



Virginia's Plan for Well-Being

2016-2020

Technical Report



Background

This document serves as a companion guide to *Virginia's Plan for Well-Being*, the Commonwealth of Virginia's state health improvement plan for 2016-2020. The plan has four aims:

1. Healthy, Connected Communities
2. Strong Start for Children
3. Preventive Actions
4. System of Health Care

Within this framework, the plan lays out 13 goals and 29 measures of success. This document describes the measures and provides the sources of the data. Calculations of unique measures are also provided.

Vision: Well-Being for All Virginians

Well-Being

Measure Percent of adults in Virginia who report positive well-being.

Description The four-item Satisfaction with Life Scale (SWLS) asks respondents to indicate how much they agree with the four following statements on a scale from 1 (strongly agree) to 5 (strongly disagree): (1) "In most ways my life is close to ideal," (2) "The conditions of my life are excellent," (3) "I am satisfied with my life," and (4) "So far I have gotten the important things I want in life." Responses to the four SWLS questions are dichotomized into those indicating positive well-being (e.g., agree/strongly agree) and those indicating negative well-being (e.g., disagree/strongly disagree). For overall SWLS, adults responding agree or strongly agree to all four questions (score = 4), are considered positive. Data collection for the SWLS scale began in 2016 as part of Virginia's Behavioral Risk Factor Surveillance System.

The Behavioral Risk Factor Surveillance System is an ongoing, annual survey of adults who are randomly called via landline or cell phone. The survey is coordinated by the Centers for Disease Control and Prevention and conducted in all 50 states. The Virginia Department of Health conducts the survey in Virginia. Responses of don't know/not sure, refused, or missing are removed from the numerator and denominator in all estimates.

Data Source Virginia Behavioral Risk Factor Surveillance System. Virginia Department of Health.

AIM 1 — Healthy, Connected Communities

Goal 1.1 Virginia's Families Maintain Economic Stability

1.1 A High School Graduates Enrolled in Higher Education

Measure Percent of Virginia high school graduates enrolled in an institute of higher education within 16 months after graduation.

Description The percent of Virginia high school graduates who:

1. Graduated within five years of entering high school,
2. Earned a standard or advanced studies diploma, and
3. Were enrolled in an institute of higher education within 16 months of graduation.

This measure follows a cohort of students who entered ninth grade in the same year.

Data Source Virginia Postsecondary Enrollment Reports. Virginia Department of Education.

Available at https://p1pe.doe.virginia.gov/postsec_public/postsec.do?dowhat=LOAD_REPORT_C11

1.1 B Cost-Burdened Households

Measure Percent of cost-burdened households in Virginia (more than 30% of monthly income spent on housing costs).

Description This measure is calculated by dividing the number of Virginians that spent more than 30% of their monthly income on rent, mortgage, or housing without a mortgage* by the number of occupied housing units in Virginia. The numerator* is housing cost as a proportion of total income in a given year. The data are from the American Community Survey 1-Year Estimates. This is a point-in-time annual survey.

Data Source American Community Survey. U.S. Census Bureau.

Available at <http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t#none>

1.1 C Consumer Opportunity Index Score

Measure Consumer Opportunity Index score in Virginia.

Description The Consumer Opportunity Index is an indicator of consumer access to resources that support long and healthy lives, with 100% representing perfect access and 0% representing no access. The metric is a multivariate index comprised of four indicators:

1. Affordability (housing and transportation cost as a percent of income),
2. Education (average years of schooling),
3. Food Accessibility (percent of population that is both low income and has low access to food), and
4. Townsend Material Deprivation Profile (unemployment, home ownership, overcrowded homes and homes without an automobile).

The Consumer Opportunity Index is one of four multivariate profiles that make up the Health Opportunity Index (HOI). The Virginia Department of Health convened stakeholders to identify 13 indicators to include in the HOI. From these indicators, four separate profiles were created using principal component analysis. Data for the indicators are taken from different sources using different methodologies, and are updated on differing schedules. Indicators in each profile are combined using the geometric mean. Each indicator is given equal weight in the profile. The Consumer Opportunity Index indicators are established at the census-tract level. County-level profiles are determined for each indicator using a population-weighted average of each tract in the county. The state score represents the median county score.

Data Source The Virginia Department of Health created the Consumer Opportunity Index utilizing the following data sources: Affordability, Education, Townsend Profile from the U.S. Census American Consumer Survey and 5-Year Food Accessibility Index from the U.S. Department of Agriculture.

Available at <https://www.vdh.virginia.gov/omhhe/hoi/>

1.1 D **Economic Opportunity Index Score**

Measure Economic Opportunity Index score in Virginia.

Description The Economic Opportunity Index is an indicator of access to the economic resources that support long and healthy lives, with 100% representing perfect access and 0% representing no access. The metric is a multivariate profile comprised of three indicators:

1. Employment (jobs per worker weighted by distance to job),
2. Income Inequality (Gini Coefficient), and
3. Job Participation (percent of working age population in the labor force).

The Economic Opportunity Index is one of four multivariate profiles that make up the Health Opportunity Index (HOI). The Virginia Department of Health convened stakeholders to identify 13 indicators to include in the HOI. From these indicators, four separate profiles were created using principal component analysis. Indicators in each profile are combined using the geometric mean. Data for the indicators are taken from different sources using different methodologies, and are updated on differing schedules. Each indicator is given equal weight in the profile. The Economic Opportunity Index indicators are established at the census-tract level. County-level profiles are determined for each indicator using a population-weighted average of each tract in the county. The state score represents the median county score.

Data Source The Virginia Department of Health created the Economic Opportunity Index utilizing the following data sources: U.S. Census, American Economic Survey, and 5-Year Estimates.

Available at <https://www.vdh.virginia.gov/omhhe/hoi/>

Goal 1.2 **Virginia's Communities Collaborate to Improve the Population's Health**

1.2 **Districts with Collaborative Community Health Improvement Processes**

Measure Percent of Virginia health planning districts that have established an on-going collaborative community health improvement process.

Description	The measure is calculated by dividing the number of health districts in Virginia that report that a collaborative community health improvement process is established in their health planning district divided by 35 (total number of health planning districts).
Data Source	Virginia Department of Health.

AIM 2 — Strong Start for Children

Goal 2.1 **Virginians Plan Their Pregnancies**

2.1 **Teen Pregnancy Rate**

Measure	Teen pregnancy rate per 1,000 females, ages 15 to 19 years, in Virginia.
Description	This metric is created using live birth data from the electronic birth certificate as reported by birth facilities, Induced Termination of Pregnancy (ITOP) data as reported by ITOP facilities, fetal death data as reported by medical providers and the number of female teens (15-19 years of age) from the National Center for Health Statistics population estimates.
Data Source	Virginia Vital Records and Health Statistics Electronic Birth Certificates, Fetal Death Certificates, Induced Termination of Pregnancy Certificates. Virginia Department of Health.

Goal 2.2 **Virginia’s Children Are Prepared to Succeed in Kindergarten**

2.2 A **Kindergartens Not Meeting Phonological Awareness Literacy (PALS-K) Benchmark**

Measure	Percent of children in Virginia who do not meet the PALS-K benchmarks in the fall of kindergarten and require literacy intervention.
Description	The Phonological Awareness Literacy Screening – Kindergarten (PALS-K) is conducted in the fall of each school year and identifies kindergarten students who are at risk for reading difficulties. The tool measures children’s knowledge of several literacy fundamentals: phonological awareness, alphabet recognition, concept of word, knowledge of letter sounds, and spelling. The PALS-K is an assessment of literacy readiness and is not a comprehensive measure of school readiness. PALS-K is the state-provided screening tool for Virginia’s Early Intervention Reading Initiative (EIRI) and is used by 99% of school divisions in the state on a voluntary basis.
Data Source	Phonological Awareness Literacy Screening – Kindergarten Results. Virginia Department of Education.

2.2 B **Third Graders Passing Reading Standards of Learning (SOL) Assessment**

Measure	Percent of third graders in Virginia who pass the Standards of Learning third grade reading assessment.
Description	The Standards of Learning (SOL) for Virginia Public Schools establish minimum expectations for what students should know and be able to do at the end of each grade. All items on SOL tests are reviewed by Virginia classroom teachers for accuracy and fairness, and teachers also assist the state Board of Education in setting proficiency standards for the tests.
Data Source	Virginia Standards of Learning Results. Virginia Department of Education.
Available at	http://www.doe.virginia.gov/statistics_reports/school_report_card/index.shtml

Goal 2.3	The Racial Disparity in Virginia’s Infant Mortality Rate is Eliminated
2.3	Infant Mortality Rate by Race
Measure	Infant mortality rate in Virginia per 1,000 live births by race.
Description	Virginia’s infant mortality rate is calculated by dividing the number of deaths of children under one year of age by the number of live births to mothers living in the state. The resulting number is multiplied by 1,000 to compute the rate.
Data Source	Virginia Vital Records and Health Statistics Electronic Birth Certificates and Electronic Death Certificates. Virginia Department of Health.
Available at	http://www.vdh.virginia.gov/HealthStats/documents/2010/pdfs/InfDeathRace13.pdf

AIM 3 — Preventive Actions

Goal 3.1	Virginians Follow a Healthy Diet and Live Actively
3.1 A	Adults Not Participating in Physical Activity
Measure	Percent of Virginia adults 18 years and older who do not participate in any physical activity during the past 30 days.
Description	The percent of Virginia adults 18 years and older who reported that they did not participate in any physical activity other than their regular job during the past 30 days. The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing, annual survey of adults who are randomly called via landline or cell phone. The survey is coordinated by the Centers for Disease Control and Prevention (CDC) and conducted in all 50 states. The Virginia Department of Health conducts the survey in Virginia. The information is self-reported and not observed or measured. Responses of don’t know/not sure, refused, or missing were removed from the numerator and denominator in all estimates.
Data Source	Virginia Behavioral Risk Factor Surveillance System. Virginia Department of Health.
Available at	http://www.vdh.virginia.gov/livewell/data/surveys/brfss/content/data.html

3.1 B	Adults Who Are Overweight or Obese
Measure	Percent of Virginia adults 18 years and older who are overweight or obese.
Description	The percent of Virginia adults 18 years and older who reported a body mass index (BMI) greater than 25. The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing, annual survey of adults who are randomly called via landline or cell phone. The survey asks respondents what their height and weight are. BMI is then calculated based on reported height and weight. The survey is coordinated by the Centers for Disease Control and Prevention (CDC) and conducted in all 50 states. The Virginia Department of Health conducts the survey in Virginia. Responses of don’t know/not sure, refused, or missing were removed from the numerator and denominator in all estimates.

Data Source Virginia Behavioral Risk Factor Surveillance System. Virginia Department of Health.
Available at <http://www.vdh.virginia.gov/livewell/data/surveys/brfss/content/data.html>

3.1 C [Households That Are Food Insecure](#)

Measure Percent of Virginia households that are food insecure for some part of the year.
Description Feeding America's *Map the Meal Gap* analyzes the relationship between food insecurity and indicators of food insecurity, and child food insecurity (poverty, unemployment, median income, etc.) at the state level.
Data Source *Map the Meal Gap* utilized the Current Population Survey, and American Community Survey from the U.S. Census Bureau.
Available at <http://map.feedingamerica.org/county/2013/overall>

Goal 3.2 [Virginia Prevents Nicotine Dependency](#)

3.2 [Adults Using Tobacco](#)

Measure Percent of Virginia adults aged 18 years and older who report using tobacco.
Description The percent of Virginia adults 18 years and older who report that they have smoked at least 100 cigarettes in their lifetime and currently smoke tobacco on at least some days, use chewing tobacco, use snuff and/or use snus. The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing, annual survey of adults who are randomly called via landline or cell phone. The survey is coordinated by the Centers for Disease Control and Prevention (CDC) and conducted in all 50 states. The Virginia Department of Health conducts the survey in Virginia. The information is self-reported and not observed or measured. Responses of don't know/not sure, refused, or missing were removed from the numerator and denominator in all estimates.
Data Source Virginia Behavioral Risk Factor Surveillance System. Virginia Department of Health.
Available at <http://www.vdh.virginia.gov/livewell/data/surveys/brfss/content/data.html>

Goal 3.3 [Virginians Are Protected Against Vaccine-Preventable Diseases](#)

3.3 A [Adults Vaccinated Against Influenza](#)

Measure Percent of Virginia adults 18 years and older who received an annual influenza vaccine.
Description The percent of Virginians 18 years of age and older who received an annual influenza vaccine. The Centers for Disease Control and Prevention analyzed the National Immunization Survey-Flu and the Behavioral Risk Factor Surveillance System to estimate national and state level flu vaccination coverage. Influenza vaccination status is based on self-report and not validated with medical records.
Data Source Behavioral Risk Factor Surveillance System, and the National Immunization Survey. Centers for Disease Control and Prevention.
Available at <http://www.cdc.gov/flu/fluview/reportshtml/reporti1415/reportii/index.html>

3.3 B

Adolescents Vaccinated Against HPV

Measure

Percent of girls aged 13-17 in Virginia who receives three doses of HPV vaccine and percent of boys aged 13-17 in Virginia who receive three doses of HPV vaccine.

Description

The percent of Virginia adolescents aged 13-17 (girls and boys reported separately) who received three doses of human papillomavirus (HPV) vaccine. The National Immunization Survey-Teen (NIS-Teen) is an ongoing, annual survey of children, whose parents/guardians are randomly called via landline or cell phone. The survey is coordinated by the Centers for Disease Control and Prevention and conducted in all 50 states. Doses of vaccines administered are verified by providers through a mailed survey to the girls' immunization providers.

Data Source

National Immunization Survey-Teen. Centers for Disease Control and Prevention.

Available at

<http://www.cdc.gov/vaccines/imz-managers/coverage/nis/teen/index.html>

Goal 3.4

Cancers Are Prevented or Diagnosed at the Earliest Stage Possible

3.4

Adults Screened for Colorectal Cancer

Measure

Percent of Virginia adults aged 50 to 75 years who receive colorectal cancer screening.

Description

The percent of Virginia adults, ages 50 to 75 years, who report receiving a colorectal cancer screening test based on the most recent guidelines (fecal occult blood test, proctoscopy, colonoscopy, or sigmoidoscopy). The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing, annual survey of adults who are randomly called via landline or cell phone. The survey is coordinated by the Centers for Disease Control and Prevention (CDC) and conducted in all 50 states. The Virginia Department of Health conducts the survey in Virginia. The information is self-reported and not observed or measured. Responses of don't know/not sure, refused, or missing were removed from the numerator and denominator in all estimates.

Data Source

Virginia Behavioral Risk Factor Surveillance System. Virginia Department of Health.

Available at

<http://www.vdh.virginia.gov/livewell/data/surveys/brfss/content/data.html>

Goal 3.5

Virginians Have Life-Long Wellness

3.5 A

Disability-Free Life Expectancy

Measure

Average years of disability-free life expectancy for Virginians.

Description

Disability-free life expectancy (DFLE) was calculated for Virginia census tracts by adding the estimates of the proportion of individuals with disabilities by tract and age group to the abridged life table estimates of mortality and population used for creating life expectancy (LE) estimates. The life table with the proportion of disabled individuals was the input for the analysis using the Chiang II methodology with Silcock's adjustment for calculation of LE and Sullivan's methods for DFLE.

The disabled population proportion was defined for this study as answering yes to any one of the six disability questions (2009-2013 aggregate) in the American Community Survey.

Significant consideration was given to disability chosen, small area analysis problems, and how to share the analysis for best impact. At the tract level, data censorship was considered when unusual population distributions were encountered. Minimum population size requirements were met to reduce large standard errors. DFLE estimates were added to a multiple linear regression model with social determinants of health as the explanatory variables.

Data Source U.S. Census Intercensal Population File Vintage 2014, Virginia Vital Records and Health Statistics Electronic Death Certificates, and the American Community Survey. Virginia Department of Health.

3.5 B [Adults with Adverse Childhood Experiences](#)

Measure Percent of adults in Virginia who report adverse childhood experiences.

Description Adverse childhood experiences (ACEs) include verbal, physical, or sexual abuse, as well as family dysfunction (e.g., an incarcerated, mentally ill, or substance-abusing family member; domestic violence; or absence of a parent because of divorce or separation). The ACE score is a measure of cumulative exposure to particular adverse childhood conditions. Exposure to any single ACE condition is counted as one point. If an adult experienced none of the conditions in childhood, the ACE score is zero. Points are totaled for a final ACE score.

The Behavioral Risk Factor Surveillance System is an ongoing, annual survey of adults who are randomly called via landline or cell phone. The survey is coordinated by the Centers for Disease Control and Prevention (CDC) and conducted in all 50 states. The Virginia Department of Health conducts the survey in Virginia. Responses of don't know/not sure, refused, or missing were removed from the numerator and denominator in all estimates. Data collection for the ACE module began in Virginia in 2016.

Data Source Virginia Behavioral Risk Factor Surveillance System. Virginia Department of Health.

AIM 4 — System of Health Care

Goal 4.1 [Virginia Has a Strong Primary Care System Linked to Behavioral Health Care, Oral Health Care, and Community Support Systems](#)

4.1 A [Adults With a Regular Health Care Provider](#)

Measure Percent of adults 18 years and older who have a regular health care provider.

Description The percent of Virginia adults who report that they have at least one personal healthcare provider for ongoing care. The Behavioral Risk Factor Surveillance System is an ongoing, annual survey of adults who are randomly called via landline or cell phone. The survey is coordinated by the Centers for Disease Control and Prevention and conducted in all 50 states. The Virginia Department of Health conducts the survey in Virginia. The information is self-reported and not observed or measured. Responses of don't know/not sure, refused, or missing were removed from the numerator and denominator in all estimates.

Data Source Virginia Behavioral Risk Factor Surveillance System. Virginia Department of Health.

Available at <http://www.vdh.virginia.gov/livewell/data/surveys/brfss/content/data.html>

4.1 B	Avoidable Hospital Stays
Measure	Rate of avoidable hospital stays for ambulatory care sensitive conditions in Virginia per 100,000 persons.
Description	The measure is the Agency for Healthcare Research and Quality’s Prevention Quality Overall Composite (PQI #90) in Virginia. It includes hospitalizations that could have been prevented through high quality outpatient care, including uncontrolled diabetes, short-term diabetes complications, long-term diabetes complications (including amputated limbs), chronic obstructive pulmonary disease, high blood pressure, heart failure, chest pain, adult asthma, dehydration, pneumonia, and urinary tract infections. The number of hospital stays is provided for every 100,000 people who reside in that area.
Data Source	Virginia Inpatient Hospitalization. Virginia Health Information.
Available at	http://www.vhi.org/monahrq2013/qual/PHC/maps/s_PQI90.html

4.1 C	Avoidable Cardiovascular Disease Deaths
Measure	Rate of avoidable deaths from heart disease, stroke, or hypertensive disease in Virginia per 100,000 persons.
Description	Deaths included were those caused by cardiovascular disease, including chronic rheumatic heart disease (ICD 10 codes I05-I09), hypertension (ICD codes I10-I15), ischemic heart disease (ICD 10 codes I20-I25), and cerebrovascular disease (ICD 10 codes I60-I69). An age-adjusted formula for population was used, where cases and population 75 years and over were excluded and recalculated 2000 US standard population weights were applied. Rates are calculated by taking the number of deaths at age younger than 75 from avoidable causes (treatable or preventable) divided by the total mid-year population younger than age 75.
Data Source	Virginia Vital Records and Health Statistics Electronic Death Certificates. Virginia Department of Health.

4.1 D	Adult Mental Health and Substance Abuse Hospitalizations
Measure	Rate of adult mental health and substance abuse hospitalizations in Virginia per 100,000 adults.
Description	Diagnosis codes to include for mental health and substance abuse hospitalizations were selected based on criteria developed by the Healthcare Cost and Utilization Project. The case definition used excluded discharges related to maternity stays and individuals under the age of 18. Population denominators were derived from midyear Census estimates provided by the National Center for Health Statistics.
Data Source	Virginia Inpatient Hospitalization. Virginia Health Information.

4.1 E	Adults Whose Poor Health Kept Them from Usual Activities
Measure	Percent of adults 18 years and older in Virginia who reported having one or more days of poor health that kept them from doing their usual activities.

Description Percent of Virginia adults who reported having one or more days of poor health (physical health or mental health) and reported that poor health kept them from doing usual activities. The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing, annual survey of adults, who are randomly called via landline or cell phone. The survey is coordinated by the Centers for Disease Control and Prevention (CDC) and conducted in all 50 states. The Virginia Department of Health conducts the survey in Virginia. The information is self-reported and not observed or measured. Responses of don't know/not sure, refused, or missing were removed from the numerator and denominator in all estimates.

Data Source Virginia Behavioral Risk Factor Surveillance System. Virginia Department of Health.

Available at <http://www.vdh.virginia.gov/livewell/data/surveys/brfss/content/data.html>

Goal 4.2 **Virginia's Health IT System Connects People, Services and Information to Support Optimal Health Outcomes**

4.2 A **Providers with Electronic Health Records**

Measure Percent of health care providers in Virginia who have implemented a certified electronic health record.

Description Data are from the National Electronic Health Records Survey (NEHRS). NEHRS is conducted by the National Center for Health Statistics and sponsored by the Office of the National Coordinator for Health Information Technology. It is a mixed mode survey of office-based physicians that collects information on physician and practice characteristics, including the adoption and use of EHR systems. NEHRS sampling design allows for both national and state-based estimates of EHR adoption. NEHRS is conducted annually as a sample survey of nonfederal office-based patient care physicians, excluding anesthesiologists, radiologists, and pathologists. It uses a sequential mixed mode design to collect data through web, mail, and phone.

Data Source National Electronic Health Records Survey. Centers for Disease Control and Prevention.

Available at http://www.cdc.gov/nchs/ahcd/web_tables.htm

4.2 B **Entities Connected to Health Information Exchange**

Measure Number of entities in Virginia connected through Connect Virginia HIE Inc., the electronic health information exchange, and the national e-Health Exchange.

Description Connect Virginia HIE, Inc. is the statewide health information exchange (HIE) for the Commonwealth of Virginia. The HIE uses secure, electronic, internet-based technology to allow medical information to be exchanged by participating entities. Connect Virginia reports the number of entities in Virginia connected on a quarterly basis.

Data Source Connect Virginia HIE, Inc.

4.2 C [Health Districts with Electronic Health Records](#)

Measure	Number of Virginia’s local public health districts that have electronic health records and connect to Connect Virginia, Virginia’s Health Information Exchange.
Description	Count of Virginia’s local public health districts (total of 35) that have electronic health records and connect to Connect Virginia, Virginia’s Health Information Exchange.
Data Source	Virginia Department of Health.

Goal 4.3 [Health Care-Associated Infections are Prevented and Controlled in Virginia](#)

4.3 [Hospitals Meeting State Goal for Prevention of *C. difficile* Infections](#)

Measure	Percent of hospitals in Virginia meeting the state goal for prevention of hospital-onset <i>Clostridium difficile</i> infections.
Description	<p>The percent of Virginia hospitals that meet the state goal for prevention of hospital-onset <i>C. difficile</i> laboratory-identified events. The state goal is a standardized infection ratio ≤ 0.7, which aligns with the goal of the Department of Health and Human Services National Healthcare-Associated Infections Action Plan.</p> <p>The standardized infection ratio (SIR) is calculated by dividing the number of observed events by the number of predicted events (based on national data from a historical baseline time period). An SIR of 0.7 means that 30% fewer events were observed than were predicted. This measure is risk-adjusted and takes into account the type of laboratory testing, facility bed size, facility affiliation with a medical school, and the number of patients admitted to the hospital that already have <i>C. difficile</i> ("community-onset" cases).</p>
Data Source	National Healthcare Safety Network. Centers for Disease Control and Prevention.