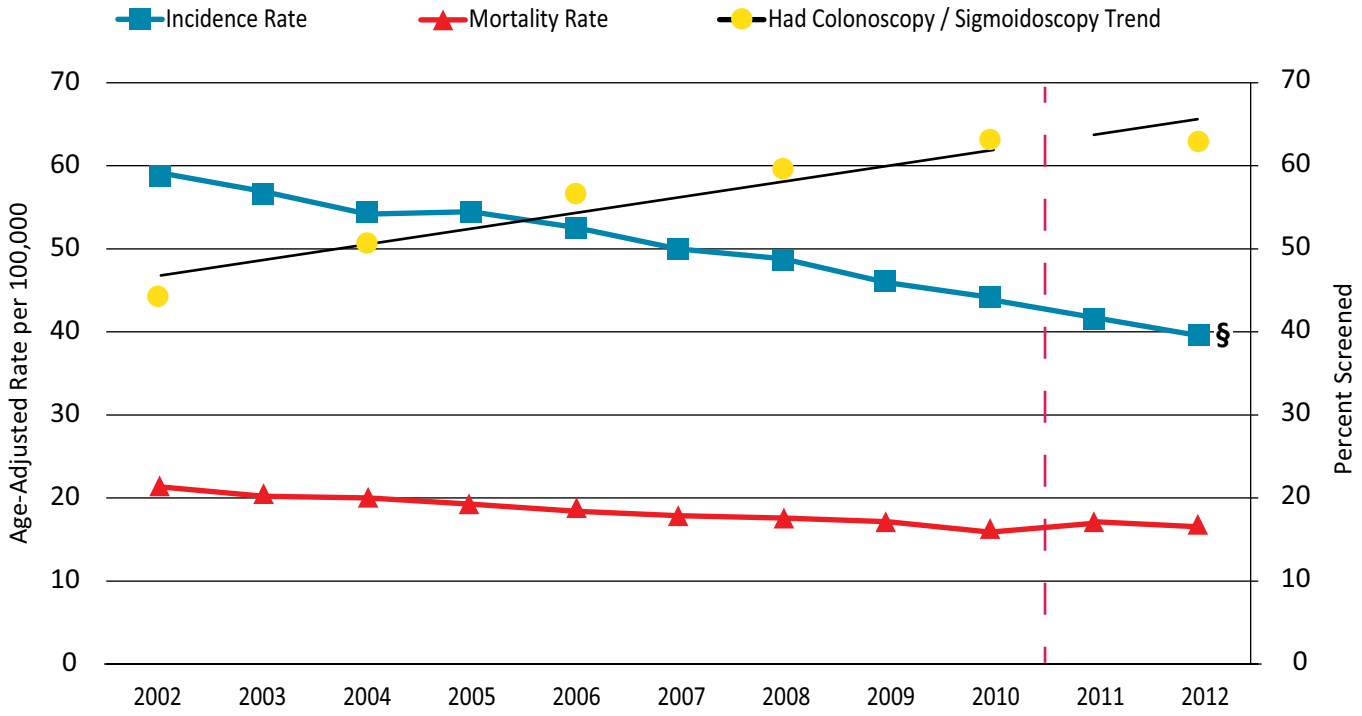
Figure 19. Trends in Colorectal Cancer Incidence* and Screening Rates† — Indiana, 2002–2012



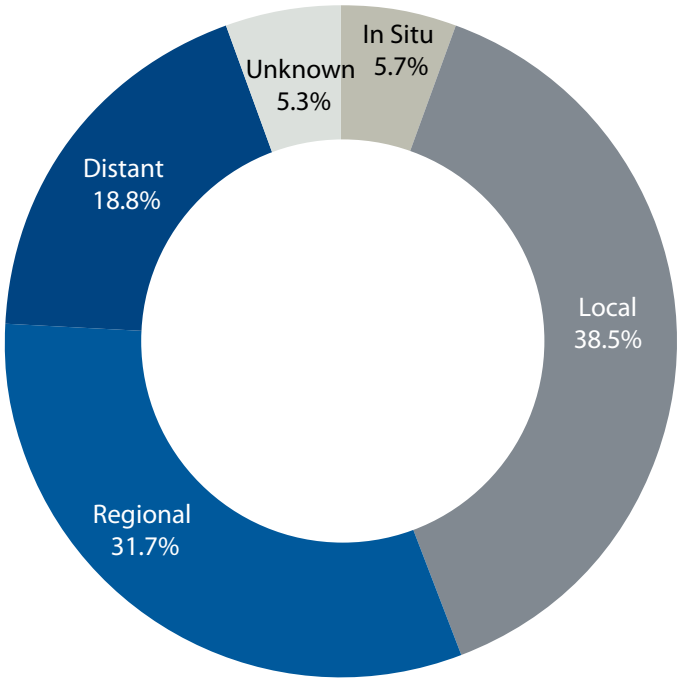
** Incidence rates are age-adjusted.*

† Persons ages 50 and older who have ever had a sigmoidoscopy or colonoscopy. Starting in 2002, these data have been collected every two years. A trend line is provided. Beginning in 2011, the BRFSS methodology changed with the inclusion of cell phone respondents and a new weighting procedure; thus, 2011 and forward are not directly comparable to previous years.

§ Incidence rate in 2012 is significantly lower (P<.05) than the rate in 2002

Sources: Indiana State Cancer Registry (Incidence data); Indiana Behavioral Risk Factor Surveillance System (Screening data)

Figure 20. Percent of Colon and Rectum Cancer Cases Diagnosed During Each Stage* — Indiana, 2008–2012



During 2008–2012, of the 16,419 Indiana residents who were diagnosed with colorectal cancer, 7,251 (44.2%) were diagnosed in the in situ or local stage, 8,290 (50.5%) were diagnosed in the regional or distant stages, and 878 (5.3%) had unknown staging.

** Includes all in situ and invasive cases*

Source: Indiana State Cancer Registry

What is the Impact on Indiana Residents?

Table 9. Burden of Invasive Lung Cancer — Indiana, 2008–2012

	Average number of cases per year (2008–2012)	Rate per 100,000 people* (2008–2012)	Number of cases (2012)	Rate per 100,000 people* (2012)
Indiana Incidence	5,167	73.9	4,674	65.4
Indiana Mortality	4,006	57.5	3,958	55.7

** Age-adjusted*

Source: Indiana State Cancer Registry

Bottom Line

Lung cancer is the leading cause of cancer deaths in the US and Indiana, killing over 158,000 Americans and approximately 4,000 Indiana residents each year. The American Cancer Society (ACS) estimated that 5,510 Indiana residents will be diagnosed with lung and bronchus cancer and 4,060 are expected to die because of the disease during 2015.[1] If all tobacco smoking were stopped, the occurrence of lung cancer would decrease by an estimated 90 percent[2]; however, in Indiana, 21.9 percent of adults continue to smoke tobacco, placing them at great risk for developing lung and other types of cancer.[3]

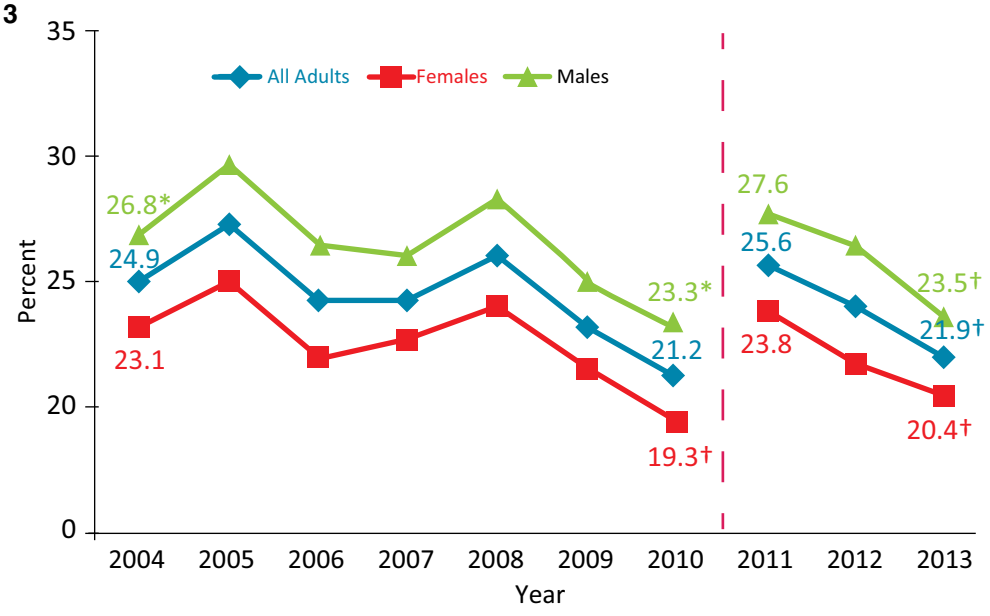
Who Most Often Gets Lung Cancer?

- **Smokers.** Smoking accounts for 87 percent of lung cancer deaths and at least 30 percent of all cancer deaths. Lung cancer mortality rates are about 23 times higher for current male smokers and 13 times higher for current female smokers when compared to people who have never smoked.[4] Over one million (21.9 percent) adults in Indiana are current smokers, and Indiana's adult smoking rate remains among the highest in the nation (median adult smoking rate in the US was 19 percent in 2013).[5]
- **Individuals exposed to secondhand smoke.** Each year, an estimated 50,000 American and 1,240 Indiana resident nonsmokers die from exposure to secondhand smoke (smoke breathed in involuntarily by someone who is not smoking).[4]
- **Individuals exposed to other cancer-causing agents.** Exposure to asbestos, radon, arsenic, talc, vinyl chloride, coal products, and radioactive ores, like uranium, can increase risk for developing lung cancer, especially if they also smoke tobacco. Radon is a naturally occurring gas that comes from rocks and dirt and can get trapped in houses and buildings. It cannot be detected by smell, taste, or sight. The Environmental Protection Agency reports radon as the cause of 20,000 cases of lung cancer each year, making it the second leading cause of lung cancer behind smoking.[9]
- **Males, especially African American males.** During 2008–2012, Indiana males, compared to females, had a 50 percent greater lung cancer incidence rate (91.3 versus 61.0 cases per 100,000 people, respectively) and a 69 percent greater mortality rate (75.1 versus 44.5 deaths per 100,000 people, respectively). This is mainly because a higher percentage of males have been smokers compared to females. In 2013, 23.5 percent of adult males and 20.4 percent of adult females reported being current smokers [Figure 21].[3] African American males in Indiana have approximately 17 percent greater incidence and 20 percent greater lung cancer mortality rates than do white males [Figure 22].

Can Lung Cancer Be Detected Early? — *see the "Be Aware" box for additional information*

Findings from the National Cancer Institute's National Lung Screening Trial established screening with the use of low-dose computed tomography in specific high-risk groups has been shown to be effective in reducing mortality from lung cancer. Individuals at high-risk are defined as those ages 55 to 74 who have a minimum 30 pack per year tobacco smoking history, who currently smoke, or have quit within the past 15 years.

Figure 21. Percent of Indiana Residents, Ages 18 Years and Older, who Reported Being Current Smokers — Indiana, 2004–2013



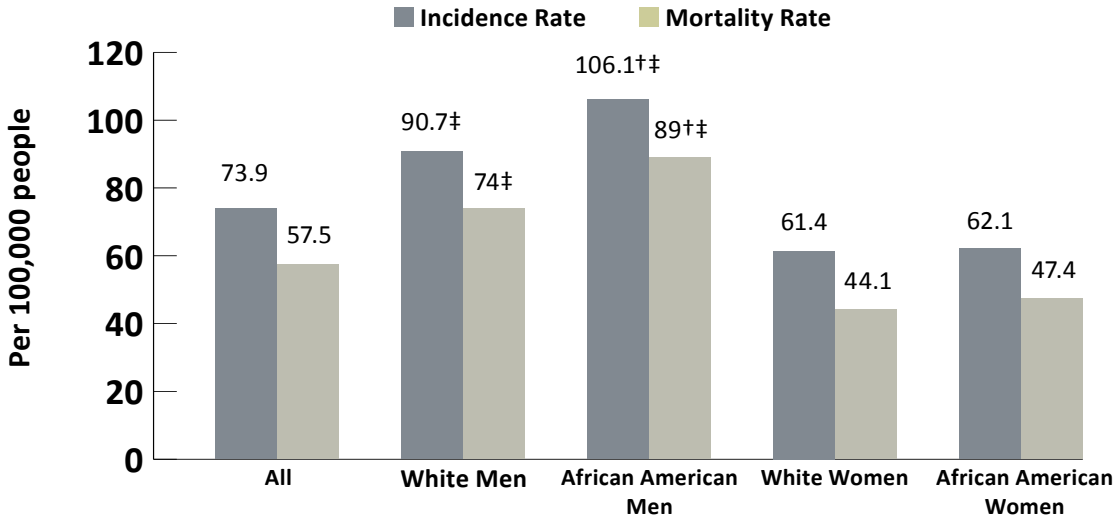
** Significantly higher (P<.05) compared to females for same year*

† Significantly lower (P<.05) compared to first year of data in trend line

Due to a change in BRFSS weighting methodology and the inclusion of cell phone individuals, results from 2011 and forward and not directly comparable with previous years.

Source: Indiana Behavior Risk Factor Surveillance System

Figure 22. Lung Cancer Incidence and Mortality (Death) Rates by Race and Sex* — Indiana, 2008–2012



** Age-adjusted*

† Significantly elevated (P<.05) compared to white males

‡ Rate among males is significantly higher (P<.05) than rate among females of the same race

Source: Indiana State Cancer Registry

What Factors Influence Lung Cancer Survival?

Lung cancer is often diagnosed at a later stage, which negatively impacts a person's odds of survival. The five-year survival rate is highest (54 percent) if the lung cancer is diagnosed when it is confined entirely within the lung (*i.e.*, localized)[6]; however, in Indiana, during 2008–2012, only 18.7 percent of lung cancers were diagnosed during this stage [Figure 23].

The one-year relative survival rate for lung cancer increased from 35 percent during 1975–1979 to 42 percent during 2002–2005, largely because of improvements in surgical techniques and combined therapies. However, the five-year survival rate for all stages combined is currently only 16 percent. The five-year survival for small cell lung cancer (6 percent) is lower than that for non-small cell lung cancer (18 percent).[7]

Treatment options are determined by the type (small cell or non-small cell) and stage of cancer, and include surgery, radiation therapy, chemotherapy, and targeted therapies such as bevacizumab (Avastin) and erlotinib (Tarceva). For localized cancers, surgery is usually the treatment of choice. Because the disease has usually spread by the time it is discovered, radiation therapy and chemotherapy are often used, sometimes in combination with surgery.

BE AWARE!

Common Signs and Symptoms of Lung Cancer

- Persistent cough
- Sputum streaked with blood
- Chest pain
- Voice changes
- Recurrent pneumonia or bronchitis
- Smokers should have an open conversation with their healthcare providers about the risks and benefits of lung cancer screening.

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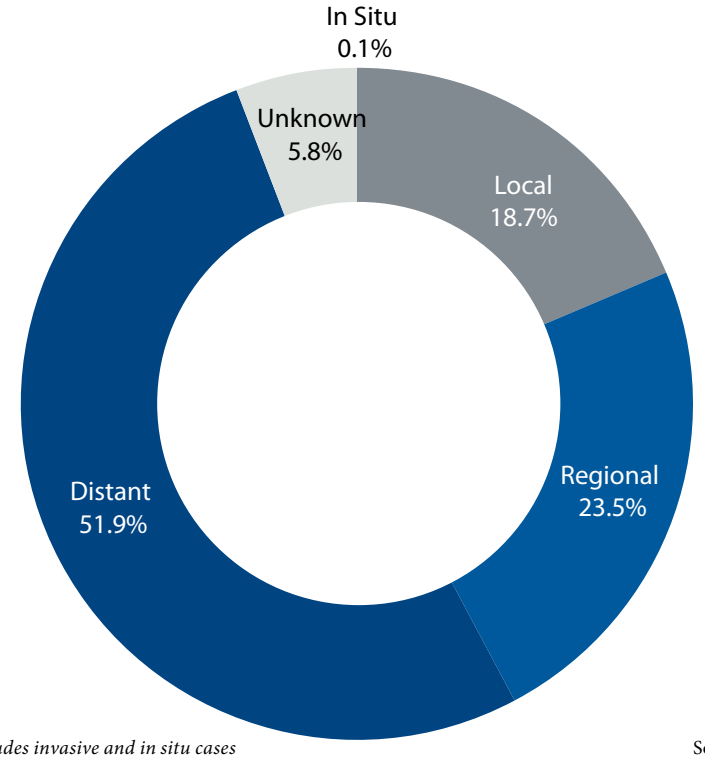
Figure 23. Percent of Lung Cancer Cases Diagnosed During Each Stage* — Indiana, 2008–2012



During 2008–2012, of the 25,859 Indiana residents who received a diagnosis of in situ or invasive lung cancer, 4,861 (18.8 percent) were diagnosed in the in situ or local stage, 19,498 (75.4 percent) were diagnosed in the regional or distant stage, and 1,500 (5.8 percent) had unknown staging.

** Includes invasive and in situ cases*

Source: Indiana State Cancer Registry

[8] Centers for Disease Control and Prevention. *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General*. Atlanta: US Department of Health and Human Services, CDC, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2006. www.surgeongeneral.gov/library/secondhandsmoke/. Accessed Dec 21, 2011.

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TAKE CHARGE!

What You Can Do to Help Prevent Lung Cancer

- Be tobacco-free. Quitting tobacco smoking substantially decreases your risk of developing lung cancer along with ten other types of cancer, exacerbation of asthma in adults, cardiovascular disease, and chronic obstructive pulmonary disease (COPD) among many other diseases.[10] Smokers who quit, regardless of age, live longer than people who continue to smoke.[4] Visit QuitNowIndiana.com for free, evidence-based smoking cessation assistance.
- Avoid all secondhand smoke exposure.

TAKE CHARGE!

What the Community Can Do to Help Prevent Lung Cancer

- Implement comprehensive smoke-free air policies and higher taxes on tobacco products.
- Sustain tobacco control program funding to help reduce smoking rates and lessen the burden of tobacco use in Indiana. Annually, tobacco use costs the state over $2 billion in health care costs, including approximately $487 million in Medicaid payments alone.[11]
- Support the continued adoption of smoke-free workplaces. The United States Surgeon General has concluded that smoke-free workplace policies are the only effective way to eliminate exposure to secondhand smoke in the workplace and lead to less smoking among workers.[8]
- Support health care provider outreach efforts that help decrease tobacco use initiation, consumption and increase quit attempts.

What is the Impact on Indiana Residents?

Table 10. Burden of Melanoma — Indiana, 2008–2012

	Average number of cases per year (2008–2012)	Rate per 100,000 people* (2008–2012)	Number of cases (2012)	Rate per 100,000 people* (2012)
Indiana Incidence	**1,191**	**17.4**	**1,091**	**15.8**
Indiana Mortality	**214**	**3.1**	**192**	**2.7**

** Age-adjusted*

Source: Indiana State Cancer Registry

Note: The number of basal cell and squamous cell skin cancers (i.e., nonmelanoma skin cancers, or NMSC) is difficult to estimate because these cases are not required to be reported to the Indiana State Cancer Registry. According to one report, in 2006 an estimated 3.5 million cases of NMSC occurred among US residents.[2] Because of the limitations of the NMSC data, most of the data reported in this section are only for melanoma.

Melanoma/Skin Cancer

Bottom Line

Skin cancer (*i.e.*, melanoma and non-melanoma skin cancer) is an uncontrolled growth and spread of cells or lesions in the epidermis (the outer layer of skin). Excessive exposure to ultraviolet (UV) radiation from the sun or other sources, like tanning beds, is the greatest risk factor for developing skin cancer. Overall, skin cancers affect more people than lung, breast, colon, and prostate cancers combined. The two most common forms of non-melanoma skin cancers (NMSC) are basal cell and squamous cell carcinoma. Melanoma accounts for less than two percent of skin cancer cases, but causes the most skin cancer deaths.[1] Overall, the lifetime risk of getting melanoma is about one in 50 for whites, one in 1,000 for African Americans, and one in 200 for Hispanics.[2]

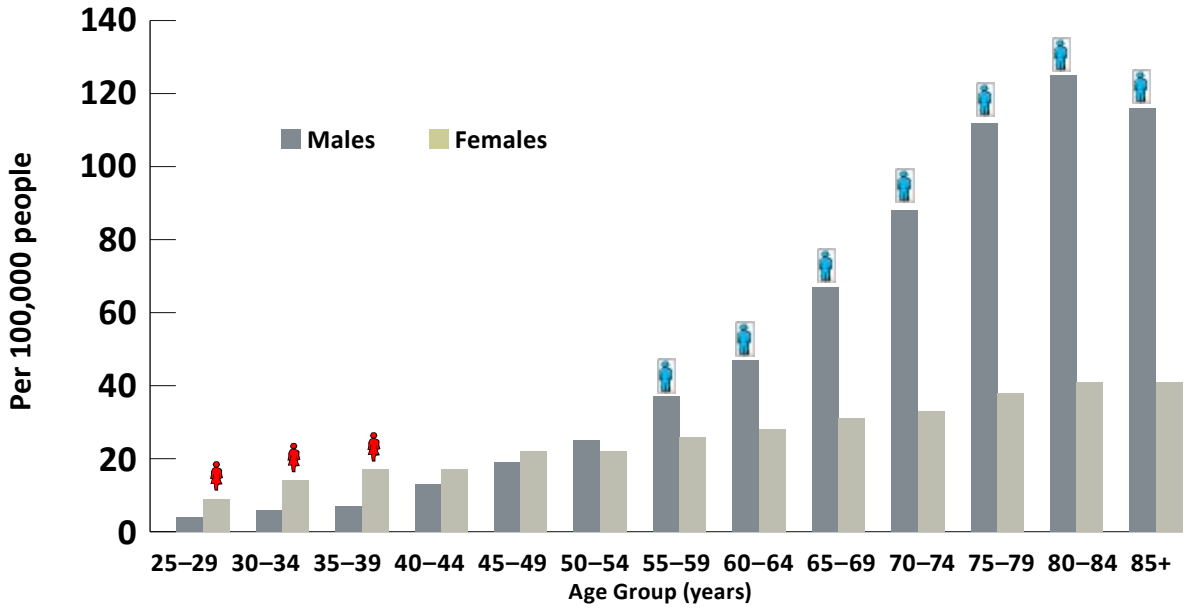
The number of non-melanoma skin cancer (*i.e.*, basal cell and squamous cell carcinoma) is difficult to estimate because these cases are not required to be reported to the Indiana State Cancer Registry. According to one report, in 2006, an estimated 3.5 million cases of NMSC occurred among US residents. Because of the limitations of the NMSC data, most of the data reported in this section are only for melanoma.

Who gets Melanoma/Skin Cancer?

People of all ages, races, and ethnicities are subject to developing skin cancer. Some risk factors include:

- **Age.** During 2008-2012, more than 74 percent of melanoma cases occurred among Indiana residents ages 50 and older [Figure 24]. However, nationally, melanoma is on the rise among younger people.[3]
- **Sex.** Overall, during 2008-2012, the incidence rate for melanoma among Indiana males was 30 percent higher than among females. However, before the age of 50, the incidence rate among females was 64 percent higher than among males. Then, among people ages 55 and older, males had more than twice the risk that females did.[3]
- **Race.** During 2008-2012, the risk of melanoma was 15 times higher for Indiana whites than for African Americans; however, anyone can develop the disease.[3]
- **Fair to light skinned complexion.** Freckles are an indicator of sun sensitivity and sun damage.
- **Hair and eye color.** People with natural blonde or red hair or blue or green eyes are more susceptible to a higher risk of developing melanoma.
- **Multiple or atypical nevi (moles).** People who have a large number of moles (more than 50) often have a higher risk of developing melanoma.
- **Family history.** The risk for developing melanoma is greater for someone who has had one or more close relatives diagnosed with the disease.
- **Excessive exposure to UV radiation from the sun and tanning beds.** The US Department of Health and Human Services and the International Agency of Research on Cancer panel has found that exposure to sunlamps or sunbeds is *known to be a human carcinogen* based on sufficient evidence of carcinogenicity from studies in humans.[4]
- **History of sunburn.** Sunburn at an early age can increase a person's risk for developing melanoma and other skin cancers.

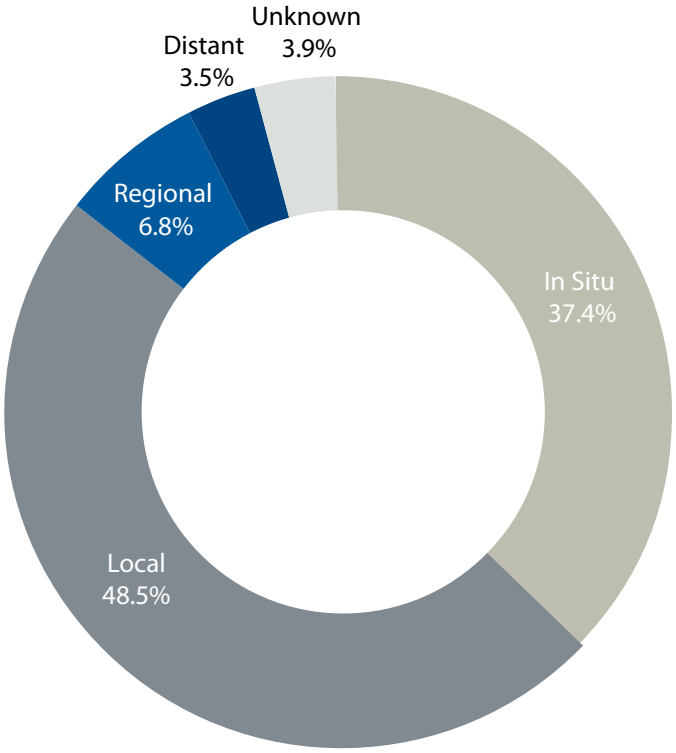
Figure 24. Incidence of Melanoma Skin Cancer by Age Group and Sex, Indiana 2008-2012



= *Significantly elevated (P<.05) among females compared to males*
= *Significantly elevated (P<.05) among males compared to females*

Source: Indiana State Cancer Registry

Figure 25. Percent of Melanoma Cases Diagnosed During Each Stage* — Indiana, 2008–2012



During 2008–2012, of the 9,506 Indiana residents who received a diagnosis of in situ or invasive melanoma, 8,166 (85.9%) were diagnosed in the in situ or local stage, 972 (10.2%) were diagnosed in the regional or distant stage, and 3.9% in the unknown stage.

** Includes invasive and in situ cases*

Source: Indiana State Cancer Registry

- **Diseases that suppress the immune system.** People who have a weakened immune system, or who are being treated with immune-suppressing medicines, have an increased risk for melanoma.[2]
- **Past history of basal cell or squamous cell skin cancers.**
- **Occupational exposure to coal tar, pitch, creosote, arsenic compounds, radium, or some pesticides.**

Can Skin Cancer be Detected Early? — *see the "Be Aware" box for additional information*

The best way to detect skin cancer early is to recognize changes in skin growths or the appearance of new growths. Adults should thoroughly examine their skin regularly, preferably once a month. New or unusual lesions or a progressive change in a lesion's appearance (size, shape, or color, for example) should be evaluated promptly by a health care provider.

Melanomas often start as small, mole-like growths that increase in size and might change color. Basal cell carcinoma might appear as growths that are flat or as small raised pink or red, translucent, shiny areas that might bleed following minor injury. Squamous cell carcinoma might appear as growing lumps, often with a rough surface, or as flat, reddish patches that grow slowly.

BE AWARE!

Common Signs and Symptoms of Melanoma

A simple **ABCDE** rule outlines some warning signs of melanoma:

A = Asymmetry: One half of the mole (or lesion) does not match the other half.

B = Border: Border irregularity; the edges are ragged, notched or blurred.

C = Color: The pigmentation is not uniform, with variable degrees of tan, brown, or black.

D = Diameter: The diameter of a mole or skin lesion is greater than 6 millimeters (or the size of a pencil eraser).

E = Evolution: When existing moles change in shape, size or color. Any sudden increase in size of an existing mole should be checked.

*Melanoma might appear differently than what is described in the **ABCDE** rule, so discuss any changes to existing moles or new growths on the skin with your health care provider.*

What Factors Influence Survival?

Most basal and squamous cell carcinomas can be cured, especially if the cancer is detected and treated early. Early stage basal and squamous cell carcinomas can be removed in most cases by one of several methods including surgical excision, electrodesiccation, and curettage (tissue destruction by electric current and removed by scraping with a curette), or cryosurgery (tissue destruction by freezing). Radiation therapy and certain topical medications may be used in some cases.

Melanoma is also highly curable if detected in its earliest stages and treated properly. Treatment involves removing the primary growth and surrounding normal tissue. Sometimes, a sentinel lymph node is biopsied to determine stage.[1] Additional, extensive lymph node surgery may be needed if lymph node metastases are present. Treatment for advanced cases of melanoma includes palliative surgery, newer targeted or immunotherapy drugs, and sometimes chemotherapy and/or radiation therapy. The treatment of advanced melanoma has changed with the US Food and Drug Administration approval of targeted drugs such as vemurafenib (Zelboraf), dabrafenib (Tafinlar), trametinib (Mekinist), and the immunotherapy drugs ipilimumab (Yervoy) and pembrolizumab (Keytruda).[1]

Melanoma is more likely than other skin cancers to spread to other parts of the body (*i.e.* legs, pelvis, spine, bones, liver, and brain). The five-year survival rate for people with melanoma is 91 percent. For localized melanoma (48.5 percent of cases diagnosed in Indiana), the five-year survival rate is 98 percent. When melanoma is spread regionally (6.8 percent of cases diagnosed in Indiana), the five-year survival rate is 62 percent. In Indiana, during 2008-2012, 3.5 percent of cases were diagnosed in the distant stage. For those diagnosed during this stage, the five-year survival rate declines to just 16 percent.

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TAKE CHARGE!

What You Can Do to Help Prevent Skin Cancer

- Limit or avoid exposure to the sun during peak hours (10 a.m. to 4 p.m.).
- Wear sunscreen with a Sun Protection Factor (SPF) of 30 or higher that protects you from both UVA and UVB rays. These are called "broad spectrum" sunscreens.
- Wear clothing that has built-in SPF in the fabric or wear protective clothing such as long sleeves and long pants (tightly woven dark fabrics protect your skin better than lightly colored, loosely woven fabrics).
- Wear a hat that protects your scalp and shades your face, neck, and ears.
- Avoid use of tanning beds and sun lamps.
- Wear sunglasses to protect your eyes from ocular melanoma (melanoma of the eye).
- ALWAYS protect your skin. Your skin is still exposed to UV rays on cloudy days and during the winter months. Use extra caution around water, snow, and sand as they reflect the sun's ultraviolet rays.

What is the Impact on Indiana Residents?

Table 11. Burden of Invasive Prostate Cancer — Indiana, 2008–2012

	Average number of cases per year (2008–2012)	Rate per 100,000 people* (2008–2012)	Number of cases (2012)	Rate per 100,000 people* (2012)
Indiana Incidence	3,529	106.9	2,844	82.6
Indiana Mortality	584	21.9	606	21.9

** Age-adjusted*

Source: Indiana State Cancer Registry

Prostate Cancer

Bottom Line

The prostate is an exocrine gland in the male reproductive system. Excluding all types of skin cancer, prostate cancer is the most commonly diagnosed cancer, and the second leading cause of cancer death among males in the US and Indiana.[1] Approximately one in six males in the US will be diagnosed with prostate cancer and one in 36 will die from it during their lifetime.

Who Gets Prostate Cancer Most Often?

- **Older males.** The chance of developing prostate cancer rises rapidly after age 50, with two out of three new diagnoses occurring among males over age 65.[7] About 60 percent of all prostate cancer cases are diagnosed in males ages 65 and older, and 97 percent occur in males 50 and older.[1]
- **African American Males.** African American males are more likely to develop prostate cancer (one in five lifetime incidence) [Table 12] than whites, and the mortality rate for African American males is twice as high as white males.[7] However, in Indiana, this disparity between African American and white males appears to be decreasing [Figure 26].
- **Males with a family history of prostate cancer.** Males with one first-degree relative (a father, brother, or son) with a history of prostate cancer are two to three times more likely to develop the disease.[2] This risk increases if more family members are diagnosed with prostate cancer.

Can Prostate Cancer Be Detected Early?

— see the "Be Aware" box for additional information

Not all medical experts agree that screening for prostate cancer will save lives. The controversy focuses on cost of screening, the age groups to be screened, and the potential for serious side effects associated with treatment after diagnosis. Not all forms of prostate cancer need treatment.

The American Cancer Society recommends that beginning at the age of 50, males who are at average risk of prostate cancer and have a life expectancy of at least 10 years have a conversation with their health care provider about the benefits and limitations of prostate-specific antigen (PSA) testing. Males should have an opportunity to make an informed decision about whether or not to be tested based on their personal values and preferences. Males at high risk of developing prostate cancer, (African Americans or males with a close relative diagnosed with prostate cancer before the age of 65), should have this discussion with their health care provider beginning at 45. Males at even higher risk (because they have several close relatives diagnosed with prostate cancer at an early age) should have this discussion with their provider at 40.[1]

- Potential benefits of prostate cancer screening include:
  - Early detection
  - Increased treatment effectiveness
- Potential risks of prostate cancer screening include:
  - False-positive test results (indicating that you have prostate cancer when you do not) — potentially leading to unneeded testing and can cause anxiety.
  - Over-diagnosis — since prostate cancer may not grow or cause symptoms. Typical growth is slow and may not cause health problems.
  - Over-treatment of some prostate cancers that might not affect a man's health if left untreated. Also, treatment might lead to serious side effects such as impotence (inability to keep an erection) and incontinence (inability to control the flow of urine, resulting in leakage).[8]
- Given the potential risks linked to prostate cancer screening, it is vital for males to talk with their health care provider to become informed decision makers. Each man should:
  - Understand his risk of prostate cancer.
  - Understand the risks, benefits, and alternatives to screening.
  - Participate in the decision to be screened or not at a level he desires.
  - Makes a decision consistent with his preferences and values.
- Tests commonly used to screen for prostate cancer include:
  - **Digital rectal exam (DRE).** A doctor or nurse inserts a gloved, lubricated finger into the rectum to feel the prostate. This allows the examiner to estimate the size of the prostate and feel for any lumps or other abnormalities.
  - **PSA test.** This is a blood test that measures levels of PSA, a substance made by the prostate. While high PSA levels may indicate the presence of prostate cancer, it may also indicate other noncancerous conditions.
  - If PSA or DRE tests are abnormal, doctors may perform additional tests, including use of transrectal ultrasounds and biopsies.

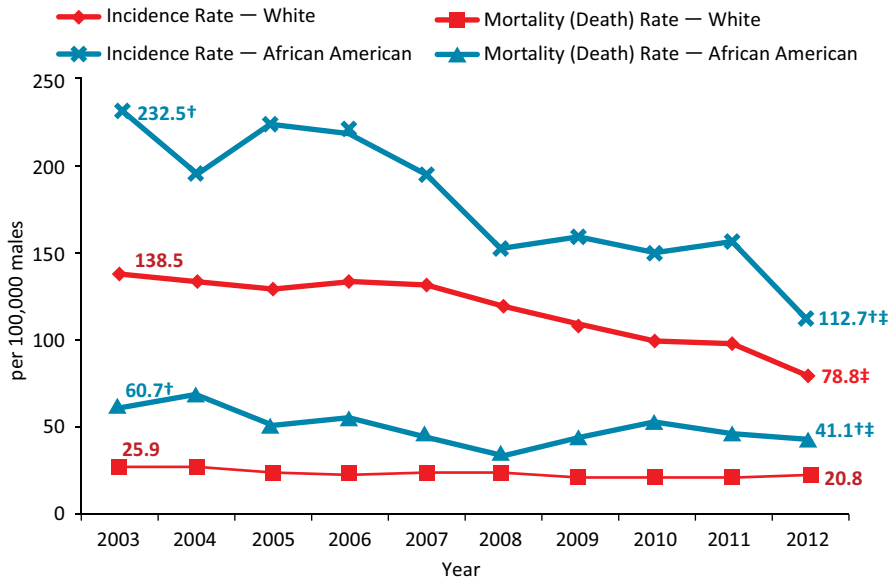
Table 12. Probability of Developing Prostate Cancer Over Selected Age Intervals by Race — US, 2009–2011*

Age	White		African American	
30 to 39	0.01	(1 in 12,288)	0.03	(1 in 4,000)
40 to 49	0.29	(1 in 390)	0.73	(1 in 138)
50 to 59	2.11	(1 in 47)	3.92	(1 in 25)
60 to 69	5.96	(1 in 16)	9.51	(1 in 10)
70 to 79	7.04	(1 in 14)	10.30	(1 in 9)
Lifetime risk	14.16	(1 in 7)	19.08	(1 in 5)

** For people free of cancer at beginning of age interval. Percentages and "1 in" numbers might not be equivalent because of rounding.*

Source: DevCan: Probability of Developing or Dying of Cancer Software, Version 6.8.0. Statistical Research and Applications Branch, National Cancer Institute, August 2014. http://surveillance.cancer.gov/devcan/).

Figure 26. Prostate Cancer Incidence and Mortality (Death) Rates by Race* — Indiana, 2003–2012



** Age-adjusted*

† Significantly elevated (P<.05) compared to white males

‡ Significantly lower (P<.05) compared to 2003

Source: Indiana State Cancer Registry

What Factors Influence Prostate Cancer Survival?

- **Stage of diagnosis.** After prostate cancer has been diagnosed, tests are performed to determine whether the cancer cells remain within the prostate or have spread to other parts of the body [Figure 27]. The grade assigned to the tumor, typically called the Gleason score, indicates the likely aggressiveness of the cancer.
- **Treatment options** vary depending on age, stage, and grade of cancer. The most common treatments for localized prostate cancer (confined to the prostate) include:
  - ***Active surveillance (watchful waiting).*** The patient's prostate cancer is closely monitored by performing the PSA and DRE tests regularly. Treatment occurs only if and when the prostate cancer causes symptoms or shows signs of growing. This can be more appropriate for males with less aggressive tumors and older males.
  - ***Surgery (radical prostatectomy).*** Prostatectomy is surgery to remove the prostate completely. Radical prostatectomy removes the prostate as well as the surrounding tissue.
  - ***Radiation therapy.*** Radiation destroys cancer cells, or prevents them from growing, by directing high-energy X-rays (radiation) at the prostate. There are two types of radiation therapy:
    - ***External radiation therapy.*** A machine outside the body directs radiation at the cancer cells.
    - ***Internal radiation therapy (brachytherapy).*** Radioactive seeds or pellets are surgically placed into or near the cancer to destroy the cancer cells.
  - ***Hormone therapy.*** This treatment, called androgen deprivation therapy (ADT), alters the effects of male hormones on the prostate through medical or surgical castration (elimination of testicular function) or administration of antiandrogen medications.
  - ***Cyrotherapy.*** This treatment involves the controlled freezing of the prostate gland in order to destroy cancerous cells.[5]

BE AWARE!

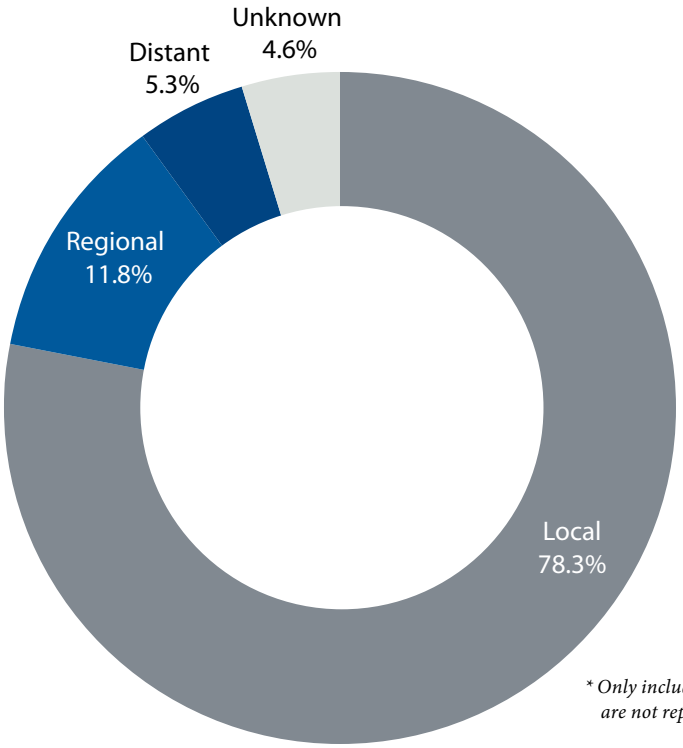
Common Signs and Symptoms of Prostate Cancer

- In early stages, prostate cancer may not cause symptoms. It is important to know that some males have no symptoms at all. [1,5]
- Symptoms* of prostate cancer can include:
  - Difficulty starting urination
  - Weak or interrupted flow of urine
  - Frequent urination, especially at night
  - Inability to empty the bladder completely
  - Pain or burning during urination
  - Blood in the urine or semen
  - Painful ejaculation
  - Trouble having an erection
  - Pain in the back, hips, or pelvis that doesn't go away**

**These symptoms also occur frequently as a result of non-cancerous conditions, such as prostate enlargement or infection and none are specific for prostate cancer*

***This symptom is most associated with advanced prostate cancer since it commonly spreads to the bones.*

Figure 27. Percent of Prostate Cases Diagnosed During Each Stage* — Indiana, 2008–2012



During 2008–2012, of the 17,643 Indiana residents who received an invasive prostate cancer diagnosis, 13,819 (78.3%) were diagnosed in the local stage, 2,090 (11.8%) were diagnosed in the regional stage, 928 were diagnosed in the distant stage (5.3%), and 806 (4.6%) had unknown staging.

** Only includes invasive cases; in situ cases are not reportable*

Source: Indiana State Cancer Registry

- **Overall survival.** The majority (93 percent) of prostate cancers are discovered in the local or regional stages.[1] In the US, the five-year relative survival rate for prostate cancer among African Americans is 96 percent and nearly 100 percent among whites.[2] Obesity and smoking are associated with an increased risk of dying from prostate cancer.[1]

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TAKE CHARGE!

What You Can Do to Help Prevent Prostate Cancer

- Stay active, eat well, and maintain a healthy body weight. In particular:
  - Eat at least five servings of fruits and vegetables each day.
  - Limit intake of red meats (especially processed meats such as hot dogs, bologna, and lunch meat).
  - Avoid excessive consumption of dairy products (>3 servings/day) and calcium (>1,500 mg/day).
  - Include recommended levels of lycopene (antioxidants that help prevent damage to DNA which are found in tomatoes, pink grapefruit, and watermelon) and vitamin E in your diet.
  - Meet recommended levels of physical activity. (http://www.cdc.gov/physicalactivity/everyone/guidelines/index.html)[6]

What is the Impact of Cancer on African Americans in Indiana?

Table 13. Burden of Cancer among African Americans — Indiana, 2008–2012

	Average number of cases per year (2008–2012)	Rate per 100,000 people* (2008–2012)	Number of cases (2012)	Rate per 100,000 people* (2012)
Indiana Incidence	2,338	479.6	2,181	430.8
Indiana Mortality	995	221.2	1,063	228.6

** Age-adjusted*

Source: Indiana State Cancer Registry

Bottom Line

African Americans have the highest mortality rate and shortest survival of any racial and ethnic group in the US for most cancers.[1] The causes of these inequalities are complex and are thought to reflect social and economic disparities more than biologic differences associated with race. These include inequities in work, wealth, income, education, housing, and overall standard of living, as well as barriers to high-quality cancer prevention, early detection, and treatment services.[1] In Indiana, while the overall racial disparities in cancer incidence and mortality rates have been gradually decreasing, during 2008–2012 African Americans still had almost a four percent greater incidence of cancer than whites, and over a 21 percent higher mortality rate.

What Types of Cancer Impact the African American Community the Most?

Table 14 provides an overview of the leading types of cancer that impacted African Americans in Indiana during 2012. Prostate cancer was the most common cancer diagnosed in African American males. Breast cancer was the most common cancer diagnosed in African American females. The leading cause of cancer death among males and females was lung cancer. Colorectal cancer was the third leading cause of cancer deaths among males and third leading cause of cancer death for females. Breast cancer was the second leading cause of cancer death for females.

Table 14. Leading Sites of New Cancer Cases and Deaths among African Americans by Sex — Indiana, 2012

Number (%) of New Cases

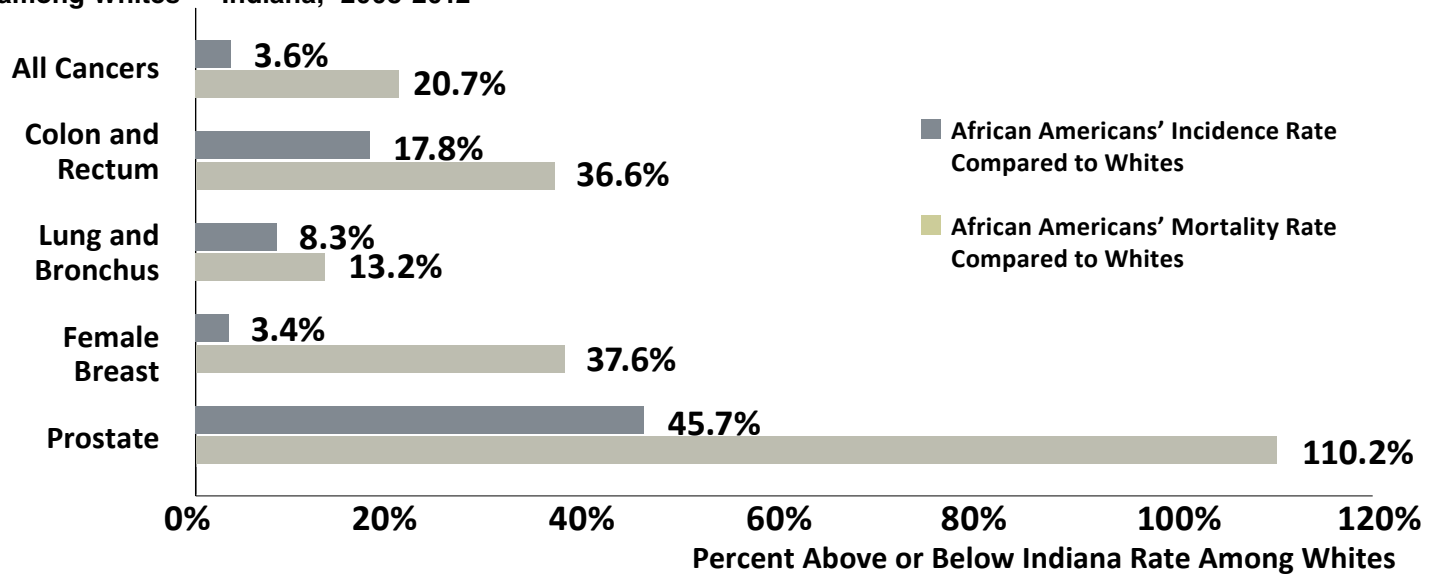
Male	Count	%	Female	Count	%
Prostate	257	26.1%	Breast	359	30.0%
Lung and Bronchus	171	17.3%	Lung and Bronchus	148	12.4%
Colon and Rectum	94	9.5%	Colon and Rectum	117	9.8%
Kidney and Renal Pelvis	59	6.0%	Pancreas	42	3.5%
Urinary Bladder	34	3.4%	Non-Hodgkin Lymphoma	41	3.4%
Pancreas	30	3.0%	Thyroid	29	2.4%
Non-Hodgkin Lymphoma	29	2.9%	Kidney and Renal Pelvis	28	2.3%
Oral Cavity and Pharynx	27	2.7%	Cervix Uteri	23	1.9%
Leukemia	20	2.0%	Ovary	20	1.7%
Melanoma of the Skin	2	0.2%	Melanoma of the Skin	4	0.3%
All Sites	**986**		**All Sites**	**1,195**	

Number (%) of Deaths

Male	Count	%	Female	Count	%
Lung and Bronchus	158	29.9%	Lung and Bronchus	148	27.7%
Prostate	65	12.3%	Breast	98	18.4%
Colon and Rectum	53	10.0%	Colon and Rectum	56	10.5%
Pancreas	34	6.4%	Pancreas	36	6.7%
Liver	30	5.7%	Ovary	21	3.9%
Leukemia	18	3.4%	Leukemia	16	3.0%
Kidney and Renal Pelvis	12	2.3%	Non-Hodgkin Lymphoma	13	2.4%
Non-Hodgkin Lymphoma	9	1.7%	Cervix Uteri	11	2.1%
Urinary Bladder	7	1.3%	Kidney and Renal Pelvis	7	1.3%
Oral Cavity and Pharynx	7	1.3%	Urinary Bladder	6	1.1%
All Sites	**529**		**All Sites**	**534**	

Source: Indiana State Cancer Registry

Figure 28. Comparison of Cancer Incidence and Mortality (Death) Rates among African American to those among Whites — Indiana,* 2008-2012



** Age-adjusted incidence and mortality rates are significantly elevated (P<.05) among African Americans compared to whites for all cancer types except for female breast cancer incidence*

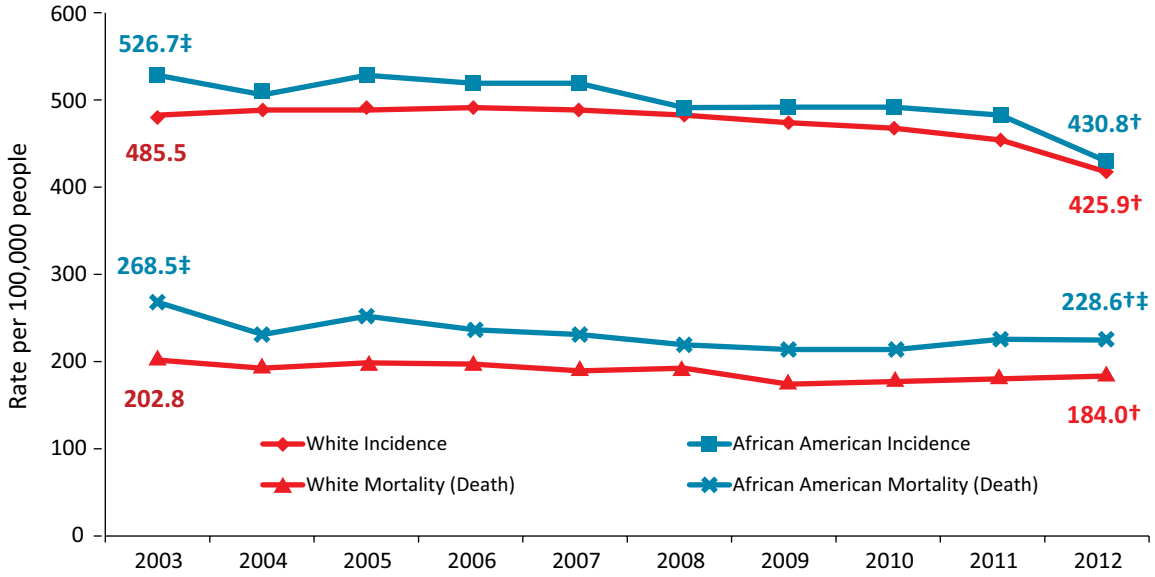
Source: Indiana State Cancer Registry

What are the Cancer Disparities in Indiana Relating to Race?

While African Americans, compared to whites, continue to be unequally burdened by cancer in Indiana [Figure 28], the disparities between the two groups have been gradually decreasing [Figure 29]. Despite these gains, continued work needs to be done to address the differences among the races, especially the difference in cancer mortality rates. Some additional information about the impact of specific cancer types among African Americans during 2008-2012 is provided below.

- **Colon and Rectum Cancer.** In comparison to whites, African Americans had an 18 percent higher incidence rate (51.5 versus 43.7 cases per 100,000 people, respectively) and a 37 percent higher mortality rate for colon and rectum cancer (22.0 versus 16.1 deaths per 100,000 people, respectively). African American males, in particular, were at greater risk, as their age-adjusted incidence rate was 16 percent greater than white males (57.6 versus 49.6 cases per 100,000 males, respectively) and their mortality rate was 36 percent higher (26.7 versus 19.7 deaths per 100,000 males, respectively). African American females had similar rates to white males, but, compared to white females, they had a 22 percent greater incidence rate (47.2 versus 38.8 cases per 100,000 females, respectively) and a 43 percent greater mortality rate (19.0 versus 13.3 deaths per 100,000 females, respectively).
- **Lung Cancer.** In comparison to whites, African Americans had an eight percent higher incidence rate (80.0 versus 73.9 cases per 100,000 people, respectively) and a 13 percent higher mortality rate (64.3 versus 56.8 deaths per 100,000 persons, respectively). Additionally, the age-adjusted mortality rate for lung cancer was nearly two times greater for African American males compared to African American females (89.0 versus 47.4 deaths per 100,000 females, respectively).
- **Prostate Cancer.** The age-adjusted incidence rate for prostate cancer was 46 percent higher among African American males compared to white males (146.3 versus 100.4 cases per 100,000 males, respectively). Moreover, the death rate for prostate cancer was more than two times greater (43.1 versus 20.5 deaths per 100,000 males, respectively).
- **Breast Cancer.** African American females had similar incidence rates to white females for breast cancer (122.0 versus 118.0 cases per 100,000 females, respectively). However, the mortality rate for African American females was 38 percent high than the rate for white females (30.0 versus 21.8 deaths per 100,000 females, respectively). Breast cancers diagnosed in African American females are more likely to have factors associated with poor prognosis (*i.e.*, higher grade, advanced stage, and negative hormone estrogen[ER] and progesterone [PR]) receptor status) than those diagnosed in white females. Studies have shown that certain reproductive patterns that are more common among African American females (*i.e.*, giving birth to more than one child, younger age at menarche, early age at first pregnancy), may be associated with increased risk for aggressive subtypes of breast cancer.[1]

Figure 29. Cancer Incidence and Mortality (Death) Rates by Race* — Indiana, 2003-2012



** Age-adjusted*

† Rate is significantly lower than in 2003

‡ African American rate is significantly higher (P<.05) than the white rate

Source: Indiana State Cancer Registry

Can Cancer Be Prevented? — *see the "Take Charge" box for additional information*

Figure 30 describes the burden of some lifestyle and external factors among African American adults in Indiana. Additional information about the impact of cancer risk factors on African Americans in Indiana is provided below.

- **Body Weight, Diet, and Physical Activity.** Scientific evidence suggests that nationally about one-third of cancer deaths are related to overweight or obesity, physical inactivity, and poor nutrition, and thus could be prevented.[2] In particular, being obese has been linked with increased risk for developing cancers of the breast (in postmenopausal females), colon, endometrial, kidney, and esophagus. In 2013, in Indiana, African American adults were 36 percent more likely than white adults to be considered obese based on body mass index (BMI) (41.7 percent versus 30.6 percent, respectively).[3] Additionally, 58 percent of African American adults did not get their recommended 150 minutes of exercise per week, and almost 80 percent failed to eat the recommended daily servings of fruits and vegetables (*i.e.*, 2 cups of fruit and 2½ cups of vegetables per day).[3]
- **Tobacco.** Smoking is the most preventable cause of premature death in the US and is responsible for about 30 percent of all cancer deaths.[4] In 2013, 24.8 percent of African American adults were current smokers, with 26.4 percent of males and 23.4 percent of females reporting current smoking.[3]
- **Health Care Coverage.** Uninsured and underinsured patients are substantially more likely to be diagnosed with cancer at a later stage, when treatment can be more extensive and more costly.[1] In 2013, in Indiana, African American adults were 70 percent more likely than white adults to not see a doctor during the year because of cost (22.8 percent versus 13.4 percent, respectively) and African Americans, ages 18–64, were 66 percent more likely than white adults to not have any form of health care coverage (28.8 percent versus 17.3 percent, respectively).[3]

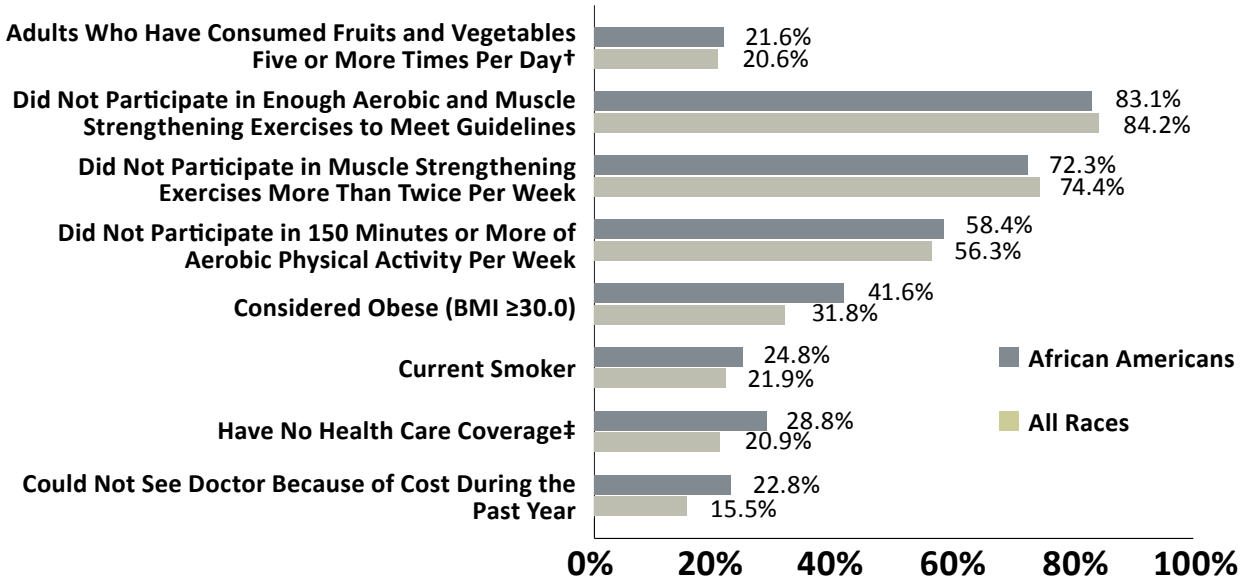
Can Cancer Be Detected Early?

Early detection tests can lead to the prevention of cancer through the identification and removal of precancerous lesions, particularly for cancers of the cervix and colon and rectum. Screening can detect cancer at an earlier stage, which can reduce the extent of treatment, improve the chances of cure, extend life, and thereby improve the quality of life for cancer survivors. In general, race did not play a role in cancer screening rates among Indiana adults during 2012 [Figure 31].

What Factors Influence Cancer Survival?

Despite having similar screening rates, African Americans are less likely than whites to survive five years at each stage of diagnosis [Figure 32] for most cancer types.[2] Based on data from the Surveillance, Epidemiology, and End Results (SEER) Program's nine population-based cancer registries the five-year survival rate for all cancer sites for whites was 69.7 percent compared to 60.7 percent for African Americans during 1973-2011.[5] Much of the difference in survival is believed to be because of barriers that prevent timely and high-quality medical care, including delayed diagnoses after screenings, greater frequency of having later stage diagnoses, and disparities in treatment.

Figure 30. Preventative Cancer Behaviors and Access to Medical Care among African American Adults* — Indiana, 2013



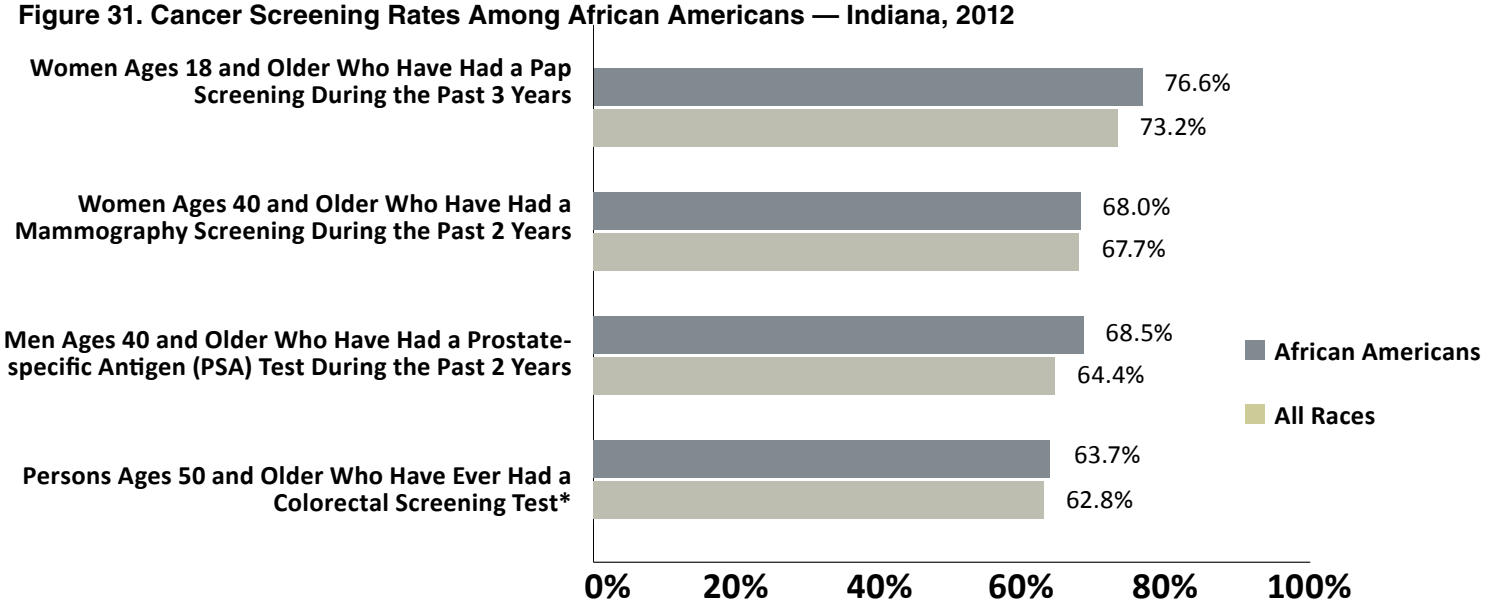
** Adults are people ages 18 and older*

† Data from 2009

‡ Adults ages 18–64

Source: Indiana Behavioral Risk Factor Surveillance System

Figure 31. Cancer Screening Rates Among African Americans — Indiana, 2012



** Sigmoidoscopy or colonoscopy*

Source: Indiana Behavioral Risk Factor Surveillance System

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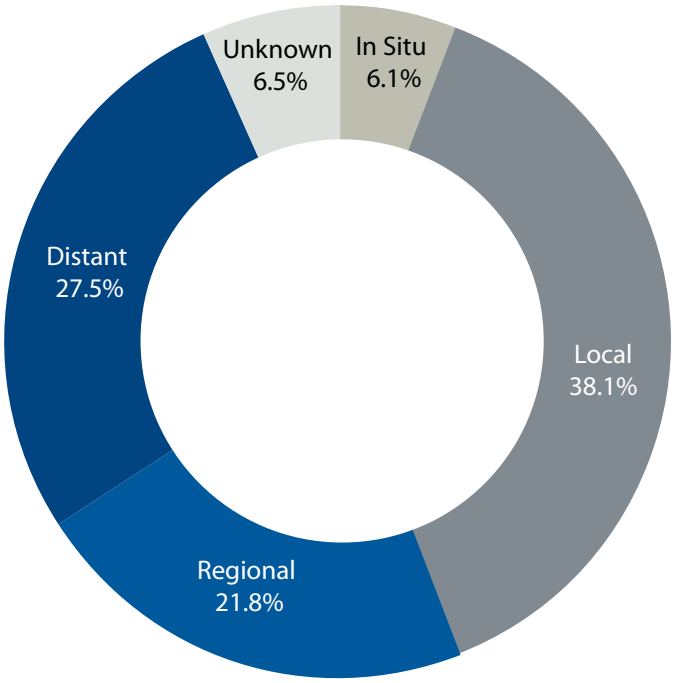
Figure 32. Percent of Cancer Cases Diagnosed among African Americans During Each Stage* — Indiana, 2008-2012



During 2008–2012, of the 11,808 African-American Indiana residents who received a diagnosis of in situ or invasive cancer, 5,218 (44.2 percent) were diagnosed in the in situ or local stage, 5,822 (49.3 percent) were diagnosed in the regional or distant stage, and 768 (6.5 percent) had unknown staging.

** Includes all in situ and invasive cancers except for basal and squamous cell skin cancers and in situ bladder, cervical, and prostate cancers, which are not reportable*

Source: Indiana State Cancer Registry

TAKE CHARGE!

What You Can Do to Help Prevent Cancer and Improve Care Among African Americans:

- Maintain a healthy body weight.
- Increase physical activity levels.
- Eat the recommended daily servings of fruits and vegetables.
- Be smoke-free — Visit www.in.gov/quitline for free smoking cessation assistance.
- Identify a primary health care provider and regularly talk about your cancer screening options.
- Talk to your primary health care provider regularly about your cancer screening options.
- Seek treatment early and avoid delaying follow-up care if you are diagnosed with cancer.
- Support the development of culturally relevant resources and support programs for African Americans that focus on early detection and treatment of cancer, as well as, improved access to services.
- Encourage health care providers to be culturally competent (*i.e.*, respectful and responsive to cultural beliefs that influence the health practices of racial and ethnic minority patients).
- Work to decrease the disparities in socioeconomic factors such as employment, income, and insurance status, which influence health behaviors and outcomes.
- Health care providers are encouraged to ask African American patients about their life, encourage them to ask questions, take seriously the responsibility and respect conferred on the provider, and involve family members.

What is the Impact of Cancer on Hispanics in Indiana?

Table 15. Burden of Cancer among Hispanics — Indiana, 2007-2011

	Average number of cases per year (2007-2011)	Rate per 100,000 people* (2007-2011)	Number of cases (2011)	Rate per 100,000 people* (2011)
Indiana Incidence	554	342.3	578	315.1
Indiana Mortality	127	99.7	139	91.9

** Age-adjusted*

Source: US Cancer Statistics Working Group. US Cancer Statistics: 1999–2011 Incidence and Mortality Web-based Report. Atlanta: US Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2011. Accessed at wonder.cdc.gov on February 5, 2014.

Cancer Facts & Figures for Hispanics

Bottom Line

Hispanics are the largest, fastest-growing, and youngest minority group in the US and the second largest minority group in Indiana. In 2013, 420,577 Indiana residents (6.4 percent) identified themselves as Hispanic or Latino; up from 3.5 percent in 2000.[1] Hispanics' median age was 24.1 years in 2013 compared to 37.3 years among all Indiana residents. Nationally, about one in two Hispanic males and one in three Hispanic females will be diagnosed with cancer during their lifetime.[2] Additionally, cancer is the leading cause of death among Hispanics in the US, accounting for 21 percent of deaths overall and 15 percent of deaths among children.[2]

Cancer Data for Hispanics in Indiana

The Indiana State Cancer Registry (ISCR) collects data on all cancer cases in Indiana to study trends of the disease and assist in the prevention of cancer and the care of patients impacted by it. There are some unique characteristics of the Hispanic population, and limitations in data collection that impact the ability to describe the burden of cancer for this group. First, while the ISCR does collect data on the ethnicity (Hispanic versus non-Hispanic) of patients, there is potential underreporting of this variable. Additionally, the rapidly changing and increasing Hispanic population tends to be younger and more mobile, thus making them less at risk for developing cancer (age-related) and more difficult to assign to a specific geographic area (mobility-related). Finally, most cancer data in Indiana and the US are reported for Hispanics as an aggregate group, which masks important differences that exist among Hispanic subpopulations according to country of origin. According to the 2013 American Community Survey, 75 percent of the Hispanic population in Indiana was born in Mexico. Because of these factors, the rates and numbers reported for Hispanics in Indiana can vary considerably year-to-year, and the burden of cancer might be slightly higher than is reported.

Table 16. Leading Sites of New Cancer Cases and Deaths among Hispanics by Sex — Indiana, 2007–2011

Number (%) of New Cases

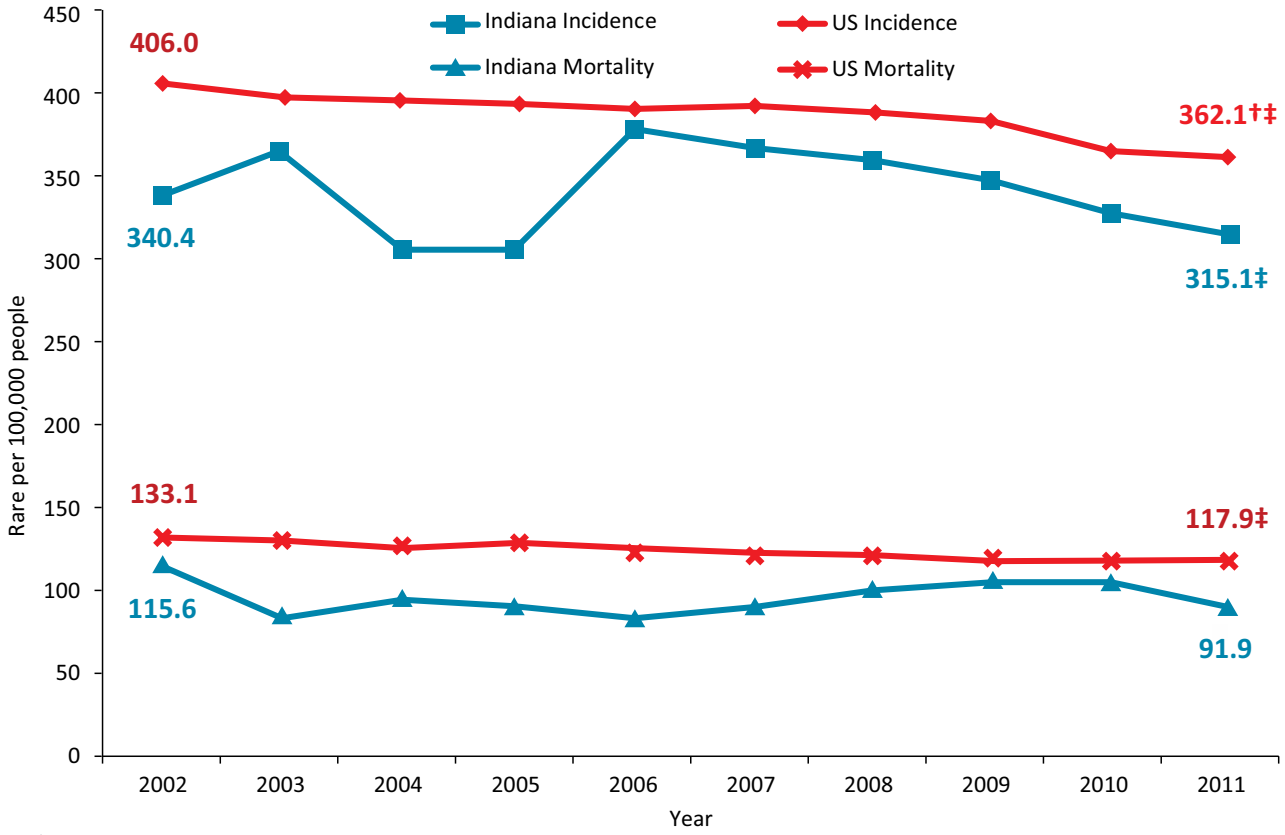
Male	Count	%	Female	Count	%
Prostate	292	23.0%	Breast	391	27.9%
Lung and Bronchus	123	9.7%	Colon and Rectum	133	9.5%
Colon and Rectum	122	9.6%	Thyroid	107	7.6%
Kidney and Renal Pelvis	80	6.3%	Lung and Bronchus	98	7.0%
Non-Hodgkin Lymphoma	63	5.0%	Corpus Uteri	83	5.9%
Urinary Bladder	61	4.8%	Kidney and Renal Pelvis	57	4.1%
Leukemias	55	4.3%	Leukemias	55	3.9%
Liver	46	3.6%	Cervix Uteri	54	3.8%
Stomach	44	3.5%	Ovary	46	3.3%
All Sites	**1,270**		**All Sites**	**1,402**	

Number (%) of Deaths

Male	Count	%	Female	Count	%
Lung and Bronchus	56	18.5%	Breast	42	14.5%
Prostate	36	10.6%	Lung and Bronchus	37	12.8%
Colon and Rectum	33	8.8%	Colon and Rectum	30	10.3%
Pancreas	31	7.3%	Pancreas	26	9.0%
Liver	25	7.3%	Leukemias	22	7.6%
All Sites	**346**		**All Sites**	**290**	

Source: US Cancer Statistics Working Group. US Cancer Statistics: 1999–2011 Incidence and Mortality Web-based Report. Atlanta: US Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2011. Accessed at wonder.cdc.gov on November 21, 2014.

Figure 33. Cancer Incidence and Mortality (Death) Rates for Hispanics* — Indiana and US, 2002–2011



** Age-adjusted*

† US rate is significantly higher (P<.05) than the Indiana rate.

‡ Rate is significantly lower than in 2002.

This section uses national and Indiana-specific results reported by the National Program of Cancer Registries, who develops them based on data supplied annually by the ISCR and other state cancer registries.

What Types of Cancer Impact the Hispanic Community the Most?

The cancer burden among Hispanics living in the US is similar to that seen in their countries of origin.[2] Compared to rates in the US, incidence of breast, colorectal, lung, and prostate cancers are lower in Puerto Rico, Cuba, and Central and South America, whereas incidence rates of cervical, liver, and stomach cancers are higher.[3] There is some evidence that descendants of Hispanic migrants have cancer rates that approach those of non-Hispanic whites because of acculturation.[4-6] "Acculturation" refers to the process by which immigrants adopt the attitudes, values, customs, beliefs, and behaviors of their new culture. The effects of acculturation are complex and can be associated with both positive and negative influences on health.[2] Among Hispanic immigrants to the US, these changes might include increases in smoking, obesity, and alcohol intake and decreases in dietary quality and physical activity.[7] One study found that overall cancer death rates among Hispanics were 22 percent higher among those who were US-born compared to those who were foreign-born.[8] Table 16 provides an overview of the leading types of cancer that have impacted Hispanics in Indiana. Overall, cancer was the leading cause of death among Indiana Hispanics from 2008-2012.[9,10] Lung and bronchus cancer was the most common cause of cancer-related death among Hispanic males and breast cancer was the most common among Hispanic females.[10]

What are the Cancer Disparities Relating to Ethnicity?

In Indiana and the US, for all cancers combined, and for the most common cancers (prostate, female breast, colorectal, and lung), incidence and death rates are lower among Hispanics than among non-Hispanic whites.[11] Cancers for which national rates are higher among Hispanics include stomach, cervix, liver, acute lymphocytic leukemia, and gallbladder.[2]

For 2007-2011, the overall cancer incidence rate for Indiana Hispanics was significantly lower than the national rate for Hispanics (342.3 versus 377.7 per 100,000, respectively).[11] The cancer mortality rate among all Indiana residents was 190.1 deaths per 100,000 people, while it was 91 percent lower among Hispanic Indiana residents at 99.7 deaths per 100,000

people.[10] Additional information about the impact of specific cancer types among Hispanics in the US and Indiana is provided below.

- **Prostate Cancer.** During 2007-2011, the prostate cancer incidence rate among Hispanics in the US was about 20 percent lower than the rate among non-Hispanic whites.[2] In Indiana, during 2007–2011, the incidence rate among Hispanics was significantly lower than the national rate (95.1 versus 120.5 cases per 100,000 males, respectively).[11] During that same time period, the mortality rate in Indiana was similar the national rate (17.0 versus 18.5 deaths per 100,000 males, respectively).[10]
- **Breast Cancer.** The US breast cancer incidence rate among Hispanic females was 37 percent lower than that among non-Hispanic white females.[2] It has been estimated that about seven percent of this difference might be explained by more protective reproductive patterns (lower age at first birth and larger number of children) among Hispanic females.[12, 13] It might also reflect less use of menopause hormone replacement therapy and under-diagnosis because of lower utilization of mammography.[14, 15] Recent studies suggest that ethnic variation in genetic factors that influence breast cancer development might also contribute to some of the difference.[16-18] However, Hispanic females are about 20 percent more likely to die of breast cancer than non-Hispanic white females diagnosed at a similar age and stage.[2] Differences in access to care and treatment likely contribute to this disparity.[20] In Indiana, during 2007–2011, the incidence rate for Hispanics was similar to the national rate for Hispanics (84.2 versus 91.8 cases per 100,000 females, respectively). Additionally, during 2007–2011, the mortality rates were statistically similar (10.9 versus 14.5 deaths per 100,000 females, respectively).
- **Colon and Rectum Cancer.** In the US, colorectal cancer incidence rates for Hispanic males and females are ten percent and 21 percent lower, respectively, than those for non-Hispanic whites.[2] However, the rates for Hispanics in the US are higher than those for residents of Puerto Rico and Spanish-speaking countries in South and Central America.[3,19] Colorectal cancer is rare in developing countries but common in affluent countries, where diets tend to be higher in fat, refined carbohydrates, and animal protein, and levels of physical activity are low. In Indiana, during 2007–2011, the incidence rate for Hispanics was similar to the national rate for Hispanics (37.0 versus 37.9 cases per 100,000 people, respectively). Additionally, during 2007–2011, the mortality rates for Indiana were statistically similar to the national rate (10.7 versus 12.4 deaths per 100,000 people, respectively).
- **Lung Cancer.** In the US, the lung cancer rates for Hispanics are about half those for non-Hispanic whites, because of traditionally lower rates of cigarette smoking and because Hispanics who do smoke are less likely to be daily smokers.[2] In Indiana, during 2007–2011, the incidence rate for Hispanics was similar to the national rate for Hispanics (34.1 versus 34.3 cases per 100,000 people, respectively). During 2007–2011, the mortality rate in Indiana was also similar to the national rate (10.7 versus 12.4 deaths per 100,000 people).

What are the Indiana and US Trends in Cancer Rates for Hispanics?

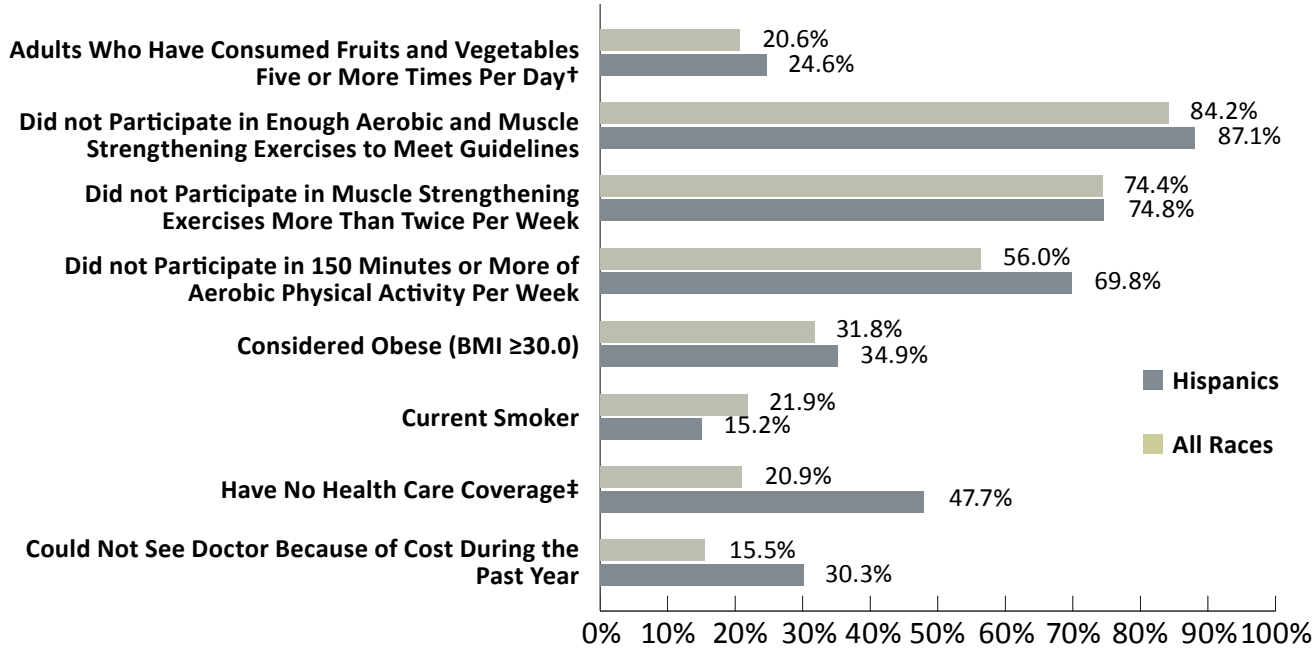
Figure 33 shows how cancer incidence and mortality rates for Hispanics in Indiana and the US have gradually decreased over time. From 2002 to 2011, the incidence rate decreased 33 percent in Indiana and 12.5 percent in the US.[10,11] From 2002 to 2011, the mortality rate decreased 12.3 percent in Indiana and 12.9 percent in the US. There is no clear explanation for why these rates have decreased, although it is important to note that the demographic characteristics of this population changed considerably during those periods.

Can Cancer Be Prevented? *— see the "Take Charge" box for additional information*

Figure 34 describes the burden of some lifestyle and external factors for Hispanic adults in Indiana. Additional information about the impact of cancer risk factors on Hispanics in Indiana include:

- **Body Weight, Diet, and Physical Activity.** Scientific evidence suggests that nationally about one-third of cancer deaths are related to overweight or obesity, physical inactivity, and poor nutrition and thus could be prevented.[20] During 2013, in Indiana, 34.9 percent of Hispanic adults were considered to be obese based on body mass index (BMI).[21] Additionally, in 2013, 68.9 percent of Hispanic adults did not get their recommended 30+ minutes of moderate physical activity five or more days per week (or vigorous physical activity for 20+ minutes three or more days per week). In 2009, about 75 percent of Hispanic adults did not eat the recommended daily servings of fruits and vegetables (*i.e.*, 2 cups of fruit and 2½ cups of vegetables per day).[21]
- **Tobacco.** Cigarette smoking is the major risk factor for lung cancer, accounting for about 87 percent and 70 percent of the cases among males and females, respectively.[22] Hispanics traditionally have a lower smoking rate than other groups. In 2013, 15.2 percent of adult Hispanics reported being current smokers, significantly lower than the rate of 21.9 percent for all Indiana adults.[21] While there was no difference in smoking prevalence between Hispanic males and white, non-Hispanic males (21.5 percent versus 23.5 percent, respectively), Hispanic females were less likely to be current smokers than white, non-Hispanic females (9.1 percent versus 20.7 percent, respectively).
- **Health Care Coverage.** Hispanics are less likely to have health insurance than any other racial or ethnic group,

Figure 34. Preventive Cancer Behaviors and Access to Medical Care for Hispanic Adults* — Indiana, 2013



** Data from 2013*
† Data from 2009
‡ Adults ages 18–64
Note: Adults are ages 18 years and older

Source: Indiana Behavioral Risk Factor Surveillance System

partially because they are much more likely than whites to work in agriculture, construction, domestic and food services, and other low-wage occupations, which are less likely to offer employer-based health insurance benefits.[23] If health coverage is available, it might not be widely affordable. In 2013, in Indiana, Hispanic adults were twice as likely as the total adult prevalence to not see a doctor during the year because of cost (30.3 percent versus 15.5 percent, respectively).[21] In 2013, Indiana Hispanics ages 18–64, were over two times more likely than adults ages 18-64 overall to not have health insurance (47.7 percent versus 20.9 percent, respectively).[21]

Can Cancer Be Detected Early?

Early detection tests can lead to the prevention of cancer through the identification and removal of precancerous lesions. Screening can detect cancer at an earlier stage, which can reduce the extent of treatment, improve the chances of cure, extend life, and thereby improve the quality of life for cancer survivors. The percentage of Hispanic females having a cervical cancer screening (Pap test) within the past three years was similar to the overall female prevalence (71.0 percent versus 73.2 percent, respectively). [21]

What Factors Influence Cancer Survival?

In general, the further a cancer has spread, the less likely that treatment will be effective. Although Hispanics have lower incidence and death rates than non-Hispanic whites for the most common cancers, they are more likely to be diagnosed with a more advanced stage of disease. Overall, the lifetime probability of dying from cancer among Hispanics is 1 in 5 for males and about 1 in 6 for females.[2]

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TAKE CHARGE!

What You Can Do to Help Prevent Cancer and Improve Care for Hispanics

- Maintain a healthy body weight.
- Increase physical activity levels.
- Eat the recommended daily servings of fruits and vegetables.
- Be smoke-free — Visit www.in.gov/quitline for free smoking cessation assistance.
- Identify a primary health care provider and regularly talk about your cancer screening options.
- Seek treatment early and avoid delaying follow-up care if you are diagnosed with cancer.
- Encourage health care providers to identify ways to be able to clearly communicate health information for people with limited English proficiency in their primary language and to be culturally competent (*i.e.,* respectful and responsive to cultural beliefs that influence the health practices of racial and ethnic minority patients).
- Work to decrease the disparities in socioeconomic factors such as employment, income, and insurance status, which influence health behaviors and outcomes.
- Health care providers are encouraged to ask Hispanic patients about their life, encourage them to ask questions, take seriously the responsibility and respect conferred on the provider, and involve family members.[2]

What is a Survivor?

Due to advances in treatment and earlier screenings, more and more people are living after a cancer diagnosis. The American Cancer Society (ACS) defines a cancer survivor as any person who has been diagnosed with cancer, from the time of diagnosis through the balance of life. Survivorship, like cancer itself, is complex and can be difficult to navigate.

There are three phases of cancer survival — the time from diagnosis to the end of initial treatment, the transition from treatment to extended survival, and long term survival.[1] More often than not, the terms "survivor" and "survivorship" are associated with the transitional period after treatment ends. However, survivorship includes a wide range of cancer experiences and paths[2], including:

- Living cancer-free for the remainder of life;
- Living cancer-free for many years, but experiencing one or more serious, late complications of treatment;
- Living cancer-free for many years, but dying after a late recurrence;
- Living cancer-free after the first cancer is treated, but developing a second cancer;
- Living with intermittent periods of active disease requiring treatment; and
- Living with cancer continuously without a disease-free period.

The preferred path for most cancer patients is to receive treatment and be "cured". This is the primary goal of all cancer treatment when possible. For many cancer patients, the initial course of treatment is successful and the cancer does not return.

Many of survivors must still cope with the mid- and long-term effects of treatment, as well as any psychological effects — such as fear of returning disease.[2] It is important that cancer patients, caregivers, and survivors have the information and support needed to help minimize these effects and improve quality of life and treatment.

Survivorship by the Numbers

An estimated 13.7 million Americans with a history of cancer were alive on January 1, 2012, according to the ACS. This estimate does not include carcinoma in situ (non-invasive cancer) of any site, except urinary bladder, and does not include basal and squamous cell carcinomas. If current estimates continue, by January 1, 2022, the population of cancer survivors will increase to almost 18 million nationwide.

According to the Indiana State Cancer Registry, as of December 31, 2012, there were an estimated 286,973 cancer survivors for all cancers combined [Table 17]. The four highest-burden cancers for the state (lung, breast, colorectal and prostate) account for approximately 56 percent of these survivors [Table 18].

Table 17. Indiana Cancer Survivor Counts*

Cancer Type	Counts
Female Breast	63,051
Cervical	4,190
Colorectal	30,491
Lung	16,812
Melanoma	14,950
Prostate	47,482
All Types	**286,973**

** Survivors (anyone treated for an invasive cancer, and still living) as of December 31, 2012*

Source: Indiana State Cancer Registry

Table 18. Percent of Survivors from Four Highest-Burden Cancers*

Cancer Type	Survivorship (Counts)	Survivorship (Percentage)
Female Breast	63,051	22%
Colorectal	30,491	11%
Lung	16,812	6%
Prostate	47,482	17%

** Survivors (anyone treated for an invasive cancer, and still living) as of December 31, 2012.*

Source: Indiana State Cancer Registry

Female Breast

Breast cancer is the second leading cause of cancer death, and, excluding skin cancers, the most frequently diagnosed cancer among Indiana females, with about 4,400 cases diagnosed each year. Sex and age are the two greatest risk factors for developing breast cancer. Females have a much greater risk of developing breast cancer than do males, and that risk increases with age. *[See the breast cancer section of this report for more information.]*

The overall five-year relative survival rate for female breast cancer patients has improved from 75 percent between 1975 and 1977 to 91 percent during 2004 through 2010.[2] For the most part, this is attributed to improvements in treatment and increased use of mammography screening.[3]

According to the ACS, the five-year relative survival rate varies depending on the cancer stage. When breast cancer is detected early, in the local stage, the five-year survival rate is 99 percent. If the cancer has spread regionally (*e.g.*, to a nearby lymph node), that rate decreases to 84 percent. In instances where the breast cancer has spread to distant lymph nodes or organs (the distant stage), the five-year survival rate decreases to 23 percent. Other factors, such as tumor grade, hormone

receptor status, and increased human epidermal growth factor receptor 2 (HER2) protein made by the cancer cells, can influence survival rates.

A common side effect of breast cancer surgery and radiation therapy is lymphedema of the arm. Lymphedema is a buildup of lymph fluid in the tissue under the skin caused by the removal or damage of the lymph nodes under the arm (called the axillary lymph nodes). It can develop soon after treatment, or even several years later. Lymphedema risk can be reduced when only the first lymph nodes to which cancer is likely spread are removed, rather than removing many lymph nodes to determine whether or not the cancer has spread. For patients with lymphedema, there are a number of effective therapies that can be used. Some evidence also suggests that upper-body exercise and physical therapy may reduce the severity and risk of developing this condition.[4]

Other long-term local effects of surgery or radiation treatment include numbness or tightness and pulling or stretching in the chest wall, arms or shoulders. In addition, women diagnosed and treated for breast cancer at a younger age may experience impaired fertility and premature menopause, and are at increased risk of osteoporosis. Aromatase inhibitor treatment can cause muscle pain, joint stiffness and/or pain, and sometimes osteoporosis.

Colorectal Cancer

Colorectal cancer is the third most commonly diagnosed cancer and cause of cancer-related death among both males and females in Indiana. In 2014, the ACS estimated that 3,020 Indiana adults would be diagnosed with colorectal cancer, and 1,090 would die because of the disease. The lifetime risk of developing colorectal cancer is about five percent for both males and females in the United States. Sex and age are the two greatest risk factors. In addition, the *The Health Consequences of Smoking — 50 Years of Progress: A Report of the Surgeon General* indicates that smoking causes colorectal cancer and increases the failure rate of treatment for all cancers. In Indiana, African Americans have higher colorectal cancer incidence and mortality rates than whites, and males have higher rates than females. *[See the colorectal cancer section of this report for more information.]*

The ACS reports that the one- and five-year survival rates for colorectal cancer are 83 percent and 65 percent, respectively. The ten-year survival rate decreases to 58 percent. When colorectal cancer is detected early (in the local stage), the five-year survival rate is 90 percent.[2] When the cancer has spread regionally, the five-year survival rate decreases to 70 percent. The five-year survival rate decreases to only 13 percent when colorectal cancer spreads distantly.

While most long-term survivors report a high quality of life, some are troubled by bowel dysfunction and other health-related issues. For those with a permanent colostomy (a surgical procedure that brings one end of the large intestine out through the abdominal wall), some issues such as problems around intimacy and sexuality, embarrassment, social inhibition, and body-image disturbances may occur.

According to the ACS, as many as 40 percent of patients treated for localized colorectal cancer, and colorectal cancer that has spread to nearby organs, are also at increased risk of second primary cancers of the colon and rectum.

Lung Cancer

Lung cancer is not a single disease; rather, it is a group of cancers that originate in the lung and associated tissues. Lung cancer is the leading cause of preventable and premature cancer deaths in Indiana, killing an estimated 4,000 Indiana residents every year. Smoking accounts for 87 percent of lung cancer deaths and at least 30 percent of all cancer deaths. However, in Indiana, about 22 percent of adults continue to smoke tobacco, placing them at great risk for developing lung and other types of cancer.[5] *[See the lung cancer section of this report for more information.]*

The ACS reports that the one-year relative survival rate for all lung cancers combined increased from 37 percent during 1975-1979 to 45 percent during 2006-2009, largely due to improvements in surgical techniques and combined therapies. The five-year survival rate is highest (54 percent) if the lung cancer is diagnosed when it is confined entirely within the lung (localized). The overall five-year survival rate for small cell lung cancer is six percent, which is lower than that for non-small cell lung cancer (18 percent).

Lung cancer survivors often have impaired lung function, especially if surgery is part of treatment. Respiratory therapy and medications can improve the ability to resume to normal daily activities and improve fitness. Lung cancer survivors who continue to smoke should be encouraged to quit. Survivors of smoking-related cancers are at an increased risk for additional smoking-related cancers, especially in the head, neck and urinary tract. Some survivors may feel stigmatized because of the connection between smoking and lung cancer. This is especially difficult for lung cancer survivors who never smoked.

Prostate Cancer

Prostate cancer is an uncontrolled growth and spread of cells in the prostate, an exocrine gland in the male reproductive system. Excluding all types of skin cancer, prostate cancer is the most commonly diagnosed cancer and the second leading cause of cancer death among Indiana males. There were approximately 2,844 new cases of prostate cancer diagnosed in Indiana during 2012, and there were 606 deaths due to prostate cancer during that same year. The ACS estimates that there were nearly three million males with a history of prostate

cancer living in the US as of January 1, 2014. Older males, African American males, and males with a family history of prostate cancer have a higher risk of being diagnosed. *[See the prostate cancer section of this report for more information.]*

The five-year survival rate of prostate cancer is almost 100 percent when discovered in the local or regional stages. The ACS reports that the five-year survival rate for all stages combined has increased over the past 25 years from 68 percent to almost 100 percent. According to the most recent data, the 10- and 15-year survival rates are 99 percent and 94 percent, respectively.

Many prostate cancer survivors who have been treated with surgery or radiation therapy experience side effects from treatment. These include incontinence, erectile dysfunction and bowel complications. Patients who received hormonal treatment may experience symptoms similar to menopause in women such as loss of libido, hot flashes, night sweats, irritability, and osteoporosis. In the long term, hormone therapy also increases risk of diabetes, cardiovascular disease, and obesity.[6]

Resources

The National Cancer Survivorship Resource Center is a collaboration between the ACS and the George Washington Cancer Institute, funded by the CDC. Its goal is to shape the future of post-treatment cancer survivorship care, and to improve the quality of life for cancer survivors. Staff and more than 100 volunteer survivorship experts nationwide developed tools for cancer survivors, caregivers, health care professionals, and policy and advocacy efforts. For more information, visit www.cancer.org/survivorshipcenter.

The National Coalition for Cancer Survivorship offers free publications and resources that empower people to become strong advocates for their own care or the care of others. The coalition's Cancer Survival Toolbox is a self-learning audio series developed by leading cancer organizations to help people develop crucial skills to understand and meet the challenges of their illness. For more information, visit www.canceradvocacy.org.

The Patient Advocate Foundation is a national nonprofit organization that seeks to safeguard patients through effective mediation assuring access to care, maintenance of employment, and preservation of financial stability. The foundation serves as an active liaison between patients and their insurer, employer and/or creditors to resolve insurance, job retention and debt crisis matters relative to their diagnosis through professional cancer managers, doctors and health care attorneys. For more information, visit www.patientadvocate.org.

Visit the Indiana Cancer Consortium website at IndianaCancer.org to learn more about local resources in your area.

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Recommended Cancer Screening Guidelines

Cancer Type	Risk Factors	Early Detection	Signs and Symptoms
Breast	Sex and age are the two greatest risk factors for developing breast cancer. Females have a much greater risk of developing breast cancer, and that risk increases with age. Factors associated with increased breast cancer risk include weight gain after the age of 18, being overweight or obese, use of menopausal hormone therapy, physical inactivity, and alcohol consumption. Research also indicates that long-term, heavy smoking increases breast cancer risk, particularly among females who start smoking before their first pregnancy. Additional risk factors may include: having one or more first degree relatives who have been diagnosed with breast cancer; having a family member who carries the breast cancer susceptibility genes (BRCA) 1 or 2; being African-American; having a long menstrual history (menstrual periods that start early and/or end later in life); have recently used oral contraceptives or Depo-Provera; have never had children, or had the first child after the age of 30; and certain medical findings such as high breast tissue density, high bone mineral density, Type 2 diabetes, certain benign breast conditions, and lobular carcinoma in situ. In addition, high dose radiation to the chest for cancer treatment increases risk. Factors associated with a decreased risk of breast cancer include breastfeeding, regular moderate or vigorous physical activity, and maintaining a healthy body weight.	Women should have frequent conversations with their health care provider about risks for breast cancer and how often they should be screened. In general, women should follow these recommendations: breast self-awareness (women in their 20s should be aware of the look and feel of their breasts); clinical breast exams (women in their 20s and 30s should have regular exams by a physician); screening mammograms.	The most common symptom of breast cancer is a new lump or mass. It's important to have anything new or unusual checked by a doctor. Other symptoms of breast cancer may include: hard knots, or thickening; swelling, warmth, redness, or darkening; change in size or shape; dimpling or puckering of the skin; itchy, scaly sore, or rash on the nipple; pulling in of the nipple or other parts of the breast; nipple discharge that starts suddenly; or new pain in one spot that doesn't go away. Although these symptoms can be caused by things other than breast cancer, it is important to have them checked out by your doctor.
Cervical	Infection with HPV is the single greatest risk factor for cervical cancer.	Average-risk women, ages 21 to 65 years, should receive a routine Pap test every three years. For women ages 30 and over, who want to extend the time periods between tests, a Pap smear combined with HPV co-testing can be done every five years.	Early stage cervical cancer often has no symptoms. The most common symptom is irregular vaginal bleeding (bleeding that starts and stops between periods, or after intercourse). Bleeding after menopause or increased vaginal discharge may also be symptoms
Colon and Rectum (Colorectal)	Indiana residents may have an increased risk if they are age 50 or over; male; African-American; have a personal history of cigarette smoking; have a personal or family history of colorectal cancer, inflammatory bowel disease, or certain inherited genetic conditions; have diabetes; are obese; are physically inactive; eat a diet high in red or processed meat and/or low in whole-grain fiber, fruits and vegetables; and have heavy alcohol consumption.	Beginning at age 50, both men and women with average risk for colorectal cancer should follow one of these schedules: 1) Tests that find polyps and cancer, such as a colonoscopy every ten years or a flexible sigmoidoscopy, double-contrast barium enema, or computed tomography colonography every five years. Or, 2) Tests that primarily find cancer such as yearly fecal occult blood test (FOBT) or fecal immunochemical test (FIT).	Early stage colorectal cancer typically has no symptoms. Later stage colorectal cancer symptoms include rectal bleeding, blood in stool, change in bowel habits, cramping pain in lower abdomen, decreased appetite or weight loss, weakness, and extreme fatigue.

Prevention	United States Preventive Services Task Force (USPSTF) Screening Guidelines	American Cancer Society Screening Guidelines
Individuals can take charge of their health by knowing their risk and talking to their doctor about personal and family history; getting screened regularly; avoiding tobacco use; maintaining a healthy weight; getting the recommended levels of moderate or vigorous physical activity; limiting alcohol consumption; limiting postmenopausal hormone use; and breastfeeding.	The USPSTF recommends biennial mammography for women ages 50-74. In addition, women should talk to their doctors about whether or not earlier screenings are needed.	The ACS recommends breast self-examination for women beginning in their 20s (women should be informed of the benefits and limitations of self-exams); clinical breast exams for women in their 20s and 30s, preferably every three years; and begin screening mammograms yearly at age 40.
Individuals can help prevent cervical cancer by getting the HPV vaccination, practicing safe sex, avoiding tobacco, getting routine screenings, getting HPV and Pap co-testing (women over the age of 30); and watch for abnormal vaginal discharge or bleeding.	The USPSTF recommends screening for cervical cancer in women age 21 to 65 years with cytology (Pap smear) every 3 years or, for women age 30 to 65 years who want to lengthen the screening interval, screening with a combination of cytology and HPV testing every five years.	The ACS recommends Pap test screening for women ages 21-29. For women ages 30-65, screening should be done every five years with both the HPV test and the Pap test, or every three years with the Pap test alone.
Individuals can take charge of their health by getting regular, routine screenings, maintaining a healthy weight, adopting a physically active lifestyle, avoiding tobacco products, limiting alcohol consumption, and consuming a healthy diet that emphasizes plant sources, supports a healthy weight, includes at least two and a half cups of a variety of vegetables and fruits each day, includes whole grains and limits processed and red meats.	The USPSTF recommends colorectal cancer screening for adults aged 50-75 using high-sensitivity FOBT once a year, flexible sigmoidoscopy every five years (when done in combination with a high-sensitivity FOBT, the FOBT should be done every three years), or colonoscopy every 10 years. Colonoscopy is also used as a follow-up test if anything unusual is found during one of the other screening tests.	The ACS recommends screening for men and women beginning at age 50 using a FOBT or FIT every year, a stool DNA test every three years, a double-contrast barium enema every five years, a colonoscopy every ten years, or a CT colonography every five years.

Recommended Cancer Screening Guidelines

Cancer Type	Risk Factors	Early Detection	Signs and Symptoms
Lung	Smoking is the greatest risk factor for lung cancer. In addition, individuals at increased risk include those exposed to second-hand smoke; those exposed to other cancer-causing agents (such as asbestos, radon, arsenic, talc, vinyl chloride, coal products, and radioactive ores); males; and African-Americans.	Findings from the National Cancer Institute's National Lung Screening Trial established screening with the use of low-dose computed tomography in specific high-risk groups has been shown to be effective in reducing mortality.	Lung cancer symptoms do not usually occur until the cancer is advanced. Common signs and symptoms of lung cancer include a persistent cough, sputum streaked with blood, chest pain, voice changes, and recurrent pneumonia or bronchitis.
Melanoma/Skin Cancer	People of all ages, races and ethnicities are subject to developing skin cancer. Indiana residents may have increased risk if they are ages 50 or older; male; white; have fair to light skinned complexions; have natural blond or red hair; have blue or green eyes; have a large number of moles (more than 50); have a family history of melanoma; have excessive exposure to UV radiation from the sun or tanning beds; have a history of sunburn at an early age; have a weakened immune system or are being treated with immune-suppressing medicines; have a past history of basal or squamous cell skin cancers; and have an occupational exposure to coal tar, pitch, creosote, arsenic compounds, radium or some pesticides.	Indiana residents should be aware of any changes in skin growths or the appearance of new growths. Adult should thoroughly examine their skin regularly, preferably once a month. New or unusual lesions or a progressive change in a lesion's appearance (size, shape, or color for example) should be evaluated promptly by a health care provider.	A simple ABCDE rule outlines some warning signs of melanoma: A for Asymmetry (one half of the mole or lesion does not match the other half); B for Border (border irregularity, edges that are ragged, notched or blurred); C for Color (the pigmentation is not uniform, with variable degrees of tan, brown or black); D for Diameter (if the diameter is greater than 6 millimeters - or the size of a pencil eraser); and E for Evolution (moles that change in shape, size or color).
Prostate	Indiana residents may have an increased risk for prostate cancer if they are; over the age of 50; African American; or if they have a first-degree relative (a father, brother or son) with a history of prostate cancer.	Not all experts agree that screening for prostate cancer will save lives. The controversy focuses on the cost of screening, the age groups to be screened, and the potential for serious side effects associated with treatment after diagnosis. Not all forms of prostate cancer need treatment.	In the early stage, prostate cancer may not cause symptoms. It is important to know that some men have no symptoms at all. Other symptoms can include difficulty starting urination; weak or interrupted flow of urine; frequent urination (especially at night); inability to empty the bladder completely; pain or burning during urination; blood in the urine or semen; painful ejaculation; trouble having an erection; pain in the back, hips, or pelvis that doesn't go away.

Prevention	United States Preventive Services Task Force (USPSTF) Screening Guidelines	American Cancer Society Screening Guidelines
Individuals can help prevent lung cancer by being tobacco free and avoiding exposure to second-hand smoke.	The USPSTF recommends annual screening for lung cancer with low-dose computed tomography (LDCT) in adults aged 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.	The ACS recommends LDCT for current smokers, or former smokers (who have quit within the past 15 years), ages 55-74 with at least a 30 pack-per-year history.
Individuals can take charge of their health by limiting or avoiding exposure to the sun during peak hours (10 a.m. to 4 p.m.); wearing sunscreen with a SPF of 30 or higher that protects from both UVA and UVB rays; wearing clothing that has built-in SPF in the fabric, or wearing protective clothing such as long sleeves and long pants; wearing a hat that protects your scalp and shades your face, neck and ears; avoiding use of tanning beds and sun lamps; wearing sunglasses to protect your eyes; and always protecting skin. In addition, any new or unusual lesions or a progressive change in a lesion's appearance should be evaluated by a physician.	The USPSTF recommends counseling children, adolescents, and young adults aged 10 to 24 years who have fair skin about minimizing their exposure to ultraviolet radiation to reduce risk for skin cancer.	
Individuals can help prevent prostate cancer by eating a healthy diet with at least five servings of fruits and vegetables each day; limiting their intake of red and processed meats; avoiding excessive consumption of dairy products; include lycopene and vitamin E in the diet; and meet recommended levels of physical activity.	The USPSTF recommends against prostate-specific antigen (PSA)-based screening for prostate cancer.	Beginning at age 50, men who have at least a 10-year life expectancy should have an opportunity to make an informed decision with their health care provider about whether to be screened for prostate cancer, after receiving information about the potential benefits, limitations, and uncertainties associated with prostate cancer screening. Men at high risk should have this discussion with their health care provider beginning at age 45.

The Impact of Cancer in Indiana

twitter.com/IN_Cancer
facebook.com/IndianaCancer

Average Cases Per Year

(2008-2012)

About 2 in 5 people now living in Indiana will eventually develop cancer. Nationally, men have almost a 1 in 2 chance of developing cancer during their lifetime; women's lifetime risk of developing cancer is slightly more than 1 in 3.

The Indiana Cancer Facts and Figures 2015 provides the most up-to-date cancer information available and identifies current cancer trends and their potential impact on Indiana residents. Download a free copy at IndianaCancer.org.

32,620 Hoosiers were diagnosed with cancer each year

16,203 of those Hoosiers were male

16,417 of those Hoosiers were female

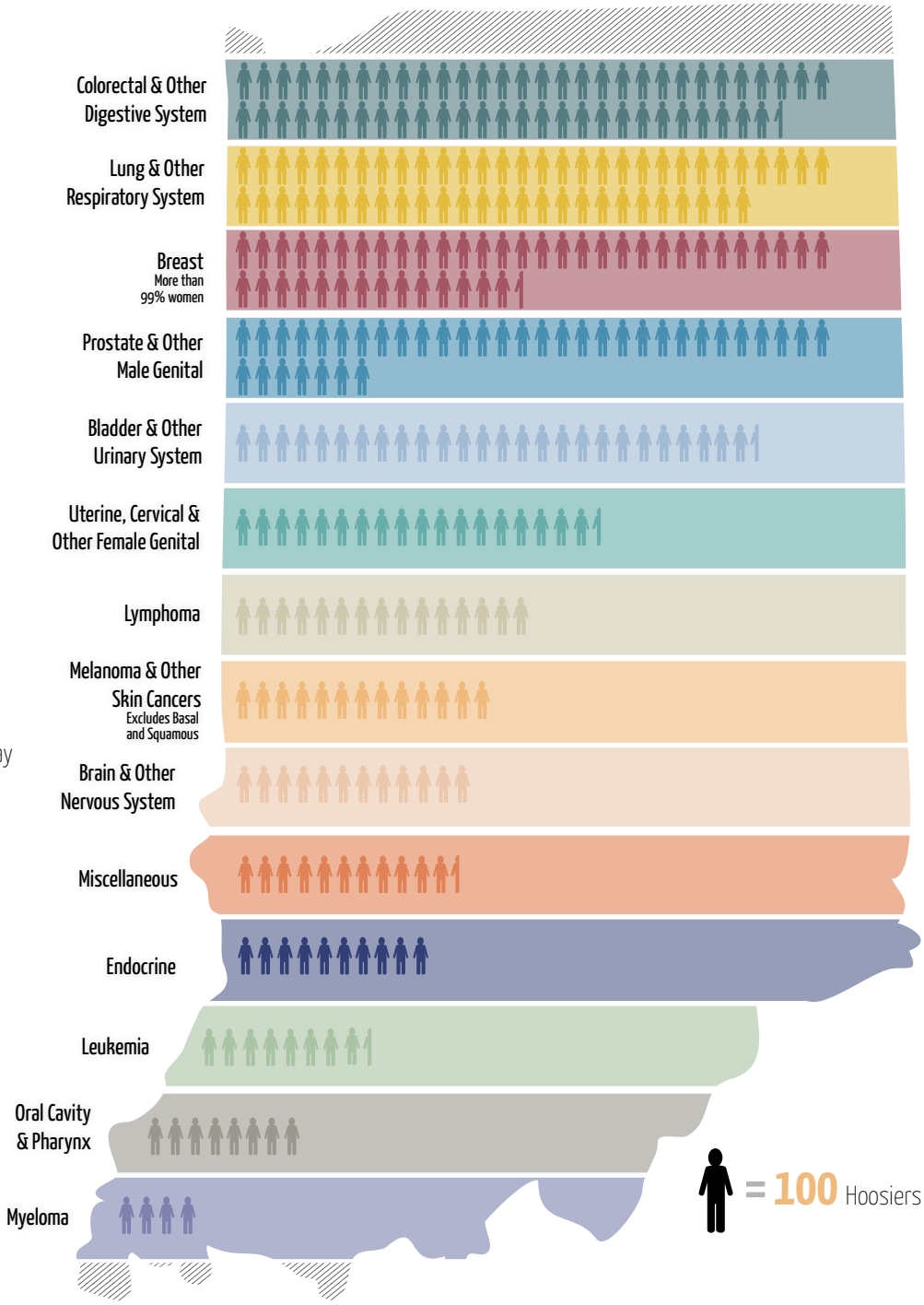
Meaning approximately...

89 Hoosiers were diagnosed with cancer every day

Estimated economic impact* ...

$1.92 billion is estimated to be spent in 2015 on direct costs of treating cancer in Indiana

$2.76 billion is the estimated amount of money Hoosiers will spend on direct costs for cancer care in 2023 if current trends continue



Data from: 2008-2012 Indiana State Cancer Registry (accessed April 6, 2015) and *The Milken Institute

IndianaCancer.org

Facebook.com/IndianaCancer

Twitter.com/IN_Cancer

Centers for Disease Control and Prevention
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Interactive Atlas of Heart Disease and Stroke Tables

Geographic Area

Select geographic area for report.

- (•) State report with county data. Select state: Indiana
- ( ) U.S. report with state data.
- ( ) U.S. report with county data.

Report Data

Select a tab to view different reports.

Health Indicators | Risk Factors | Social and Economic Data | Health Care Delivery and Insurance | Health Care Costs

Health Indicators

Diagnosis Categories:

Total Cardiovascular Disease

Health Indicator:

Hospitalizations

Year:	Race/Ethnicity:	Gender:	Age:	Spatial Smoothing:
2013-2015	All Races/Ethnicities	Both Genders	65+	Smoothed

Show Results

Summary Statistics | County Statistics

Indiana County Statistics

Total Cardiovascular Disease Hospitalization Rate per 1,000 Medicare Beneficiaries, 65+, All Races/Ethnicities, Both Genders, 2013-2015

County	State	Value
Lawrence (javascript:cdcAtlasWeb.launchDetailedReport('18093');)	IN	70.6
Adams (javascript:cdcAtlasWeb.launchDetailedReport('18001');)	IN	71.1
Fulton (javascript:cdcAtlasWeb.launchDetailedReport('18049');)	IN	72.6
Monroe (javascript:cdcAtlasWeb.launchDetailedReport('18105');)	IN	80.8
Decatur (javascript:cdcAtlasWeb.launchDetailedReport('18031');)	IN	81.7
LaGrange (javascript:cdcAtlasWeb.launchDetailedReport('18087');)	IN	83.1
Rush (javascript:cdcAtlasWeb.launchDetailedReport('18139');)	IN	85
Miami (javascript:cdcAtlasWeb.launchDetailedReport('18103');)	IN	86.9
Tipton (javascript:cdcAtlasWeb.launchDetailedReport('18159');)	IN	89.7
White (javascript:cdcAtlasWeb.launchDetailedReport('18181');)	IN	90.6

County	State	Value
Steuben (javascript:cdcAtlasWeb.launchDetailedReport('18151');)	IN	91.9
Ripley (javascript:cdcAtlasWeb.launchDetailedReport('18137');)	IN	92.4
Pulaski (javascript:cdcAtlasWeb.launchDetailedReport('18131');)	IN	92.4
Greene (javascript:cdcAtlasWeb.launchDetailedReport('18055');)	IN	95.2
Wabash (javascript:cdcAtlasWeb.launchDetailedReport('18169');)	IN	96
Franklin (javascript:cdcAtlasWeb.launchDetailedReport('18047');)	IN	96.7
Warren (javascript:cdcAtlasWeb.launchDetailedReport('18171');)	IN	100
Marshall (javascript:cdcAtlasWeb.launchDetailedReport('18099');)	IN	101.5
Hamilton (javascript:cdcAtlasWeb.launchDetailedReport('18057');)	IN	101.5
Owen (javascript:cdcAtlasWeb.launchDetailedReport('18119');)	IN	101.8
Brown (javascript:cdcAtlasWeb.launchDetailedReport('18013');)	IN	102.4

County	State	Value
Jay (javascript:cdcAtlasWeb.launchDetailedReport('18075');)	IN	102.5
Putnam (javascript:cdcAtlasWeb.launchDetailedReport('18133');)	IN	103.2
Clinton (javascript:cdcAtlasWeb.launchDetailedReport('18023');)	IN	104.6
Randolph (javascript:cdcAtlasWeb.launchDetailedReport('18135');)	IN	105
Orange (javascript:cdcAtlasWeb.launchDetailedReport('18117');)	IN	105.4
Perry (javascript:cdcAtlasWeb.launchDetailedReport('18123');)	IN	108.5
Fountain (javascript:cdcAtlasWeb.launchDetailedReport('18045');)	IN	109.6
Jennings (javascript:cdcAtlasWeb.launchDetailedReport('18079');)	IN	109.9
Parke (javascript:cdcAtlasWeb.launchDetailedReport('18121');)	IN	111.6
Carroll (javascript:cdcAtlasWeb.launchDetailedReport('18015');)	IN	113.9
Vermillion (javascript:cdcAtlasWeb.launchDetailedReport('18165');)	IN	114.5

County	State	Value
Dubois (javascript:cdcAtlasWeb.launchDetailedReport('18037');)	IN	115.7
Johnson (javascript:cdcAtlasWeb.launchDetailedReport('18081');)	IN	116.1
Elkhart (javascript:cdcAtlasWeb.launchDetailedReport('18039');)	IN	116.2
Boone (javascript:cdcAtlasWeb.launchDetailedReport('18011');)	IN	116.8
Benton (javascript:cdcAtlasWeb.launchDetailedReport('18007');)	IN	117.4
Hendricks (javascript:cdcAtlasWeb.launchDetailedReport('18063');)	IN	117.5
Jackson (javascript:cdcAtlasWeb.launchDetailedReport('18071');)	IN	117.8
Sullivan (javascript:cdcAtlasWeb.launchDetailedReport('18153');)	IN	118
Tippecanoe (javascript:cdcAtlasWeb.launchDetailedReport('18157');)	IN	118.5
Hancock (javascript:cdcAtlasWeb.launchDetailedReport('18059');)	IN	118.5
Jasper (javascript:cdcAtlasWeb.launchDetailedReport('18073');)	IN	118.8

County	State	Value
St. Joseph (javascript:cdcAtlasWeb.launchDetailedReport('18141');)	IN	122.1
Montgomery (javascript:cdcAtlasWeb.launchDetailedReport('18107');)	IN	122.8
Wells (javascript:cdcAtlasWeb.launchDetailedReport('18179');)	IN	123.2
Whitley (javascript:cdcAtlasWeb.launchDetailedReport('18183');)	IN	123.6
Cass (javascript:cdcAtlasWeb.launchDetailedReport('18017');)	IN	123.6
Blackford (javascript:cdcAtlasWeb.launchDetailedReport('18009');)	IN	123.8
Harrison (javascript:cdcAtlasWeb.launchDetailedReport('18061');)	IN	124.4
Scott (javascript:cdcAtlasWeb.launchDetailedReport('18143');)	IN	125.5
Newton (javascript:cdcAtlasWeb.launchDetailedReport('18111');)	IN	126.1
Bartholomew (javascript:cdcAtlasWeb.launchDetailedReport('18005');)	IN	126.4
Clay (javascript:cdcAtlasWeb.launchDetailedReport('18021');)	IN	126.6

County	State	Value
Howard (javascript:cdcAtlasWeb.launchDetailedReport('18067');)	IN	127.3
Kosciusko (javascript:cdcAtlasWeb.launchDetailedReport('18085');)	IN	127.6
Morgan (javascript:cdcAtlasWeb.launchDetailedReport('18109');)	IN	127.9
Crawford (javascript:cdcAtlasWeb.launchDetailedReport('18025');)	IN	128.2
Washington (javascript:cdcAtlasWeb.launchDetailedReport('18175');)	IN	128.8
Huntington (javascript:cdcAtlasWeb.launchDetailedReport('18069');)	IN	129.5
Noble (javascript:cdcAtlasWeb.launchDetailedReport('18113');)	IN	129.9
Allen (javascript:cdcAtlasWeb.launchDetailedReport('18003');)	IN	130.1
Spencer (javascript:cdcAtlasWeb.launchDetailedReport('18147');)	IN	130.9
LaPorte (javascript:cdcAtlasWeb.launchDetailedReport('18091');)	IN	131.7
Madison (javascript:cdcAtlasWeb.launchDetailedReport('18095');)	IN	132.3

County	State	Value
Marion (javascript:cdcAtlasWeb.launchDetailedReport('18097');)	IN	134.2
Delaware (javascript:cdcAtlasWeb.launchDetailedReport('18035');)	IN	135.7
Gibson (javascript:cdcAtlasWeb.launchDetailedReport('18051');)	IN	137.6
DeKalb (javascript:cdcAtlasWeb.launchDetailedReport('18033');)	IN	137.6
Martin (javascript:cdcAtlasWeb.launchDetailedReport('18101');)	IN	140.1
Grant (javascript:cdcAtlasWeb.launchDetailedReport('18053');)	IN	141.3
Henry (javascript:cdcAtlasWeb.launchDetailedReport('18065');)	IN	141.8
Fayette (javascript:cdcAtlasWeb.launchDetailedReport('18041');)	IN	142
Union (javascript:cdcAtlasWeb.launchDetailedReport('18161');)	IN	142.4
Starke (javascript:cdcAtlasWeb.launchDetailedReport('18149');)	IN	145
Wayne (javascript:cdcAtlasWeb.launchDetailedReport('18177');)	IN	146.4

County	State	Value
Warrick (javascript:cdcAtlasWeb.launchDetailedReport('18173');)	IN	146.7
Floyd (javascript:cdcAtlasWeb.launchDetailedReport('18043');)	IN	148
Dearborn (javascript:cdcAtlasWeb.launchDetailedReport('18029');)	IN	148.5
Shelby (javascript:cdcAtlasWeb.launchDetailedReport('18145');)	IN	148.5
Jefferson (javascript:cdcAtlasWeb.launchDetailedReport('18077');)	IN	151.7
Pike (javascript:cdcAtlasWeb.launchDetailedReport('18125');)	IN	154.5
Vigo (javascript:cdcAtlasWeb.launchDetailedReport('18167');)	IN	154.9
Porter (javascript:cdcAtlasWeb.launchDetailedReport('18127');)	IN	156.7
Vanderburgh (javascript:cdcAtlasWeb.launchDetailedReport('18163');)	IN	158.2
Daviess (javascript:cdcAtlasWeb.launchDetailedReport('18027');)	IN	162.1
Knox (javascript:cdcAtlasWeb.launchDetailedReport('18083');)	IN	167.1

County	State	Value
Switzerland (javascript:cdcAtlasWeb.launchDetailedReport('18155');)	IN	167.3
Clark (javascript:cdcAtlasWeb.launchDetailedReport('18019');)	IN	170.4
Posey (javascript:cdcAtlasWeb.launchDetailedReport('18129');)	IN	171.8
Ohio (javascript:cdcAtlasWeb.launchDetailedReport('18115');)	IN	174.2
Lake (javascript:cdcAtlasWeb.launchDetailedReport('18089');)	IN	184.9

Insert What's New Here

Centers for Disease Control and Prevention
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Interactive Atlas of Heart Disease and Stroke Tables

Geographic Area

Select geographic area for report.

- (•) State report with county data. Select state: Indiana
- ( ) U.S. report with state data.
- ( ) U.S. report with county data.

Report Data

Select a tab to view different reports.

Health Indicators | Risk Factors | Social and Economic Data | Health Care Delivery and Insurance | Health Care Costs

Health Indicators

Diagnosis Categories:

Total Cardiovascular Disease

Health Indicator:

Deaths

Discharge:	Year:	Race/Ethnicity:	Ger
Discharged Home	2013-2015	All Races/Ethnicities	B

Show Results

Summary Statistics | County Statistics

Indiana County Statistics

Total CVD Hospitalization, Medicare Beneficiaries, Percentage Discharged Home, All Races/Ethnicities, Both Genders, 2013-2015

County	State	Value
Daviess (javascript:cdcAtlasWeb.launchDetailedReport('18027');)	IN	54
Monroe (javascript:cdcAtlasWeb.launchDetailedReport('18105');)	IN	54.4
Dubois (javascript:cdcAtlasWeb.launchDetailedReport('18037');)	IN	54.6
Tippecanoe (javascript:cdcAtlasWeb.launchDetailedReport('18157');)	IN	54.6
Wabash (javascript:cdcAtlasWeb.launchDetailedReport('18169');)	IN	54.7
Adams (javascript:cdcAtlasWeb.launchDetailedReport('18001');)	IN	54.8
Brown (javascript:cdcAtlasWeb.launchDetailedReport('18013');)	IN	55.2
Cass (javascript:cdcAtlasWeb.launchDetailedReport('18017');)	IN	55.3
Howard (javascript:cdcAtlasWeb.launchDetailedReport('18067');)	IN	55.5
Kosciusko (javascript:cdcAtlasWeb.launchDetailedReport('18085');)	IN	55.5
Huntington (javascript:cdcAtlasWeb.launchDetailedReport('18069');)	IN	55.6
Knox (javascript:cdcAtlasWeb.launchDetailedReport('18083');)	IN	55.9
Lawrence (javascript:cdcAtlasWeb.launchDetailedReport('18093');)	IN	56.4

County	State	Value
Orange (javascript:cdcAtlasWeb.launchDetailedReport('18117');)	IN	56.6
Fayette (javascript:cdcAtlasWeb.launchDetailedReport('18041');)	IN	56.6
Dearborn (javascript:cdcAtlasWeb.launchDetailedReport('18029');)	IN	56.7
Ripley (javascript:cdcAtlasWeb.launchDetailedReport('18137');)	IN	57
Jefferson (javascript:cdcAtlasWeb.launchDetailedReport('18077');)	IN	57
Montgomery (javascript:cdcAtlasWeb.launchDetailedReport('18107');)	IN	57.2
Noble (javascript:cdcAtlasWeb.launchDetailedReport('18113');)	IN	57.2
Bartholomew (javascript:cdcAtlasWeb.launchDetailedReport('18005');)	IN	57.2
Carroll (javascript:cdcAtlasWeb.launchDetailedReport('18015');)	IN	57.3
Shelby (javascript:cdcAtlasWeb.launchDetailedReport('18145');)	IN	57.3
Johnson (javascript:cdcAtlasWeb.launchDetailedReport('18081');)	IN	57.6
Martin (javascript:cdcAtlasWeb.launchDetailedReport('18101');)	IN	57.8
Floyd (javascript:cdcAtlasWeb.launchDetailedReport('18043');)	IN	57.9

County	State	Value
Franklin (javascript:cdcAtlasWeb.launchDetailedReport('18047');)	IN	57.9
DeKalb (javascript:cdcAtlasWeb.launchDetailedReport('18033');)	IN	58
Grant (javascript:cdcAtlasWeb.launchDetailedReport('18053');)	IN	58.1
Benton (javascript:cdcAtlasWeb.launchDetailedReport('18007');)	IN	58.3
Madison (javascript:cdcAtlasWeb.launchDetailedReport('18095');)	IN	58.3
Clinton (javascript:cdcAtlasWeb.launchDetailedReport('18023');)	IN	58.4
Marshall (javascript:cdcAtlasWeb.launchDetailedReport('18099');)	IN	58.5
Pike (javascript:cdcAtlasWeb.launchDetailedReport('18125');)	IN	58.5
Wayne (javascript:cdcAtlasWeb.launchDetailedReport('18177');)	IN	58.5
Marion (javascript:cdcAtlasWeb.launchDetailedReport('18097');)	IN	58.7
Jackson (javascript:cdcAtlasWeb.launchDetailedReport('18071');)	IN	58.8

County	State	Value
Warren (javascript:cdcAtlasWeb.launchDetailedReport('18171');)	IN	58.9
Wells (javascript:cdcAtlasWeb.launchDetailedReport('18179');)	IN	59.2
Hamilton (javascript:cdcAtlasWeb.launchDetailedReport('18057');)	IN	59.4
Allen (javascript:cdcAtlasWeb.launchDetailedReport('18003');)	IN	59.5
Miami (javascript:cdcAtlasWeb.launchDetailedReport('18103');)	IN	59.5
St. Joseph (javascript:cdcAtlasWeb.launchDetailedReport('18141');)	IN	59.6
Hancock (javascript:cdcAtlasWeb.launchDetailedReport('18059');)	IN	59.6
Washington (javascript:cdcAtlasWeb.launchDetailedReport('18175');)	IN	59.7
Clark (javascript:cdcAtlasWeb.launchDetailedReport('18019');)	IN	59.8
Owen (javascript:cdcAtlasWeb.launchDetailedReport('18119');)	IN	59.8
Putnam (javascript:cdcAtlasWeb.launchDetailedReport('18133');)	IN	59.9

County	State	Value
Henry (javascript:cdcAtlasWeb.launchDetailedReport('18065');)	IN	59.9
Tipton (javascript:cdcAtlasWeb.launchDetailedReport('18159');)	IN	60
White (javascript:cdcAtlasWeb.launchDetailedReport('18181');)	IN	60.1
Vigo (javascript:cdcAtlasWeb.launchDetailedReport('18167');)	IN	60.2
Starke (javascript:cdcAtlasWeb.launchDetailedReport('18149');)	IN	60.2
Fountain (javascript:cdcAtlasWeb.launchDetailedReport('18045');)	IN	60.2
Elkhart (javascript:cdcAtlasWeb.launchDetailedReport('18039');)	IN	60.2
Rush (javascript:cdcAtlasWeb.launchDetailedReport('18139');)	IN	60.3
Union (javascript:cdcAtlasWeb.launchDetailedReport('18161');)	IN	60.3
Vermillion (javascript:cdcAtlasWeb.launchDetailedReport('18165');)	IN	60.5
Ohio (javascript:cdcAtlasWeb.launchDetailedReport('18115');)	IN	60.7

County	State	Value
Gibson (javascript:cdcAtlasWeb.launchDetailedReport('18051');)	IN	60.8
Hendricks (javascript:cdcAtlasWeb.launchDetailedReport('18063');)	IN	61
Newton (javascript:cdcAtlasWeb.launchDetailedReport('18111');)	IN	61.3
Scott (javascript:cdcAtlasWeb.launchDetailedReport('18143');)	IN	61.6
Vanderburgh (javascript:cdcAtlasWeb.launchDetailedReport('18163');)	IN	61.7
Switzerland (javascript:cdcAtlasWeb.launchDetailedReport('18155');)	IN	61.7
Whitley (javascript:cdcAtlasWeb.launchDetailedReport('18183');)	IN	61.8
Morgan (javascript:cdcAtlasWeb.launchDetailedReport('18109');)	IN	61.9
Boone (javascript:cdcAtlasWeb.launchDetailedReport('18011');)	IN	62
Crawford (javascript:cdcAtlasWeb.launchDetailedReport('18025');)	IN	62.2
Jay (javascript:cdcAtlasWeb.launchDetailedReport('18075');)	IN	62.4
LaGrange (javascript:cdcAtlasWeb.launchDetailedReport('18087');)	IN	62.4
LaPorte (javascript:cdcAtlasWeb.launchDetailedReport('18091');)	IN	63
Jennings (javascript:cdcAtlasWeb.launchDetailedReport('18079');)	IN	63

County	State	Value
Spencer (javascript:cdcAtlasWeb.launchDetailedReport('18147');)	IN	63
Randolph (javascript:cdcAtlasWeb.launchDetailedReport('18135');)	IN	63
Harrison (javascript:cdcAtlasWeb.launchDetailedReport('18061');)	IN	63
Fulton (javascript:cdcAtlasWeb.launchDetailedReport('18049');)	IN	63.1
Blackford (javascript:cdcAtlasWeb.launchDetailedReport('18009');)	IN	63.4
Porter (javascript:cdcAtlasWeb.launchDetailedReport('18127');)	IN	63.4
Pulaski (javascript:cdcAtlasWeb.launchDetailedReport('18131');)	IN	63.9
Lake (javascript:cdcAtlasWeb.launchDetailedReport('18089');)	IN	64
Greene (javascript:cdcAtlasWeb.launchDetailedReport('18055');)	IN	64.1
Parke (javascript:cdcAtlasWeb.launchDetailedReport('18121');)	IN	64.3
Warrick (javascript:cdcAtlasWeb.launchDetailedReport('18173');)	IN	64.3

County	State	Value
Steuben (javascript:cdcAtlasWeb.launchDetailedReport('18151');)	IN	64.7
Delaware (javascript:cdcAtlasWeb.launchDetailedReport('18035');)	IN	64.9
Decatur (javascript:cdcAtlasWeb.launchDetailedReport('18031');)	IN	65.6
Jasper (javascript:cdcAtlasWeb.launchDetailedReport('18073');)	IN	65.7
Clay (javascript:cdcAtlasWeb.launchDetailedReport('18021');)	IN	66
Posey (javascript:cdcAtlasWeb.launchDetailedReport('18129');)	IN	66
Sullivan (javascript:cdcAtlasWeb.launchDetailedReport('18153');)	IN	66.1
Perry (javascript:cdcAtlasWeb.launchDetailedReport('18123');)	IN	66.4

Insert What's New Here

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H I J K L M N O P Q R S T U V W X Y Z #

es Data and Statistics > County Data

Downlo

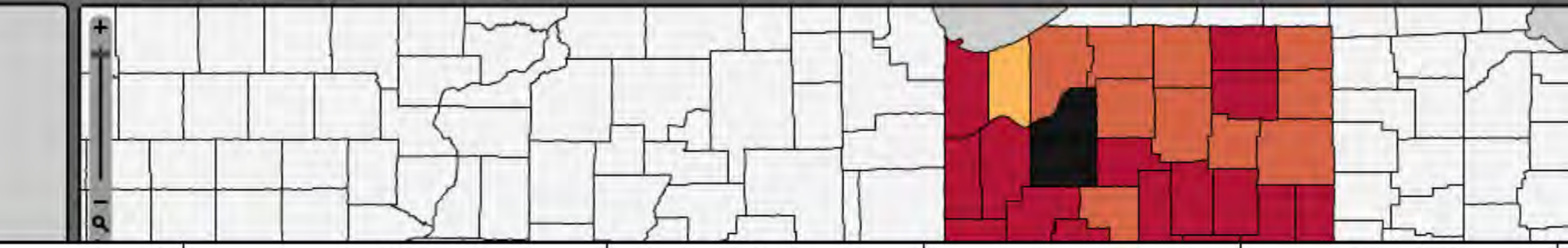
centage | 2013* Indiana

Diabetes Data

Low- and High-Rank Maps

Deselect State | Zoom Out

2004 2005 2006 2007 2008 2009 2010



	State	Indicator	Lower Limit	Upper Limit
	Indiana	12.2	9.3	15.6
	Indiana	10.0	7.5	13.1
	Indiana	14.2	11.5	17.7
	Indiana	13.7	11.1	16.9
	Indiana	14.0	10.8	17.8
	Indiana	12.7	9.5	16.3
	Indiana	11.4	8.6	14.5
	Indiana	10.8	8.2	13.8
	Indiana	9.9	8.3	11.6
	Indiana	13.6	10.3	17.3

Data Brief 329. Drug Overdose Deaths in the United States, 1999–2017

Data table for Figure 1. Age-adjusted drug overdose death rates: United States, 1999–2017

	Total		Male		Female	
Year	Number	Deaths per 100,000	Number	Deaths per 100,000	Number	Deaths per 100,000
1999	16,849	6.1	11,258	8.2	5,591	3.9
2000	17,415	6.2	11,563	8.3	5,852	4.1
2001	19,394	6.8	12,658	9.0	6,736	4.6
2002	23,518	8.2	15,028	10.6	8,490	5.8
2003	25,785	8.9	16,399	11.5	9,386	6.4
2004	27,424	9.4	17,120	11.8	10,304	6.9
2005	29,813	10.1	18,724	12.8	11,089	7.3
2006	34,425	11.5	21,893	14.8	12,532	8.2
2007	36,010	11.9	22,298	14.9	13,712	8.8
2008	36,450	11.9	22,468	14.9	13,982	8.9
2009	37,004	11.9	22,593	14.8	14,411	9.1
2010	38,329	12.3	23,006	15.0	15,323	9.6
2011	41,340	13.2	24,988	16.1	16,352	10.2
2012	41,502	13.1	25,112	16.1	16,390	10.2
2013	43,982	13.8	26,799	17.0	17,183	10.6
2014	47,055	14.7	28,812	18.3	18,243	11.1
2015	52,404	16.3	32,957	20.8	19,447	11.8
2016	63,632	19.8	41,558	26.2	22,074	13.4
2017	70,237	21.7	46,552	29.1	23,685	14.4

NOTES: Deaths are classified using the *International Classification of Diseases, 10th Revision*. Drug-poisoning (overdose) deaths are identified using underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Data Brief 329. Drug Overdose Deaths in the United States, 1999–2017

Data table for Figure 2. Drug overdose death rates, by selected age group: United States, 1999–2017

	15–24		25–34		35–44		45–54		55–64		65 and over	
Year	Number	Deaths per 100,000	Number	Deaths per 100,000	Number	Deaths per 100,000	Number	Deaths per 100,000	Number	Deaths per 100,000	Number	Deaths per 100,000
1999	1,240	3.2	3,236	8.1	6,295	14.0	4,067	11.1	991	4.2	930	2.7
2000	1,435	3.7	3,169	7.9	6,469	14.3	4,389	11.6	1,013	4.2	854	2.4
2001	1,700	4.2	3,410	8.6	6,968	15.5	5,115	13.0	1,185	4.7	910	2.6
2002	2,095	5.1	4,125	10.5	8,064	18.1	6,466	16.2	1,601	6.0	1,060	3.0
2003	2,491	6.0	4,488	11.4	8,358	18.9	7,325	17.9	1,943	6.9	1,070	3.0
2004	2,751	6.6	4,680	11.9	8,439	19.3	8,040	19.3	2,283	7.8	1,104	3.0
2005	2,918	6.9	5,340	13.6	8,506	19.6	8,968	21.1	2,761	9.0	1,203	3.3
2006	3,460	8.1	6,346	16.1	9,373	21.7	10,421	24.1	3,355	10.5	1,321	3.6
2007	3,550	8.2	6,663	16.8	9,152	21.4	11,012	25.1	4,043	12.2	1,435	3.8
2008	3,487	8.0	6,739	16.8	8,885	21.1	11,222	25.2	4,396	12.9	1,587	4.1
2009	3,377	7.7	7,013	17.2	8,524	20.5	11,390	25.4	4,858	13.7	1,721	4.3
2010	3,571	8.2	7,572	18.4	8,546	20.8	11,299	25.1	5,486	15.0	1,722	4.3
2011	3,762	8.6	8,445	20.2	9,130	22.5	11,933	26.7	6,060	15.9	1,892	4.6
2012	3,518	8.0	8,508	20.1	8,948	22.1	11,895	26.9	6,423	16.6	2,094	4.9
2013	3,664	8.3	8,947	20.9	9,320	23.0	12,045	27.5	7,551	19.2	2,344	5.2
2014	3,798	8.6	10,055	23.1	10,134	25.0	12,263	28.2	8,122	20.3	2,568	5.6
2015	4,235	9.7	11,880	26.9	11,505	28.3	12,974	30.0	8,901	21.8	2,760	5.8
2016	5,376	12.4	15,443	34.6	14,183	35.0	14,771	34.5	10,632	25.6	3,075	6.2
2017	5,455	12.6	17,400	38.4	15,949	39.0	15,996	37.7	11,747	28.0	3,529	6.9

NOTES: Deaths are classified using the *International Classification of Diseases, 10th Revision*. Drug-poisoning (overdose) deaths are identified using underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Data Brief 329. Drug Overdose Deaths in the United States, 1999–2017

Data table for Figure 3. Age-adjusted drug overdose death rates, by state: United States, 2017

State	Number	Deaths per 100,000
Alabama	835	18.0
Alaska	147	20.2
Arizona	1,532	22.2
Arkansas	446	15.5
California	4,868	11.7
Colorado	1,015	17.6
Connecticut	1,072	30.9
Delaware	338	37.0
District of Columbia	310	44.0
Florida	5,088	25.1
Georgia	1,537	14.7
Hawaii	203	13.8
Idaho	236	14.4
Illinois	2,778	21.6
Indiana	1,852	29.4
Iowa	341	11.5
Kansas	333	11.8
Kentucky	1,566	37.2
Louisiana	1,108	24.5
Maine	424	34.4
Maryland	2,247	36.3
Massachusetts	2,168	31.8
Michigan	2,694	27.8
Minnesota	733	13.3
Mississippi	354	12.2
Missouri	1,367	23.4
Montana	119	11.7
Nebraska	152	8.1
Nevada	676	21.6
New Hampshire	467	37.0
New Jersey	2,685	30.0
New Mexico	493	24.8
New York	3,921	19.4
North Carolina	2,414	24.1
North Dakota	68	9.2
Ohio	5,111	46.3
Oklahoma	775	20.1
Oregon	530	12.4
Pennsylvania	5,388	44.3
Rhode Island	320	31.0
South Carolina	1,008	20.5
South Dakota	73	8.5
Tennessee	1,776	26.6
Texas	2,989	10.5
Utah	650	22.3
Vermont	134	23.2
Virginia	1,507	17.9
Washington	1,169	15.2
West Virginia	974	57.8
Wisconsin	1,177	21.2
Wyoming	69	12.2

NOTES: Deaths are classified using the *International Classification of Diseases, 10th Revision*. Drug-poisoning (overdose) deaths are identified using underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14. The age-adjusted drug overdose death rate in the United States in 2017 was 21.7 per 100,000 standard population.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Data Brief 329. Drug Overdose Deaths in the United States, 1999–2017

Data table for Figure 4. Age-adjusted drug overdose death rates, by opioid category: United States, 1999–2017

Year	Any opioid		Heroin		Natural and semisynthetic opioids		Methadone		Synthetic opioids other than methadone	
	Number	Deaths per 100,000	Number	Deaths per 100,000	Number	Deaths per 100,000	Number	Deaths per 100,000	Number	Deaths per 100,000
1999	8,050	2.9	1,960	0.7	2,749	1.0	784	0.3	730	0.3
2000	8,407	3.0	1,842	0.7	2,917	1.0	986	0.4	782	0.3
2001	9,496	3.3	1,779	0.6	3,479	1.2	1,456	0.5	957	0.3
2002	11,920	4.1	2,089	0.7	4,416	1.5	2,358	0.8	1,295	0.4
2003	12,940	4.5	2,080	0.7	4,867	1.7	2,972	1.0	1,400	0.5
2004	13,756	4.7	1,878	0.6	5,231	1.8	3,845	1.3	1,664	0.6
2005	14,918	5.1	2,009	0.7	5,774	1.9	4,460	1.5	1,742	0.6
2006	17,545	5.9	2,088	0.7	7,017	2.3	5,406	1.8	2,707	0.9
2007	18,516	6.1	2,399	0.8	8,158	2.7	5,518	1.8	2,213	0.7
2008	19,582	6.4	3,041	1.0	9,119	3.0	4,924	1.6	2,306	0.8
2009	20,422	6.6	3,278	1.1	9,735	3.1	4,696	1.5	2,946	1.0
2010	21,089	6.8	3,036	1.0	10,943	3.5	4,577	1.5	3,007	1.0
2011	22,784	7.3	4,397	1.4	11,693	3.7	4,418	1.4	2,666	0.8
2012	23,166	7.4	5,925	1.9	11,140	3.5	3,932	1.2	2,628	0.8
2013	25,052	7.9	8,257	2.7	11,346	3.5	3,591	1.1	3,105	1.0
2014	28,647	9.0	10,574	3.4	12,159	3.8	3,400	1.1	5,544	1.8
2015	33,091	10.4	12,989	4.1	12,727	3.9	3,301	1.0	9,580	3.1
2016	42,249	13.3	15,469	4.9	14,487	4.4	3,373	1.0	19,413	6.2
2017	47,600	14.9	15,482	4.9	14,495	4.4	3,194	1.0	28,466	9.0

NOTES: Deaths are classified using the *International Classification of Diseases, 10th Revision*. Drug-poisoning (overdose) deaths are identified using underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14. Among deaths with drug poisoning as the underlying cause, the following multiple cause-of-death codes indicate the drug type(s) involved: any opioid, T40.0–T40.4 and T40.6; heroin, T40.1; natural and semisynthetic opioids, T40.2; methadone, T40.3; and synthetic opioids other than methadone, T40.4. Deaths involving more than one opioid category (e.g., a death involving both methadone and a natural and semisynthetic opioid such as oxycodone) are counted in both categories. Natural and semisynthetic opioids include drugs such as morphine, oxycodone, and hydrocodone; and synthetic opioids other than methadone include such drugs as fentanyl, fentanyl analogs, and tramadol. The percentage of drug overdose deaths for which at least one specific drug was identified as being involved varied by year, ranging from 75%–79% from 1999 through 2013 and from 81%–88% from 2014 through 2017.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Appendix B

Focus Group Documents

Pulaski
Memorial Hospital

January 29, 2019

Dear

Pulaski Memorial Hospital and the Indiana Rural Health Association respectfully request your participation in an upcoming Community Focus Group. The meeting will take place on Tuesday, **February 19, 2019** from 6:00-8:00 p.m. EST at the Winamac Event Center, 211 S. Logan St., Winamac, IN 46996.

Based on requirements released by the Internal Revenue Service, a Community Needs Assessment must be completed to identify the needs of Pulaski Memorial Hospital's service area. The first step in this process will consist of a focused discussion on the most important health issues facing Pulaski and Starke County(ies) and will directly lead to government assistance, project planning, and information gathering for citizens, businesses, and organizations within the service area.

As a community leader, your input is greatly valued in this matter, and we look forward to working with you to create an accurate and meaningful portrait of our communities. If you are not able to attend, please feel free to send a representative from your organization. Light refreshments will be provided.

Please RSVP to Laura Doty at 574-946-2166 or email to ldoty@pmhnet.com by February 13, 2019.

Sincerely,

Thomas F. Barry, Jr
President & CEO
Pulaski Memorial Hospital

Phil Ellis
Director
Indiana Statewide Rural Health Network

	A	B	C	D
1	Name (please print)	Organization	Contact Information	
2	Terri Hansen	Health	219-204-2151	Thansen@pulaskicounty.in.gov
3	Celinda Briney	Health	574-595-0066	Cbriney@pulaskicounty.in.gov
4	Dan Foster	Schools - EPLSC	574-946-4010	dan.foster@EPulaski.k12.in.us
5	Rev. LeRoy G. Kinnaman	Church	574.946.4960	stpete4906@embarqmail.com
6	Sharon McKinley	Pulaski Health Foundation	574-946-0692	Smckinley@phec-phf.com
7	Andrea Keller	Pulaski Co. Health Dept.	574-946-6080	akeller@pulaskicounty.in.gov
8	Dan Murphy	Prosecutor	574 946-6858	Prosecutor@ PulaskiCounty.In.Gov
9	Ron Krueger	Alliance Bank	574-946-7000	rkrueger@myalliancebank.com
10	Jan Good	Standard Industrial	574-946-6661 Ext 102	jan@standardinc.net
11	Mackenzie Ledley	Pulaski Co PL	(574) 946-6981	Mledley@pulaskicounty.lib.in.us
12	Nathan Prosser	CDC	574.242.2458	nporiger@pulaskionline.org
13	Brandon Osborne	PCEMS	574-225-0172	emsdirector@pulaskicounty.IN.gov
14	Rob Brooks	PCEMS	765-669-0087	"

	A	B	C	D
1	Name (please print)	Organization	Contact Information	
15	Nicole Hicht-Drang	FarCounty	574-546-6696	nhichtdrang@farcounty.org
16	Rebecca J. Kraft	Braun Ability	574-946-4139 ext 3054	Rebecca J. Kraft
17	GREGG A. MALOTT	PMH	574-946-2103	
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				

Appendix C

Survey

Pulaski Memorial Hospital Community Health Needs Survey 2019

1. What is your zip code?

- a. 46996
- b. 47946
- c. 46960
- d. 46366
- e. 46975
- f. 46534
- g. 47978
- h. 47960
- i. 46985
- j. 46939
- k. 46511
- l. 46374
- m. 46947

Other (please specify)

* 2. What is your age:

- a. 0 - 14
- b. 15 - 24
- c. 25 - 34
- d. 35 - 44
- e. 45 - 54
- f. 55 - 64
- g. 65+
- h. Prefer not to answer

* 3. What is your sex?

- a. Male
- b. Female
- c. Prefer not to answer

* 4. What is your race or origin?

- a. White
- b. Black or African American
- c. Hispanic, Latino, or Spanish origin
- d. American Indian or Alaska Native
- e. Asian
- f. Native Hawaiian or Other Pacific Islander
- g. Some other race or origin
- h. Prefer not to answer

5. How do the following issues affect your county?

	Very Negative Effect	Some Negative Effect	No Effect	Some Positive Effect	Very Positive Effect
Availability of medical transportation					
Cost of medical transportation					
Availability of non-medical transportation					
Cost of non-medical transportation					
Availability of mental health services					
Availability of specialists					
Availability of drug treatment programs					
Availability of drug treatment facilities					
Availability of illegal drug, tobacco, and/or alcohol education					
Availability of health care services for the elderly					

	Very Negative Effect	Some Negative Effect	No Effect	Some Positive Effect	Very Positive Effect
Availability of supports services for the elderly	○	○	○	○	○
Availability of safe housing	○	○	○	○	○
Availability of affordable housing	○	○	○	○	○
Methamphetamine use	○	○	○	○	○
Tobacco use	○	○	○	○	○
Vaping and electronic cigarettes	○	○	○	○	○
Opioid drug abuse	○	○	○	○	○
Availability of parenting education	○	○	○	○	○
Availability of parenting support services	○	○	○	○	○
Availability of health insurance	○	○	○	○	○
Cost of health insurance	○	○	○	○	○
Availability of health care	○	○	○	○	○
Cost of health care	○	○	○	○	○
Availability of quality housing	○	○	○	○	○
Cost of quality housing	○	○	○	○	○

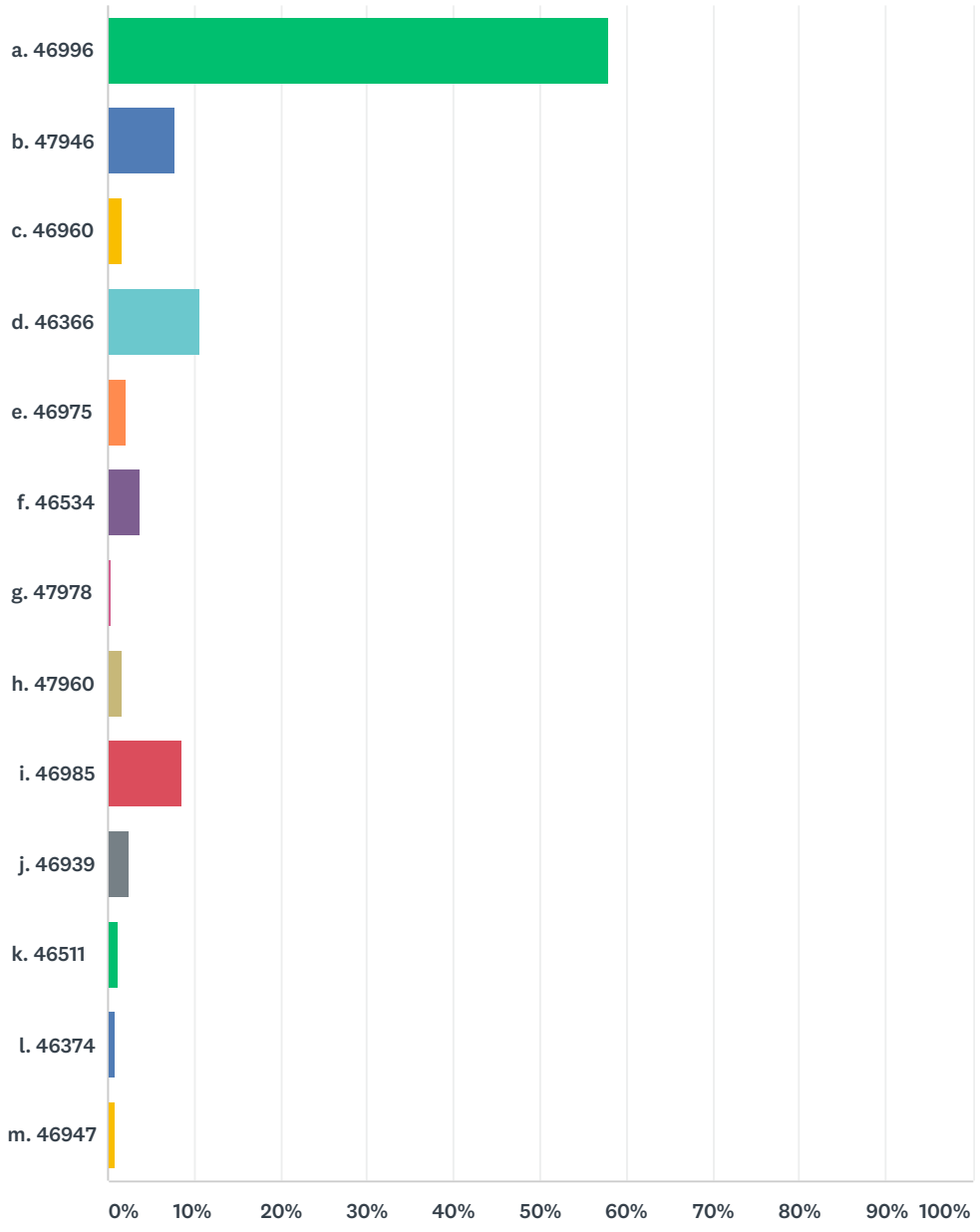
6. Do you see a need for the following services/facilities in your community?

	No need	Slight need	Definite need	Extreme Need	NO opinion
basic medical services	○	○	○	○	○
mental health services	○	○	○	○	○
specialty services	○	○	○	○	○
healthcare services for the elderly	○	○	○	○	○
support services for adults and seniors	○	○	○	○	○
public transportation	○	○	○	○	○
medical transportation	○	○	○	○	○
illegal drug prevention education	○	○	○	○	○
tobacco prevention education	○	○	○	○	○
drug treatment programs	○	○	○	○	○
drug treatment facilities	○	○	○	○	○
affordable insurance	○	○	○	○	○
affordable housing	○	○	○	○	○
safe housing	○	○	○	○	○
parenting skills education	○	○	○	○	○
parenting support services	○	○	○	○	○
affordable health insurance	○	○	○	○	○

7. Open comments:

Q1 What is your zip code?

Answered: 235 Skipped: 13



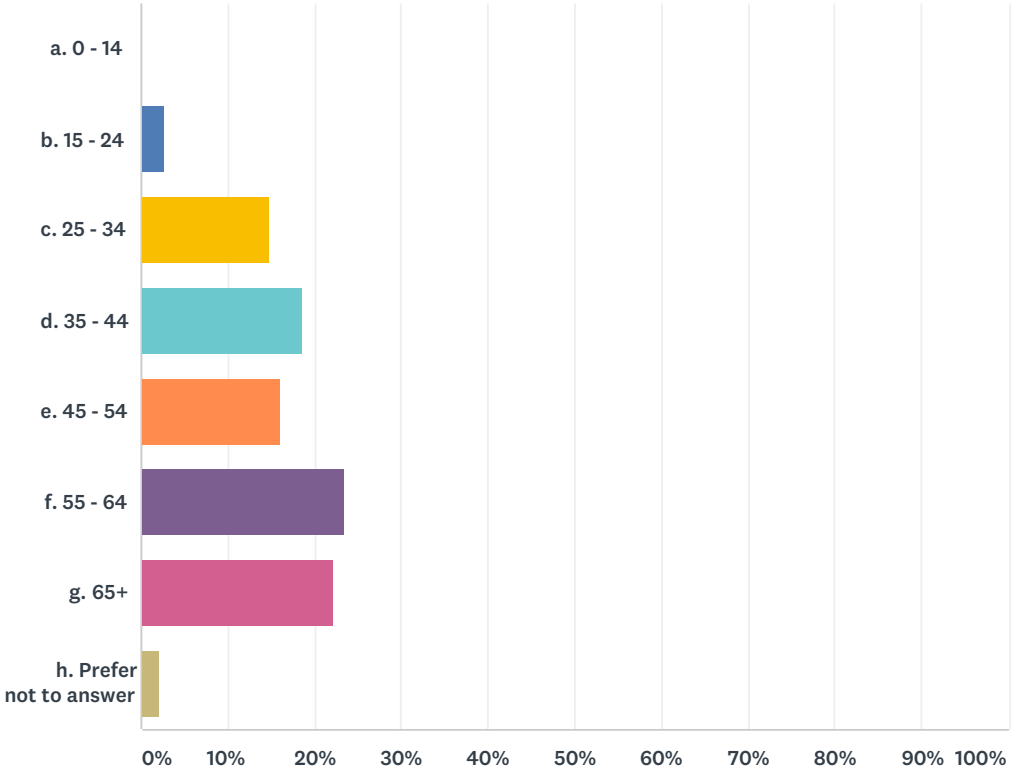
ANSWER CHOICES	RESPONSES	
a. 46996	57.87%	136
b. 47946	7.66%	18
c. 46960	1.70%	4
d. 46366	10.64%	25
e. 46975	2.13%	5
f. 46534	3.83%	9

g. 47978	0.43%	1
h. 47960	1.70%	4
i. 46985	8.51%	20
j. 46939	2.55%	6
k. 46511	1.28%	3
l. 46374	0.85%	2
m. 46947	0.85%	2
TOTAL		235

#	OTHER (PLEASE SPECIFY)	DATE
1	47957	3/30/2019 8:21 AM
2	47957 really? Can't believe I have to type this.	3/28/2019 6:54 AM
3	47957	3/27/2019 3:15 PM
4	46968	3/26/2019 10:01 AM
5	47957	3/26/2019 8:30 AM
6	46978	3/19/2019 1:43 PM
7	47943	3/19/2019 1:05 PM
8	46383	3/19/2019 1:03 PM
9	46310	3/19/2019 12:59 PM
10	46978	3/14/2019 6:44 AM
11	46932	3/7/2019 2:16 PM
12	47957	3/6/2019 5:44 PM
13	46950	3/6/2019 3:05 PM

Q2 What is your age:

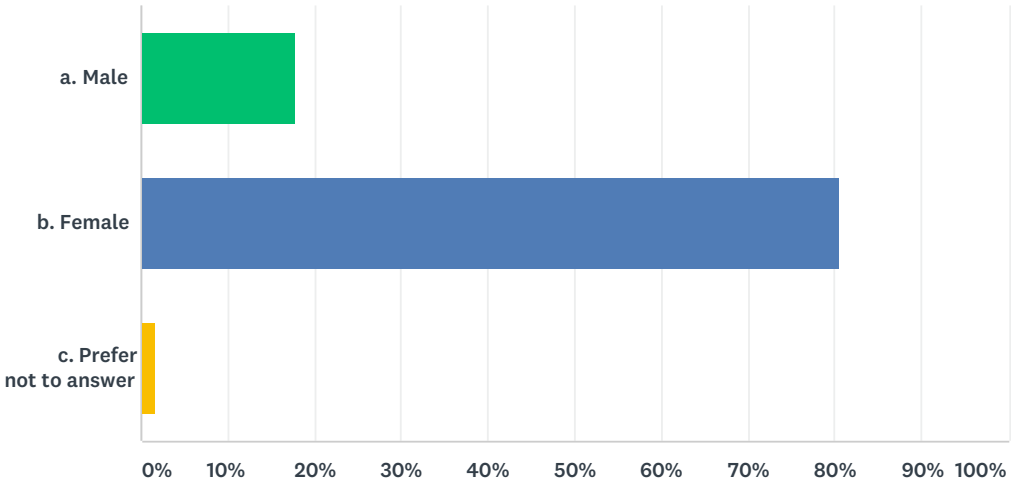
Answered: 248 Skipped: 0



ANSWER CHOICES	RESPONSES	
a. 0 - 14	0.00%	0
b. 15 - 24	2.82%	7
c. 25 - 34	14.92%	37
d. 35 - 44	18.55%	46
e. 45 - 54	16.13%	40
f. 55 - 64	23.39%	58
g. 65+	22.18%	55
h. Prefer not to answer	2.02%	5
TOTAL		248

Q3 What is your sex?

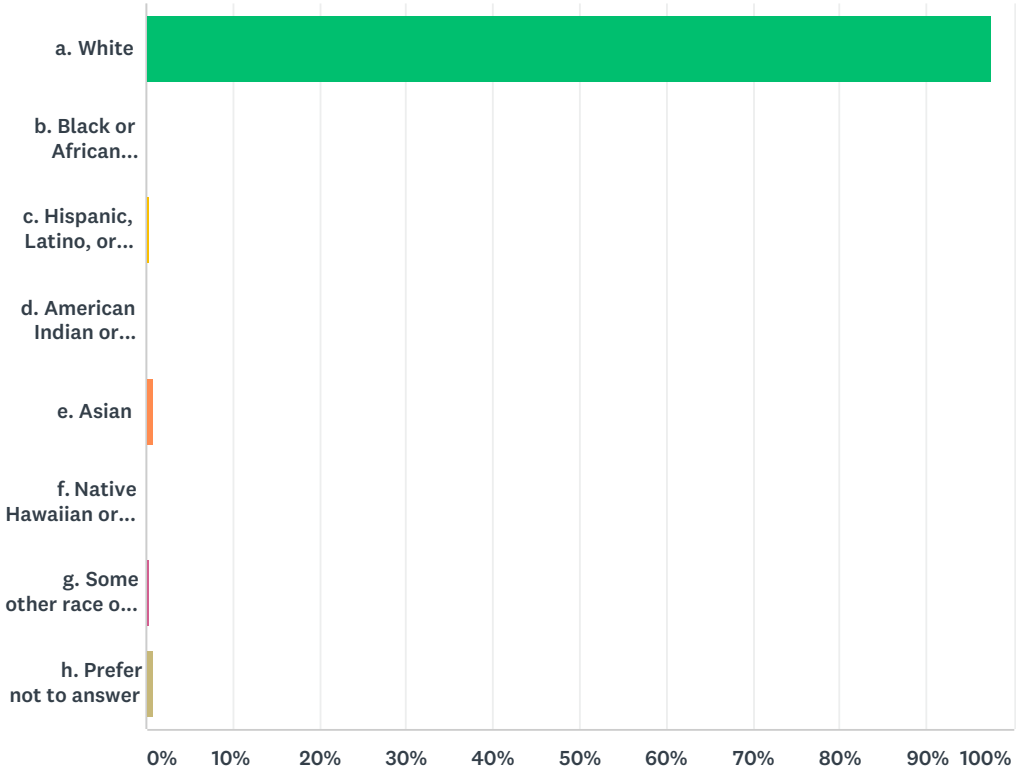
Answered: 248 Skipped: 0



ANSWER CHOICES	RESPONSES	
a. Male	17.74%	44
b. Female	80.65%	200
c. Prefer not to answer	1.61%	4
TOTAL		248

Q4 What is your race or origin?

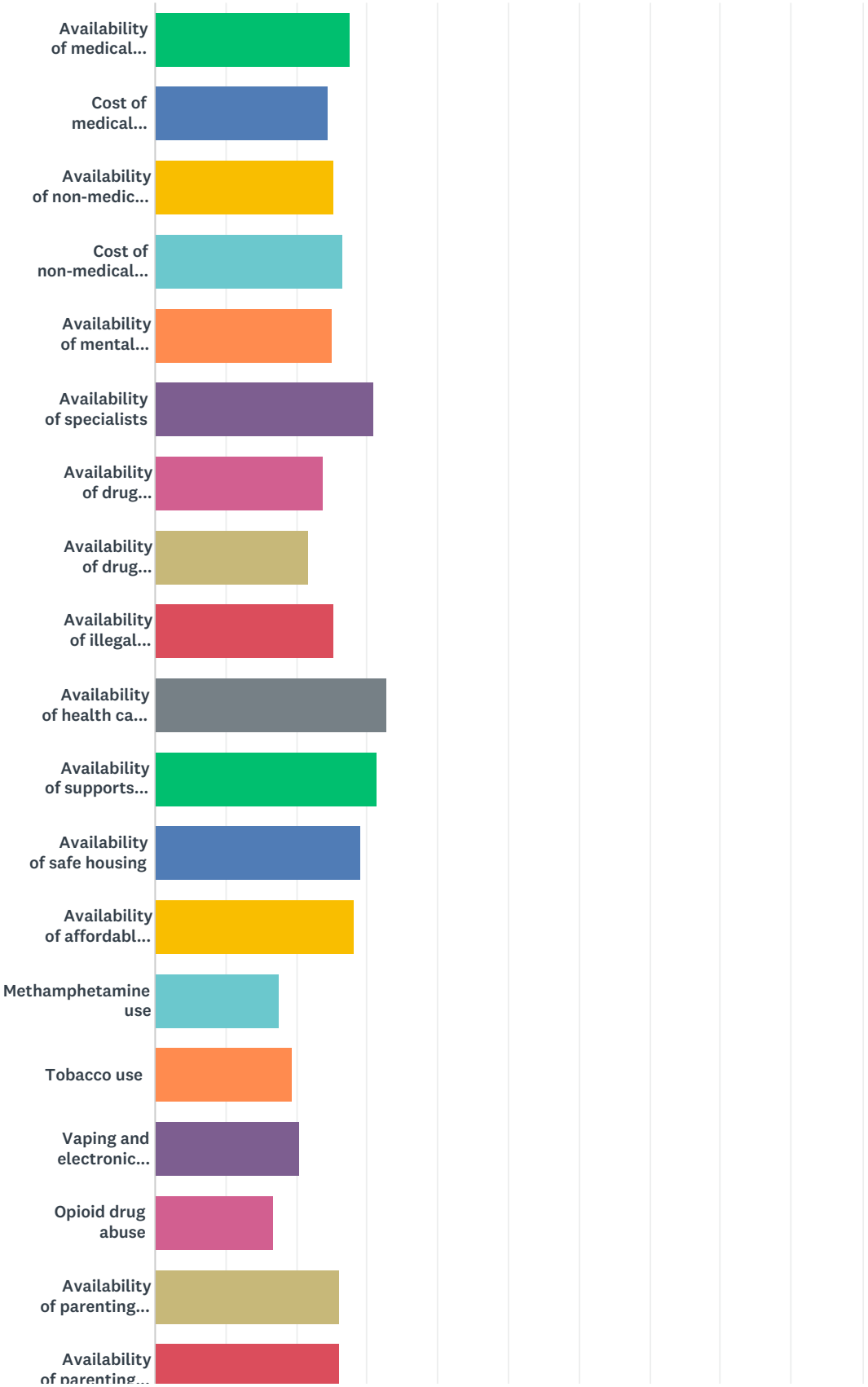
Answered: 248 Skipped: 0

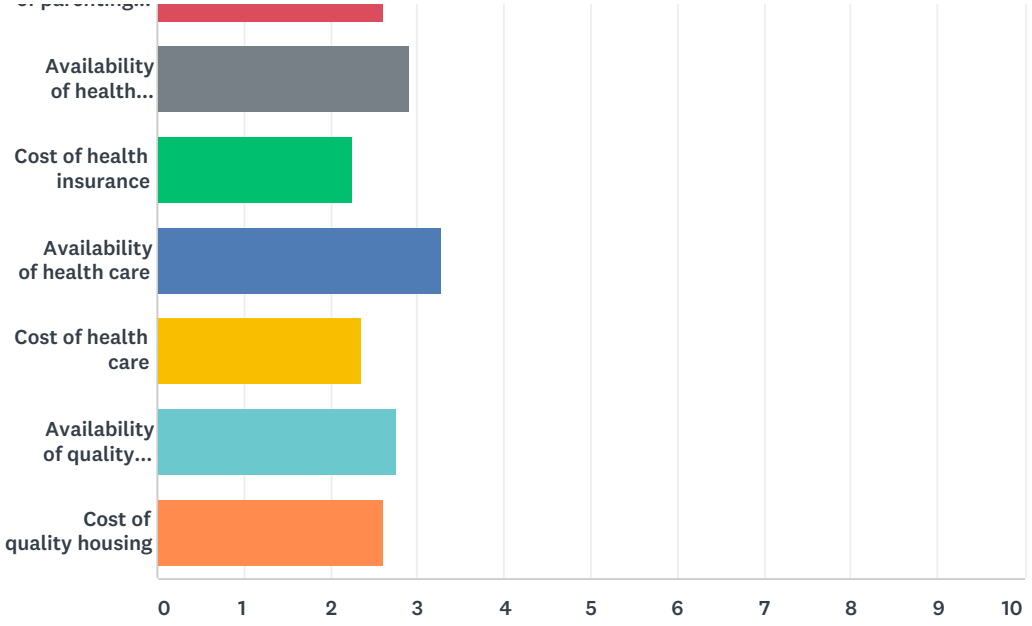


ANSWER CHOICES	RESPONSES	
a. White	97.58%	242
b. Black or African American	0.00%	0
c. Hispanic, Latino, or Spanish origin	0.40%	1
d. American Indian or Alaska Native	0.00%	0
e. Asian	0.81%	2
f. Native Hawaiian or Other Pacific Islander	0.00%	0
g. Some other race or origin	0.40%	1
h. Prefer not to answer	0.81%	2
TOTAL		248

Q5 How do the following issues effect your county?

Answered: 244 Skipped: 4



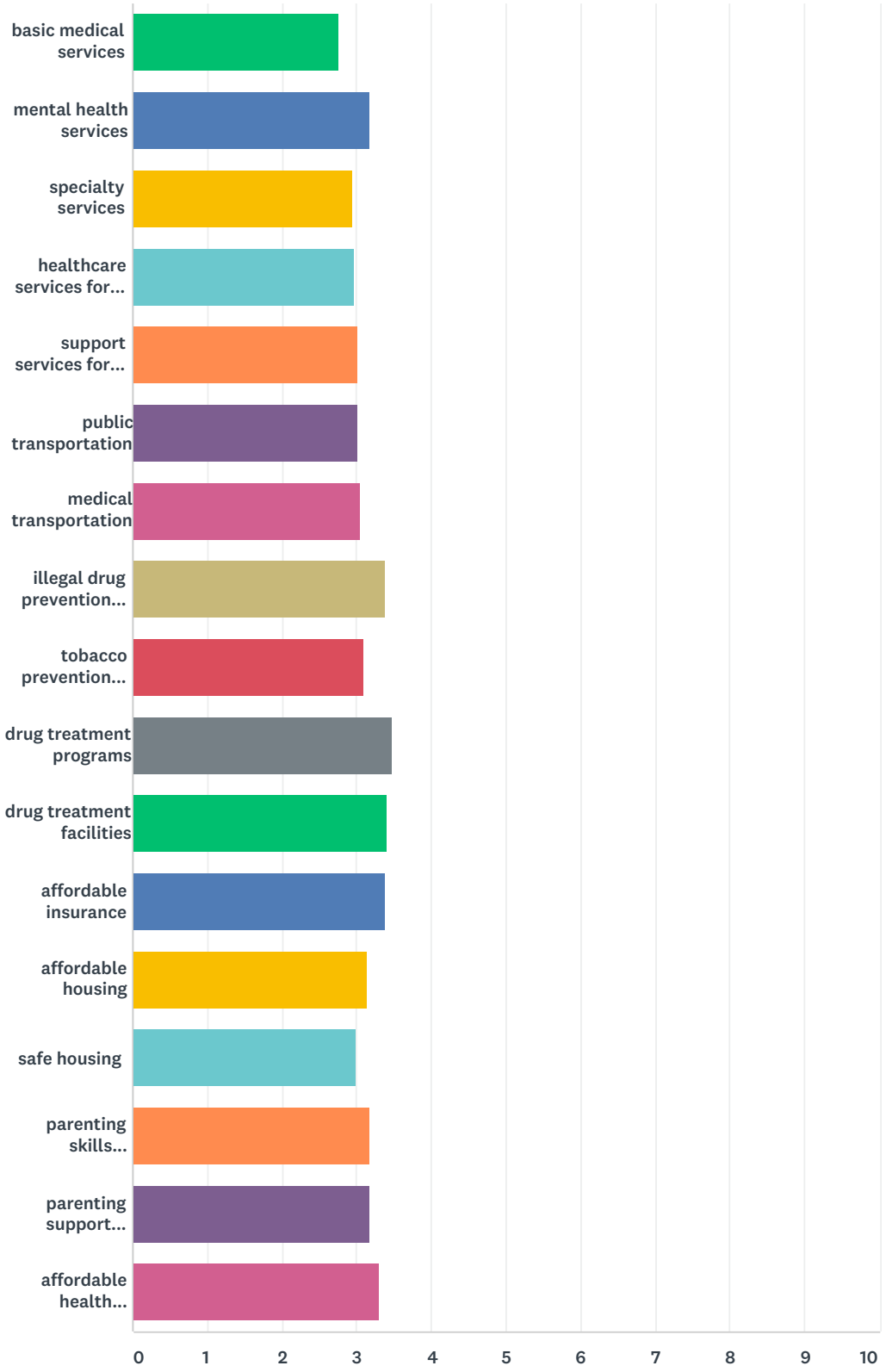


	VERY NEGATIVE EFFECT	SOME NEGATIVE EFFECT	NO EFFECT	SOME POSITIVE EFFECT	VERY POSITIVE EFFECT	TOTAL	WEIGHTED AVERAGE
Availability of medical transportation	15.48% 37	35.15% 84	18.41% 44	19.25% 46	11.72% 28	239	2.77
Cost of medical transportation	15.02% 35	43.35% 101	27.90% 65	9.87% 23	3.86% 9	233	2.44
Availability of non-medical transportation	16.24% 38	35.90% 84	31.20% 73	11.11% 26	5.56% 13	234	2.54
Cost of non-medical transportation	10.87% 25	30.87% 71	44.35% 102	9.13% 21	4.78% 11	230	2.66
Availability of mental health services	27.12% 64	29.24% 69	16.95% 40	18.22% 43	8.47% 20	236	2.52
Availability of specialists	7.92% 19	36.25% 87	9.58% 23	30.83% 74	15.42% 37	240	3.10
Availability of drug treatment programs	28.82% 66	29.26% 67	22.27% 51	13.10% 30	6.55% 15	229	2.39
Availability of drug treatment facilities	34.78% 80	30.87% 71	21.30% 49	8.26% 19	4.78% 11	230	2.17
Availability of illegal drug, tobacco, and/or alcohol education	20.26% 47	33.62% 78	24.57% 57	15.09% 35	6.47% 15	232	2.54
Availability of health care services for the elderly	8.44% 20	21.52% 51	19.41% 46	33.76% 80	16.88% 40	237	3.29
Availability of supports services for the elderly	9.79% 23	24.26% 57	20.85% 49	32.34% 76	12.77% 30	235	3.14
Availability of safe housing	13.36% 31	24.14% 56	32.33% 75	18.53% 43	11.64% 27	232	2.91
Availability of affordable housing	15.52% 36	26.72% 62	26.72% 62	21.55% 50	9.48% 22	232	2.83
Methamphetamine use	60.78% 141	18.10% 42	13.36% 31	1.29% 3	6.47% 15	232	1.75

Tobacco use	40.69% 94	35.06% 81	17.32% 40	3.03% 7	3.90% 9	231	1.94
Vaping and electronic cigarettes	34.35% 79	36.52% 84	22.17% 51	3.48% 8	3.48% 8	230	2.05
Opioid drug abuse	63.36% 147	16.81% 39	12.93% 30	2.16% 5	4.74% 11	232	1.68
Availability of parenting education	15.79% 36	35.09% 80	26.75% 61	16.23% 37	6.14% 14	228	2.62
Availability of parenting support services	15.65% 36	34.35% 79	28.70% 66	14.78% 34	6.52% 15	230	2.62
Availability of health insurance	14.78% 34	24.78% 57	25.65% 59	24.78% 57	10.00% 23	230	2.90
Cost of health insurance	34.63% 80	28.57% 66	18.61% 43	12.12% 28	6.06% 14	231	2.26
Availability of health care	8.66% 20	21.65% 50	20.35% 47	31.60% 73	17.75% 41	231	3.28
Cost of health care	25.54% 59	37.66% 87	18.18% 42	12.12% 28	6.49% 15	231	2.36
Availability of quality housing	16.16% 37	26.64% 61	30.57% 70	18.78% 43	7.86% 18	229	2.76
Cost of quality housing	17.90% 41	32.31% 74	28.38% 65	13.54% 31	7.86% 18	229	2.61

Q6 Do you see a need for the following services/facilities in your community?

Answered: 239 Skipped: 9



	NO NEED	SLIGHT NEED	DEFINITE NEED	EXTREME NEED	NO OPINION	TOTAL	WEIGHTED AVERAGE
basic medical services	12.61% 30	25.63% 61	36.97% 88	23.11% 55	1.68% 4	238	2.76
mental health services	2.53% 6	16.88% 40	42.62% 101	36.29% 86	1.69% 4	237	3.18
specialty services	3.81% 9	23.73% 56	46.61% 110	24.15% 57	1.69% 4	236	2.96
healthcare services for the elderly	7.14% 17	22.27% 53	39.50% 94	27.73% 66	3.36% 8	238	2.98
support services for adults and seniors	5.11% 12	22.98% 54	39.57% 93	29.36% 69	2.98% 7	235	3.02
public transportation	4.60% 11	26.36% 63	35.56% 85	30.13% 72	3.35% 8	239	3.01
medical transportation	5.44% 13	20.50% 49	38.91% 93	33.05% 79	2.09% 5	239	3.06
illegal drug prevention education	2.98% 7	8.94% 21	37.45% 88	47.66% 112	2.98% 7	235	3.39
tobacco prevention education	5.60% 13	19.40% 45	39.66% 92	31.47% 73	3.88% 9	232	3.09
drug treatment programs	2.97% 7	6.78% 16	34.32% 81	51.69% 122	4.24% 10	236	3.47
drug treatment facilities	2.97% 7	9.32% 22	36.02% 85	47.46% 112	4.24% 10	236	3.41
affordable insurance	1.71% 4	9.83% 23	37.61% 88	49.57% 116	1.28% 3	234	3.39
affordable housing	4.64% 11	19.41% 46	39.24% 93	32.07% 76	4.64% 11	237	3.13
safe housing	6.38% 15	23.40% 55	38.30% 90	27.66% 65	4.26% 10	235	3.00
parenting skills education	1.69% 4	19.92% 47	42.37% 100	31.36% 74	4.66% 11	236	3.17
parenting support services	1.27% 3	19.07% 45	45.34% 107	28.81% 68	5.51% 13	236	3.18
affordable health insurance	2.93% 7	12.13% 29	38.49% 92	44.35% 106	2.09% 5	239	3.31

Q7 Open comments:

Answered: 40 Skipped: 208

#	RESPONSES	DATE
1	Need affordable dermatologist and hearing aid professional	4/5/2019 12:11 PM
2	Questions were too ambiguous to answer	4/5/2019 12:01 PM
3	Ambulance service needed that goes out to country. We had to wait 2 hours for an ambulance to come from indy to take my husband to indy with a paramedic. Ridiculous! We also need transportation for people from our county to other counts for appointments, etc. Drug use is rampant. Need treatment facilities and programs. This county/town needs a public sharps drop off. The hospital disposes of sharps all the time. Why shouldn't they have a sharps container for public use. This would eliminate sharps being thrown in trash or flushed. Healthcare is outrageous price! Side note - We have a great hospital with great staff	4/5/2019 11:41 AM
4	Need a free needle drop off site anonymous	4/5/2019 11:25 AM
5	People need a place to dispose of syringes	4/5/2019 10:10 AM
6	Need a place to available to be able to dispose of medicine, needles and syringes	4/4/2019 1:27 PM
7	Thank you for all your help! :)	4/4/2019 9:46 AM
8	Most do not apply to me!	4/3/2019 10:21 PM
9	Many of these things I'm unaware... I just don't know about availability of none of these mentioned services. Maybe more publicity?	4/3/2019 9:03 PM
10	I was very disappointed that 47957 - Medaryville ZIP Code was not an option on the first question. I feel all the 'other' comments will be lumped together and ignored. Medaryville is a very blighted community; what happens here does affect the rest of the county whether anyone cares or not. The drug problem here (and in the whole county) needs to be seriously addressed. It definitely affects the 'quality of life' of all of our county residents. PCHS transportation service is a joke, nothing after 3 pm or weekends! Families facing drug addiction challenges do not have the resources to drive to Winamac for treatment . . . or counseling . . . or support groups.	3/30/2019 8:21 AM
11	Transition housing for returning substance offenders.	3/28/2019 10:26 PM
12	We are a poor community and need help to keep us healthy. We need better jobs and goals for the people in this community.	3/27/2019 11:08 PM
13	Need an urgent care facility in our community.	3/27/2019 6:22 PM
14	Need affordable care, cost containment.	3/27/2019 9:57 AM
15	Costly health insurance and premiums make preventable medical care nearly impossible to come by. A healthy community starts with affordable preventative care.	3/26/2019 4:00 PM
16	community is mostly elderly and spoiled kids who do drugs..so we need some info on that	3/26/2019 1:47 PM
17	Some of your housing and transportation questons were unclear. The illegal drugs is a very big problem that needs addressed along with the smoking and parenting classes. I also feel like insurance is extremely priced to high. Very hard to afford if your job does not provide it for you.	3/26/2019 1:23 PM
18	While there are specialist at PMH, I believe there needs to be at least another, or two more, ortho's. I have heard several people say they wish there was another choice for orthopedics @ PMH. Maybe even offer specialty MD @ Francesville clinic once a month or so. And possible even our other Rural Clinics.	3/26/2019 10:04 AM
19	An urgent care would be nice.	3/26/2019 8:37 AM
20	Why does the Pulaski County/Winamac community so often exclude Medaryville from even being a part of it. The very first question, 'zip code', left Medaryville out yet included towns from other counties. What an affront to the people over here. You wonder why there is an east/west/north/south divide? You are increasing it.	3/26/2019 8:30 AM

21	Love your facility. I take my family there for everything, but I wish you had a gynecologist. I hate having to drive.	3/25/2019 10:03 PM
22	Definitely need drug control and support for users!	3/25/2019 2:09 PM
23	There are rumors circulating regarding the possible sale of Pulaski memorial hospital, please dont, as this would very negative to the community, thank you	3/25/2019 1:10 PM
24	WE NEED TO HAVE TRANSPORTATION FOR OUR PATIENTS .	3/21/2019 8:45 AM
25	Difficult for me to answer as a lot of this doesn't effect me.	3/19/2019 1:26 PM
26	Pulaski County has been declining in quality because of the lack of understanding by the county government. There is a lack of vision to improve the county. The result is less educated people, poorer housing, and drug addiction. Our county has only gotten older since 1920. We must step into the next century to be successful. If we do not, our quality of life in Pulaski county will only lessen.	3/16/2019 8:54 AM
27	WE NEED BETTER TRANSPORTATION FOR OUT PATIENTS	3/14/2019 11:46 AM
28	the ambulance service needs replaced by a service that makes their employees work instead of refuse calls.	3/14/2019 6:44 AM
29	Our hospital and physicians might cost a little more than surrounding counties, but I feel that having that level of care nearby is a tremendous asset to the community. Mental health and addiction, however, is extremely lacking. What care, services, and communication available from Four County certainly feels as if they're only here because they're required to be and their office is reminiscent of a homeless shelter. They are(or at least it seems like) the only local option. Do better, Four County. Act like you're interested in serving Pulaski County.	3/13/2019 9:53 AM
30	orthopedic services need to be improved. More consequences for drug arrests.	3/10/2019 10:29 PM
31	This survey needs more explaining to figure out what the question is really asking. I answered Question 6 for what the county needs, but we do already have some of the services.	3/10/2019 1:56 PM
32	I am an indepently living disabled female in my own home. Due to medical issues in 2017, I can not drive and I still have to have home health for my daily living. Finding public transportation is a big factor and struggle in this area. I am also a wheelchair user.	3/10/2019 1:25 PM
33	The hospital has come a long way and are always adding new and improved ideas to the community, just need to see more of an outreach for mental health of all ages. This is a growing area of concern.	3/7/2019 2:16 PM
34	domestic finance education is also a definite need	3/7/2019 10:51 AM
35	1.) I live in this county but you didn’t include my zip code like I don’t count? 2.) I no longer use any health care facilities in this county after being told there wasn’t time to listen to my concerns at my last appointment. Apparently visits are being timed? And with one person in the waiting room when I left I decided, if PMH does not have time to listen to my medical concerns I do not need their services. Period. I go out of county for all needs for myself and my family. I’m also moving my elderly parents out of county.	3/6/2019 5:44 PM
36	Need better ER services	3/6/2019 2:35 PM
37	Your wording in the first section is very confusing!	3/6/2019 1:57 PM
38	Great hospital with robust services. Wish the doctors clinic was open later and on Saturdays	3/6/2019 11:48 AM
39	Not enough job here locally to keep our people here -- a lot of people especially the they 20-30 years olds are moving away due to lack of job/money.	3/6/2019 10:57 AM
40	We have a great hospital and medical staff. I believe we need to be have a succession plan over the next 5-10 for dental care when our current dentist may retire. Concern of attracting a professional workforce in the future as many young people are leaving the community. Availability of ALS and BLS ambulance to transport patients is problem when trying to get patients to a higher level of care.	3/1/2019 6:10 PM

Appendix D

Existing Facilities

Healthcare Facilities in Pulaski & Starke Counties

Providers/Offices

IU La Porte Physicians
Knox Winamac Community Health Center
Dr. Majed Al-Hamwi
Knox Family Medical Center
Dr. Linda G. Munson, DO
Affiliated Ankle and Foot Clinic
Dr. Sara Christie

Dentists

Dr. Bradley Crawford
Dr. Charles Hutton
Advantage Dental and Dentures
Arch Family Dentistry
Badell Dental Clinic

Eye Care

Jennifer Gudas, OD, PC
Northwest Indiana Eye and Laser Center

Mental/Behavioral Health

Four County Counseling Center
HealthLink Community Health Center
Porter-Starke Services, Inc.

Pharmacies

CVS Pharmacy - Pulaski County
Walgreens Pharmacy
CVS Pharmacy - Starke County

Long-term Care/Assisted Living

Parkview Haven Retirement Home
Hickory Creek
Pulaski Health Care Center
Golden Living Center
Wintersong Village - Nursing and Rehab

Fitness Centers

Get Fit NonStop
Community Wellness Center of Winamac
Fit 'N Fabulous – Francesville
MBS Fitness
Max Effex
New Millennium
Go Figure

Pulaski Memorial Hospital Providers

Surgery:
Dr. Wade Hsu
Dr. Daniel Anderson
Family Medicine:

Dr. Rex Allman
Dr. Curtis Bejes
Dr. Elizabeth Curtis
Dr. F. Alan Utes
Family & Women's Health:
Dr. Clint Kauffman
Dr. Melissa Zahrt
Pediatrics:
Dr. Eileen Hsu
Orthopedics:
Dr. Gene Fedor
Nurse Practitioners:
Chantel Anderson, FNP-BC
Patricia Benedict, FNP
Tisha Fry, FNP-BC
Rebecca Jernstrom, FNP-BC
Valerie Leman, PNP
Warren Penrod, FNP
Samantha Pugh, FNP-BC
Beth Ruff, NP-C
Laura Wicker, FNP-BC
Specialists: (non-employed)
Cardiology:
Dr. Ryan Oeltgen
Dr. Robert Riddell
Dr. Mukesh Garg
Dr. Stanley Hillis
Audiology:
Dr. Rebecca Berger, AuD
Ophthalmology:
Dr. Kent Kirk
Dermatology:
Katrina Masterson, NP
Podiatry:
Dr. William Oliver, DPM
Urology:
Dr. Subba Rao Nagubadi