

Williams County Cancer Data: 2017–2021 Review

The following report includes data collected and analyzed using the Williams County from the Ohio Cancer Incidence Surveillance System (OCISS, 2017–2021), Ohio Public Health Data Warehouse (OPHDW, 2017–2021), and 2022 Williams County Community Health Assessment (CHA, 2022).

Throughout the report, data may be suppressed due to low numbers. Data suppression refers to the various methods or restrictions that are applied to the data to limit the disclosure of information about individual cases and to reduce unacceptable levels of statistical reliability.

Overview of Cancer in Williams County: Diagnosis & Mortality

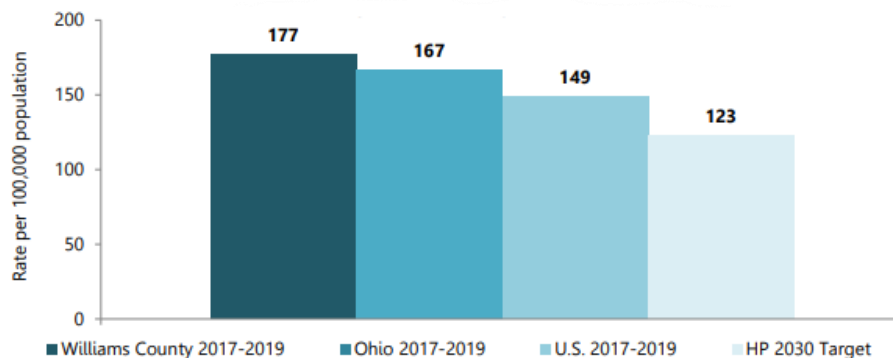
Diagnosis

- ⌘ In Williams County, **18%** of adults have been diagnosed with cancer during their lifetime. This means, that almost **1 in 5** adults have had some form of cancer. The percentage of adults who have had cancer increases in populations who make less than \$25,000 per year (**27%**) and adults over the age of 65 (**35%**) (CHA, 2022).
 - All adults: **18%**
 - Adults have a household income of less than \$25,000/year: **27%**
 - Adults 65+: **35%**

Mortality

- ⌘ According to the Ohio Department of Health, **21%** of deaths in Williams County from 2017–2019 were due to cancer (OPHDW, 2017–2019).
- ⌘ When adjusted for age, Williams County (**177** per 100,000) had a higher mortality rate (cancer deaths per 100,000 population) than the state of Ohio (**167** per 100,000) and the United States (**149** per 100,000) (OPHDW, 2017–2019). Figure 1 shows the comparison between the age-adjusted mortality rates and the Healthy People 2030 target. To meet the target for 2030, Williams County needs to decrease the mortality rate by **30.5%**.

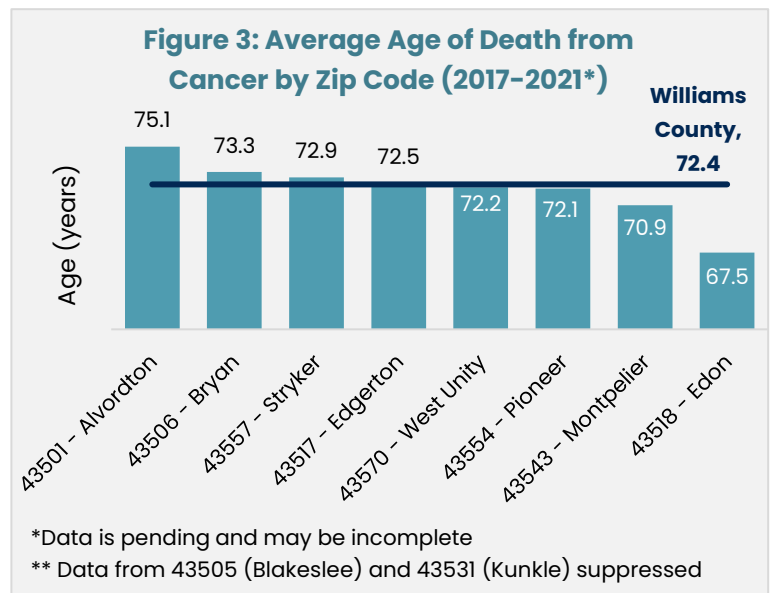
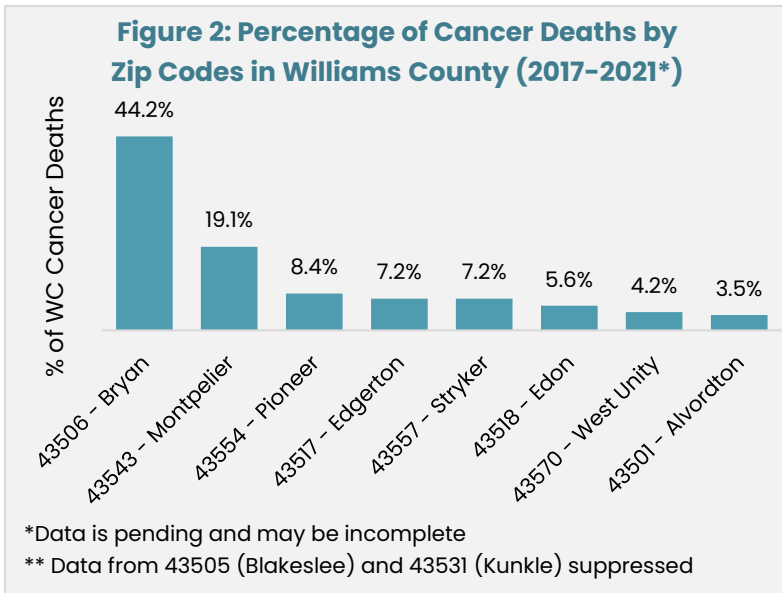
Figure 1: Healthy People 2030 Objective & Age-Adjusted Mortality Rate for Cancers



- ⌘ In 2017–2019, **22%** of all male deaths in Williams County were from cancer. For females, **20%** of all deaths between 2017 and 2019 were from cancer (OPHDW, 2017–2019).

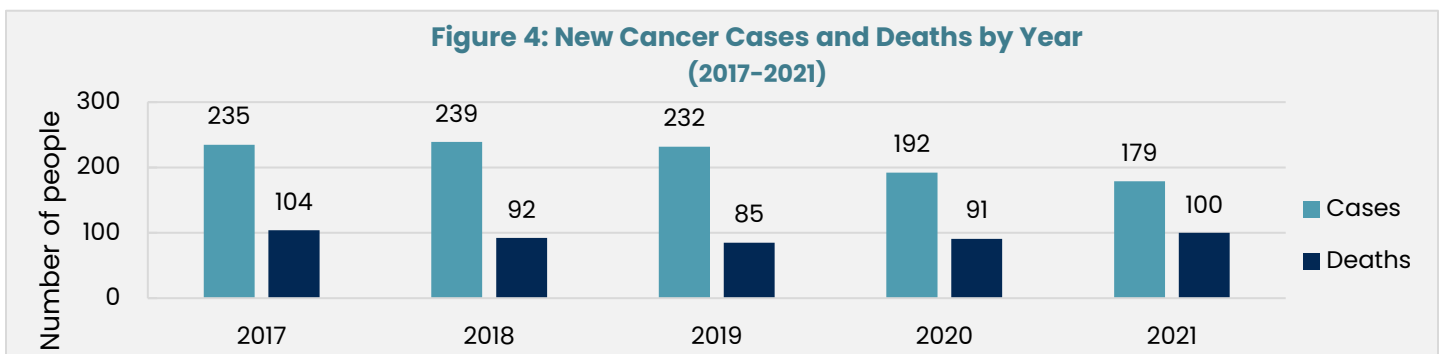
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- Figure 2 shows the percent of Williams County cancer deaths by zip code. Areas like Bryan (43506) and Montpelier (43543) have a higher percent of deaths from cancer than other areas. This is to be expected because of the larger population size in these areas.
- Figure 3 shows the average age of death from cancer by zip code. In 43570 (West Unity), 43554 (Pioneer), 43543 (Montpelier), and 43518 (Edon), people die from cancer at an earlier age than the average age for the county (**72.4** years). Edon (43518) had the youngest age of at **67.5** years.



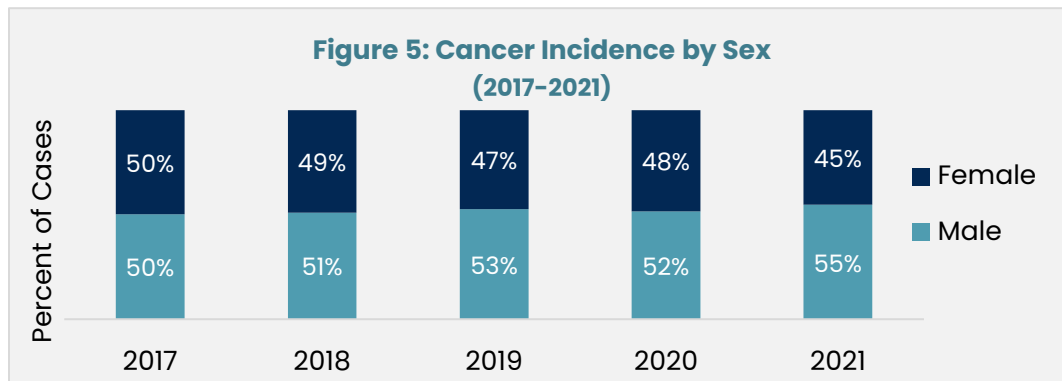
Trends

- The number of new cancer cases reported each year has been decreasing since 2017; however, the number of cancer deaths has increased from 2019 to 2021 (OCISS, 2017–2021). See Figure 4.
- Between 2017 and 2021, cancer diagnosis rates decreased by **23.8%**. During that same period, cancer deaths have decreased **3.8%** (OCISS, 2017–2021).



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Cancer Incidence by Sex



Since 2017, males are slightly more likely to be diagnosed with cancer than females. In 2021, there was the greatest difference of cancer incidence between males and females with **45%** of cancer cases among females and **55%** among males. There is no significant difference in cancer incidence by sex. See Figure 5 (OCISS, 2017–2021).

Table 1: Top 5 Cancers among Males in Williams County (2017–2021)

In Williams County, prostate cancer is the most common diagnosis among males. Breast cancer is the most common diagnosis among females. For both males and females, lung/bronchial cancer is the second cancer diagnosis and colon/rectal cancer is the third leading diagnosis. See Table 1 & Table 2 (OCISS, 2017–2021).

Rank	Cancer Type	Average Age at Diagnosis (years)
1	Prostate Cancer	69.4
2	Lung/Bronchial Cancer	69.2
3	Colon/Rectal Cancer	66.9
4	Bladder Cancer	72.6
5	Other Sites/Types of Cancer	67.1

Table 2: Top 5 Cancers among Females in Williams County (2017–2021)

Rank	Cancer Type	Average Age at Diagnosis (years)
1	Breast Cancer	66.7
2	Lung/Bronchial Cancer	68.7
3	Colon/Rectal Cancer	69.2
4	Uterine Cancer	61.9
5	Other Sites/Types of Cancer	64.3

Table 3: Average Age at Cancer Diagnosis (2017–2021)

Overall, females had an earlier average age of diagnosis compared to males with females being diagnosed at **66.2** years compared to **69.0** years for males.

Year	Average Age (years)
2017	66.7
2018	67.4
2019	67.0
2020	65.8
2021	66.8
Average	66.8

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- ⌘ From 2017 to 2021, the average age of diagnosis for each type of cancer was between **61.9** and **72.6** years for both males and females.
- ⌘ The average age of diagnosis for lung/bronchial cancer is older for males than for females by **6** months.
- ⌘ For colon/rectal cancer, women who are diagnosed are an average of **2.3** years older than males with the same type of cancer.
- ⌘ For other sites/types of cancer, the average age of males diagnosed was **2.8** years older than the average age of females diagnosed.
- ⌘ The average age at diagnosis per year is shown in Table 3. The average age has remained stable over the past 5 years.

Cancer Diagnoses by Location

- ⌘ To compare data for areas with different sized populations, incidence rates are converted into rates per 100,000 population. This makes it possible to compare a county incidence rate to a state or country incidence rate. It also makes it possible to compare rates between to cities or zip codes. Figure 6 shows the location of Williams County zip codes. Figure 7 shows the cancer rate per 100,000 by zip code for 2017–2021 (OCISS, 2017–2021). Please note that some Williams County zip codes may cross county lines. The data that is presented is based on zip code only, so some cancer cases may reside in a neighboring county.

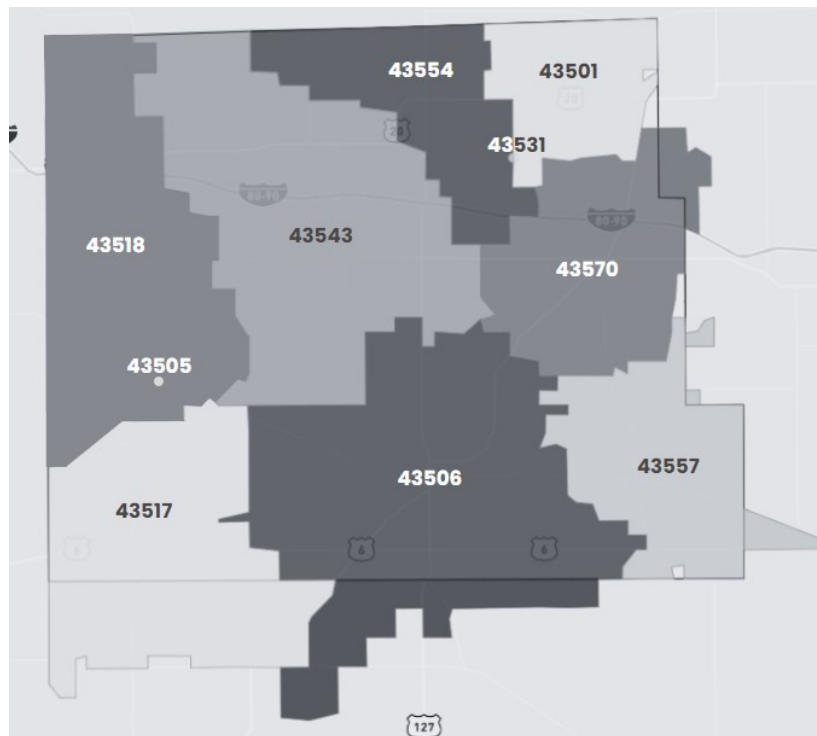


Figure 6: Location of Williams County Zip Codes

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Table 4: Williams County Cancer Diagnosis by Zip Code (2017–2021)

Zip Code*	43501 Alvordton	43506 Bryan	43517 Edgerton	43518 Edon	43543 Montpelier	43554 Pioneer	43557 Stryker
Total number of cancer diagnoses	24	423	78	85	243	69	82
Rate per 100,000	2,395	3,012	2,023	2,856	3,278	3,038	2,532

* Data suppressed in 43505 (Blakeslee), 43531 (Kunkle), 43570 (West Unity).

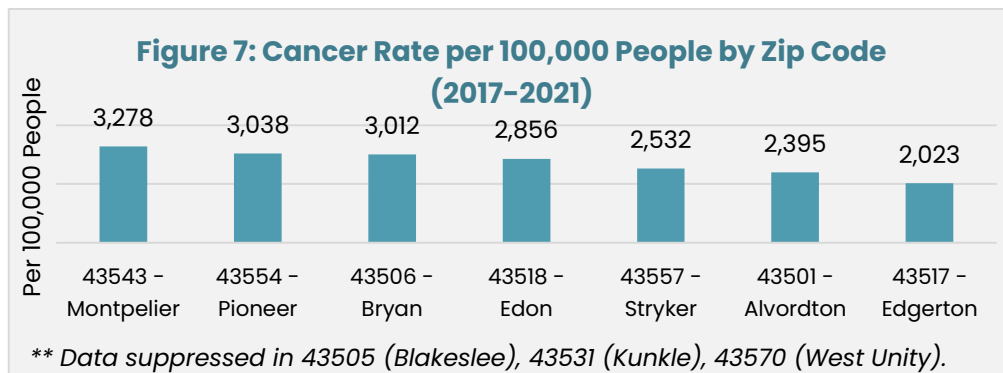


Table 5: Zip Code Cancer Diagnosis Ranking by Number & Rate

By Total Number		Rank	Per 100,000 Population	
39%	43506 - Bryan	Highest 1	43543 - Montpelier	13%
23%	43543 - Montpelier	2	43554 - Pioneer	12%
8%	43518 - Edon	3	43506 - Bryan	12%
8%	43557 - Stryker	4	43518 - Edon	11%
7%	43517 - Edgerton	5	43557 - Stryker	10%
6%	43554 - Pioneer	6	43501 - Alvordton	8%
5%	43501 - Alvordton	7	43517 - Edgerton	8%
*	43570 - West Unity	8	43505 - Blakeslee	*
*	43531 - Kunkle	9	43531 - Kunkle	*
*	43505 - Blakeslee	10 Lowest	43570 - West Unity	*

* Data suppressed

From 2017–2021, the top three zip codes with the highest rates of cancer cases per capita among were 43543–Montpelier (**3,278** per 100,000 population), 43554–Pioneer (**3,038** per 100,000), and 43506–Bryan (**3,012** per 100,000). This means that there were more cancer diagnoses in these zip

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codes, even if they had the same population size as the other areas of the county. From 2017–2021, the lowest cancer rates per capita, apart from the data that was suppressed, were in zip codes like 43517–Edgerton (**2,023**).

- ⌘ The total number of actual cancer diagnoses was highest in 43506–Bryan, 43543–Montpelier, and 43518–Edon and lowest in 43505–Blakeslee, 43531–Kunkle, and 43570–West Unity. Data was suppressed for those zip codes in Table 4 & 5 due to low numbers.

Stage at Diagnosis by Location

To determine the stage of cancer at diagnosis, it is important to understand the terms utilized to describe the stage and recognize that many types of cancer are also based on tumor size and number of lymph nodes affected, not only the location and/or spread. Stages are also classified further into 2a, 2b, 3a, 3b, for example. See Appendix A to read the terms used in the data analysis.

- ⌘ See Table 6 which ranks the above terms in order from best outcome to worst outcomes based on stage of diagnosis.
 - *Note: Unstaged is not included in severity because there is not enough information; however, unstaged cancer may mean that the type is very severe. Regional NOS is also difficult to rank because the physician has not indicated the extent of the regional spread.*

Table 6: Cancer Stage Rankings

Best Outcome
Not Applicable
In Situ
Localized
Regional, Direct Extension Only
Regional, Regional Lymph Nodes Only
Regional, Direct Extension and Regional Lymph Nodes Only
Distant
Worst Outcome

- ⌘ Table 7 shows the stage of cancer diagnosis by zip code. The stages were combined to show the risk at diagnosis by localized (in situ and localized), regional (regional, direct extension only; regional, regional lymph nodes only; and regional, direct extension and regional lymph nodes only), and distant. Not applicable cases were removed as they are considered benign.
- ⌘ In Williams County, **54%** of all cancer cases are diagnosed in the localized stage and **21%** are diagnosed in the distant stage. This trend is followed by most of the zip codes within Williams County.
- ⌘ The following data compare percent of cases diagnosed by localized, regional, and distant stages as shown by Table 7. Data can be interpreted by comparing Williams County’s percent or average and the data for each zip code. Zip codes of concern include areas where the percent is higher than the county’s average for those diagnosed as “distant” upon initial diagnosis. Those diagnosed in the localized stage are more likely to have better outcomes from their cancer diagnosis than those who are diagnosed in the distant stage.

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- Areas like 43501–Alvordton (**68%**), 43506–Bryan (**56%**), 43518–Edon (**56%**), and 43570–West Unity (**55%**) all have higher rates of localized cases at initial diagnosis than the average for the county (**54%**).
- Zip codes like 43517–Edgerton (**28%**), 43518–Edon (**26%**), 43554–Pioneer (**24%**), and 43557–Stryker (**24%**) all have higher rates of diagnosis at the “distant” stage than the average for the county (**21%**).

Table 7: Percent Diagnosed at Local, Regional or Distant Stage by Zip Code

Zip Code	Localized <i>(in situ & localized)</i>	Regional <i>(all regional)</i>	Distant
43501 – Alvordton	68%	18%	14%
43505 – Blakeslee	*	*	*
43506 – Bryan	56%	23%	21%
43517 – Edgerton	47%	25%	28%
43518 – Edon	56%	18%	26%
43531 – Kunkle	*	*	*
43543 – Montpelier	54%	27%	18%
43554 – Pioneer	45%	30%	24%
43557 – Stryker	51%	25%	24%
43570 – West Unity	55%	33%	13%
Williams County	54%	25%	21%

* Data suppressed

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Data Implications & Recommendations

With the cancer data in the report, programs can be modified to reach subpopulations in the county that are more likely to be diagnosed with cancer or die from cancer.

⌘ Williams County Cancer Data

- Williams County residents die from cancer at a greater rate than Ohio and the United States.
- Some populations in Williams County have higher rates of cancer, including adults who have a household income of less than \$25,000 per year, and among adults 65 and older.
- Some zip codes higher rates of diagnosis at the “distant” stage than the average for the county. This is likely to lead to worse outcomes from cancer than those diagnosed in the localized stage.
- In some areas of the county, people die from cancer at an earlier age than the average age of cancer death in the county. This may be due to some of the following social determinant of health factors.

⌘ Social Determinants of Health & Cancer

- Social determinants of health (SDOH) should be considered to reduce the incidence of cancer among low-income populations within the county. Social determinants of health are the conditions in the environments where people are born, live, learn,

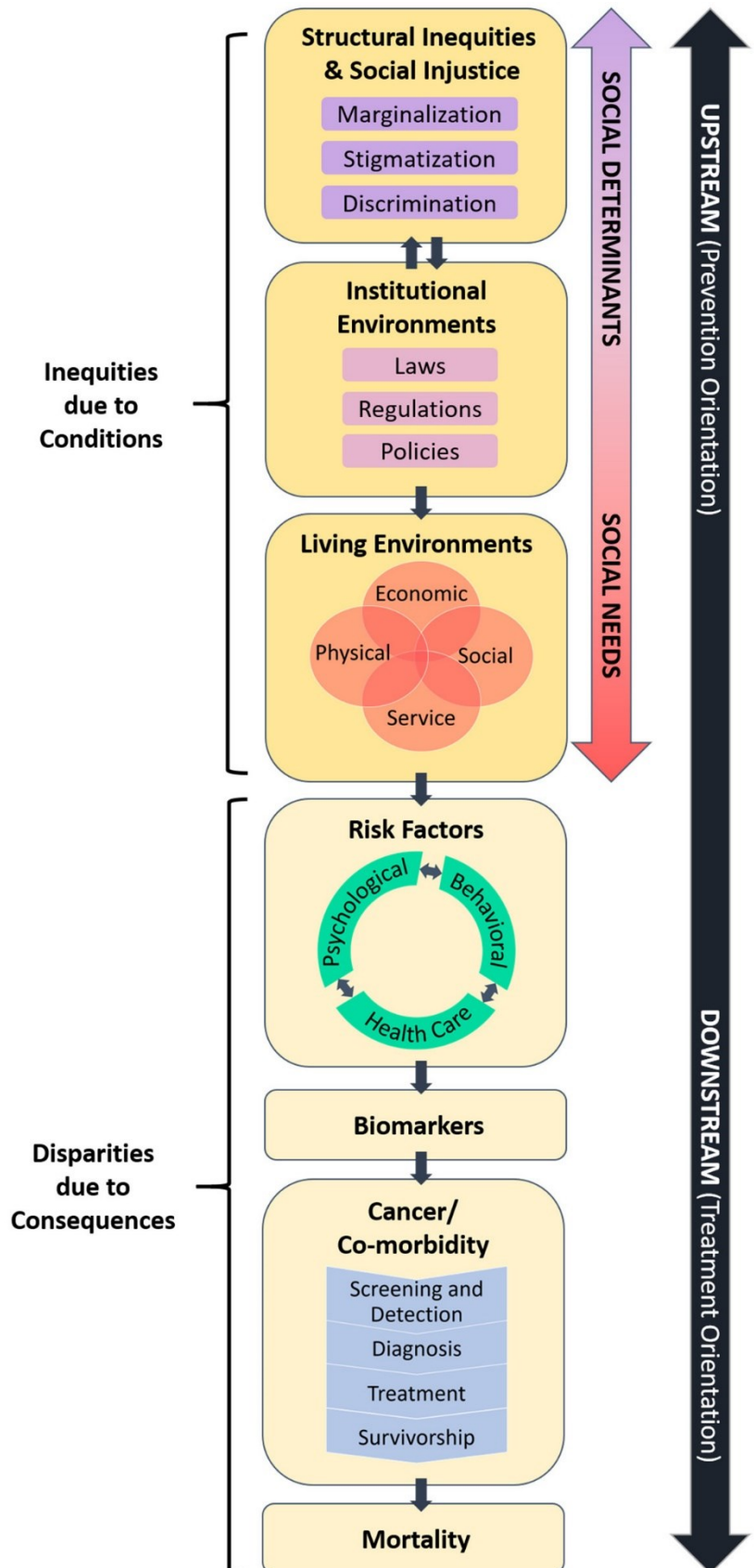


Figure 8: Integrated Conceptual Framework for Understanding and Addressing Social Determinants to Advance Cancer Health Equity. (<https://doi.org/10.3322/caac.21586>)

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work, play, worship, and age that affect a person’s health, including their risk of getting and dying from cancer (Healthy People 2030: SDOH). SDOH can include a person’s ability to access a good education, healthy food, a safe home to live in, reliable transportation, healthcare, and clean air or water (CDC, 2022).

- Negative health outcomes linked to social determinants of health could include an earlier onset or faster progression of the disease, unhealthy behaviors leading to worse outcomes, or premature death (NIH, 2021).
- By working on social determinants of health such as education, access to healthy fruits and vegetables, social support, access to cancer screenings and quality healthcare, and other ways to make the healthy choice the easy choice, Williams County can improve cancer rates and reduce deaths. For example:
 - Cigarette smoking can cause cancer, but smoking rates are higher among people with a lower education level (CDC, 2022).
 - Having obesity is associated with an increased risk of cancer, and people living in rural areas are more likely to be obese. This is likely due to limited access to healthy and affordable foods. In rural areas, safe transportation, without relying on a vehicle, is limited (CDC, 2022).
 - Not getting screened for cancer as recommended can result in cancer being found at a later stage. This causes the cancer to be harder to treat and more likely to have poor outcomes for the patient. Patients are less likely to get screened if they have limited access to transportation, do not have sick time, or do not have insurance (CDC, 2022).
- To reduce cancer risk at a community level, social determinants of health need to be improved for Williams County.
 - Promote healthy behaviors that reduce cancer risk. On the community level, efforts need to be made to encourage physical activity and healthy eating to prevent and reduce obesity and other chronic diseases that are associated with cancer (CDC, 2017). This could include working on complete streets policies to encourage active transportation, addressing food insecurity with community gardens and school-based interventions, and community physical activity programs could be promoted.
 - Improve access to cancer screenings and vaccinations that prevent cancer or detect it early (CDC, 2017). By workplaces offering sick time to employees, this reduces a barrier to screenings. Barriers could also be reduced by providing reliable transportation services or utilizing patient navigators or community health workers to reduce structural barriers, using patient recall systems, or providing services at easy to access locations.
 - Multicomponent interventions or interventions that combine two or more approaches are more effective at reducing cancer risk.

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🔗 Evidence-Based Resources

- Healthy People 2030 has evidence-based cancer resources available on its website ranging from cancer screenings interventions or programs, chronic disease prevention, workplace wellness, school-based interventions, reducing structural barriers, reminder and recall systems, media, group education, diet and nutrition, supportive care, and more (Healthy People 2030: Cancer):
[Cancer – Evidence-Based Resources - Healthy People 2030 | health.gov](#)
- Robert Wood Johnson Foundation (RWJF) offers several evidence-based approaches (RWJF, 2022):
[What Works for Health | County Health Rankings & Roadmaps](#)
- The National Cancer Institute shares several evidence-based cancer control programs with accessible program materials (NCI, 2022):
[Home | Evidence-Based Cancer Control Programs \(EBCCP\).](#)
- The Community Guide includes community preventive services for cancer as well as implementation resources (The Community Guide, 2022):
[Cancer Prevention and Control | The Community Guide](#)

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Appendix A – Stage at Diagnosis by Location

To determine the stage of cancer at diagnosis, it is important to understand the terms utilized to describe the stage and recognize that many types of cancer are also based on tumor size and number of lymph nodes affected, not only the location and/or spread. Stages are also classified further into 2a, 2b, 3a, 3b, for example. Terms used in the data analysis:

- ⌘ **Regional, direct extension only** – This indicates that the cancer has spread beyond the primary site to nearby tissue or organs but not any nearby lymph nodes.
- ⌘ **Regional, regional lymph nodes only** – This cancer indication is when cancerous cells have invaded nearby lymph nodes only. This might also be referred to as stage 3 cancer. For example, a primary breast cancer tumor might spread to five lymph nodes nearby.
- ⌘ **Regional NOS** – NOS means “not otherwise specified.” It just means that the physician(s) who did the staging, did not specify whether it was local extension or lymph node extension.
- ⌘ **Unstaged** – This means that there is not enough information yet for the cancer to be staged. However, it normally indicates that the cancer type and location is very severe.
- ⌘ **In situ** – This cancer indication is very similar to localized. It is sometimes used interchangeably. It indicates a very early cancer that is only present in the layer of cells it began. In situ literally means “in position” so cancerous cells are present but have not moved into any surrounding tissue or lymph nodes. This might also be referred to as stage 0 cancer.
- ⌘ **Regional, direct extension and regional lymph nodes only** – This stage of cancer is when the primary tumor spreads beyond the original site and into nearby tissue and nearby lymph nodes. The stage can be further classified based on the number of lymph nodes affected and the size of the tumor.
- ⌘ **Localized** – When cancer is localized, it is contained to the one part of the body, like an organ, where it began. For example, localized prostate cancer would mean that the tumor has not spread or extended past the prostate gland.
- ⌘ **Distant** – This is a serious cancer indication. The cancer has spread (metastasized) to distant organs, lymph nodes, and tissue far from where the original or primary tumor was located. This is also referred to stage 4 cancer. For example, a primary breast cancer tumor might spread to lymph nodes in the groin.
- ⌘ **Not Applicable** – This is indicating that the tumor is not cancerous or malignant. They are benign. For example, adenomas are benign and can be found in many areas of the body. Also, many primary brain tumors are slow-growing and not cancerous.

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