Cancer: Understanding the Risk

Jennifer Kachajian, MA, MPH and Leanne Shulman, MS
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Overview

- How cancer statistics are created and what they mean.
- Chittenden County and Burlington compared to State and U.S.
- What increases risk for developing cancer.
- How that risk can be mitigated.
- Accessing cancer data.
About Cancer Data
Keep in mind...

- The numbers we present are meant to describe and enhance understanding of a subject.
- Context is necessary in order to understand the numbers
  - What is the nature of the disease?
  - What is the nature of the population at risk?
  - Is there a common thread?
- Numbers are not the be-all end-all
  - They’re just one tool, really
What are data?

- Rates
  - Incidence and Mortality
- Statistical Significance
- Where do data come from?
  - Where to find data
  - Who collects data?
  - How do they collect it?
Where do numbers come from?

- Different agencies collect data
  - Primary and Secondary Reporting
    - Komen’s *Vermont-New Hampshire Community Profile* used National Cancer Institute Data.
- When were the data collected?
- How representative are the data?
  - Sample.
  - Census.
- What is a ‘statistic’?
  - Using a subset of the population (a sample) to understand and/or describe it.

Sources of Cancer Data

- Cancer Registry
- Death Certificates
- Surveys
- Research Studies
Rates

- Frequency of a disease over a time period divided by the unit size of the population during that same time period.

- Incidence rates measure occurrence.

\[ \text{Incidence rate} = \frac{\text{# of NEW cases diagnosed during a period of time}}{\text{# of the population at risk}} \times 100,000 \]

- Usually expressed in the form of per some number of the population i.e. per 100,000

\[ \frac{450 \text{ new cases of pertussis}}{2,134,000 \text{ people at risk during time period}} \times 100,000 \]

\[ = 0.000211 \times 100,000 \text{ people} \]

\[ = 21.1 \text{ cases of pertussis per 100,000 people – Gives more context.} \]
Incidence and Prevalence

- **Incidence**: Number of NEW cases during a given period in a specified population.
  - Useful measure to help assess the risk of disease.

- **Prevalence**: Number of EXISTING cases during a given period in a specified population
  - Useful measure to help understand the burden of disease.
What is significance?

- A *statistically significant difference* indicates that there is a difference that is unlikely to have occurred by chance alone.

  - Lower ▼
  - Higher ▲
  - Not Different (or Similar)
Small Numbers

- Small numbers (samples) = unreliable
  - If you chose 20 people at random and asked whether they have breast cancer...
    - Would it be accurate?
    - Would it represent the entire at risk population?
  - What about 50? 100? 200,000? One million people?

- Small geographic areas
  - Towns
  - Neighborhoods
  - Vermont is small in some areas
    - Numbers are calculated over several years
Cancer Incidence and Mortality
Vermont’s Cancer Landscape

- Small, Mainly Rural (~626,000 pop.)
- Aging Population
  - 2nd oldest state
- 94.3% White Non-Hispanic
- Cancer Incidence
  - 471.9 per 100,000
  - ~3,600 cases per year
  - Statistically higher than U.S.
- Cancer Mortality
  - 173.4 per 100,000
  - ~1,300 deaths per year
  - Leading cause of death in Vermont
- Vermont Adults Living with Cancer
  - 7% or about 36,000

Data Sources:
2010 Census
Vermont Cancer Registry 2008-2012
Vermont Vital Statistics 2008-2012
NPCR and SEER 2008-2012
Vermont BRFSS 2014

Chronic Disease Prevalence

Chronic Disease Prevalence, Adults (18+), 2014

* Excluding skin cancers.

Data Source: Behavioral Risk Factor Surveillance System, 2014
<table>
<thead>
<tr>
<th>Cancer Site</th>
<th>Males 2008-2012</th>
<th>Females 2008-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate</td>
<td>25%</td>
<td>29%</td>
</tr>
<tr>
<td>Lung and Bronchus</td>
<td>14%</td>
<td>15%</td>
</tr>
<tr>
<td>Urinary Bladder</td>
<td>7%</td>
<td>8%</td>
</tr>
<tr>
<td>Colon and Rectum</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>Melanoma of the Skin</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>Other Sites</td>
<td>38%</td>
<td>35%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Data Sources: Vermont Cancer Registry, 2008-2012
3-4-50 Deaths Account for Majority of All Deaths

Data Sources: 2012 Vermont Vital Statistics (Provisional), Vermont BRFSS, 2013

Leading Cancer Cause of Death

**Leading Cancer Deaths, Vermont Males, All Ages, 2008-2012**

- **Lung and Bronchus**: 28%
- **Prostate**: 10%
- **Urinary Bladder**: 4%
- **Colon and Rectum**: 8%
- **Pancreas**: 7%
- **Other Sites**: 43%

**Leading Cancer Deaths, Vermont Females, All Ages, 2008-2012**

- **Lung and Bronchus**: 29%
- **Breast**: 12%
- **Ovary**: 5%
- **Colon and Rectum**: 9%
- **Pancreas**: 7%
- **Other Sites**: 38%

Data Sources: Vermont Vital Statistics, 2008-2012 (2012, Provisional)

Cancer Stage at Diagnosis

Cancer Stage at Diagnosis
% of total cases of cancer, by type, according to stage at diagnosis, 2008-2012

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melanoma</td>
<td>5%</td>
</tr>
<tr>
<td>Prostate</td>
<td>15%</td>
</tr>
<tr>
<td>Breast (Female)</td>
<td>23%</td>
</tr>
<tr>
<td>Cervix</td>
<td>33%</td>
</tr>
<tr>
<td>Colon and Rectum</td>
<td>3%</td>
</tr>
<tr>
<td>Lung</td>
<td>25%</td>
</tr>
</tbody>
</table>

Note: Cervical cancers diagnosed as in situ are not reported to the Cancer Registry and are therefore not included in this chart.
Data Source: Vermont Cancer Registry, 2008-2012.
Cancer Risk
Risk for Developing Cancer

- "Cancer" is a group of more than 100 diseases characterized by uncontrolled growth and spread of abnormal cells.
  - Cancer can start in any cell in the body.
  - The cells start out as normal and then change.
  - Injuries to the cell affect how it grows, works, reproduces, and dies.
  - Cells grow and divide out of control instead of dying when they should.

- **Latency** is the time that passes between being exposed to something that can cause disease (such as sun exposure or smoking) and having symptoms.
Risk for Developing Cancer

- A risk factor is a condition, an activity, or an exposure that increases a person’s chance of developing cancer.
  - People with known risk factors may never develop cancer.
  - Many people who develop cancer have none of the known risk factors.
- Cancer develops gradually as a result of a complex mix of factors related to lifestyle choices, environment and genetics.
  - Nearly two-thirds of cancer deaths in the U.S. can be linked to tobacco use, poor diet, obesity, and lack of exercise.
Health Behaviors that Contribute to Chronic Disease

- Currently Smoke
  - Adults: 18%
  - Youth: 13%

- Do NOT Get Recommended Physical Activity
  - Adults: 75%
  - Youth: 41%

- Do NOT Eat Recommended Fruits and Vegetables
  - Adults: 79%
  - Youth: 77%

Data Sources: Vermont BRFSS and YRBSS, 2013
Tobacco Associated Cancers
Tobacco Associated Diseases

- Tobacco use causes more than 480,000 U.S. deaths each year.

- Smoking (and secondhand smoking) can cause cancer almost anywhere in the body but also contributes to many other diseases including:
  - Heart Disease
  - Respiratory Illness
  - Stroke
  - Diabetes
  - Reproductive Health
  - Dental Health
  - Preterm birth, low birth weight, still birth, birth defects, SIDS

Data Source: Centers for Disease Control and Prevention.
Tobacco Associated Cancers

- Tobacco use increases the risk for many types of cancer, particularly lung cancer.

- Tobacco also increases the risk for cancers of the mouth, lips, nose and sinuses, larynx (voice box), pharynx (throat), esophagus, stomach, colon and rectum, pancreas, cervix, uterus, ovary, bladder, kidney, and acute myeloid leukemia.

- **Chittenden County** has a lower rate of tobacco associated cancers compared to the state.

*Notes: All rates are age adjusted to the 2000 U.S. standard population.*

*Data Source: VCR, 2008-2012*
Lung Cancer Statistics – Males

- **Incidence:**
  - 262 Vermont male cases per year
  - VT: 75.8 per 100,000 (U.S. 76.6 per 100,000).
  - 42 Chittenden County new cases per year
  - Chittenden County: 62.2 per 100,000

- **Late Stage (regional and distant, age 55+):**
  - VT: 239.9 per 100,000 (U.S. 234.2 per 100,000)
  - Chittenden County: 201.0 per 100,000

Lung Cancer Statistics - Females

- **Incidence:**
  - 259 Vermont female cases per year
  - VT: 62.7 per 100,000 (U.S. 54.1 per 100,000).
  - **59 Chittenden County cases per year**
  - Chittenden County: 67.1 per 100,000 (than U.S.)

- **Late Stage (regional and distant, age 55+):**
  - VT: 188.4 per 100,000 (U.S. 153.4 per 100,000)
  - Chittenden County: 203.3 per 100,000 (than U.S.)

Lung Cancer Statistics – SIR’s

Burlington’s Old North End has more lung cancers then expected compared to the state.

Notes: All rates are age adjusted to the 2000 U.S. standard population.
Data Source: VCR, 2003-2012
Eighteen percent of Vermonters reported being current smokers in 2014; this is similar to the national rate (18%) in 2014.

Chittenden County had lower smoking rates to the state as a whole.

Among current smokers in Vermont, 59% reported quitting for at least one day in the past 12 months. This was similar to the national quit attempt rate of 60%.

Notes: All rates are age adjusted to the 2000 U.S. standard population

Data Source: BRFSS, VT: Statewide 2014, Counties 2013 and 2014
Goal 2. Reduce exposure to tobacco among Vermonters.

Objectives

<table>
<thead>
<tr>
<th>No.</th>
<th>Objective</th>
<th>Measures</th>
<th>Target Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2a</td>
<td>Decrease % of adults who smoke cigarettes. (Data Source: BRFSS)</td>
<td>(2014)</td>
<td>12%</td>
</tr>
<tr>
<td>2b</td>
<td>Decrease % of adult cancer survivors who smoke cigarettes. (Data Source: BRFSS)</td>
<td>(2014)</td>
<td>12%</td>
</tr>
<tr>
<td>2c</td>
<td>Increase % of adults attempting to quit in the past year. (Data Source: BRFSS)</td>
<td>(2014)</td>
<td>80%</td>
</tr>
<tr>
<td>2d</td>
<td>Decrease % of adult non-smokers exposed to second-hand smoke. (Data Source: Adult Tobacco Survey)</td>
<td>(2014)</td>
<td>30%</td>
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Objectives and Measures

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**Strategies**

- Support efforts to increase the number and type of tobacco and smoke-free environments including, college and hospital campuses, parks, beaches and community gathering spots.
- Promote media cessation messaging to increase registrants to NOQQuits.
Obesity Associated Cancers
Obesity Associated Cancers

- Overweight and obesity may contribute to as much as 25% of newly diagnosed cancers in the U.S. annually.

- The prevalence of obesity (BMI 30+) among Vermonters age 20+ has increased from 21% in 2005 to 25% in 2014.

- 36% of Vermonters were considered overweight (BMI between 25 and 29).

- 60% of Vermont adults were either overweight or obese placing them at increased risk of conditions such as type 2 diabetes, hypertension, heart disease, stroke, osteoarthritis, and cancer.

- Excess weight has also been associated with poor prognosis including: later stage of diagnosis, complications from treatments, increased recurrence of cancers, and increased mortality.

Data Source: BRFSS, 2014
Obesity Associated Cancers

- Nutritional factors such as fruit and vegetable consumption and drinking sugar sweetened beverages can contribute to weight and body mass index.

- Participation in physical activity also can influence body weight and obesity.

- Several studies have demonstrated that weight loss reduces the risk of developing chronic diseases including diabetes and cardiovascular disease as well as some cancers.

**Obesity by Nutritional Factors and Physical Activity, Age 18+, 2013**

- **Fruits per Day**
  - Less than 2: 29%
  - 2 or More: 19%

- **Vegetables per Day**
  - Less than 3: 28%
  - 3 or More: 15%

- **Sugar Sweetened Beverages per Day**
  - None: 23%
  - 1 to 2: 26%
  - 3 or More: 36%

- **Physical Activity Recommendations**
  - Meet: 19%
  - Not Meet: 34%

Data Source: BRFSS, 2013
Excess weight has been identified as a risk factor for cancers of the breast (postmenopausal), colon and rectum, uterus, esophagus, kidney, pancreas, thyroid, and gallbladder; and may also increase the risk for cancers of the ovary, cervix, liver, non-Hodgkin lymphoma, myeloma, and prostate (advanced stage).

Chittenden County has similar obesity associated cancer rates compared to the state rate.

Notes: All rates are age adjusted to the 2000 U.S. standard population.

Data Source: VCR, 2008-2012
Cancer Related Risk Factors – Obesity

- In the United States, 30% of adults 20 and older are obese. In Vermont in 2014, the rate was 25%, which is lower than the national rate.

- While most Vermont counties have obesity rates that are similar to the state as a whole, Chittenden County has a lower obesity rate (20%) compared to Vermont.

Notes: All rates are age adjusted to the 2000 U.S. standard population. Obesity rates include adults, age 20 and over, with a Body Mass Index (BMI) classified as obese (BMI of 30+).

Data Source: BRFSS, VT: Statewide 2014, Counties 2013 and 2014
State Cancer Plan - 2020

Goal 4. Improve nutrition and physical activity among Vermonters.

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Measures</th>
<th>Fiscal Year 2015</th>
<th>Fiscal Year 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>Decrease % of adults age 20+ who are obese</td>
<td>23% (2014)</td>
<td>20% (2015)</td>
</tr>
<tr>
<td>43</td>
<td>Decrease % of adults age 20+ with BMI &gt; 30%</td>
<td>31% (2014)</td>
<td>20% (2015)</td>
</tr>
<tr>
<td>44</td>
<td>Decrease % of adults who do not meet physical activity guidelines</td>
<td>54% (2013)</td>
<td>65% (2014)</td>
</tr>
<tr>
<td>45</td>
<td>Increase % of adults who eat the recommended amount of fruit and vegetables per day</td>
<td>41% (2013)</td>
<td>45% (2014)</td>
</tr>
<tr>
<td>46</td>
<td>Increase % of adults who eat the recommended amount of fruit and vegetables per day</td>
<td>34% (2013)</td>
<td>40% (2014)</td>
</tr>
<tr>
<td>47</td>
<td>Decrease incidence rate of obesity-associated cancer</td>
<td>204.8 (2008-2012)</td>
<td>194.6 (2013)</td>
</tr>
</tbody>
</table>

Strategies
- Support Vermont schools in developing and implementing healthy eating policies.
- Support worksites in developing policies and programs to promote healthy behaviors.
- Support community design initiatives, such as increasing opportunities for physical activity and access to healthy foods, to make it easier for people to live healthy lives.

Physical Activity and Nutrition

Overweight and obesity are associated with an increased risk of developing many types of cancer as defined in the Burden of Cancer in Vermont section of this plan. Lack of physical activity and poor nutrition are the main contributors to obesity. Approximately one-third of the cancers diagnosed in the U.S. are linked to these risk factors.

Adopting or maintaining a healthy lifestyle after a cancer diagnosis can reduce morbidity and mortality from cancer and other chronic diseases. Reducing excess body weight through good nutrition and regular exercise can enhance the quality of life and extend the lifespan of cancer survivors as well as reduce their risk of developing secondary cancers and experiencing treatment side effects.

The objectives laid out in this plan align with the priorities of the Vermont Obesity Prevention Plan coordinated by the Vermont Department of Health Office of Oral Health. This program works with partners such as VTAAC to address obesity-related health issues in Vermont.

HPV

Human Papillomavirus (HPV) is the most common sexually transmitted infection in the U.S. There are many types of HPV. Some types cause genital warts, while...
UV Exposure
Melanoma Statistics – Trend

- Third most commonly diagnosed cancer among cancers that affect both sexes.
- Vermonters have significantly higher rates of melanoma (29.0 per 100,000) compared to the U.S. rates (19.9 per 100,000).
- The incidence of melanoma has increased significantly in both Vermont and the U.S.

Incidence rates of male and female melanoma - Vermont and United States, All Ages, 1996 - 2012

Melanoma Statistics - Males

- **Incidence Rankings by State:** Vermont is #3.

- **Incidence:**
  - 121 Vermont male cases per year.
  - VT: 35.2 per 100,000 (↑ than U.S. 25.5 per 100,000).
  - 27 Chittenden County cases per year.
  - Chittenden County: 38.6 per 100,000 (↑ than U.S.).

Melanoma Statistics – Females

- **Incidence Rankings by State:** Vermont is #1.

- **Incidence:**
  - 94 Vermont female cases per year.
  - VT: 24.7 per 100,000 ▲ (U.S. 16.0 per 100,000).
  - 25 Chittenden County cases per year.
  - Chittenden County: 28.9 per 100,000 (▲ than U.S.).

Melanoma, UV Associated Cancers

- Most skin cancers are strongly associated with ultraviolet radiation (UV) exposure.
- As much as 90 percent of melanomas are estimated to be caused by UV exposure, the most preventable risk factor.
- **Chittenden County** has a similar rate of UV associated cancers compared to the state.

*Notes: All rates are age adjusted to the 2000 U.S. standard population.*

Data Source: VCR, 2008-2012
Among Vermont adults, 35% reported having one or more sunburns in the past year.

Sunburn rates in Chittenden County are similar to the state.
Cancer Related Risk Factors – Sun Exposure

The use of tanning devices before age 35 years increase melanoma risk by as much as 75 percent.

During the past 12 months:

- 65% of high school students reported having at least one sunburn after being outside in the sun or using an indoor tanning device.
  - Among middle school students, 54% reported having at least one sunburn.

- 11% had five or more sunburns.

- 4% used an indoor tanning device such as a sunlamp, sunbed, or tanning booth.

- Females were significantly more likely than males to report having at least one sunburn or using an indoor tanning device.

Data Source: YRBS, 2015
Goal 6. Reduce exposure to environmental hazards among Vermonters.

6A. Ultraviolet (UV) radiation from the sun and sun lamps

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>6.1 Decrease % of youth in grades 6-12 reporting sunburns in the past 12 months. (Data Source: YRBS)</td>
<td>Grades 6-8: 54% (2015)</td>
<td>Grades 6-8: 51%</td>
<td></td>
</tr>
<tr>
<td>6.2 Decrease % of youth in grades 9-12 who have used a tanning booth or sunlamp in the past 12 months. (Data Source: YRBS)</td>
<td>4% (2015)</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>6.3 Decrease incidence rate of invasive melanoma. (Per 100,000 persons, Data Source: VCR)</td>
<td>29.0 (2008-2012)</td>
<td>27.6</td>
<td></td>
</tr>
</tbody>
</table>

Strategies

- Promote awareness of and compliance with Vermont’s tanning regulations prohibiting use of tanning beds by Vermonters under age 18.
- Educate the public regarding the dangers of exposure to ultraviolet (UV) radiation from the sun and sun lamps.
- Promote evidence-based skin cancer prevention strategies in schools and parks/recreation programs.
- Promote education of healthcare providers about the importance of sun-safety counseling for children, adolescents, and young adults age 10 to 24 who have fair skin.
- Promote education of healthcare providers on the burden of skin cancer in Vermont and the evidence and information related to visual skin examination and skin cancer diagnosis and treatment.

Environmental Hazards

- Ultraviolet Radiation

Skin cancer is the most common form of cancer in Vermont and the U.S. Melanoma is the least common, but most serious form of skin cancer. Vermont has one of the highest rates of melanoma incidence in the U.S.

Ultraviolet radiation exposure from the sun, sunlamps and tanning beds is the major known factor associated with melanoma. An intermittent pattern of sun exposure over many years and having at least one severe, blistering sunburn significantly increases melanoma risk. The use of tanning devices before the age of 35 also significantly increases the risk of developing melanoma.

- Promote evidence-based skin cancer prevention strategies in schools and parks/recreation programs.
Water and Radon
Environmental agents are estimated to account for roughly four percent of cancer cases.

The Vermont Department of Health makes recommendations for water and radon testing.
Radon

- Radon is a naturally occurring radioactive gas that is present in soil, air, and water.

- Radon increases a person’s risk of developing lung cancer.

- Unless you test for it, there is no way of knowing if radon is present in your home.

- Testing is free!
  - Radon@vermont.gov or 1-800-439-8550.
Water

- If you pay a bill for your water your water comes from a **public water supply**.

- Public water supplies must be tested regularly for bacteria, nonorganic chemicals, naturally occurring radioactivity, and naturally occurring compounds.

- Public water supply test results for a specific system can be obtained from the water company upon request.

- For **private water systems** the health department recommends periodic testing by homeowners:
  - Coliform bacteria (Kit A) once a year.
  - Inorganic chemicals, including arsenic (Kit C) every five years.
  - Mineral radioactivity (Kit RA) every five years.
  - Request a test kit by phone at 1-800-660-9997.
Accessing Cancer Data
Accessing Data – Vermont Department of Health

Cancer Data and Statistics

Overview
- Age Adjusted Incidence and Mortality Rates
- 2015 Cancer Data Pages - Full Report
- Cancer Dashboard - Healthy Vermonters 2020
- Cancer from a Public Health Perspective

Risk Factors and Associated Cancers
- Cancer-Related Risk Factors and Preventative Behaviors
- Data Brief: Melanoma
- Data Brief: Obesity Associated Cancers
- Data Brief: Tobacco Associated Cancers

Screening, Diagnosis, and Mortality
- Age Adjusted Incidence and Mortality Rates
- Cancer Incidence
- Cancer Screening
- Cancer Mortality
- Data Brief: Colorectal Cancer
- Thyroid Cancer
- Screening and Early Detection

Cancer Survivorship
- Cancer Prevalence and Health of Survivors
- Data Brief: Cancer Survivorship

Community Data
- Cancer Fact Sheets

<table>
<thead>
<tr>
<th>Addison</th>
<th>Bennington</th>
<th>Caledonia</th>
<th>Chittenden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essex</td>
<td>Franklin</td>
<td>Grand Isle</td>
<td>Lamoille</td>
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<td>Orange</td>
<td>Orleans</td>
<td>Rutland</td>
<td>Washington</td>
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<td>Windham</td>
<td>Windsor</td>
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http://healthvermont.gov/cancer
# Accessing Data – County Cancer Fact Sheets

## Cancer Related Risk Factors and Preventative Behaviors

Chittenden County rates for adult smoking and obesity, as well as youth tanning in the past 12 months are better than Vermont overall. The percentages of males and females ages 13-17 who have received the full HPV vaccine series are higher in Chittenden County than Vermont overall.

| Risk Factor | Chittenden | Vermont | Goal Type
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Smoke Cigarettes, Currently (Adults)*</td>
<td>14</td>
<td>16</td>
<td>HV, SCP</td>
</tr>
<tr>
<td>Obesity (Ages 20+)*</td>
<td>20</td>
<td>25</td>
<td>HV, SCP</td>
</tr>
<tr>
<td>Tanning, Past 12 Months (Youth, Grades 9-12)</td>
<td>9</td>
<td>10</td>
<td>SCP</td>
</tr>
<tr>
<td>Completed 3 dose HPV vaccination series (Females, Ages 13-17)</td>
<td>51</td>
<td>46</td>
<td>SCP</td>
</tr>
<tr>
<td>Completed 3 dose HPV vaccination series (Males, Ages 13-17)</td>
<td>39</td>
<td>30</td>
<td>SCP</td>
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</table>


## Cancer Incidence by Risk Factor: Newly Diagnosed Cases per Year

The incidence rate for tobacco associated cancers is better in Chittenden County than Vermont overall. Other risk factor associated cancer incidence rates in Chittenden County are similar to the Vermont rates.

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Rate per 100,000 People</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco Associated Cancers*</td>
<td>196.8</td>
</tr>
<tr>
<td>Obesity Associated Cancers**</td>
<td>206.9</td>
</tr>
<tr>
<td>Melanoma (UV Associated Cancer)**</td>
<td>32.4</td>
</tr>
<tr>
<td>HPV Associated Cancers***</td>
<td>9.0</td>
</tr>
</tbody>
</table>

Data Source: VCR, 2008-2012.

Note: Excludes basal cell and squamous cell skin cancers and in situ carcinomas, except urinary bladder.

*Tobacco use increases the risk of cancers of the lung and bronchus, mouth, lip, nose and sinuses, larynx (voice box), pharynx (throat), esophagus, stomach, colon and rectum, pancreas, cervix, uterus, ovary, bladder, kidney, and acute myeloid leukemia.

**Excess weight increases the risk of cancers of the breast (postmenopausal), colon and rectum, uterus, esophagus, kidney, pancreas, thyroid and gallbladder. Excess weight may increase the risk of cancers of the cervix, ovary, liver, non-Hodgkin lymphoma, myeloma and prostate (advanced stage).

***UV radiation increases the risk of melanoma.

### Cancer Screening

The Chittenden County colorectal cancer screening rate is better than Vermont overall. Other screening rates are similar to state rates.

<table>
<thead>
<tr>
<th>Screening Type</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Screening (Females, Ages 50-74)**</td>
<td>82</td>
</tr>
<tr>
<td>Colorectal Cancer Screening (Females, Ages 21-65)**</td>
<td>87</td>
</tr>
<tr>
<td>Colorectal Cancer Screening (Males and Females, Ages 50-75)**</td>
<td>77</td>
</tr>
</tbody>
</table>


### Cancer Diagnosis: Advanced Stage

Chittenden County has similar advanced stage diagnosis rates for cancers of the breast, lung and bronchus, and colon and rectum, compared to Vermont overall.

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Rate per 100,000 People</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast* (Females, Ages 50+)</td>
<td>90.5</td>
</tr>
<tr>
<td>Colorectal* (Males and Females, Ages 50+)</td>
<td>52.4</td>
</tr>
<tr>
<td>Lung* (Males and Females, Ages 55+)</td>
<td>201.4</td>
</tr>
</tbody>
</table>

Data Source: VCR, 2008-2012.

Note: The number of advanced stage cervical cancers is too small to report by county.

### Cancer Survivors (Prevalence): Ever Diagnosed with Cancer

There are approximately 7,200 adult cancer survivors living in Chittenden County.

Data Source: BRFSS, 2012-2014.

Note: Cancer prevalence excludes those whose only cancer was a skin cancer.

### Cancer Mortality: Deaths Due to Cancer

The cancer death rate in Chittenden County is similar to the Vermont rate.

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Rate per 100,000 People</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Cancer Deaths*</td>
<td>180.8</td>
</tr>
</tbody>
</table>


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* Indicates statistically worse or ** indicates statistically better than Vermont.
Accessing Data – Environmental Public Health Tracking

How clean is Vermont’s air? What health problems could be linked to the water we drink? What relationships may exist between environmental exposures and cancer?

Vermont’s Environmental Public Health Tracking Program will help you, policymakers, health professionals, scientists, researchers and others answer questions such as these.

Tracking brings together environmental and public health data in one place. Funded by the Centers for Disease Control and Prevention as part of the National Environmental Public Health Tracking Program, Vermont’s Tracking program also links you to comparable information from other states and to national data. Learn more about Tracking in Vermont.

http://healthvermont.gov/tracking
Accessing Data – Vermont Cancer Incidence Maps

Lung and Bronchus Cancer SIRs 2003-2012
Source: Vermont Cancer Registry

<table>
<thead>
<tr>
<th>Area</th>
<th>Observed Cases</th>
<th>Expected Cases</th>
<th>SIR</th>
<th>Statistically Compared to State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addison County Central</td>
<td>51</td>
<td>55.8</td>
<td>0.91</td>
<td>Not Different</td>
</tr>
<tr>
<td>Addison County East</td>
<td>21</td>
<td>21.3</td>
<td>0.99</td>
<td>Not Different</td>
</tr>
<tr>
<td>Addison County North</td>
<td>63</td>
<td>59.9</td>
<td>1.05</td>
<td>Not Different</td>
</tr>
<tr>
<td>Addison County West</td>
<td>44</td>
<td>46.7</td>
<td>0.90</td>
<td>Not Different</td>
</tr>
<tr>
<td>Barre City</td>
<td>92</td>
<td>79.9</td>
<td>1.15</td>
<td>Not Different</td>
</tr>
<tr>
<td>Barre Town</td>
<td>53</td>
<td>69.5</td>
<td>0.76</td>
<td>Not Different</td>
</tr>
</tbody>
</table>

Statewide: SIR = Observed Cases/Expected Cases

<table>
<thead>
<tr>
<th>SIRs by Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERMONT</td>
</tr>
</tbody>
</table>

*Data not shown in areas with fewer than 5 observed cases. Statistical comparisons to state based on multiple comparisons correction.

2016 – 2020
VERMONT CANCER PLAN
A FRAMEWORK FOR ACTION

Effective March 2016
Wrap Up

- There are many types of cancer statistics and data sources.
- Chittenden County compares similarly to Vermont for cancer risk factors and cancer diagnosis.
- Excess weight and tobacco use contribute to more cancers than environmental pollutants do.
- The most current cancer data for Chittenden County and for Burlington are available at healthvermont.gov.
Any Questions?

Contact information for questions or for a copy of this presentation:

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