



Community Health Needs Assessment

Ballad Health - Johnston Memorial Hospital

June 29, 2018

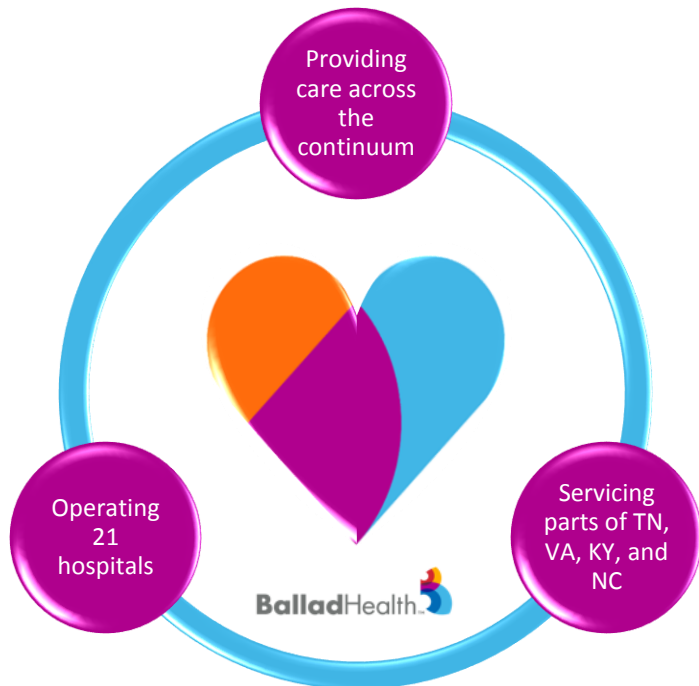
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1 Introduction

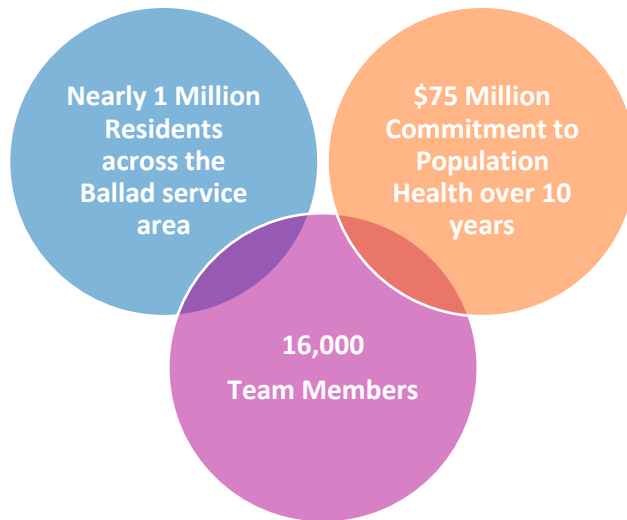
Johnston Memorial Hospital, an acute care hospital in Abingdon, VA is one of the hospitals within the Ballad Health system. Ballad Health is an integrated healthcare system serving 29 counties of Northeast Tennessee, Southwest Virginia, Northwest North Carolina and Southeast Kentucky. Ballad was created upon the merger of two large regional health systems, Mountain States Health Alliance and Wellmont Health System, on February 1, 2018. Through rigorous state oversight, these two competitors have been granted the ability to merge into an integrated healthcare delivery system with a simple and concise mission: to improve the health of the people we serve.

Ballad Health operates a family of 21 hospitals, including three tertiary care facilities, a dedicated children's hospital, community hospitals, three critical access hospitals, a behavioral health hospital, an addiction treatment facility, long-term care facilities, home care and hospice services, retail pharmacies, outpatient services and a comprehensive medical management corporation.



Ballad's hospitals include:

- Bristol Regional Medical Center
- Dickenson Community Hospital
- Franklin Woods Community Hospital
- Hancock County Hospital
- Hawkins County Memorial Hospital
- Holston Valley Medical Center
- Indian Path Medical Center
- Johnson City Medical Center
- Johnson County Community Hospital
- Johnston Memorial Hospital
- Laughlin Memorial Hospital
- Lonesome Pine Hospital
- Mountain View Regional Hospital
- Niswonger Children's Hospital
- Norton Community Hospital
- Russell County Medical Center
- Smyth County Community Hospital
- Sycamore Shoals Hospital
- Takoma Regional Hospital
- Unicoi County Memorial Hospital
- Woodridge Hospital



Ballad Health Mission:

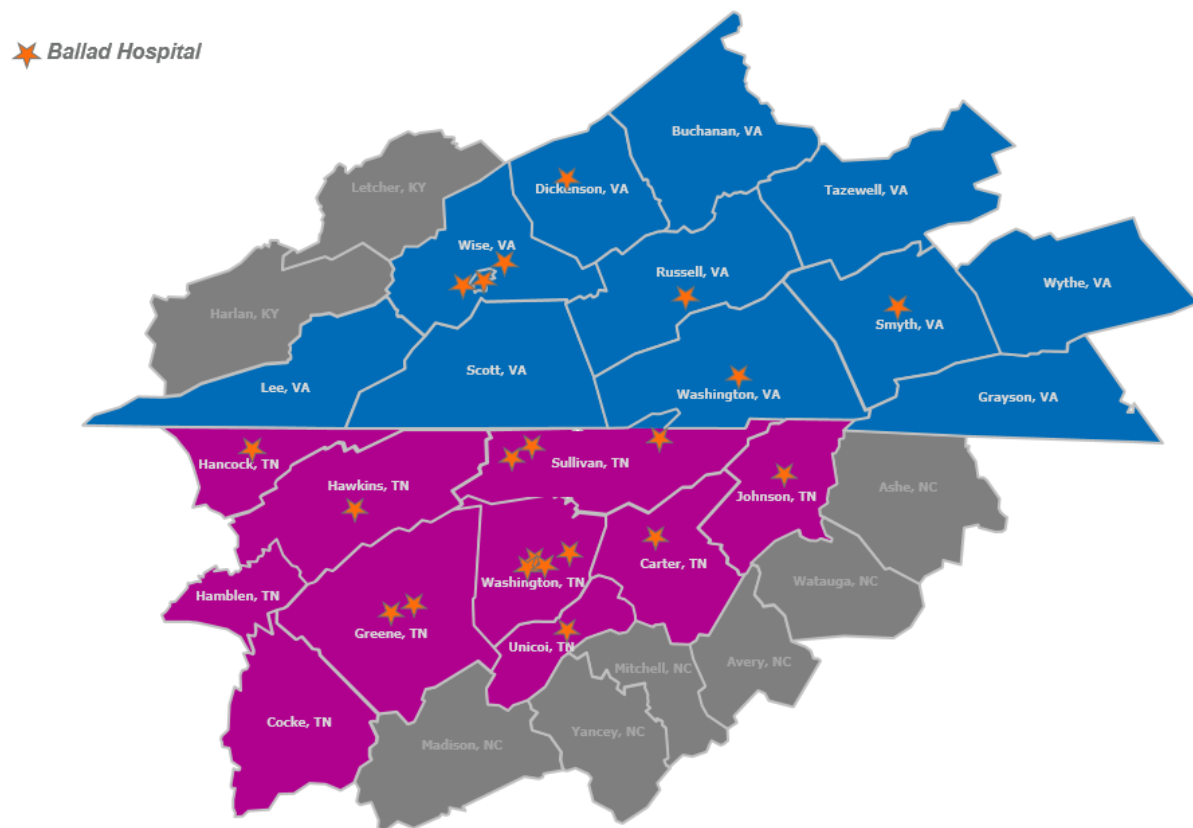
Ballad Health is committed to honoring those we serve by delivering the best possible care.

Ballad Health Vision:

To build a legacy of superior health by listening to and caring for those we serve.

The tagline of Ballad Health - "It's your story. We're listening." - is more than a marketing tool. Through the comprehensive state oversight and merger processes, the newly formed Ballad Health system was created to meet and address local health needs. Realizing that people want to receive care from someone who really listens to them, the organization's name and its tagline speak to the fact that good health is about more than healthcare – it's the story of people's lives. Located in the heart of Appalachia, Ballad pays homage to the traditions and stories that have shaped people's lives; yet, the organization also looks for new ways to partner with individuals and communities to make the region a healthier place to live and work.

With hospitals and services strategically placed throughout the region, Ballad Health is positioned to be the region's largest health care provider. The system's primary service area is comprised of 21 counties across Northeast Tennessee and Southwest Virginia, with a secondary service area encompassing an additional six counties in Western North Carolina and two counties in Southeastern Kentucky.



2 Executive Summary

Ballad Health is heavily invested in the health and well-being of its communities. In addition to its enhanced focus on population health management through the merger of the two legacy health systems, Ballad is also the largest employer in the region and the fourth largest employer in the State of Tennessee. Being such a prominent member of the regional economic community, Ballad has a strong desire to improve the health of the region, as well as its employees and their families. Realizing that health is tied to more than just genetics, Ballad is working towards a deeper understanding of the socioeconomic issues that face the population's ability to improve their overall health status. Social determinants of health related to topics such as access and ability to understand complex health conditions oftentimes go hand in hand with people's capacity to make optimal health decisions. Nevertheless, Ballad views the current health disparities of the Appalachian region as the opportunity to go beyond the walls of the hospital and work hand-in-hand with communities to make sustainable change happens for generations to come.

As part of the state oversight process, Ballad and its hospitals and entities have committed to improving the health status of its service area counties by agreeing to focus on an index of 25 active population health index measures (plus an additional 31 measures for monitoring). The population health index creates a platform for Ballad to further engage the efforts of its hospitals in partnership with the surrounding communities in order to drive change in a region that has a number of health disparities and access challenges. Leveraging the community health needs assessment process has helped Ballad to further educate on the health disparities that appear across the individual communities within its service area and has also helped the organization prioritize those issues that are most important in each hospital's community.

The population health index itself is based on the focus areas outlined in the previous community health needs assessments of both legacy systems (Mountain States and Wellmont), as well as the state health plans of both Tennessee and Virginia. Additionally, the Ballad population health index aligns with national health improvement efforts, such as Healthy People 2020. Although quite comprehensive, the index actually allows Ballad to be proactive with more-defined health improvement focus areas. Also, by encompassing the on-going work of local community and civic organizations, all vested groups can begin to work more so in unison, rather than in silos.

In order for Ballad to serve its region most effectively, it is essential to understand each community's individual needs. As such, Ballad conducted community health needs assessments to profile the health of the residents within its service areas. Activities associated with the development of this assessment have taken place from fall of 2017 through the spring of 2018. Primary data was obtained through individual surveys and focus groups with participants from the local communities, while secondary data was collated from national, state, regional, and county-specific sources.

Throughout this community health needs assessment process, high priority was given to determining the health disparities and available resources within each community. Community members from each county met with Ballard representatives to discuss current health priorities and identify potential solutions. The information gathered from a local perspective, paired with county, state, and national data, helps to communicate the region's health situation in order to begin formulating solutions for improvement.

According to America's Health Rankings, in 2018 Tennessee ranked 45th and Virginia ranked 19th out of 50 states for overall health outcomes. Both states had high rates of obesity, heart disease, addiction, and mental health concerns. Though Virginia's overall ranking is significantly higher than that of Tennessee's ranking, the health outcomes in Southwest Virginia counties, where Ballard facilities are located, resembles those of Tennessee. After compiling the various sources of information and using population health index as a starting point for discussion, the top health priorities were identified for the communities that each of the hospitals serve. This effort has led to the determination of the top health priorities for Washington County to include **obesity/physical activity, smoking, substance abuse/mental health, and maternal/infant health**. There are certainly a number of other health challenges in this community, but these rise to the top based on the assessment.

For reference, a complete list of the Ballard population health index measures can be found in the accompanying table. A more comprehensive view, with actual county versus state-level data, can also be found in the Appendix section of this report.

Ballard Health Population Health Index: Measure List
Smoking Rates
Smoking Rates During Pregnancy
Youth Tobacco Use Rates
Physically Active Adults Rates
Physically Active Youth Rates
Adult Obesity Rates
Obesity Levels in Public School Students
Average mPINC Score (CDC Hospital-based survey on child/maternal health)
Breastfeeding Initiation Rates
Infants Breastfed at 6 months Rates
Neonatal Abstinence Syndrome (NAS) Births per 1,000 live births
Drug Deaths per 100,000
Adults using Prescription Drugs for non-medical reasons
Children – On-time Vaccination Rates
Vaccination Rates – HPV Females
Vaccination Rates – HPV Males
Vaccination Rates – Flu Vaccine, Older Adults
Teen Pregnancy Rates
Third Grade Reading Levels
Dental Sealants (ages 6-9; 13-15)
Frequent Mental Distress Rates
Infant Mortality Rates (per 1,000 live births)
Low Birthweight Rates
People with Pre-diabetes referred to a prevention program
Premature Death Rates (per 100,000)
<i>Cancer Screenings (breast, cervical, colorectal)*</i>
<i>Diabetes Screenings*</i>
<i>Hypertension Screenings*</i>

**The screening measures in the above table are not included in the official population health index, but are included as access measures to which Ballard will be held also accountable. Because of their relatability to the population health measures, they were also considered in the community focus group discussion.*

3 Johnston Memorial Hospital

i. Facility Description

Johnston Memorial Hospital in Abingdon, Virginia is a not-for-profit, 116-bed modern medical facility dedicated to bringing quality healthcare to the residents of the region. Johnston Memorial hospital offers the full continuum of healthcare services from the family birth center, to primary care, surgical services, screenings, and a state of the art cancer center.



ii. Scope of Services:

Johnston Memorial Hospital offers a variety of services including:

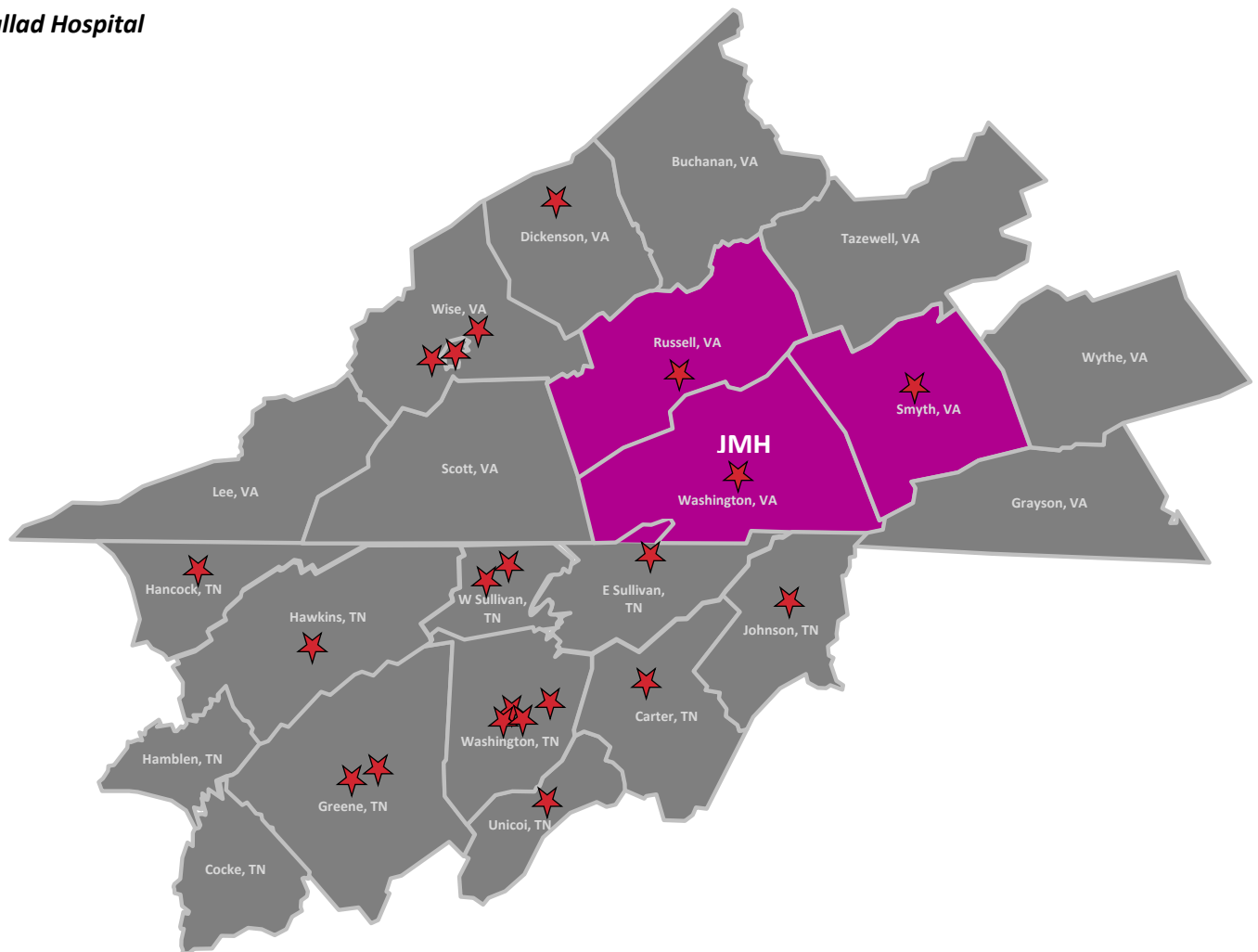
- General Acute Medical Services
- Heart and Vascular Services
- Cancer Center
- Surgical Care
- Orthopedic Care
- Family Birth Center
- 24-hour Emergency Services
- Laboratory Services,
- Physical Rehabilitation
- Diabetes and Wound Care Services

The hospital also hosts Johnston Memorial Family Medicine Residency Program and the Internal Medicine Program. This program is committed to providing advanced, innovative, and specialized training in osteopathic family medicine and internal medicine.

iii. **Primary Service Area:**

Johnston Memorial Hospital serves the population of Washington, Russell, and Smyth County, Virginia which is located in Southwest Virginia.

★ **Ballad Hospital**



4 Community Assessment Summary

i. Market Overview

While the JMH service area encompasses three counties in SW Virginia, the facility is located in Washington County – from which it draws its largest patient base.

Washington County, Virginia is made up of 70,000 residents. The county is the largest metropolitan area of the three counties in the service area. While the overall population of Washington County is projected to remain relatively flat over the next five years, the 65+ age group is expected to grow significantly (by 11.3%) over the same five year period. The aging population of the county presents opportunities for earlier identification and better management of health conditions that oftentimes affect elderly populations in rural areas.

Additionally, the median household income for Washington County is \$41,400, which ranks well below the Virginia state average of \$66,150. Another demographic factor influencing health status in the county also includes education levels. Nearly 33% of individuals living in Washington County, Virginia have at least a high school diploma, with 22% holding a bachelor's degree or higher.

According to the 2018 County Health Rankings, Washington County is ranked 63rd in Virginia for health outcomes and 60th for health factors out of 133 counties/cities. Washington County also ranked 60th in health behaviors. When compared to other Virginia counties, Washington County has high rates of physical inactivity and high overweight/obesity rates. As for social and economic factors, Washington County ranks 52nd primarily due to high rates of children in poverty and above average unemployment rates. A graphical representation of the 2018 County Health Rankings for Washington County components can be found in the appendix.

ii. Methodology

a. Community Interview Summary

As part of the community health needs assessment process, Ballad Health conducted localized community focus groups with organization representatives such as those from local health departments, school systems, health clinics, emergency services, businesses, and philanthropic boards. The individuals in each community were selected for participation by the hospital's CEO. These members were selected due to their involvement in the health of the community and their direct relationship to the population served.

Focus Groups - Representatives:
Virginia Department of Health
Children's Advocacy Center of Highlands Community Service
Ballad Health Government Relations
United Way of Southwest Virginia
Washington County Services
Washington County Emergency Management
Virginia Highlands Community College
Washington County Higher Education
Washington County Chamber of Commerce
Highlands Community Services Board (CSB)
Mount Rogers Health District
Faith in Action
Washington County Public Schools
Johnston Memorial Hospital Foundation Board

b. Collecting Community Input

Along with an introduction to the relationship between socio-economic conditions and overall health status at a national and state level, focus group participants were shown Washington County-specific health indicators as compared to the overall Commonwealth of Virginia rates. As part of the commitment to population health under the merger, participants were made aware of the 25 measures that make up the Ballad population health index and 3 additional measures related to access to screenings that complemented the community health discussion.

Members of the Ballad Health Strategic Planning Department then asked the community members to complete a 5-question survey relative to what health priorities should be a focus for their specific community over the next three years, what existing resources were already at work in the community, how the hospital can best support identified priorities, what pre-existing barriers are in place, and who else might be good to include in these community-level improvement discussions.

After the survey was completed, the group as a whole discussed their thoughts related to each question to further enhance the level at which the priorities were identified. The same information and process was later presented to the hospital's philanthropic foundation board members to further build awareness of the Ballard commitments made to population health and gain additional insight into community prioritization of specific health conditions/disparities.

	Survey Questions
1	Which of the health priorities mentioned can this community work to improve in the short term (3 years)?
2	What existing resources, such as organized groups or public health initiatives, have been developed and are in place to address these health priorities?
3	How could resources at this hospital best support your identified priorities?
4	What pre-existing barriers are in place that may prevent improvement on these identified priorities?
5	Who else from the community should be involved in these initiatives?

iii. Key Priorities Identified

After interviews with the various focus groups, the Washington County representatives identified the following priorities as the top focus areas for their community health improvement efforts and subsequent implementation plans:

Priority Focus Area	Sub-Measure
Smoking	<ul style="list-style-type: none"> • <i>Smoking Rates</i> • <i>Smoking During Pregnancy Rates</i>
Physical Activity/Obesity	<ul style="list-style-type: none"> • <i>Youth/Adult Physical Activity</i> • <i>Adult/Child Obesity Rates</i>
Substance Abuse/Mental Health	<ul style="list-style-type: none"> • <i>Drug Deaths</i> • <i>NAS Births</i> • <i>Frequent Mental Distress</i>
Maternal/Infant Health	<ul style="list-style-type: none"> • <i>Breastfeeding initiation</i> • <i>Infants breastfed at 6 months</i>

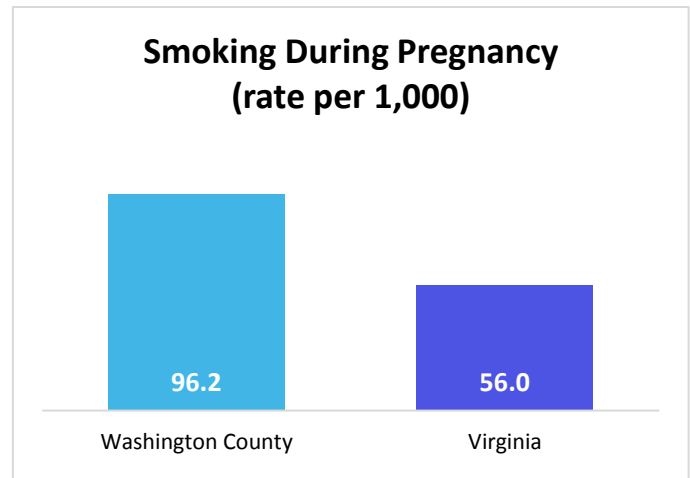
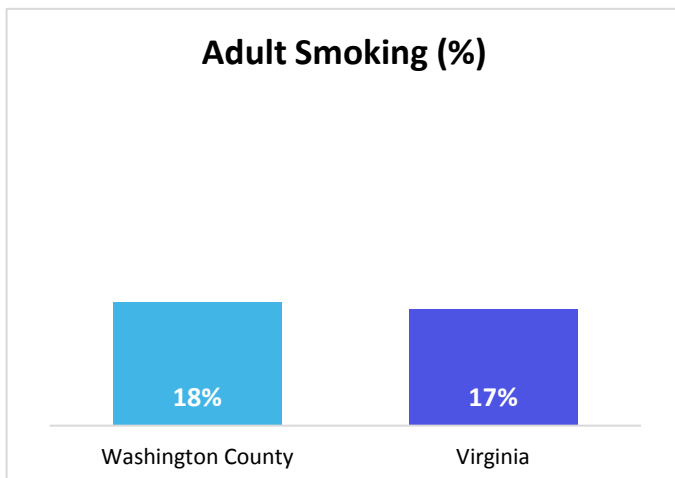
As evidenced by the county-level vs. state-level data represented for each of the priority measure selected by Washington County focus group participants, opportunity for improvement exists to better the results across all priority measures within the local

community. Although not all metrics compare unfavorably to the overall state data, opportunity still exists as the Virginia data is not intended as a benchmark, but merely as a comparison.

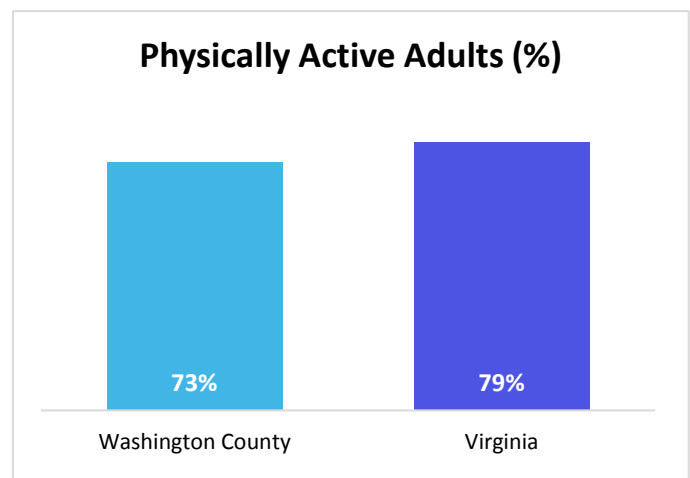
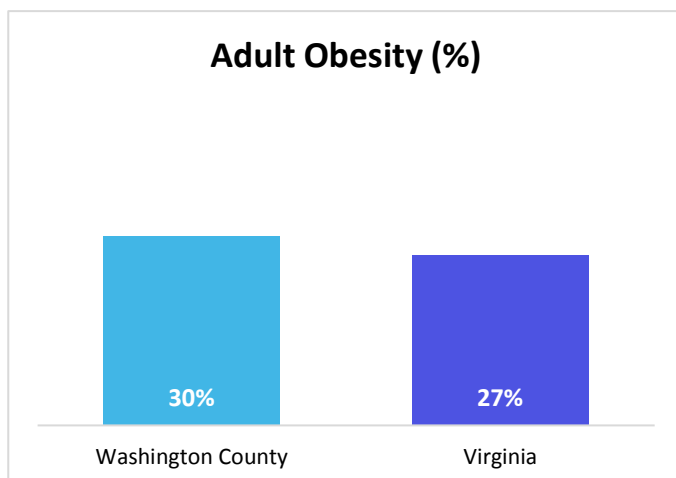
By identifying these priority areas, Johnston Memorial Hospital, in conjunction with Ballad Health and other local community organizations, can begin to implement targeted programs and efforts to improve the overall health and well-being of citizens of Washington County. Foundational to any population health improvement effort is the identification of actionable priorities and now that has been accomplished, the hospital can begin to formulate targeted implementation plans to help address the disparities plaguing parts of its population.

Priority Area Measures with County vs. State Comparisons (*where available*):

Smoking

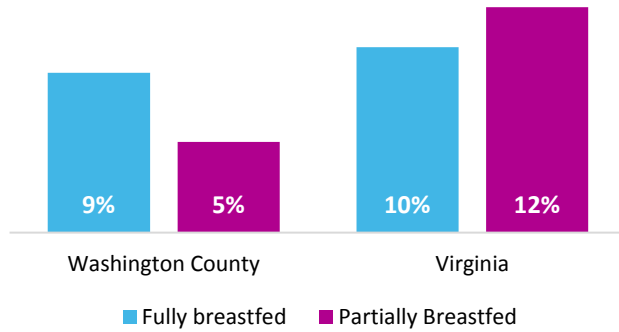


Obesity/Physical Activity



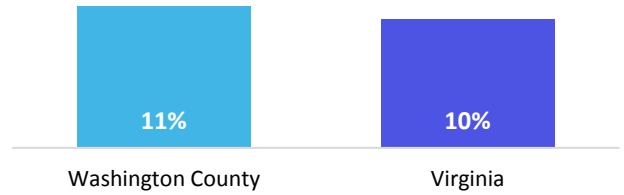
Maternal/Infant Health

Full/Partial Breastfeeding



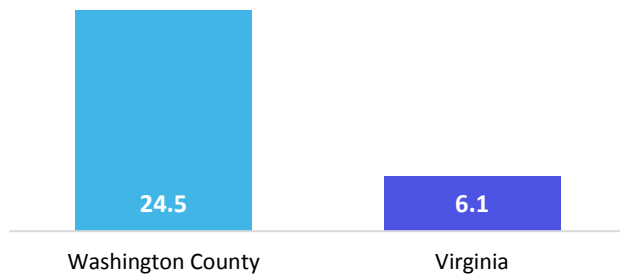
Mental Health

Frequent Mental Distress (%)

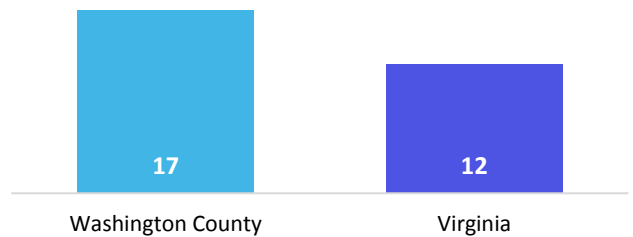


Substance Abuse

NAS Rate (rate per 1,000 live births)



Drug Overdose deaths (rate per 100,000)



iv. Barriers and Gaps

Because health is more than just a result of behaviors or individual pre-disposition to disease, Ballard realizes that it must also evaluate social determinants such as the environment and community in which people live, the access to care they have, and the policy issues that exist/are absent in order to be able to make effective strides in improvement.



Behaviors include the everyday activities that affect personal health. They include habits and practices we develop as individuals and families that have an effect on personal health and utilization of health resources. Behaviors are modifiable with effort by the individual supported by community, policy, and clinical interventions.

However, equally important to health behaviors are community and environment factors, health policy, and access to clinical care. Community and environment reflects the reality and daily conditions in which people live. Health policies are indicative of the availability of resources to encourage and maintain health and the extent to which public health programs reach into the general population. Access to clinical care reflects the accessibility, quality, appropriateness, and cost of care received at doctors' offices, clinics, and hospitals. All four areas of health determinants are intertwined and must work together to be optimally effective in improving health status.

To help understand social determinants of health for the community, participants in the Johnston Memorial Hospital focus groups also identified barriers and gaps that may impact progress in improving the key priority measures. The identified barriers and gaps for Washington County include:

- Lack of collaboration between agencies and entities
- Lack of transportation to medical offices/facilities
- Limited resources to provide help (human and financial)
- Lack of communication between medical programs
- Lack of understanding on the connection of our behavior and our health

- Inability to pay for basics (i.e. food, housing, utilities) vs. medications/medical treatment
- Education levels/understanding of health management
- Cultural/generational cycles of unhealthy behaviors
- Food insecurity; access to/ability to afford healthy food
- Lack of motivation to change

v. Community and Hospital Resources

To help improve the identified health priorities for Washington County, focus group participants were also asked to help identify current programs/organizations/individuals from the local community that may be of assistance with the population health efforts in their county. Because multiple resources working together for the same cause can help to drive change faster, having the inventory of local resources with whom Ballard can partner with is key. There are many resources currently in existence in Washington County through the both the hospital and local organizations. The resources identified in the focus groups are as follow:

- United Way (Smart Beginnings, Ignite, MCAT programs)
- Health Departments
- Community Coalition – NAS Taskforce
- Revive Naloxone Protocol
- Highlands Community Services
- Washington County Public Schools
- Johnston Memorial Labor and Delivery
- Community Health Providers
- Crossroads Medical Mission
- Faith in Action
- Silver Sneakers for older adults
- Child Protective Services

In addition to preexisting resources in the community, the focus group participants also discussed possibilities for how the hospital can continue or enhance programs/services to provide local resources to support the identified priorities. To enhance existing resources, the participants stressed the significance of increasing public awareness of both addressing one's health needs and the availability of health care options within each community. Additional suggestions as to how Ballard and Johnston Memorial Hospital can improve the previously identified health priorities are listed below:

- Data sharing between community agencies
- Financial resources/grants

- Public education
- Forensic medical services
- Psychiatric Provider Recruitment
- Expansion of the Combs Center
- Utilize community events to educate the community
- Funding for effective programs
- Improved discharge planning/case management
- Development of substance abuse treatment program
- Counseling services
- Nurse educators in the community
- Enhanced residency program

To further address health priorities within the community related to social determinants of health, programmatic opportunities were also discussed to assist with areas such as built environment (i.e. playgrounds, creation of safe sidewalks, bike sharing/bike paths, etc...), improved literacy rates and understanding of overall health, and healthy food availability (i.e. community gardens, farmers markets, etc...).

vi. Conclusion

As hospitals and health systems continue to work to make the communities they serve healthier, the identification of prioritized population health issues has become an area of strategic importance. Because Johnston Memorial Hospital is located in a region with many chronic disease challenges, that prioritization becomes even more important so that focused actions can be developed and implemented with strategic purpose. The allocation of hospital resources to the prioritized issues, coupled with partnerships with other community organizations, will continue to build momentum toward the building of a healthier Washington County.

5 Appendix

i. Population Profile

The table below highlights key demographics for Washington County, Virginia.

Sg2 MARKET SNAPSHOT



Mountain State Health Alliance
Washington, VA

Population and Gender	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
Female Population	35,702	51.3%	35,679	51.3%	(0.1)%	50.8%
Male Population	33,941	48.7%	33,916	48.7%	(0.1)%	49.2%
Total	69,643	100.0%	69,595	100.0%	(0.1)%	100.0%

Age Groups	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
00-17	13,012	18.7%	12,447	17.9%	(4.3)%	22.6%
18-44	21,534	30.9%	21,144	30.4%	(1.8)%	35.8%
45-64	19,853	28.5%	19,045	27.4%	(4.1)%	25.8%
65-UP	15,244	21.9%	16,959	24.4%	11.3%	15.9%
Total	69,643	100.0%	69,595	100.0%	(0.1)%	100.0%

Ethnicity/Race	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
Asian & Pacific Is. Non-Hispanic	651	0.9%	857	1.2%	31.6%	5.8%
Black Non-Hispanic	1,784	2.6%	1,890	2.7%	5.9%	12.4%
Hispanic	1,212	1.7%	1,412	2.0%	16.5%	18.3%
White Non-Hispanic	64,972	93.3%	64,288	92.4%	(1.1)%	60.4%
All Others	1,024	1.5%	1,148	1.7%	12.1%	3.2%
Total	69,643	100.0%	69,595	100.0%	(0.1)%	100.0%

Language*	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
Chinese at Home	196	0.3%	194	0.3%	(1.0)%	1.1%
Germanic Lang at Home	148	0.2%	143	0.2%	(3.4)%	0.5%
Only English at Home	64,649	97.4%	64,704	97.5%	0.1%	78.6%
Other Lang at Home	171	0.3%	171	0.3%	0.0%	1.0%
Spanish at Home	848	1.3%	824	1.2%	(2.8)%	13.3%
All Others	342	0.5%	340	0.5%	(0.6)%	5.5%
Total	66,354	100.0%	66,376	100.0%	0.0%	100.0%

Household Income	Market 2018 Households	Market 2018 % of Total	Market 2023 Households	Market 2023 % of Total	Market Households % Change	National 2018 % of Total
<\$15K	4,403	14.8%	4,293	14.5%	(2.5)%	10.2%
\$15-25K	3,935	13.3%	3,865	13.0%	(1.8)%	9.3%
\$25-50K	8,199	27.6%	8,149	27.4%	(0.6)%	23.5%
\$50-75K	5,548	18.7%	5,560	18.7%	0.2%	16.5%
\$75-100K	3,145	10.6%	3,182	10.7%	1.2%	10.5%
\$100K-200K	3,417	11.5%	3,574	12.0%	4.6%	19.3%
>\$200K	1,029	3.5%	1,093	3.7%	6.2%	10.7%
Total	29,676	100.0%	29,716	100.0%	0.1%	100.0%

Education Level**	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
Less than High School	3,575	7.0%	3,640	7.1%	1.8%	5.6%
Some High School	4,528	8.9%	4,578	8.9%	1.1%	7.4%
High School Degree	16,719	32.9%	16,869	32.9%	0.9%	27.6%
Some College/Assoc. Degree	14,877	29.2%	14,974	29.2%	0.7%	31.0%
Bachelor's Degree or Greater	11,202	22.0%	11,143	21.8%	(0.5)%	28.4%
Total	50,901	100.0%	51,204	100.0%	0.6%	100.0%

*Excludes population age <5, **Excludes population age <25

The table below highlights key demographic statistics for Smyth County, VA:

Sg2 MARKET SNAPSHOT



Mountain State Health Alliance
Smyth, VA

Population and Gender	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
Female Population	15,710	50.8%	15,578	50.8%	(0.8)%	50.8%
Male Population	15,209	49.2%	15,065	49.2%	(1.0)%	49.2%
Total	30,919	100.0%	30,643	100.0%	(0.9)%	100.0%

Age Groups	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
00-17	6,030	19.5%	5,762	18.8%	(4.4)%	22.6%
18-44	9,415	30.5%	9,166	29.9%	(2.6)%	35.8%
45-64	8,722	28.2%	8,267	27.0%	(5.2)%	25.8%
65-UP	6,752	21.8%	7,448	24.3%	10.3%	15.9%
Total	30,919	100.0%	30,643	100.0%	(0.9)%	100.0%

Ethnicity/Race	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
Asian & Pacific Is. Non-Hispanic	143	0.5%	181	0.6%	26.6%	5.8%
Black Non-Hispanic	862	2.8%	1,015	3.3%	17.8%	12.4%
Hispanic	629	2.0%	704	2.3%	11.9%	18.3%
White Non-Hispanic	28,846	93.3%	28,222	92.1%	(2.2)%	60.4%
All Others	439	1.4%	521	1.7%	18.7%	3.2%
Total	30,919	100.0%	30,643	100.0%	(0.9)%	100.0%

Language*	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
Chinese at Home	28	0.1%	24	0.1%	(14.3)%	1.1%
Germanic Lang at Home	55	0.2%	55	0.2%	0.0%	0.5%
Only English at Home	28,957	98.6%	28,742	98.6%	(0.7)%	78.6%
Other Indo-European Lang at Home	38	0.1%	36	0.1%	(5.3)%	1.8%
Spanish at Home	259	0.9%	257	0.9%	(0.8)%	13.3%
All Others	40	0.1%	37	0.1%	(7.5)%	4.7%
Total	29,377	100.0%	29,151	100.0%	(0.8)%	100.0%

Household Income	Market 2018 Households	Market 2018 % of Total	Market 2023 Households	Market 2023 % of Total	Market Households % Change	National 2018 % of Total
<\$15K	2,129	16.7%	1,931	15.3%	(9.3)%	10.2%
\$15-25K	1,748	13.7%	1,654	13.1%	(5.4)%	9.3%
\$25-50K	3,562	27.9%	3,470	27.5%	(2.6)%	23.5%
\$50-75K	2,236	17.5%	2,167	17.1%	(3.1)%	16.5%
\$75-100K	1,285	10.1%	1,311	10.4%	2.0%	10.5%
\$100K-200K	1,455	11.4%	1,680	13.3%	15.5%	19.3%
>\$200K	349	2.7%	430	3.4%	23.2%	10.7%
Total	12,764	100.0%	12,643	100.0%	(1.0)%	100.0%

Education Level**	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
Less than High School	1,847	8.2%	1,856	8.3%	0.5%	5.6%
Some High School	2,167	9.7%	2,174	9.7%	0.3%	7.4%
High School Degree	8,727	38.9%	8,748	39.0%	0.2%	27.6%
Some College/Assoc. Degree	6,460	28.8%	6,433	28.7%	(0.4)%	31.0%
Bachelor's Degree or Greater	3,238	14.4%	3,207	14.3%	(1.0)%	28.4%
Total	22,439	100.0%	22,418	100.0%	(0.1)%	100.0%

*Excludes population age <5, **Excludes population age <25

The table below highlights key demographic statistics for Russell County, VA:

Sg2 MARKET SNAPSHOT



Mountain State Health Alliance
Russell, VA

Population and Gender	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
Female Population	13,435	51.2%	13,179	51.2%	(1.9)%	50.8%
Male Population	12,814	48.8%	12,580	48.8%	(1.8)%	49.2%
Total	26,249	100.0%	25,759	100.0%	(1.9)%	100.0%

Age Groups	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
00-17	5,090	19.4%	4,879	18.9%	(4.2)%	22.6%
18-44	7,944	30.3%	7,591	29.5%	(4.4)%	35.8%
45-64	7,756	29.6%	7,293	28.3%	(6.0)%	25.8%
65-UP	5,459	20.8%	5,996	23.3%	9.8%	15.9%
Total	26,249	100.0%	25,759	100.0%	(1.9)%	100.0%

Ethnicity/Race	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
Asian & Pacific Is. Non-Hispanic	59	0.2%	63	0.2%	6.8%	5.8%
Black Non-Hispanic	313	1.2%	380	1.5%	21.4%	12.4%
Hispanic	380	1.5%	458	1.8%	20.5%	18.3%
White Non-Hispanic	25,227	96.1%	24,540	95.3%	(2.7)%	60.4%
All Others	270	1.0%	318	1.2%	17.8%	3.2%
Total	26,249	100.0%	25,759	100.0%	(1.9)%	100.0%

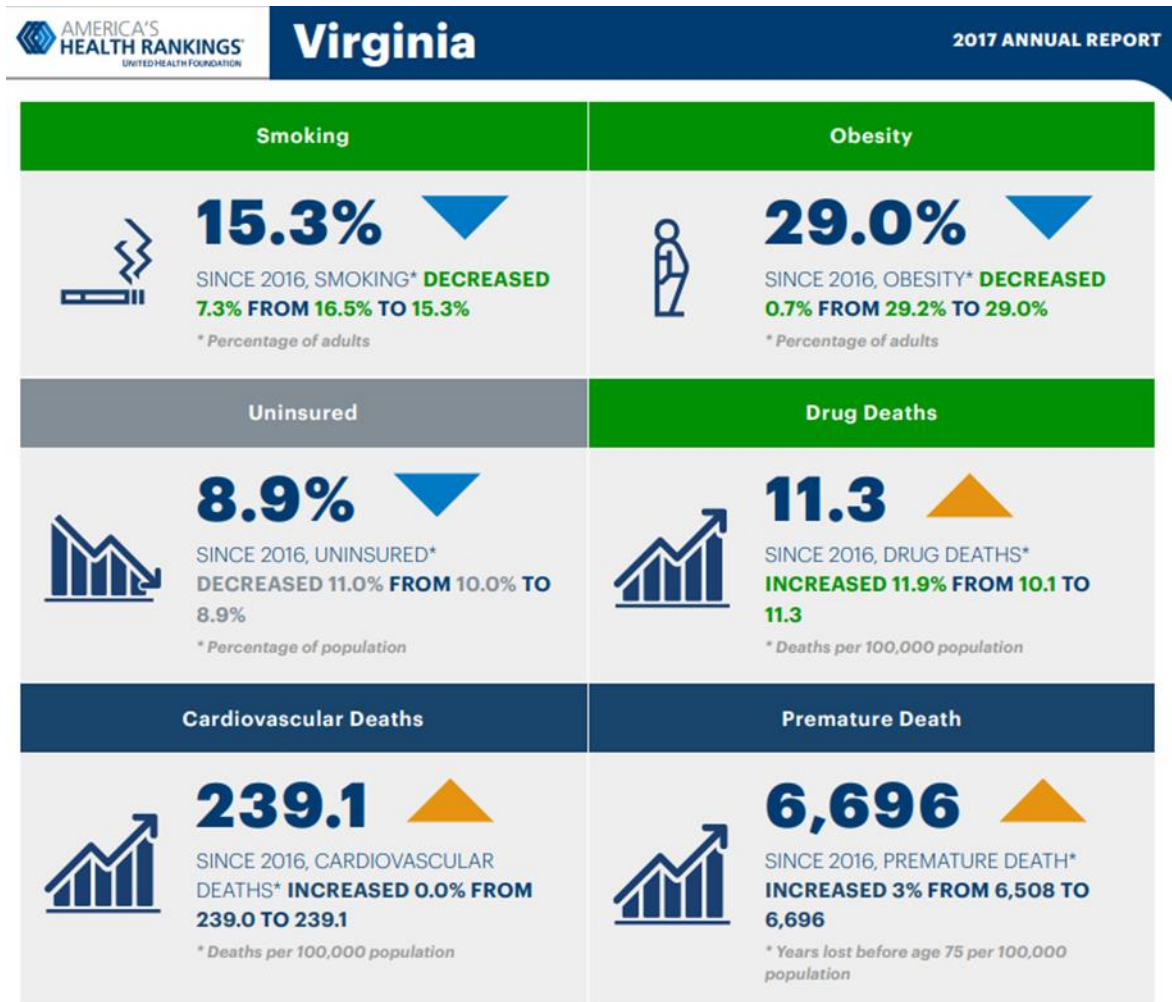
Language*	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
Only English at Home	24,458	98.2%	24,037	98.2%	(1.7)%	78.6%
Other Asian-Pacific Lang at Home	35	0.1%	33	0.1%	(5.7)%	0.9%
Other Indo-European Lang at Home	66	0.3%	65	0.3%	(1.5)%	1.8%
Slavic Lang at Home	25	0.1%	25	0.1%	0.0%	0.7%
Spanish at Home	288	1.2%	278	1.1%	(3.5)%	13.3%
All Others	29	0.1%	29	0.1%	0.0%	4.7%
Total	24,901	100.0%	24,467	100.0%	(1.7)%	100.0%

Household Income	Market 2018 Households	Market 2018 % of Total	Market 2023 Households	Market 2023 % of Total	Market Households % Change	National 2018 % of Total
<\$15K	2,190	19.9%	2,025	18.6%	(7.5)%	10.2%
\$15-25K	1,514	13.8%	1,471	13.5%	(2.8)%	9.3%
\$25-50K	2,916	26.5%	2,906	26.7%	(0.3)%	23.5%
\$50-75K	1,804	16.4%	1,689	15.5%	(6.4)%	16.5%
\$75-100K	1,134	10.3%	1,137	10.5%	0.3%	10.5%
\$100K-200K	1,274	11.6%	1,416	13.0%	11.2%	19.3%
>\$200K	181	1.6%	222	2.0%	22.7%	10.7%
Total	11,013	100.0%	10,866	100.0%	(1.3)%	100.0%

Education Level**	Market 2018 Population	Market 2018 % of Total	Market 2023 Population	Market 2023 % of Total	Market Population % Change	National 2018 % of Total
Less than High School	2,591	13.5%	2,558	13.5%	(1.3)%	5.6%
Some High School	1,876	9.8%	1,852	9.8%	(1.3)%	7.4%
High School Degree	7,096	37.0%	6,997	37.0%	(1.4)%	27.6%
Some College/Assoc. Degree	5,340	27.9%	5,257	27.8%	(1.6)%	31.0%
Bachelor's Degree or Greater	2,261	11.8%	2,230	11.8%	(1.4)%	28.4%
Total	19,164	100.0%	18,894	100.0%	(1.4)%	100.0%

*Excludes population age <5, **Excludes population age <25

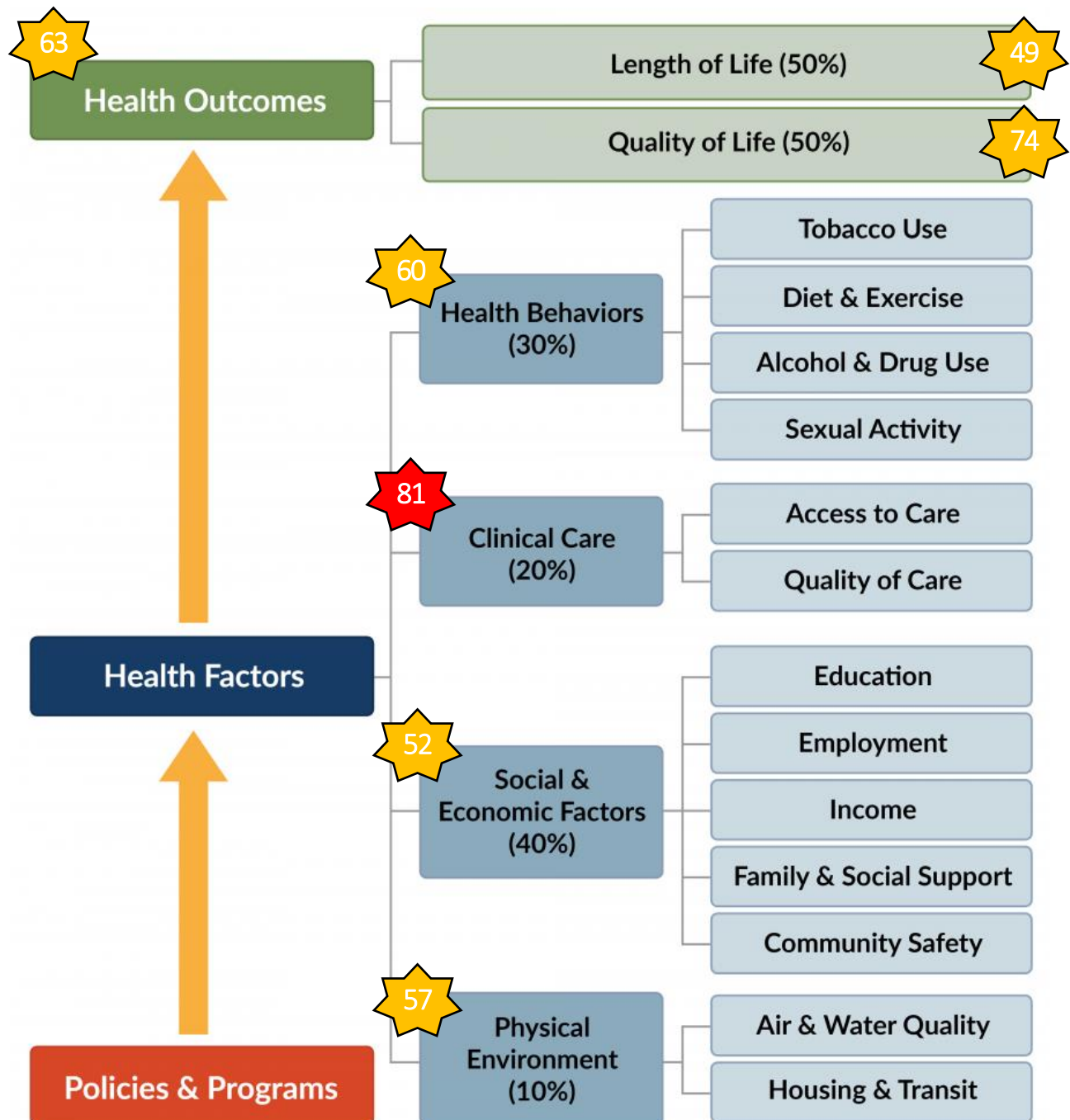
ii. Health Status Data
Virginia Overall



Measure	Rating	2017 Value	2017 Rank
BEHAVIORS			
Drug Deaths (Deaths per 100,000 population)	++++	11.3	7
Excessive Drinking (Percentage of adults)	++++	17.4%	15
High School Graduation (Percentage of students)	++++	85.7%	20
Obesity (Percentage of adults)	+++	29.0%	21
Physical Inactivity (Percentage of adults)	+++	23.3%	26
Smoking (Percentage of adults)	++++	15.3%	15
Behaviors* (All Behaviors)	++++	0.112	8
POLICY			
Immunizations - Adolescents (Mean z score of HPV, meningococcal and Tdap)	++	-0.590	40
Immunization HPV Females (Percentage of females aged 13 to 17)	+	41.1%	42
Immunization HPV Males (Percentage of males aged 13 to 17)	+++	37.4%	25
Immunization Meningococcal (Percentage of adolescents aged 13 to 17)	+	71.5%	41
Immunization Tdap (Percentage of adolescents aged 13 to 17)	++	87.1%	32
Immunizations - Children (Percentage of children aged 19 to 35 months)	+	65.9%	45
Public Health Funding (Dollars per person)	++	\$73	33
Uninsured (Percentage of population)	+++	8.9%	28
Policy* (All Policy measures)	++	-0.042	39
CLINICAL CARE			
Dentists (Number per 100,000 population)	++++	63.6	14
Low Birthweight (Percentage of live births)	+++	7.9%	22
Mental Health Providers (Number per 100,000 population)	++	145.2	40
Preventable Hospitalizations (Discharges per 1,000 Medicare enrollees)	++++	42.8	15
Primary Care Physicians (Number per 100,000 population)	+++	141.8	24
Clinical Care* (All Clinical Care measures)	+++	0.002	26
COMMUNITY & ENVIRONMENT			
Air Pollution (Micrograms of fine particles per cubic meter)	++++	7.5	20
Children in Poverty (Percentage of children)	++++	13.0%	11
Infectious Disease (Mean z score of chlamydia, pertussis and Salmonella)	++++	-0.443	13
Chlamydia (Cases per 100,000 population)	+++	424.5	21
Pertussis (Cases per 100,000 population)	+++	4.4	22
Salmonella (Cases per 100,000 population)	++++	14.1	19
Occupational Fatalities (Deaths per 100,000 workers)	++++	4.2	20
Violent Crime (Offenses per 100,000 population)	++++	218	4
Community & Environment* (All Community & Environment Measures)	++++	0.170	6
ALL DETERMINANTS			
All Determinants* (All Determinants)	++++	0.241	19
OUTCOMES			
Cancer Deaths (Deaths per 100,000 population)	+++	190.1	24
Cardiovascular Deaths (Deaths per 100,000 population)	+++	239.1	25
Diabetes (Percentage of adults)	+++	10.4%	23
Disparity in Health Status (Percentage point difference)	+++	27.4%	27
Frequent Mental Distress (Percentage of adults)	++++	10.9%	19
Frequent Physical Distress (Percentage of adults)	++++	11.0%	14
Infant Mortality (Deaths per 1,000 live births)	+++	5.8	23
Premature Death (Years lost before age 75 per 100,000 population)	++++	6,696	19
All Outcomes* (All Outcomes)	+++	0.062	23
OVERALL			
Overall* (Overall)	++++	0.303	19
RATING RANK			
++++ 1 - 10			
+++ 11 - 20			
++ 21 - 30			
+ 31 - 40			
- 41 - 50			

* Value indicates z score. Negative scores are below US value; positive scores are above US value. For complete definitions of measures including data sources and years, see ["Appendix: Core Measures"](#).

iii. County Snapshot
 Washington County, VA
 2018 County Health Rankings
www.countyhealthrankings.org



County Health Rankings model © 2014 UWPHI

Washington County, Virginia

Health Outcomes	Washington County	Virginia	Desired
Infant mortality	2.0	5.9	↓
Low Birthweight (%)	9%	8%	↓
Children with NAS (rate)	24.5	6.1	↓
Poor or fair health (%)	14%	15%	↓
Cardiovascular Death (per 100,000)	226.1	155.9	↓
Cancer deaths (per 100,000)	157.6	161.36	↓
Diabetes Mellitus deaths (per 100,000)	22.8	18	↓
Cerebrovascular deaths (per 100,000)	42.5	38.5	↓
Suicide Rate (per 100,000)	12.2	12.2	↓
Lung cancer deaths (per 100,000)	70.5	60.4	↓
Female breast cancer deaths (per 100,000)	23.4	22.7	↓
Prevalence of diabetes (%)	13%	10%	↓
Mammography Screening (%)	66%	64%	↑
Frequent Mental Distress	11%	10%	↓
Premature Deaths (age adjusted)	350	310	↓

Health Behaviors	Washington County	Virginia	Desired
Alcohol-impaired driving deaths (per 100,000)	20%	31%	↓
Excessive Drinking (%)	16%	17%	↓
Adult Smoking (%)	18%	17%	↓
Adult Obesity (%)	30%	27%	↓
Physical Inactivity (%)	67%	21%	↓
Teen births (per 1,000)	47	25	↓
Drug overdose deaths	17	12	↓
Violent crime (per 100,000)	127	194	↓
Motor vehicle crash deaths (per 100,000)		9	↓
Non Marital Births (%)		35%	↓

Health Determinants	Washington County	Virginia	Desired
Uninsured Adults (%)	16%	15%	↓
Uninsured Children (%)	6%	6%	↓
Median Household Income (\$)	45,900	66,300	↑
Children eligible for free or reduced lunch (%)	46%	40%	↓
Children in single-parent households (%)	29%	30%	↓
Children in poverty (%)	23%	15%	↓
High school graduation (%)	90%	86%	↑
Unemployment (%)	4.80%	4.40%	↓
Food insecurity (%)		12%	↓
Passage rate for third grade reading subject standards of learning (SOL) (%)	87%	75%	↑

Physical Environment	Washington County	Virginia	Desired
Severe housing problems (%)		15%	↓
Air pollution - particulate matter (µg/m ³)		8.70	↓

Health Resources	Washington County	Virginia	Desired
Hospital Staffed Beds (per 1,000)			↑
Licensed Nursing Beds (per 1,000 65+)			↑
# of Primary Care MDs (residents to MD)		1320:01:00	↑
# of Mental Health Providers (residents to provider)		730:01:00	↑
# of Dentists (residents to dentist)			↑
# of Midlevel PCPs (residents to provider)			↑
% of Medicaid enrollees			↓
Food stamp eligible participants (SNAP) (%)			↓
Children on SNAP (%)		4.2%	↓
Infants and Children on WIC			↓

Maternal Infant Health	Washington County	Virginia	Desired
Birth rate per 1,000 population	9	12.3	↑
Prenatal Care beginning in first trimester	49.4%	81.6%	↑
Mothers who smoke during pregnancy	96.2	56	↓
Fully Breastfed (WIC Participants in Cumberland Plateau)	9%	10.2%	↑
Partially Breastfed (WIC Participants in Cumberland Plateau)	5%	12.4%	↑

Russell County, VA

Health Outcomes	Russell County	Virginia	Desired
Infant mortality	3.9	5.9	↓
Low Birthweight (%)	8%	8%	↓
Children with NAS (rate)	19	6.10	↓
Poor or fair health (%)	18%	15%	↓
Cardiovascular Death (per 100,000)	205.6	155.9	↓
Cancer deaths (per 100,000)	196.9	161.36	↓
Diabetes Mellitus deaths (per 100,000)	19.7	18	↓
Cerebrovascular deaths (per 100,000)	28.6	38.5	↓
Suicide Rate (per 100,000)	25.5	12.2	↓
Lung cancer deaths (per 100,000)	60.6	60.4	↓
Female breast cancer deaths (per 100,000)	26.4	22.7	↓
Prevalence of diabetes (%)	12%	10%	↓
Mammography Screening (%)	65%	64%	↑
Frequent Mental Distress	12%	10%	↓
Premature Deaths (age adjusted)	510	310	↓

Health Behaviors	Russell County	Virginia	Desired
Alcohol-impaired driving deaths (per 100,000)	27%	31%	↓
Excessive Drinking (%)	15%	17%	↓
Adult Smoking (%)	19%	17%	↓
Adult Obesity (%)	29%	27%	↓
Physical Inactivity (%)	27%	21%	↓
Teen births (per 1,000)	49	25	↓
Drug overdose deaths	24	12	↓
Violent crime (per 100,000)	175	194	↓
Motor vehicle crash deaths (per 100,000)	18	9	↓
Non Marital Births (%)	36%	35%	↓

Health Determinants	Russell County	Virginia	Desired
Uninsured Adults (%)	17%	15%	↓
Uninsured Children (%)	7%	6%	↓
Median Household Income (\$)	38,400	66,300	↑
Children eligible for free or reduced lunch (%)	57%	40%	↓
Children in single-parent households (%)	29%	30%	↓
Children in poverty (%)	28%	15%	↓
High school graduation (%)	87%	86%	↑
Unemployment (%)	6.50%	4.40%	↓
Food insecurity (%)	13%	12%	↓
Passage rate for third grade reading subject standards of learning (SOL) (%)	82%	75%	↑

Physical Environment	Russell County	Virginia	Desired
Severe housing problems (%)	12%	15%	↓
Air pollution - particulate matter (µg/m ³)	9.20	8.70	↓

Health Resources	Russell County	Virginia	Desired
Hospital Staffed Beds (per 1,000)			↑
Licensed Nursing Beds (per 1,000 65+)			↑
# of Primary Care MDs (residents to MD)	2550:01:00	1320:01:00	↑
# of Mental Health Providers (residents to provider)	1640:01:00	730:01:00	↑
# of Dentists (residents to dentist)			↑
# of Midlevel PCPs (residents to provider)			↑
% of Medicaid enrollees			↓
Food stamp eligible participants (SNAP) (%)	5,828		↓
Children on SNAP (%)	3.5%	4.2%	↓
Infants and Children on WIC			↓

Maternal Infant Health	Russell County	Virginia	Desired
Birth rate per 1,000 population	9.2	12.3	↑
Prenatal Care beginning in first trimester	52.9%	81.6%	↑
Mothers who smoke during pregnancy	171.5	56	↓
Fully Breastfed (WIC Participants in Cumberland Plateau)	7.1%	10.2%	↑
Partially Breastfed (WIC Participants in Cumberland Plateau)	2.4%	12.4%	↑

Smyth County, VA

Health Outcomes	Smyth County	Virginia	Desired
Infant mortality	10.00	5.9	↓
Low Birthweight (%)	9%	8%	↓
Children with NAS (rate)		6.10	↓
Poor or fair health (%)	16%	15%	↓
Cardiovascular Death (per 100,000)	200.6	155.9	↓
Cancer deaths (per 100,000)	175.8	161.36	↓
Diabetes Mellitus deaths (per 100,000)	19.5	18	↓
Cerebrovascular deaths (per 100,000)	64.9	38.5	↓
Suicide Rate (per 100,000)	23.8	12.2	↓
Lung cancer deaths (per 100,000)	88.1	60.4	↓
Female breast cancer deaths (per 100,000)	23.4	22.7	↓
Prevalence of diabetes (%)	10%	10%	↓
Mammography Screening (%)	63%	64%	↑
Frequent Mental Distress	11%	10%	↓
Premature Deaths (age adjusted)	490	310	↓

Health Behaviors	Smyth County	Virginia	Desired
Alcohol-impaired driving deaths (per 100,000)	36%	31%	↓
Excessive Drinking (%)	16%	17%	↓
Adult Smoking (%)	19%	17%	↓
Adult Obesity (%)	30%	27%	↓
Physical Inactivity (%)	28%	21%	↓
Teen births (per 1,000)	54	25	↓
Drug overdose deaths	6	12	↓
Violent crime (per 100,000)	158	194	↓
Motor vehicle crash deaths (per 100,000)	15	9	↓
Non Marital Births (%)	39%	35%	↓

Health Determinants	Smyth County	Virginia	Desired
Uninsured Adults (%)	17%	15%	↓
Uninsured Children (%)	5%	6%	↓
Median Household Income (\$)	38,900	66,300	↑
Children eligible for free or reduced lunch (%)	55%	40%	↓
Children in single-parent households (%)	34%	30%	↓
Children in poverty (%)	28%	15%	↓
High school graduation (%)	88%	86%	↑
Unemployment (%)	6.50%	4.40%	↓
Food insecurity (%)	14%	12%	↓
Passage rate for third grade reading subject standards of learning (SOL) (%)	74%	75%	↑

Physical Environment	Smyth County	Virginia	Desired
Severe housing problems (%)	11%	15%	↓
Air pollution - particulate matter (µg/m ³)	8.60	8.70	↓

Health Resources	Smyth County	Virginia	Desired
Hospital Staffed Beds (per 1,000)			↑
Licensed Nursing Beds (per 1,000 65+)			↑
# of Primary Care MDs (residents to MD)	1660:01	1320:01:00	↑
# of Mental Health Providers (residents to provider)	870:01	730:01:00	↑
# of Dentists (residents to dentist)			↑
# of Midlevel PCPs (residents to provider)			↑
% of Medicaid enrollees			↓
Food stamp eligible participants (SNAP) (%)	6,537		↓
Children on SNAP (%)		4.2%	↓
Infants and Children on WIC			↓

Maternal Infant Health	Smyth County	Virginia	Desired
Birth rate per 1,000 population	9.5	12.3	↑
Prenatal Care beginning in first trimester	67.6%	81.6%	↑
Mothers who smoke during pregnancy	104.7	56	↓
Fully Breastfed (WIC Participants in Mount Rogers)	8.8%	10.2%	↑
Partially Breastfed (WIC Participants in Mount Rogers)	5.0%	12.4%	↑

iv. Ballad Health Population Health Index

Measure	Washington County	Virginia	Better/ Worse than VA
Smoking	18%	17%	Worse
Smoking During Pregnancy (rate per 1,000 births)	96.2	56	Worse
Youth Tobacco Use	n/a	25.7%	
Physically Active Adults	73%	79%	Worse
Physically Active Youth	n/a	54.8%	
Adult Obesity	30%	27%	Worse
Obesity in Public School Students	n/a	n/a	
Average Maternity Practices in Infant Nutrition & Care (mPINC) Score	n/a	n/a	
Fully Breastfed	9%	10.2%	Worse
Partially Breastfed	5%	12.4%	Worse
NAS Births (rate per 1,000)	24.5	6.10	Worse
Drug Overdose Deaths	17	12	Worse
Adults using Prescription Drugs for non-medical reasons	n/a	n/a	
Children – On-time Vaccinations	n/a	64.4%	
Vaccines – HPV Females	n/a	32.7%	
Vaccines – HPV Males	n/a	33.3%	
Vaccines – Flu Vaccine, Older Adults	n/a	63.0%	
Teen Pregnancy	47	25	Worse
Third Grade Reading Level	87%	75%	Better
Dental Sealants	n/a	n/a	
Frequent Mental Distress	11%	10%	Worse
Infant Mortality	2.0	5.9	Better
Low Birthweight	9%	8%	Worse
People with Pre-diabetes referred to a prevention program	n/a	n/a	
Premature Deaths	350	310	Worse

*mPINC score is for JMH

Note: County level data currently not available for all index measures; Ballad is working with the State of Tennessee and Commonwealth of Virginia to develop baseline and collection/reporting methodologies moving forward

Fully and partially breastfed infant data is from the subset of women who are involved in WIC

v. Key Definitions for Population Health Index Data

Third grade reading level: Passage rate for third grade reading subject standards of learning (SOL) Kidscount

Frequent Mental Distress: Percentage of adults reporting 14 or more days of poor mental health per month, County Health Rankings, 2017

Obesity: Greater than 30.0 Body Mass Index (BMI), County Health Rankings, 2017

Adult Physical Activity: Percentage of adults over age 20 who participated in leisure time physical activity, County Health Rankings, 2017

Youth Physical Activity: Were Not Physically Active At Least 60 Minutes Per Day On 5 Or More Days, Youth Behavioral Risk Factor Surveillance System, 2016

Smoking: % of adults who are current smokers, County Health Rankings, 2017

Youth Tobacco Use: Ever tried cigarette smoking (even one or two puffs), 2015

Smoking During Pregnancy: Number of births for which the mother indicated she smoked while pregnant, Virginia Department of Health Maternal-Child Health, 2014

Low Birthweight: Percentage of live births with low birth weight (<2500 grams), County Health Rankings, 2017

Infant Mortality: Number of all infant deaths (within 1 year), per 1,000 live births, County Health Rankings, 2017

Prenatal Care Beginning in First Trimester: Local Agency Report VA Department of Health, 2015

Virginia WIC Participants who either partially breastfed or fully breastfed: WIC Breastfeeding Data, 2015

Teen Births: Births to mothers aged 15-19, County Health Rankings, 2017

NAS Discharge Rate: NAS diagnosis code was present on the record and the patient was < 1 year of age (VA residents only) rate per 1,000, Virginia Department of Health Opioid-Overdose Data, 2016

Drug Overdose Deaths: Number of drug poisoning deaths per 100,000, County Health Rankings, 2017

Prescriptions Opioid Overdose Mortality Rate: Fatal overdose data are based upon toxicology results and cause of death statements. Data include all manners of death (accident, homicide, suicide, and undetermined) and are based upon the locality of event (overdose). 'Prescription opioids' excludes fentanyl and counts fatal overdoses with one or more prescription opioids causing death, 2016

Combined 7-vaccine series coverage among children 19-35 months, CDC VaxView, 2016

Older adults flu vaccination: Adults aged 65+ who have had a flu shot within the past year, Behavioral Risk Factor Surveillance System, 2016

Colorectal Screenings: Aged 50-75 had a colonoscopy in the past 10 years, Behavioral Risk Factor Surveillance System, 2016

Mammography: Percentage of female Medicare enrollees aged 67-69 who received a mammogram, County Health Rankings, 2017

Cervical Screening: Women aged 21-65 who have had a pap test in the past three years, Behavioral Risk Factor Surveillance System, 2016

Diabetes Prevalence: Percentage of adults aged 20 and over who have been diagnosed with diabetes, County Health Rankings, 2017

Other Deaths: Virginia Department of Health- Health Profile, 2013

vi. [Data Sources](#)

Kids Count Data Center (<http://datacenter.kidscount.org/>)

America's Health Rankings (<https://www.americashealthrankings.org>)

County Health Rankings (<http://www.countyhealthrankings.org/>)

Sg2 Analytics

Virginia Department of Health