

Maine Cancer Blueprint: Comprehensive Methodology

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Overview

The Maine Cancer Blueprint, created by Maine Cancer Foundation (MCF), is the State's first comprehensive, interactive tool for monitoring cancer statistics. The integration of data sources and development of cancer prevalence and incidence statistics support efforts to reduce disparities in cancer prevention, treatment, and outcomes.

The Maine Cancer Blueprint is designed to:

- Increase knowledge and awareness of issues related to cancer
- Expand access to care
- Support lifestyle changes to reduce cancer risk by exploring inequities, variations in cancer rates, and how social determinants of health, race, ethnicity, and socio-economic status influence health outcomes
- Provide individual and population-based measures to inform programming efforts and targeted interventions

The [Maine Health Data Organization \(MHDO\)](#) is the state agency charged with creating and maintaining a useful, objective, reliable, and comprehensive health information database that is used to improve the health of Maine citizens and is crucial to the success of the Maine Cancer Blueprint.

While a variety of public data sources are utilized, data from MHDO is the primary source, including:

- All-Payer Claims Data (APCD)
- Hospital Inpatient and Outpatient Encounter
- MHDO Data Integrated with Maine Cancer Registry and Vital Records Death Data

The Population Health Team at the [Human Services Research Institute \(HSRI\)](#) builds data systems to collect, analyze, and report healthcare data to improve the quality of health information available for research, policy, and practice. HSRI supports MCF in the development of the Maine Cancer Blueprint through selecting and integrating data sources, developing measures, and reviewing the data to provide actionable data points and visualizations. For the development of in-house measures, HSRI conducted literature reviews, consulted standard methodologies and code definitions, and performed a thorough assessment of the MHDO data sources, before and after they were integrated into analytic data sets.

Data Sources

Measures are developed at individual, de-identified levels, with breakdowns by geography (state, county, and hospital service areas) and demographics (age, comorbidities, race/ethnicity, and sex).

The integration of APCD data with Maine Cancer Registry allows for a more comprehensive and recent resource than public data sets alone. The interactive tool offers a lens into the state of cancer in Maine to address gaps in prevention and care, and answer questions that directly inform programming efforts and public health policy.

Maine Health Data Organization (MHDO)

- **MHDO All-Payer Claims Data (APCD)¹ | 2015-2024** – Maine has collected health insurance claims information since 2003. The APCD currently holds claims from commercial insurance carriers, third party administrators (TPAs), pharmacy benefit managers (PBMs), dental benefit administrators, MaineCare (Maine Medicaid), and CMS (Medicare). Health care claims processors regularly submit to MHDO a completed health care claims data set for all members who are Maine residents. The submissions include files with member eligibility, medical claims, pharmacy claims, and/or dental claims information, as defined per [Chapter 243](#).
- **MHDO Hospital Inpatient and Outpatient Encounter Data² | 2015-2024** – Inpatient and outpatient services from Maine hospitals, as well as services provided by Maine hospital-owned specialty groups or primary care practices.
- **MHDO De-identified Person Directory** – De-identified Person ID and person-level demographic characteristics, such as date of birth, gender, race, ethnicity, for individuals in MHDO APCD and/or Hospital Encounter Data, as defined per [Chapter 241](#).
- **Maine Vital Statistics Mortality Data Integrated with MHDO Data³ | 2015-2023**– Death records collected by the Maine Center for Disease Control and Prevention. Vital statistics data is limited to data obtained in Maine; meaning any data obtained from interagency exchanges or agreements are not included, as defined per [Chapter 730](#).
- **Maine Cancer Registry Data Integrated to MHDO³ | 2015-2021** – Cancer records collected by the Maine Center for Disease Control and Prevention. Cancer Registry data is limited to data obtained in Maine; meaning any data obtained from interagency exchanges or agreements are not included, as defined per [Chapter 730](#).

Some populations are missing from this data that may impact the results shown. Data presented may not include or be limited for:

- Indian Health Services
- Veterans' Health Services
- Self-Funded Insurance Plans (a majority of the self-funded or commercial data in the APCD is from non-Employee Retirement Income Security Act of 1974 [ERISA] plans)
- Uninsured individuals if they went to a healthcare setting not captured through the Hospital Encounter Data or received services out-of-state
- Cancer and death records of Mainers that had data collected through interstate data exchange

Public Data Sources

- [United States Cancer Statistics Data Visualizations Tool Technical Notes | CDC](#)
- [Maine Tracking Network | Maine Center for Disease Control and Prevention](#)
- [Statewide Behavioral Risk Factor Surveillance System \(BRFSS\) Prevalence Data | CDC](#)
- [County-Level Behavioral Risk Factor Surveillance System \(BRFSS\) Prevalence Data | CDC](#)
- [Maine Occupational Employment and Wage Estimates | United States Bureau of Labor Statistics](#)
- [United States Cancer Statistics - Mortality: 2017 - 2021, WONDER Online Database | CDC Wonder](#)

Additional Resources

The following analytic resources are utilized:

- **Dartmouth Atlas Zip Code to HSA Crosswalk⁴** – Identify and categorize Hospital Service Areas (HSAs).
- **SEER Oncology Toolbox⁵** – Capture treatment related procedure codes.
- **AHFS[®] Pharmacologic/Therapeutic Classification^{®6}** – Capture anti-neoplastic National Drug Codes (NDCs), as well as Nicotine Replacement Therapy NDCs.
- **Chronic Conditions Warehouse⁷** – Define chronic conditions listed in the measures below come from the Centers for Medicare and Medicaid Chronic Conditions Warehouse.
- **Procedure Code Selection** – Identify medical procedures for the metrics described below, procedure codes were sourced from scientific journal articles, Centers for Medicare and Medicaid resources, resources from medical professional organizations, and online code look-up tools.

In-House Data

The dashboards containing in-house measures relevant to cancer are based on two population groups:

1. **Overall Maine Population** – Utilized for measures about cancer screening and smoking cessation efforts. The analytic data set developed for these measures relies on merging the MHDO Hospital Encounter data, MHDO APCD data and the MHDO de-identified Person Directory.
2. **Maine Residents with Cancer** – Utilized for measures about cancer histology, cancer stages, medical services received before and after treatment, and other health related risk factors. The analytic data set developed for these measures relies on Maine Cancer Registry Data and Maine Vital Statistics Mortality Data, each merged with the MHDO Hospital Encounter data, MHDO APCD data and MHDO de-identified Person Directory.

HSRI developed these measures through individual-level analyses using MHDO data, which required the creation of custom analytic data sets for each of these population sub-groups:

1. **All individuals diagnosed with cancer between 2015-2021** – For general sub-population-level reporting of selected measures by cancer histology and cancer stages, using Maine Cancer Registry Data only.
2. **Individuals diagnosed with each cancer in 2019-2021** – For cancer cohort populations, reporting of selected measures are based on the year of diagnosis with the first year starting in 2019. Through MHDO's de-identified Person ID, medical history has been available in the MHDO APCD since 2017 and Hospital Encounter Data since 2018. These analyses use Maine Cancer Registry Data, Maine Vital Statistics Mortality Data, MHDO Hospital Encounter data, and MHDO APCD data.

Data Suppression

Consistent with the Centers of Medicare & Medicaid Services (CMS),⁸ data suppression rules were applied. Counts between 1 and 11 were suppressed, and when necessary, additional counts were suppressed to avoid recalculation of suppressed values using the publicly available RStudio package `sdTable`.⁹

All Cancers Dashboard

This page displays information for all cancers combined and for selected cancer types: All cancers, female breast, colon and rectum, lung, melanomas of the skin, and prostate cancer. The following measures are acquired from public data sources:

- **Cancer Incidence** – The age-adjusted rate per 100,000 of new cases of each cancer type.
- **Cancer Mortality** – The age-adjusted rate per 100,000 of deaths caused by each cancer type.

Source: Centers for Disease Control and Prevention (CDC) | 2011-2021¹⁰

Lung Cancer Dashboard

Risk Factors

These measures refer to the overall Maine population or Maine households and are acquired from publicly available data sources:

- **Binge Drinking** – Percent of adults who binge drink.
- **BMI Categories** – Percent of adults who are obese, underweight (Statewide only), overweight (Statewide only), and Normal weight (Statewide only).
- **Cost Preventing Care** – Percent of adults who did not see a healthcare professional due to Cost (Statewide only).
- **Last Routine Checkup** – Percent of adults who had a routine check-up in the last year, a routine check-up in the last two years (Statewide only), a routine check-up within the past 5 years (Statewide only), a routine check-up 5 or more years ago (Statewide only), and never received a routine check-up (Statewide only).
- **Once Daily Fruit Consumption** – Percent of Adults who eat at least one fruit a day on average (Statewide only; Available only for 2019 and 2021).
- **Once Daily Vegetable Consumption** – Percent of Adults who eat at least one vegetable a day on average (Statewide only; Available only for 2019 and 2021).
- **Physical Activity** – Percent of Adults who participated in physical activity during the past month.
- **Smoking History** – Self-reported data about smoking status among adults 18 years of age and older.

Source: Behavioral Risk Factor Surveillance System (BRFSS) | 2018-2023 (Statewide)¹¹, 2018-2022 (County)¹²

- **Percent of Households with 4 PCi/L of Radon (Action Recommended)** – The proportion of surveyed households that have high levels of radon, based on radon home test kits collected between 2013 and 2019. Radon levels at 4PCi/L or higher are considered dangerous and action is recommended. Per Maine law, radon testing is only required for rental properties and optional for private properties.

Source: Maine CDC Radiation Control Program¹³ | 2013-2019

- **Economic Industry** – Employed population estimates by industry type.

Source: United States Bureau of Labor Statistics¹⁴ | 2018-2022

Incidence

The following measures are sourced from MHDO's APCD and/or Hospital Inpatient and our Outpatient Encounter Data integrated with the Maine Cancer Registry and Maine Vital Statistics. All measures include information for the population consisting of individuals diagnosed with lung or bronchus cancer (ICD-O-3 Codes: C340-C343, C348-C349) in the Maine Cancer Registry from 2015-2021. Individual level identification is based on data linkages across all data sources (MHDO data and Maine Cancer Registry, and Maine Vital Statistics) with the primary identifier being from MHDO data.

Prior to 2018, detailed cancer stage information (i.e., stage I, stage II, etc.) was not available in the cancer registry. As a result, measures are displayed by summary stage within this dashboard:

- **Proportion of Lung Cancer Incidence by Summary Stage** – New lung cancer cases that fall into each summary stage (the spread and severity of the cancer). Cancer summary stages include “localized,” “regional,” “distant,” and “unknown or not applicable.” Measure breakdowns include demographic characteristics at the state level only (race/ethnicity), demographic characteristics across all geographies (age group and sex), geographic groupings (state, county, and hospital service area), and rolling five-year increments representing the diagnosis year (2015-2019, 2016-2020, and 2017-2021).
- **Proportion of Lung Cancer Incidence by Histology** – New lung cancer cases that fall into each cancer histology (the subtype of cancer present). Cancer histology types include “small cell lung cancer,” “non-small cell lung cancer,” and “other histology.” Measure breakdowns include demographic characteristics at the state level only (race/ethnicity), demographic characteristics across all geographies (age group and sex), geographic groupings (state, county, and hospital service area), and rolling five-year increments representing the diagnosis year (2015-2019, 2016-2020, and 2017-2021).
- **Comparison to the US Incidence Rate¹⁰** – The percent difference between the Maine and the United States lung cancer incidence rates obtained from the CDC's United States Cancer Statistics.

Screening

Data reported for these measures may differ from values captured in other well-known resources such as the Behavioral Risk Factor Surveillance System (BRFSS). BRFSS is a telephone-based survey that samples a portion of the population and applies weighting methods to produce estimates that reflect the broader population. This methodology relies

on interviewee recall as opposed to definitive service usage and may have sample bias due to voluntary participation.

The data captured in the screening measures used in the Maine Cancer Blueprint is based on service usage data contained in healthcare claims and hospital encounter data sets. The measure values are representative of the year a procedure was received without controlling for prior years unless otherwise stated in the definition.

The following measures are sourced from the MHDO's APCD and/or Hospital Inpatient and Outpatient Encounter Data:

- **Number of Individuals that Received a Lung Cancer Screening (LDCT)** – Distinct individuals that received a Low-Dose Computed Tomography (LDCT) screening. Measure breakdowns include demographic characteristics at the state level only (race/ethnicity), demographic characteristics across all geographies (age group and sex), geographic groupings (state, county, and hospital service area), and procedure year (2021, 2022, 2023, and 2021-2023). The United States Preventive Services Taskforce recommends that eligible individuals receive screenings annually.¹ Combined year values (2021-2023) represent distinct individuals across the entire time frame with age and geography based on the most recent data point available for that individual. For example, if an individual received a screening in all three years (2021, 2022, and 2023) they would only be counted once, with age and geography stemming from 2023.
- **Percent of Lung Cancer Screenings (LDCT) that were First Time Screenings** – The number and proportion of distinct individuals that received a Low-Dose Computed Tomography (LDCT) screening but did not have a prior record of receiving this procedure. Measure breakdowns include demographic characteristics at the state level only (race/ethnicity), demographic characteristics across all geographies (age group and sex), geographic groupings (state, county, and hospital service area), and procedure year (2021, 2022, 2023, and 2021-2023). Combined year values (2021-2023) represent distinct individuals that received a screening for the first time within the entire time frame with age and geography based on their age and residence when the first screening was received. For example, if an individual received their first screening in 2021 and continued to receive annual screenings, for single year values, they would only be counted as receiving the first screening in 2021. For the combined year value, this individual would be counted as receiving the first screening with age and geography stemming from 2021.

¹ <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/lung-cancer-screening>

- Percent of Individuals that Received Shared Decision Making for an LDCT Screening by Receipt of an LDCT Screening within 1 Year** – The number and proportion of individuals that received a shared decision-making session for a lung cancer screening and either received or did not receive a Low-Dose Computed Tomography (LDCT) screening within a year after the session. Measure breakdowns include demographic characteristics at the state level only (race/ethnicity), demographic characteristics across all geographies (age group and sex), geographic groupings (state, county, and hospital service area), and procedure year (2021, 2022, 2023, and 2021-2023). Combined year values (2021-2023) represent distinct individuals across the entire time frame based on the most recent encounter where a shared decision-making code was present. For example, consider an individual who receives shared decision making for an LDCT screening in multiple years, 2021 and 2022. After the first shared decision-making visit in 2021, they pursue an LDCT screening within one year of the encounter, but they do not after the second visit in 2022. For single year values, this individual would be counted as receiving an LDCT screening within one year in 2021, but not in 2022. For the combined year value, based on the most recent data point, this individual would be counted as not receiving an LDCT screening within one year of the shared decision-making encounter.
- Percent of Individuals that Received Any Tobacco Cessation Counseling and/or Medication within 1 Year of Lung Cancer Screening*** – The proportion of individuals that received tobacco cessation counseling and/or nicotine replacement or other tobacco cessation medications within 1-year post-screening. Measure breakdowns include demographic characteristics at the state level only (race/ethnicity), demographic characteristics across all geographies (age group and sex), geographic groupings (state, county, and hospital service area), and procedure year (2021, 2022, 2023, and 2021-2023). Combined year values (2021-2023) represent distinct individuals across the entire time frame based on the most recent screening. For example, consider an individual who receives a screening in multiple years, 2021 and 2022. After the first screening in 2021, they receive any tobacco cessation services (counseling and/or medications) within one year of the screening, but they do not after the second screening in 2022. For single year values, this individual would be counted as receiving any tobacco cessation services within one year in 2021, but not in 2022. For the combined year value,

* Over the counter (OTC) tobacco cessation products are limited to those available within pharmacy claims records.

based on the most recent data point, this individual would be counted as not receiving any tobacco cessation services within one year of the screening.

- **Percent of Individuals that Received Tobacco Cessation Counseling within 1 Year of Lung Cancer Screening** – The proportion of individuals that received tobacco cessation counseling within 1-year post-screening. Measure breakdowns include demographic characteristics at the state level only (race/ethnicity), demographic characteristics across all geographies (age group and sex), geographic groupings (state, county, and hospital service area), and procedure year (2021, 2022, 2023, and 2021-2023). Combined year values (2021-2023) represent distinct individuals across the entire time frame based on the most recent screening. For example, consider an individual who receives a screening in multiple years, 2021 and 2022. After the first screening in 2021, they receive tobacco cessation counseling within one year of the screening, but they do not after the second screening in 2022. For single year values, this individual would be counted as receiving tobacco cessation counseling within one year in 2021, but not in 2022. For the combined year value, based on the most recent data point, this individual would be counted as not receiving any tobacco cessation counseling within one year of the screening.
- **Percent of Individuals that Received Tobacco Cessation Medications within 1 Year of Lung Cancer Screening*** – The proportion of individuals that received tobacco cessation medications such as bupropion and nicotine replacement or other tobacco cessation medications within 1-year post-screening. Measure breakdowns include demographic characteristics at the state level only (race/ethnicity), demographic characteristics across all geographies (age group and sex), geographic groupings (state, county, and hospital service area), and procedure year (2021, 2022, 2023, and 2021-2023). Combined year values (2021-2023) represent distinct individuals across the entire time frame based on the most recent screening. For example, consider an individual who receives a screening in multiple years, 2021 and 2022. After the first screening in 2021, they receive tobacco cessation medications within one year of the screening, but they do not after the second screening in 2022. For single year values, this individual would be counted as receiving tobacco cessation medications within one year in 2021, but not in 2022. For the combined year value, based on the most recent data point, this individual would be counted as not receiving any tobacco cessation medications within one year of the screening.

Mortality

The following measures are sourced from the MHDO's APCD and/or Hospital Inpatient and Outpatient Encounter Data integrated with the Maine Cancer Registry and Maine Vital Statistics Death Data. All measures include information for individuals that died from Lung and Bronchus Cancer (ICD-10-CM Code C34) from 2015-2021.

Detailed stage and histology include information for individuals with a lung and bronchus cancer diagnosis (ICD-O-3 Codes C340-C343, C348-C349) in the Maine Cancer Registry from 2015-2020 based on the most recent and relevant data for that individual. For example, if an individual had multiple records in the cancer registry for lung and bronchus cancer, the most recent record with most progressive stage was selected. As a result, the cancer stage and histology may not reflect the stage and histology at the time of death.

Individual level identification is based on data linkages across all data sources (MHDO data and Maine Cancer Registry, and Maine Vital Statistics) with the primary identifier from MHDO data.

Prior to 2018, detailed cancer stage information (i.e., stage I, stage II, etc.) was not available in the cancer registry. As a result, measures are displayed by summary stage within this dashboard:

- **Proportion of Lung Cancer Mortality by Summary Stage at Diagnosis** – Lung cancer deaths that fall into each summary stage (the spread and severity of the cancer) based on information at the time of diagnosis. Cancer summary stages include “localized,” “regional,” “distant,” “not available in registry,” and “unknown or not applicable.” “Not available in the registry” indicates that we were not able to link the individuals across all data sets based on the information available. Measure breakdowns include demographic characteristics at the state level only (race/ethnicity), demographic characteristics across all geographies (age group and sex), geographic groupings (state, county, and hospital service area), and rolling five-year increments representing the death year (2015-2019, 2016-2020, and 2017-2021).
- **Proportion of Lung Cancer Mortality by Histology at Diagnosis** – Lung cancer deaths that fall into each cancer histology (the subtype of cancer present) based on information at the time of diagnosis. Cancer histology types include “small cell lung cancer,” “non-small cell lung cancer,” “other histology,” and “not available in registry.” “Not available in the registry” indicates that we were not able to link the individuals across all data sets based on the information available. Measure breakdowns include demographic characteristics at the state level only

(race/ethnicity), demographic characteristics across all geographies (age group and sex), geographic groupings (state, county, and hospital service area), and rolling five-year increments representing the death year (2015-2019, 2016-2020, and 2017-2021).

- **Comparison to the US Incidence Rate¹⁰** – The percent difference between the Maine and the United States lung cancer mortality rates obtained from the CDC’s United States Cancer Statistics.

Lung Cancer Cohort

The following measures are sourced from the MHDO’s APCD and/or Hospital Inpatient and Outpatient Encounter Data integrated with the Maine Cancer Registry and Maine Vital Statistics Death Data.

Individual level identification is based on data linkages across all data sources (MHDO data and Maine Cancer Registry, and Maine Vital Statistics) with the primary identifier being from MHDO data.

Measures are listed by the pages they are displayed on. All measures include information for the population consisting of individuals diagnosed with lung cancer (ICD-O-3 Codes C340-C343, C348-C349) in 2019-2021, for whom the cancer diagnosis appears to be their first cancer diagnosis based on the history available within the cancer registry.

Characteristics

- **Lung Cancer Cohort Demographics** – Basic demographic characteristics of individuals with lung and bronchus cancers, which include average age, percentage that is white, non-Hispanic, and the percentage that is male.
- **Stage at Diagnosis** – Number and proportion of distinct individuals by cancer stage at diagnosis among individuals with lung and bronchus cancers. Cancer stages include: “stage I,” “stage II,” “stage III,” “stage IV,” and “unknown or not applicable.” Measure breakdowns include demographic characteristics (age group and sex) and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level only.
- **Histology at Diagnosis** – Number and proportion of distinct individuals by histology at diagnosis (the subtype of cancer present) among individuals with lung and bronchus cancers. Cancer histology groups include: “small-cell lung cancer,” “non-small cell lung cancer,” “other histology,” “unknown or not applicable.” Measure breakdowns include demographic characteristics (age group and sex) and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level only.
- **Smoking History** – Proportion of lung cancer patients that had a known history of smoking based on ICD-10-CM diagnosis and medical procedure codes (ICD,

HCPCS, CPT) related to nicotine use at any point in their medical history. State level measure breakouts include stage (stage I/II and stage III/IV), and histology (adenocarcinoma, other colorectal cancer histology). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (age group and sex) and diagnosis year (2019, 2020, 2021, 2019-2021).

- **Detailed Chronic Conditions⁷** – Percent of lung cancer patients with detailed chronic comorbid conditions based on the CMS Chronic Conditions Warehouse Algorithm. State level measure breakouts include stage (stage I/II and stage III/IV), and histology (adenocarcinoma, other colorectal cancer histology). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (age group and sex) and diagnosis year (2019, 2020, 2021, 2019-2021).

Conditions reported include:

- Acute Myocardial Infarction
 - Asthma
 - Chronic Kidney Disease
 - COPD
 - Diabetes
 - Heart Failure and Non-Ischemic Heart Disease
 - Hypertension
 - Ischemic Heart Disease
 - Pneumonia
 - Stroke
- **Number of Chronic Conditions⁷** – Percent of lung cancer patients with a summarized number of chronic comorbid conditions based on those listed under “Detailed Chronic Conditions” from the CMS Chronic Conditions Warehouse Algorithm. These options include: “none of the conditions,” “only 1 condition,” and “2 or more conditions.” Measure breakdowns include demographic characteristics (age group and sex), stage (stage I/II and stage III/IV), histology (adenocarcinoma, other colorectal cancer histology), and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level.

Pre-Treatment

- **Received Genetic Testing on a Tumor** – Proportion of lung cancer patients who received treatment that also received genetic testing on a tumor as identified by ICD, CPT, and HCPCS procedure codes within one year prior to diagnosis through the first treatment date. State-level measure breakouts include demographic groups (race/ethnicity). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (age group and sex) and diagnosis year (2019, 2020, 2021, 2019-2021).
- **Received Chest Imaging by Imaging Type within 3 Months prior to Diagnosis** – Proportion of lung cancer patients that received chest imaging by imaging type within 3 months prior to diagnosis as identified by ICD, CPT, and HCPCS procedure codes. Chest imaging options include “CT scans,” “endoscopic procedures,” “PET scans,” and “X-Ray procedures.” State level measure breakouts include demographic groups (race/ethnicity). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (age group and sex) and diagnosis year (2019, 2020, 2021, 2019-2021).

Treatment

Individual treatments were identified using ICD, CPT, and HCPCS procedure codes as well as NDCs from the date of diagnosis onward with a diagnosis code of lung and bronchus cancer (ICD-10-CM Code C34) on the hospital or claim record among individuals that survived 60 days post diagnosis.

Treatment Types are defined by:

- **Radiation Therapies:** Beam radiation, brachytherapy, proton therapy, thermal therapy, radio frequency therapy, image guided radiation therapy (IGRT), intense, modulated radiation therapy (IMRT), nuclear medicine therapy, stereotactic body radiation treatment (SBRT), and stereotactic radiosurgery (SRS).
- **Medication Therapies:** Chemotherapy, immunotherapy, antineoplastic medications, and hormone therapies.
- **Surgical Intervention:** Any procedure with a description mentioning the removal or surgical impacts on body locations related to the lung and bronchus cancer.

The measures include:

- **Died within 60 Days of Diagnosis** – Percent of lung cancer patients that died within 60 days of diagnosis. Measure breakdowns include demographic groupings (age group and sex) and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level.

- **Number of Treatment Types Received** – Proportion of lung cancer patients that received treatment by the number of treatment types. Options include: “received no treatment,” “received 1 treatment type,” “received 2 treatment types,” and “received 3 treatment types.” Measure breakdowns include demographic groupings (age group and sex) and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level.
- **Detailed Treatment Types Received** – Proportion of lung cancer patients that received treatment by treatment type combinations. Measure breakdowns include demographic groupings (age group and sex) and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level.

Reported combinations include:

1. Received No Treatment
 2. Only Received Medication Therapy
 3. Received Medication Therapy and Radiation
 4. Received Medication Therapy and Surgery
 5. Received Radiation and/or Surgery
 6. Received All 3 (Medication, Radiation, and Surgery)
- **Median Days to Treatment by Diagnostic Procedure and Treatment** – Median days from diagnostic services to first instance of treatment. Diagnostic services include ICD, CPT, and HCPCS codes for biopsy, LDCT, CT scans, endoscopic procedures, PET scans, and X-Ray procedures that were received 1 year prior to 30 days after the date of diagnosis. Median days are only calculated for individuals that had both treatment and diagnostic records. The median day calculation is based on the most recent diagnostic procedure and the first treatment procedure. State level measure breakouts include demographic characteristics (age group) and stage (stage I, stage II, stage III, and stage IV). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (sex), histology (small cell, non-small cell, and other histology), stage (I/II and stage III/IV) and diagnosis year (2019, 2020, 2021, 2019-2021).

Variations of this measure include:

1. Median Days to Treatment between Any Diagnostic Procedure and Any Treatment[^]
2. Median Days to Treatment between Biopsy and Any Treatment[^]
3. Median Days to Treatment between Biopsy and Medication Therapy[^]

[^] This measure is available at the county and hospital service area (HSA) geographic levels.

4. Median Days to Treatment between Biopsy and Radiation Therapy
 5. Median Days to Treatment between Biopsy and Surgery
 6. Median Days to Treatment between Biopsy and Treatment Planning
 7. Median Days to Treatment between Chest Imaging (LDCT, CT, Endoscope, PET, and/or X-Ray) and Any Treatment^
 8. Median Days to Treatment between Chest Imaging (LDCT, CT, Endoscope, PET, and/or X-Ray) and Medication Therapy^
 9. Median Days to Treatment between Chest Imaging (LDCT, CT, Endoscope, PET, and/or X-Ray) and Radiation Therapy
 10. Median Days to Treatment between Chest Imaging (LDCT, CT, Endoscope, PET, and/or X-Ray) and Surgery
 11. Median Days to Treatment between Chest Imaging (LDCT, CT, Endoscope, PET, and/or X-Ray) and Treatment Planning
- **Received Any Treatment** – Number and proportion of distinct individuals from the lung cancer cohort that received any treatment after their diagnosis date. State-level measure breakouts include demographic characteristics (age group) and stage (stage I, stage II, stage III, stage IV). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (sex), histology (small cell, non-small cell, and other histology), and diagnosis year (2019, 2020, 2021, 2019-2021). Measure breakouts for granular geographies (county and hospital service area) include stage (stage I/II and stage III/IV).
 - **Received Any Medication Therapy** – Number and proportion of distinct individuals from the lung cancer cohort that received medication therapy after their diagnosis date. State-level measure breakouts include demographic characteristics (age group) and stage (stage I, stage II, stage III, stage IV). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (sex), histology (small cell, non-small cell, and other histology), and diagnosis year (2019, 2020, 2021, 2019-2021). Measure breakouts for granular geographies (county and hospital service area) include stage (stage I/II and stage III/IV).
 - **Received Any Radiation Therapy** – Number and proportion of distinct individuals from the lung cancer cohort that received radiation therapy after their diagnosis date. State level measure breakouts include demographic characteristics (age group) and stage (stage I, stage II, stage III, and stage IV). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (sex), histology (small cell, non-small cell, and other histology), and diagnosis year (2019, 2020, 2021, 2019-2021). Measure breakouts for granular

geographies (county and hospital service area) include stage (stage I/II and stage III/IV).

- **Received Any Surgery** – Number and proportion of distinct individuals from the lung cancer cohort that received surgery after their diagnosis date. State level measure breakouts include demographic characteristics (age group) and stage (stage I, stage II, stage III, and stage IV). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (sex), histology (small cell, non-small cell, and other histology), and diagnosis year (2019, 2020, 2021, 2019-2021). Measure breakouts for granular geographies (county and hospital service area) include stage (stage I/II and stage III/IV).

Follow-Up Care

- **Percent of Lung Cancer Patients Diagnosed by Year of Diagnosis that Died by the End of 2023** – Number and proportion of distinct individuals from the lung cancer cohort that had a death record from date of diagnosis through the end of 2023. Breakdowns of this measure include demographic characteristics (age group and sex), stage (stage I/II and stage III/IV), and diagnosis year (2019, 2020, 2021, and 2019-2021) at the state level.
- **Percent that Received of Follow-Up Care** – Number and proportion of distinct individuals from the lung cancer cohort that received follow-up care (defined as blood test, CT scan, or X-Ray procedures) received after the last known treatment date. This excludes individuals that died within 30 days after their last treatment. Breakdowns of this measure include demographic characteristics (age group and sex), stage (stage I/II and stage III/IV), and diagnosis year (2019, 2020, 2021, and 2019-2021) at the state level.

Breakdowns of this measure include the following options, and are not mutually exclusive categories:

1. Received a follow-up Blood Test
 2. Received a follow-up CT scan
- **Percent that Received Tobacco Cessation Post-Treatment*** – Number and proportion of distinct individuals from the lung cancer cohort tobacco cessation counseling and/or nicotine replacement or other tobacco cessation medications after the last known treatment date, excluding individuals that died within 30 days after their last treatment. Breakdowns of this measure include demographic

* Over the counter (OTC) tobacco cessation products are limited to those available within pharmacy claims records.

characteristics (age group and sex), stage (stage I/II and stage III/IV), and diagnosis year (2019, 2020, 2021, and 2019-2021) at the state level.

Colorectal Cancer Dashboard

Risk Factors

The following measures refer to the overall Maine population or Maine households and are acquired from publicly available data sources.

- **Binge Drinking** – Percent of adults who binge drink.
- **BMI Categories** – Percent of adults who are obese, underweight (Statewide only), overweight (Statewide only), and Normal weight (Statewide only).
- **Cost Preventing Care** – Percent of adults who did not see a healthcare professional due to Cost (Statewide only).
- **Last Routine Checkup** – Percent of adults who had a routine check-up in the last year, a routine check-up in the last two years (Statewide only), a routine check-up within the past 5 years (Statewide only), a routine check-up 5 or more years ago (Statewide only), and never received a routine check-up (Statewide only).
- **Once Daily Fruit Consumption** – Percent of Adults who eat at least one fruit a day on average (Statewide only; Available only for 2019 and 2021).
- **Once Daily Vegetable Consumption** – Percent of Adults who eat at least one vegetable a day on average (Statewide only; Available only for 2019 and 2021).
- **Physical Activity** – Percent of Adults who participated in physical activity during the past month.
- **Smoking History** – Self-reported data about smoking status among adults 18 years of age and older.

Source: Behavioral Risk Factor Surveillance System (BRFSS) | 2018-2023 (Statewide)¹¹, 2018-2022 (County)¹²

Incidence

The following measures are sourced from the MHDO's APCD and/or Hospital Inpatient and our Outpatient Encounter Data integrated with the Maine Cancer Registry and Maine Vital Statistics. All measures include information for the population consisting of individuals diagnosed with Colorectal Cancer (ICD-O-3 Codes C18, C199, C20, or C260) in the Maine Cancer Registry from 2015-2021. Individual-level identification is based on data linkages across all data sources (MHDO data and Maine Cancer Registry, and Maine Vital Statistics) with the primary identifier being from MHDO data.

Prior to 2018, detailed cancer stage information (i.e., stage I, stage II, etc.) was not available in the cancer registry. As a result, measures are displayed by summary stage within this dashboard:

- **Proportion of Colorectal Cancer Incidence by Summary Stage** – The proportion of new colorectal cancer cases that fall into each summary stage (the spread and severity of the cancer). Cancer summary stages include “localized,” “regional,” “distant,” and “unknown or not applicable.” Measure breakdowns include demographic characteristics at the state level only (race/ethnicity), demographic characteristics across all geographies (sex and age group), geographic groupings (state, county, and hospital service area), and rolling five-year increments representing the diagnosis year (2015-2019, 2016-2020, and 2017-2021).
- **Proportion of Colorectal Cancer Incidence by Histology** – The proportion of new colorectal cancer cases that fall into each cancer histology (the subtype of cancer present). Cancer histology types include “adenocarcinoma” and “other histology.” Measure breakdowns include demographic characteristics at the state level only (age group and race/ethnicity), demographic characteristics across all geographies (sex), geographic groupings (state, county, and hospital service area), and rolling five-year increments representing the diagnosis year (2015-2019, 2016-2020, and 2017-2021).
- **Percent of Colorectal Cancer Patients that Received a Screening** – The proportion of new colorectal cancer cases that received a colorectal cancer screening at any point in their medical history. Measure breakdowns include demographic characteristics at the state level only (age group and race/ethnicity), demographic characteristics across all geographies (sex), geographic groupings (state, county, and hospital service area), and rolling five-year increments representing the diagnosis year (2015-2019, 2016-2020, and 2017-2021).
- **Comparison to the US Incidence Rate¹⁰** – The percent difference between the Maine United States colorectal cancer incidence rates obtained from the CDC’s United States Cancer Statistics.

Screening

Data reported for these measures may differ from values captured in other well-known resources such as the Behavioral Risk Factor Surveillance System (BRFSS). BRFSS is a telephone-based survey that samples a portion of the population and applies weighting methods to produce estimates that reflect the broader population. This methodology relies on interviewee recall as opposed to definitive service usage and may have sample bias due to voluntary participation.

The data captured in the screening measures used in the Maine Cancer Blueprint is based on service usage data contained in healthcare claims and hospital encounter data sets.

The measure values are representative of the year a procedure was received without controlling for prior years unless otherwise stated in the definition.

The following measures are sourced from the MHDO's APCD and/or Hospital Inpatient and Outpatient Encounter Data:

- **Received Colorectal Cancer Screenings** – The number and proportion of distinct individuals in hospital encounter and claims records that received a colorectal screening. Colorectal cancer screenings include visual (Colonoscopy, Sigmoidoscopy, or Virtual Colonoscopy) and stool-based (FOBT or FIT Tests) procedures. Measure breakdowns include demographic characteristics (age group, race/ethnicity, and sex), geographic groupings (state, county, and hospital service area), and procedure year (2021, 2022, 2023, and 2021-2023). The United States Preventive Services Taskforce recommends that eligible individuals receive screenings with frequency dependent on screening method with some methods occurring annually and others occurring after several years.² Combined year values (2021-2023) represent distinct individuals across the entire time frame with age and geography based on the most recent data point available for that person. For example, if an individual received a screening in two years, 2021 and 2023, they would only be counted once, with age and geography stemming from 2023.
- **Received Colorectal Cancer Screenings for the First Time** – Of those in hospital encounter and claims records who received a colorectal screening, the number and proportion that received a colorectal screening for the first time based on the information available in the data source. Colorectal cancer screenings include visual (Colonoscopy, Sigmoidoscopy, or Virtual Colonoscopy) and stool-based (FOBT or FIT Tests) procedures. Measure breakdowns include demographic characteristics (age group, race/ethnicity, and sex), geographic groupings (state, county, and hospital service area), and procedure year (2021, 2022, 2023, and 2021-2023). Combined year values (2021-2023) represent distinct individuals that received a screening for the first time within the entire time frame with age and geography based on their age and residence when the first screening was received. For example, if an individual received their first screening in 2021 and continued to receive annual screenings, for single year values, they would only be counted as receiving the first screening in 2021. For the combined year values, this individual would be counted as receiving the first screening with age and geography stemming from 2021.

² <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/colorectal-cancer-screening>

- Average Age of Screening** – The average age of those in hospital encounter and claims records who received a colorectal screening. Colorectal cancer screenings include visual (Colonoscopy, Sigmoidoscopy, or Virtual Colonoscopy) and stool-based (FOBT or FIT Tests) procedures. Measure breakdowns include demographic characteristics (race/ethnicity, and sex), geographic groupings (state, county, and hospital service area), and procedure year (2021, 2022, 2023, and 2021-2023). The United States Preventive Services Taskforce recommends that eligible individuals receive screenings with frequency dependent on screening method with some methods occurring annually and others occurring after several years.² Combined year values (2021-2023) represent distinct individuals across the entire time frame with age and geography based on the most recent data point available for that person. For example, if an individual received screenings in 2021 and 2023, they would only be counted once with age and geography stemming from 2023.
- Average Age of those Receiving First Screening** – The average age of those in hospital encounter and claims records who received a colorectal screening for the first time based on the information available in the data source. Colorectal cancer screenings include visual (Colonoscopy, Sigmoidoscopy, or Virtual Colonoscopy) and stool-based (FOBT or FIT Tests) procedures. Measure breakdowns include demographic characteristics (race/ethnicity and sex), geographic groupings (state, county, and hospital service area), and procedure year (2021, 2022, 2023, and 2021-2023). Combined year values (2021-2023) represent distinct individuals that received a screening for the first time within the entire time frame with age and geography based on their age and residence when the first screening was received. For example, if an individual received their first screening in 2021 and continued to receive annual screenings, for single year values, they would only be counted as receiving the first screening in 2021. For the combined year value, this individual would be counted as receiving the first screening with age and geography based on the age and geography stemming from 2021.
- Received Colorectal Cancer Screening by Screening Type (Stool-Based, Visual, or Both)** – Of those in hospital encounter and claims records who received a colorectal screening, the number and proportion that received a visual colorectal cancer screening (Colonoscopy, Sigmoidoscopy, or Virtual Colonoscopy), a stool-based (FOBT or FIT Tests) procedures, or received both. These are mutually exclusive categories. Measure breakdowns include demographic characteristics (age group, race/ethnicity, and sex), geographic groupings (state, county, and hospital service area), and procedure year (2021, 2022, 2023, and 2021-2023). Combined year values (2021-2023) represent distinct individuals across the entire time frame with age and geography based on the most recent data point available

for that person, but screening type aggregated across years. For example, if an individual received their first visual screening in 2021 and continued to receive annual stool-based screenings, they would only be counted as receiving both in 2021-2023, with age and geography stemming from 2023.

Mortality

The following measures are sourced from the MHDO's APCD and/or Hospital Inpatient and Outpatient Encounter Data integrated with the Maine Cancer Registry and Maine Vital Statistics Death Data. All measures include information for the population consisting of individuals that died from Colorectal Cancer (ICD-10-CM Codes C18, C199, C20, or C260) from 2015-2020.

Detailed stage and histology include information for individuals with a colorectal cancer diagnosis (ICD-O-3 Codes C18, C199, C20, or C260) in the Maine Cancer Registry from 2015-2020 based on the most recent and relevant data for that individual. For example, if an individual had multiple records in the cancer registry for colorectal cancers, the most recent record with the most progressive stage were selected. As a result, the cancer stage and histology may not reflect the stage and histology at the time of death.

Individual level identification is based on data linkages across all data sources (MHDO data and Maine Cancer Registry, and Maine Vital Statistics) with the primary identifier being from MHDO data.

Prior to 2018, detailed cancer stage information (i.e., stage I, stage II, etc.) was not available in the cancer registry. As a result, these measures are displayed by summary stage within this dashboard:

- **Proportion of Colorectal Cancer Mortality by Summary Stage at Diagnosis** – The proportion of colorectal cancer deaths that fall into each summary stage (the spread and severity of the cancer) based on information at the time of diagnosis. Cancer summary stages presented include “localized,” “regional,” “distant,” “not available in registry,” and “unknown or not applicable.” “Not available in the registry” indicates that we were not able to link the individuals across all data sets based on the information available. Measure breakdowns demographic characteristics at the state level only (age group and sex), geographic groupings (state, county, and hospital service area), and rolling five-year increments representing the death year (2015-2019, 2016-2020, and 2017-2021).
- **Proportion of Colorectal Cancer Mortality by Histology at Diagnosis** – The proportion of colorectal cancer deaths that fall into each cancer histology (the subtype of cancer present) based on information at the time of diagnosis. Cancer

histology types include “adenocarcinoma,” “other histology,” and “not available in registry.” “Not available in the registry” indicates that we were not able to link the individuals across all data sets based on the information available. Measure breakdowns include demographic characteristics at the state level only (age group and sex), geographic groupings (state, county, and hospital service area), and rolling five-year increments representing the death year (2015-2019, 2016-2020, and 2017-2021).

- **Comparison to the US Incidence Rate¹⁰** – The percent difference between the Maine and the United States colorectal cancer mortality rates obtained from the CDC’s United States Cancer Statistics.

Colorectal Cancer Cohort

The following measures are sourced from MHDO APCD and/or Hospital Inpatient and Outpatient Encounter Data integrated with the Maine Cancer Registry and Maine Vital Statistics Death Data.

Individual level identification is based on data linkages across all data sources (MHDO data and Maine Cancer Registry, and Maine Vital Statistics) with the primary identifier being from MHDO data.

Measures are listed by the pages they are displayed on. All measures include information for the population consisting of individuals diagnosed with colorectal cancer (ICD-O-3 Codes C18, C199, C20, or C260) in 2019-2021, for whom the cancer diagnosis appears to be their first cancer diagnosis based on the history available within the cancer registry.

Characteristics

- **Colorectal Cancer Cohort Demographics** – Basic demographic characteristics of individuals with colorectal cancer, which include average age and percentage of the cohort that is white, non-Hispanic, and percentage that is male. Measure breakdowns include demographic characteristics (age group, race/ethnicity, and sex), geographic groupings (state, county, and hospital service area), colorectal cancer subtype (all colorectal cancers, rectal cancer only, or colon cancer only) and diagnosis year (2019, 2020, 2021, 2019-2021).
- **Stage at Diagnosis** – Number and proportion of distinct individuals by cancer stage at diagnosis among individuals with colorectal cancer. Cancer stages include: “stage I/II,” “stage III/IV,” and “unknown or not applicable.” Measure breakdowns include demographic characteristics (age group, race/ethnicity, and sex), colorectal cancer subtype (all colorectal cancers, rectal cancer only, or colon cancer only) and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level only.

- **Histology at Diagnosis** – Number and proportion of distinct individuals by histology at diagnosis (the subtype of cancer present) among individuals with colorectal cancer. Cancer histology groups include “adenocarcinoma” and “other histology.” Measure breakdowns include demographic characteristics (age group, race/ethnicity, and sex), colorectal cancer subtype (all colorectal cancers, rectal cancer only, or colon cancer only) and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level only.
- **Smoking History** – Proportion of colorectal cancer patients that had a known history of smoking based on ICD-10-CM diagnosis and medical procedure codes (ICD, HCPCS, CPT) related to nicotine use at any point in their medical history. Measure breakdowns include demographic characteristics at the state level (age group), demographic characteristics across all geographies (sex), colorectal cancer subtypes at the state level (any colorectal cancer, colon cancer only, rectal cancer only), geographic groupings (state, county, and hospital service area) and diagnosis year (2019, 2020, 2021, 2019-2021).
- **High Risk Conditions** – Proportion of colorectal cancer patients that had record of co-occurring high-risk disorders (i.e., type II diabetes, inflammatory bowel disease, and high-risk genetic conditions (lynch syndrome, Turcot syndrome, Gardner syndrome, attenuated familial adenomatous polyposis (Attenuated FAP), Peutz-Jeghers syndrome (PJS), and MUTYH-associated polyposis). Measure breakdowns include demographic characteristics at the state level (age group), demographic characteristics across all geographies (sex), colorectal cancer subtypes at the state level (any colorectal cancer, colon cancer only, rectal cancer only), geographic groupings (state, county, and hospital service area) and diagnosis year (2019, 2020, 2021, 2019-2021).
- **Detailed Chronic Conditions⁷** – Percent of the colorectal cancer patients with detailed chronic comorbid conditions based on the CMS Chronic Conditions Warehouse Algorithm. Measure breakdowns include demographic characteristics at the state level (age group), demographic characteristics across all geographies (sex), colorectal cancer subtypes at the state level (any colorectal cancer, colon cancer only, rectal cancer only), geographic groupings (state, county, and hospital service area) and diagnosis year (2019, 2020, 2021, 2019-2021).

Conditions reported include:

1. Acute Myocardial Infarction
2. Diabetes
3. Inflammatory Bowel Disease (Crohn’s Disease and IBS)[†]

4. High-Risk Genetic Conditions (lynch syndrome, Turcot syndrome, Gardner syndrome, attenuated familial adenomatous polyposis (Attenuated FAP), Peutz-Jeghers syndrome (PJS), and MUTYH-associated polyposis)
 5. Chronic Kidney Disease (CKD)
 6. Chronic Obstructive Pulmonary Disease (COPD)
 7. Hypertension
 8. Ischemic Heart Disease
 9. Heart Failure
 10. Non-Alzheimer's Dementia or Alzheimer's Disease
 11. Stroke/Transient Ischemic Attack
 12. Rheumatoid Arthritis/Osteoarthritis
- **Number of Chronic Conditions⁷** – Percent of colorectal cancer patients with a summarized number of chronic comorbid conditions based on those listed under “Detailed Chronic Conditions” from the CMS Chronic Conditions Warehouse Algorithm. These options include: “none of the conditions,” “only 1 condition,” and “2 or more conditions.” Measure breakdowns include demographic characteristics at the state level (age group), demographic characteristics across all geographies (sex), colorectal cancer subtypes at the state level (any colorectal cancer, colon cancer only, rectal cancer only), geographic groupings (state, county, and hospital service area) and diagnosis year (2019, 2020, 2021, 2019-2021).

Treatment

Individual treatments were identified using ICD, CPT, and HCPCS procedure codes as well as National Drug Codes (NDCs) from the date of diagnosis onward with a diagnosis code of colorectal cancer (ICD-10-CM Codes C18, C199, C20, or C260) on the hospital or claim record among individuals that survived 60 days post diagnosis.

Treatment Types are defined by:

- **Radiation Therapies:** Beam radiation, brachytherapy, proton therapy, thermal therapy, radio frequency therapy, image guided radiation therapy (IGRT), intense, modulated radiation therapy (IMRT), nuclear medicine therapy, stereotactic body radiation treatment (SBRT), and stereotactic radiosurgery (SRS).
- **Medication Therapies:** Chemotherapy, immunotherapy, antineoplastic medications, and hormone therapies.
- **Surgical Intervention:** Any procedure with a description mentioning the removal or surgical impacts on body locations related to colorectal cancer.

Measures include:

- **Died within 60 Days of Diagnosis** – Percent of colorectal cancer patients that died within 60 days of diagnosis. Measure breakdowns include demographic groupings (age group and sex) and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level.
- **Genetic Testing Rates** – Percent of colorectal cancer patients who received treatment that also received genetic testing on a tumor as identified by ICD, CPT, and HCPCS procedure codes in the 1 year prior to diagnosis through first treatment date. Measure breakdowns include demographic groupings (age group and sex) and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level.
- **Number of Treatment Types Received** – Proportion of colorectal cancer patients that received treatment by the number of treatment types. Options include: “received no treatment,” “received 1 treatment type,” “received 2 treatment types,” and “received 3 treatment types.” Individual treatments are identified using ICD, CPT, and HCPCS procedure codes as well as NDCs. Measure breakdowns include demographic characteristics (age group and sex), colorectal cancer subtypes (any colorectal cancer, colon cancer only, rectal cancer only), and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level.
- **Detailed Treatment Types Received** – Proportion of colorectal cancer patients that received treatment by treatment type combinations. Individual treatments are identified using ICD, CPT, and HCPCS procedure codes as well as NDCs. Measure breakdowns include demographic characteristics (age group and sex), colorectal cancer subtypes (any colorectal cancer, colon cancer only, rectal cancer only), and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level.

Reported combinations include:

1. Received No Treatment
 2. Only Received Medication Therapy
 3. Received Medication Therapy and Radiation
 4. Received Medication Therapy and Surgery
 5. Received Radiation and/or Surgery
 6. Received All 3 (Medication, Radiation, and Surgery)
- **Median Days to Treatment by Diagnostic Procedure and Treatment Type** – Median days from diagnostic services to first instance of treatment. Diagnostic services include ICD, CPT, and HCPCS codes for biopsy and screening procedures that were received 1 year prior to 30 days after the date of diagnosis. Colorectal

cancer screenings include visual (Colonoscopy, Sigmoidoscopy, or Virtual Colonoscopy) and stool-based (FOBT or FIT Tests) procedures. State-level measure breakouts include demographic characteristics (age group), stage at diagnosis (stage I, stage II, stage III, stage IV, unknown or not applicable), histology at (adenocarcinoma, other colorectal cancer histology), colorectal cancer subtypes (any colorectal cancer, colon cancer only, rectal cancer only). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (sex) and diagnosis year (2019, 2020, 2021, 2019-2021).

Variations of this measure include:

1. Median Days to Treatment between Any Diagnostic Procedure and Any Treatment[^]
 2. Median Days to Treatment between Biopsy and Any Treatment
 3. Median Days to Treatment between Biopsy and Medication Therapy
 4. Median Days to Treatment between Biopsy and Radiation Therapy
 5. Median Days to Treatment between Biopsy and Surgery
 6. Median Days to Treatment between Biopsy and Treatment Planning
 7. Median Days to Treatment between Screening (visual and stool-based) and Any Treatment[^]
 8. Median Days to Treatment between Screening (visual and stool-based) and Medication Therapy[^]
 9. Median Days to Treatment between Screening (visual and stool-based) and Radiation Therapy[^]
 10. Median Days to Treatment between Screening (visual and stool-based) and Surgery[^]
 11. Median Days to Treatment between Screening (visual and stool-based) and Treatment Planning[^]
- **Received Any Treatment** – Number and proportion of distinct individuals from the colorectal cancer cohort that received any treatment after their diagnosis date. State level measure breakouts include demographic characteristics (age group), stage at diagnosis (stage I, stage II, stage III, stage IV, unknown or not applicable), histology at (adenocarcinoma, other colorectal cancer histology), colorectal cancer subtypes (any colorectal cancer, colon cancer only, rectal cancer only). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (sex) and diagnosis year (2019, 2020, 2021, 2019-2021).

[^] This measure is available at the county and hospital service area (HSA) geographic levels.

- **Received Any Medication Therapy** – Number and proportion of distinct individuals from the colorectal cancer cohort that received medication therapy after their diagnosis date. State-level measure breakouts include demographic characteristics (age group), stage at diagnosis (stage I, stage II, stage III, stage IV, unknown or not applicable), histology (adenocarcinoma, other colorectal cancer histology), and colorectal cancer subtypes (any colorectal cancer, colon cancer only, rectal cancer only). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (sex) and diagnosis year (2019, 2020, 2021, 2019-2021).
- **Received Any Radiation Therapy** – Number and proportion of distinct individuals from the colorectal cancer cohort that received radiation therapy after their diagnosis date. State level measure breakouts include demographic characteristics (age group and sex), stage at diagnosis (stage I, stage II, stage III, stage IV, unknown or not applicable), histology (adenocarcinoma, other colorectal cancer histology), and colorectal cancer subtypes (any colorectal cancer, colon cancer only, rectal cancer only). Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2019, 2020, 2021, 2019-2021).
- **Received Any Surgery** – Number and proportion of distinct individuals from the colorectal cancer cohort that received surgery after their diagnosis date. State-level measure breakouts include demographic characteristics (age group), stage at diagnosis (stage I, stage II, stage III, stage IV, unknown or not applicable), histology (adenocarcinoma, other colorectal cancer histology), and colorectal cancer subtypes (any colorectal cancer, colon cancer only, rectal cancer only). Measure breakouts across geographies (state, county, and hospital service area) include demographic characteristics (sex) and diagnosis year (2019, 2020, 2021, 2019-2021).

Follow-Up Care

- **Percent of Colorectal Cancer Patients Diagnosed by Year of Diagnosis that Died by the end of 2023** – Number and proportion of distinct individuals from the colorectal cancer cohort that had a death record from date of diagnosis through the end of 2023. State level measure breakouts include demographic characteristics (age group and sex) and colorectal cancer subtypes (any colorectal cancer, colon cancer only, rectal cancer only). Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2019, 2020, 2021, 2019-2021).
- **Percent that Received Follow-Up Care** – Number and proportion of distinct individuals from the colorectal cancer cohort that received follow-up care (defined

as a blood test, colonoscopy, or sigmoidoscopy) after the last known treatment date, excluding individuals that died within 30 days after their last treatment. State-level measure breakouts include demographic characteristics (age group and sex) and colorectal cancer subtypes (any colorectal cancer, colon cancer only, rectal cancer only). Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2019, 2020, 2021, 2019-2021).

Additional breakdowns of this measure include the following options. These are not mutually exclusive categories and are available at the state level only:

1. Received a follow-up colonoscopy
 2. Received a follow-up sigmoidoscopy
 3. Received a follow-up blood test
- **Percent that Received Tobacco Cessation Post-Treatment*** – Number and proportion of distinct individuals from the colorectal cancer cohort that received tobacco cessation counseling and/or nicotine replacement or other tobacco cessation medications after the last known treatment date, excluding individuals that died within 30 days after their last treatment. Nicotine replacement or other related medication services are identified using NDCs. State-level measure breakouts include demographic characteristics (age group and sex) and colorectal cancer subtypes (any colorectal cancer, colon cancer only, rectal cancer only). Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2019, 2020, 2021, 2019-2021).

* Over the counter (OTC) tobacco cessation products are limited to those available within pharmacy claims records.

Breast Cancer Dashboard

Risk Factors

The following measures refer to the overall Maine population or Maine households and are acquired from publicly available data sources:

- **Binge Drinking** – Percent of adults who binge drink.
- **BMI Categories** – Percent of adults who are obese, underweight (Statewide only), overweight (Statewide only), and Normal weight (Statewide only).
- **Cost Preventing Care** – Percent of adults who did not see a healthcare professional due to Cost (Statewide only).
- **Last Routine Checkup** – Percent of adults who had a routine check-up in the last year, a routine check-up in the last two years (Statewide only), a routine check-up within the past 5 years (Statewide only), a routine check-up 5 or more years ago (Statewide only), and never received a routine check-up (Statewide only).
- **Once Daily Fruit Consumption** – Percent of Adults who eat at least one fruit a day on average (Statewide only; Available only for 2019 and 2021).
- **Once Daily Vegetable Consumption** – Percent of Adults who eat at least one vegetable a day on average (Statewide only; Available only for 2019 and 2021).
- **Physical Activity** – Percent of Adults who participated in physical activity during the past month.
- **Smoking History** – Self-reported data about smoking status among adults 18 years of age and older.

Source: Behavioral Risk Factor Surveillance System (BRFSS) | 2018-2023 (Statewide)¹¹, 2018-2022 (County)¹²

Incidence

The following measures are sourced from the MHDO's APCD and/or Hospital Inpatient and our Outpatient Encounter Data integrated with the Maine Cancer Registry and Maine Vital Statistics. All measures include information for the population consisting of females diagnosed with Breast Cancer (ICD-O-3 Codes C50) in the Maine Cancer Registry from 2015-2021. Individual level identification is based on data linkages across all data sources (MHDO data and Maine Cancer Registry, and Maine Vital Statistics) with the primary identifier being from MHDO data.

Prior to 2018, detailed cancer stage information (i.e., stage I, stage 11, etc.) was not available in the cancer registry. As a result, measures are displayed by summary stage within this dashboard:

- **Proportion of Breast Cancer Incidence by Summary Stage** – The proportion of new breast cancer cases that fall into each summary stage (the spread and severity of the cancer). Cancer summary stages include “localized,” “regional,” “distant,” and “unknown or not applicable.” State level measure breakouts include demographic characteristics (age group and race/ethnicity). Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2015-2019, 2016-2020, 2017-2021).
- **Proportion of Breast Cancer Incidence by Histology** – The proportion of new breast cancer cases that fall into each cancer histology (the subtype of cancer present). Cancer histology types include “invasive lobular carcinoma,” “invasive ductal carcinoma,” “ductal carcinoma in situ,” and “other histology.” State level measure breakouts include demographic characteristics (age group and race/ethnicity). Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2015-2019, 2016-2020, 2017-2021).
- **Percent of Breast Cancer Patients that Received a Mammography** – The proportion of new breast cancer cases that received a breast cancer screening, such as mammography, at any point in their medical history. Measure breakouts across geographies (state, county, and hospital service area) include year of diagnosis (2015-2019, 2016-2020, 2017-2021) and demographic characteristics (age group and race/ethnicity).
- **Percent of Breast Cancer Patients that Received Breast/Annual Exams** – The proportion of new breast cancer cases that received a breast exam or annual gynecological visit at any point in their medical history. Measure breakouts across geographies (state, county, and hospital service area) include year of diagnosis (2015-2019, 2016-2020, 2017-2021) and demographic characteristics (age group and race/ethnicity).
- **Percent of Breast Cancer Patients that Received Hereditary Genetic Testing** – The proportion of new breast cancer cases that received hereditary genetic testing for breast cancer genes at any point in their medical history. Measure breakouts across geographies (state, county, and hospital service area) include year of diagnosis (2015-2019, 2016-2020, 2017-2021) and demographic characteristics (age group and race/ethnicity).
- **Comparison to the US Incidence Rate¹⁰** – The percent difference between the Maine United States breast cancer incidence rates obtained from the CDC’s United States Cancer Statistics.

Screening

Data reported for these measures may differ from values captured in other well-known resources such as the Behavioral Risk Factor Surveillance System (BRFSS). BRFSS is a telephone-based survey that samples a portion of the population and applies weighting methods to produce estimates that reflect the broader population. This methodology relies on interviewee recall as opposed to definitive service usage and may have sample bias due to voluntary participation.

The data captured in the screening measures used in the Maine Cancer Blueprint is based on service usage data contained in healthcare claims and hospital encounter data sets. The measure values are representative of the year a procedure was received without controlling for prior years unless otherwise stated in the definition.

The following measures are sourced from the MHDO's APCD and/or Hospital Inpatient and Outpatient Encounter Data:

- **Received Breast Cancer Screenings (Mammography)** – The number and proportion of distinct females in hospital encounter and claims records that received a mammography for a breast cancer screening. Measure breakouts across geographies (state, county, and hospital service area) include procedure year (2021, 2022, 2023, 2021-2023) and demographic characteristics (age group and race/ethnicity). The United States Preventive Services Taskforce recommends that women be screened biennially.³ Combined year values (2021-2023) represent distinct individuals across the entire time frame with age and geography based on the most recent data point available for that individual. For example, if an individual received a screening in two years, 2021 and 2023, they would only be counted once, with age and geography stemming from 2023.
- **Received a Breast Cancer Screening (Mammography) for the First Time** – Of females in hospital encounter and claims records females who received a breast cancer screening (mammography), the number and proportion that received a breast cancer screening mammography for the first time based on the information available in the data source. Measure breakouts across geographies (state, county, and hospital service area) include procedure year (2021, 2022, 2023, 2021-2023) and demographic characteristics (age group and race/ethnicity). Combined year values (2021-2023) represent distinct individuals that received a screening for the first time within the entire time frame with age and geography based on their age and residence when the first screening was received. For example, if an individual

³ <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/breast-cancer-screening>

received their first screening in 2021 and continued to receive bi-annual screenings, for single year values, they would only be counted as receiving the first screening in 2021. For the combined year value, this individual would be counted as receiving the first screening with age and geography based on the age and geography stemming from 2021.

- **Average Age of Individuals that Received Breast Cancer Screenings (Mammography)** – The average age of females in hospital encounter and claims records who received a mammography for a breast cancer screening. Measure breakouts across geographies (state, county, and hospital service area) include procedure year (2021, 2022, 2023, 2021-2023) and demographic characteristics (age group and race/ethnicity). The United States Preventive Services Taskforce recommends that women be screened biennially.³ Combined year values (2021-2023) represent distinct individuals across the entire time frame with age and geography based on the most recent data point available for that individual. For example, if an individual received a screening in two years, 2021 and 2023, they would only be counted once with age and geography stemming from 2023.
- **Average Age of Individuals that Received Their First Breast Cancer Screenings (Mammography)** – The average age of females in hospital encounter and claims records who received a mammography for a breast cancer screening for the first time based on the information available in the data source. Measure breakouts across geographies (state, county, and hospital service area) include procedure year (2021, 2022, 2023, 2021-2023) and demographic characteristics (age group and race/ethnicity). Combined year values (2021-2023) represent distinct individuals that received a screening for the first time within the entire time frame with age and geography based on their age and residence when the first screening was received. For example, if an individual received their first screening in 2021 and continued to receive biannual screenings, for single year values, they would only be counted as receiving the first screening in 2021. For the combined year value, this individual would be counted as receiving the first screening with age and geography based on the age and geography stemming from 2021.
- **Received a Breast Exam/Annual Gynecological Exam** – The number and proportion of distinct females in hospital encounter and claims records that received a breast exam and/or annual gynecological exam. Measure breakouts across geographies (state, county, and hospital service area) include procedure year (2021, 2022, 2023, 2021-2023) and demographic characteristics (age group and race/ethnicity). Combined year values (2021-2023) represent distinct individuals across the entire time frame with age and geography based on the most recent data point available for that individual. For example, if an individual received an annual

wellness visit in all three years (2021,2022, and 2023) they would only be counted once with age and geography stemming from 2023.

- **Average Age of Individuals that Received a Breast Exam/Annual Gynecological Exam** – The average age of distinct females in hospital encounter and claims records that received a breast exam and/or annual gynecological exam. Measure breakouts across geographies (state, county, and hospital service area) include procedure year (2021, 2022, 2023, 2021-2023) and demographic characteristics (age group and race/ethnicity). Combined year values (2021-2023) represent distinct individuals across the entire time frame with age and geography based on the most recent data point available for that individual. For example, if an individual received an annual wellness visit in all three years (2021,2022, and 2023) they would only be counted once with age and geography stemming from 2023.
- **Length of Time Between Most Recent Breast Cancer Screenings (Mammography)** – Years between most recent mammography screenings for females that received a mammography as a breast cancer screening. Measure breakouts across geographies (state, county, and hospital service area) include procedure year (2021, 2022, 2023, 2021-2023) and demographic characteristics (age group and race/ethnicity).

Length of time options include:

1. First Exam Received
2. Exam Received within 2 Years
3. Exam Received within 3 Years
4. Exam Received within 4+ Years

- **Length of Time Between Most Recent Breast Exam/Annual Gynecological Exams** – Years between most recent breast exam/annual gynecological exams for females that received a breast exam and/or annual gynecological exam. Measure breakouts across geographies (state, county, and hospital service area) include procedure year (2021, 2022, 2023, 2021-2023) and demographic characteristics (age group and race/ethnicity).

Length of time options include:

1. First Exam Received
2. Exam Received within 1 Year
3. Exam Received within 2 Years
4. Exam Received within 3+ Years

- Percent of Mainers that Received Counseling for Hereditary Genetic Testing Due to a Familial and/or Personal History of High-Risk Conditions But Did Not Pursue Genetic Testing** – The number and proportion of distinct females in hospital encounter and claims records that received counseling for hereditary genetic testing due to a personal or family history of high-risk conditions but did not pursue genetic testing. High risk conditions include breast cancer, ovarian cancer, prostate cancer, and familial history of being a carrier of genetic disease. Measure breakouts across geographies (state, county, and hospital service area) include procedure year (2021, 2022, 2023, 2021-2023) and demographic characteristics (age group and race/ethnicity). Combined year values (2021-2023) represent distinct individuals based on the most recent data point available for that individual. For example, consider an individual who receives counseling in multiple years, 2021 and 2023. After the first counseling service, they do not pursue genetic testing, but they do after the second counseling service. For single year values, this individual would be counted as receiving counseling with genetic testing in 2023, but not in 2021. For the combined year value, based on the most recent data point, this individual would be counted as receiving counseling with genetic testing with the age and geography stemming from 2023.
- Percent of Mainers that Received Hereditary Genetic Testing** – The number and proportion of distinct females for individuals with a known personal or familial history of high-risk conditions that received hereditary genetic testing out of eligible individuals that had not already received testing. High risk conditions include breast cancer, ovarian cancer, prostate cancer, and familial history of being a carrier of genetic disease. Measure breakouts across geographies (state, county, and hospital service area) include procedure year (2021, 2022, 2023, 2021-2023) and demographic characteristics (age group and race/ethnicity). Hereditary genetic testing should only occur once; however, some situations may result in an individual receiving multiple genetic tests. All procedure year values are based on the most recent test that occurred for an individual, with these individuals being removed from the denominator after receiving a test.

Mortality

The following measures are sourced from the MHDO's APCD and/or Hospital Inpatient and Outpatient Encounter Data integrated with the Maine Cancer Registry and Maine Vital Statistics Death Data. All measures include information for the population consisting of females that died from Breast Cancer (ICD-10-CM Code C50) from 2015-2021.

Detailed stage and histology include information for females with a breast cancer diagnosis (ICD-O-3 Code C50) in the Maine Cancer Registry from 2015-2021 based on the most recent and relevant data for that individual. For example, if an individual had multiple records in the cancer registry for breast cancers, the most recent record with most progressive stage was selected. As a result, the cancer stage and histology may not reflect the stage and histology at the time of death.

Individual-level identification is based on data linkages across all data sources (MHDO data and Maine Cancer Registry, and Maine Vital Statistics) with the primary identifier being from MHDO data.

Prior to 2018, detailed cancer stage information (i.e., stage I, stage II, etc.) was not available in the cancer registry. As a result, measures are displayed by summary stage within this dashboard:

- **Proportion of Breast Cancer Mortality by Summary Stage at Diagnosis** – The proportion of breast cancer deaths that fall into each summary stage (the spread and severity of the cancer) based on information at the time of diagnosis. Cancer summary stages presented include “localized,” “regional,” “distant,” “not available in registry,” and “unknown or not applicable.” “Not available in the registry” indicates that we were not able to link the individuals across all data sets based on the information available. State-level measure breakouts include demographic characteristics (age group) and diagnosis year (2015-2019, 2016-2020, 2017-2021).
- **Proportion of Breast Cancer Mortality by Histology at Diagnosis** – The proportion of breast cancer deaths that fall into each cancer histology (the subtype of cancer present) based on information at the time of diagnosis. Cancer histology types include “invasive carcinoma,” “other histology,” and “not available in registry.” “Not available in the registry” indicates that we were not able to link the individuals across all data sets based on the information available. State level measure breakouts include demographic characteristics (age group) and diagnosis year (2015-2019, 2016-2020, 2017-2021).
- **Comparison to the US Incidence Rate¹⁰** – The percent difference between the Maine and the United States breast cancer mortality rates obtained from the CDC’s United States Cancer Statistics.

Breast Cancer Cohort

The following measures are sourced from MHDO APCD and/or Hospital Inpatient and Outpatient Encounter Data integrated with the Maine Cancer Registry and Maine Vital Statistics Death Data.

Individual level identification is based on data linkages across all data sources (MHDO data and Maine Cancer Registry, and Maine Vital Statistics) with the primary identifier being from MHDO data.

Measures are listed by the pages they are displayed on. All measures include information for the population consisting of females diagnosed with breast cancer (ICD-O-3 Code C50) in 2019-2021, for whom the cancer diagnosis appears to be their first cancer diagnosis based on the history available within the cancer registry.

Characteristics

- **Breast Cancer Cohort Demographics** – Basic demographic characteristics of females with breast cancer, which include average age and percentage of the cohort that is white, non-Hispanic.
- **Stage at Diagnosis** – Number and proportion of distinct females by cancer stage at diagnosis among individuals with breast cancer. Cancer stages include: “stage 0 or not applicable/unknown,” “stage I/II,” “stage III/IV,” and “unknown or not applicable.” Measure breakdowns include demographic groupings (age group and race/ethnicity) and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level.
- **Histology at Diagnosis** – Number and proportion of distinct females by histology at diagnosis (the subtype of cancer present) among individuals with breast cancer. Cancer histology groups include “invasive lobular carcinoma,” “invasive ductal carcinoma,” “ductal in situ,” and “other histology.” Measure breakdowns include demographic groupings (age group and race/ethnicity) and diagnosis year (2019, 2020, 2021, 2019-2021) at the state level.
- **Percentage with High-Risk Genetic Disorders, Familial History, and/or Medical History** – Proportion of female breast cancer patients that had record of high risk personal or family history (i.e., breast cancer, prostate cancer, ovarian cancer), receipt of high risk medical procedures (i.e., breast implants and chest radiation), high risk medical history (i.e. benign breast conditions), and high-risk genetic conditions (Cowden syndrome, Peutz-Jeghers Syndrome, Bannayan-Riley-Ruvalcaba Syndrome, Li-Fraumeni Syndrome). Measure breakdowns at the state level include demographic characteristics (age group), cancer stage (stage 0 or N/A, stage I/II, and stage III/IV), and cancer histology (ductal carcinoma in situ, invasive ductal carcinoma, invasive lobular carcinoma, and other histology). Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2019, 2020, 2021, 2019-2021).

Additional Variations of this measure are not mutually exclusive and available at the state-level only for demographic characteristics (age group) and diagnosis year (2019, 2020, 2021, 2019-2021). These variations include:

1. Percent that had a high-risk genetic disorder
 2. Percent that had high-risk familial history
- **Percent of Breast Cancer Patients Diagnosed by Year of Diagnosis that Died by the end of 2023** – Number and proportion of distinct females from the breast cancer cohort that had a death record from date of diagnosis through the end of 2023. Measure breakdowns at the state level include demographic characteristics (age group), cancer stage (stage 0 or N/A, stage I/II, and stage III/IV), and cancer histology (ductal carcinoma in situ, invasive ductal carcinoma, invasive lobular carcinoma, and other histology). Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2019, 2020, 2021, 2019-2021).

Treatment

Individual treatments were identified using ICD, CPT, and HCPCS procedure codes as well as National Drug Codes (NDCs) from the date of diagnosis onward with a diagnosis code of breast cancer (ICD-10-CM Code C50) on the hospital or claim record among individuals that survived 60 days post diagnosis.

Treatment Types are defined by:

- **Radiation Therapies:** Beam radiation, brachytherapy, proton therapy, thermal therapy, radio frequency therapy, image guided radiation therapy (IGRT), intense modulated radiation therapy (IMRT), nuclear medicine therapy, stereotactic body radiation treatment (SBRT), and stereotactic radiosurgery (SRS).
- **Medication Therapies:** Chemotherapy, immunotherapy, antineoplastic medications, and hormone therapies.
- **Surgical Intervention:** Any procedure with a description mentioning the removal or surgical impacts on body locations related to the breast.

Measures include:

- **Median Days to Treatment from Diagnosis to Treatment Type** – Median days from date of diagnosis to the first instance of treatment. Measure breakdowns at the state level include demographic characteristics (race/ethnicity), cancer stage (stage 0, stage I, stage II, stage III, stage IV), and cancer histology (ductal carcinoma in situ, invasive ductal carcinoma, invasive lobular carcinoma, and other histology).

Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2019, 2020, 2021, 2019-2021) and demographic characteristics (age group).

Variations of this measure include:

1. Median Days to Treatment between Diagnosis and Any Treatment
 2. Median Days to Treatment between Diagnosis and Medication Therapy
 3. Median Days to Treatment between Diagnosis and Chemotherapy
 4. Median Days to Treatment between Diagnosis and Hormone Therapy
 5. Median Days to Treatment between Diagnosis and Radiation Therapy
 6. Median Days to Treatment between Diagnosis and Surgery
 7. Median Days to Treatment between Diagnosis and Treatment Planning
- **Received Any Treatment** – Number and proportion of distinct females from the breast cancer cohort that received any treatment after their diagnosis date. Measure breakdowns at the state level include demographic characteristics (race/ethnicity), cancer stage (stage 0, stage I, stage II, stage III, stage IV), and cancer histology (ductal carcinoma in situ, invasive ductal carcinoma, invasive lobular carcinoma, and other histology). Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2019, 2020, 2021, 2019-2021) and demographic characteristics (age group).
 - **Received Any Medication Therapy** – Number and proportion of distinct females from the breast cancer cohort that received medication therapy after their diagnosis date. Measure breakdowns at the state level include demographic characteristics (race/ethnicity), cancer stage (stage 0, stage I, stage II, stage III, stage IV), and cancer histology (ductal carcinoma in situ, invasive ductal carcinoma, invasive lobular carcinoma, and other histology). Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2019, 2020, 2021, 2019-2021) and demographic characteristics (age group).
 - **Percent that Received Medication Therapies by Type Received** – Number and proportion of distinct females from the breast cancer cohort that received medication therapy after their diagnosis date by medication type. Types are not mutually exclusive and include: “chemotherapy,” “hormone therapy,” “immunotherapy,” and “other medications.” Measure breakdowns at the state level include demographic characteristics (race/ethnicity and age group), cancer stage (stage 0, stage I, stage II, stage III, stage IV), and cancer histology (ductal carcinoma in situ, invasive ductal carcinoma, invasive lobular carcinoma, and other histology), and diagnosis year (2019, 2020, 2021, 2019-2021).

- **Percent that Received Surgical Therapies by Type Received** – Number and proportion of distinct females from the breast cancer cohort that received surgery after their diagnosis date by procedure type. Types include: “lumpectomy” and “mastectomy.” Measure breakdowns at the state level include cancer stage (stage 0, stage I, stage II, stage III, stage IV), cancer histology (ductal carcinoma in situ, invasive ductal carcinoma, invasive lobular carcinoma, and other histology) and diagnosis year (2019, 2020, 2021, 2019-2021).
- **Received Any Radiation Therapy** – Number and proportion of distinct females from the breast cancer cohort that received radiation therapy after their diagnosis date. Measure breakdowns at the state level include demographic characteristics (race/ethnicity), cancer stage (stage 0, stage I, stage II, stage III, stage IV), and cancer histology (ductal carcinoma in situ, invasive ductal carcinoma, invasive lobular carcinoma, and other histology). Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2019, 2020, 2021, 2019-2021) and demographic characteristics (age group).
- **Received Any Surgery** – Number and proportion of distinct females from the breast cancer cohort that received surgery after their diagnosis date. Measure breakdowns at the state level include demographic characteristics (race/ethnicity), cancer stage (stage 0, stage I, stage II, stage III, stage IV), and cancer histology (ductal carcinoma in situ, invasive ductal carcinoma, invasive lobular carcinoma, and other histology). Measure breakouts across geographies (state, county, and hospital service area) include diagnosis year (2019, 2020, 2021, 2019-2021) and demographic characteristics (age group).

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