

New Hampshire Statewide Primary Care Needs Assessment



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Rural Health & Primary Care

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Background

The US Department of Health and Human Services (US DHHS), Health Resources and Services Administration (HRSA), Bureau of Health Workforce (BHW) funds the State Primary Care Offices (PCO) program in each state and US territory. The purpose of this grant program is to assist states and/or territories in their efforts to improve primary care service delivery, conduct a health provider needs assessment, manage shortage designation, and address workforce availability in the various states and/or territories to meet the needs of underserved populations. This program is authorized by sections §330(l), 330(m), and 333(d) of the Public Health Service Act as amended. In New Hampshire (NH), the Primary Care Office (PCO) is located in the Rural Health & Primary Care Section (RHPC), Division of Public Health Services, Department of Health and Human Services.

During the project period of April 1, 2019 through March 31, 2024 the PCO is required to complete the following activities:

- Conduct a statewide assessment to identify health care providers and health service shortages, unmet need and disparities in health outcomes by areas and population groups, and health workforce concerns;
- Coordinate the Health Professional Shortage Area (HPSAs) and Medically Underserved Area/Population (MUA/P) designation processes within the state to ensure consistent and accurate assessment of underservice including data collection, verification, and analysis as applicable;
- Provide technical assistance and collaboration to expand access to primary care, including: coordination of the NHSC and NURSE Corps programs and provider recruitment and retention; collaboration with Health Center planning and development; and collaboration with other HRSA partners and organizations to support access to primary care services; and
- Develop a statewide, long-term strategic plan to reduce health provider shortages and shortage designations.

This report is the result of the first activity, which is to conduct a statewide primary care needs assessment. The statewide primary care needs assessment identifies the communities with the greatest unmet health care needs, disparities, and health workforce shortages, and also identifies the key barriers to access health care for these communities.

The data in this report represents the NH landscape, prior to COVID-19 (2013-2019) impacts. Because of the ways the pandemic has disrupted access to, and delivery and utilization of care, caution should be used in interpreting this report for current primary health care needs.

New Hampshire is one of the oldest states in the country; it was originally a land grant in 1623 and became a state in 1775. With its 1,300 lakes and ponds, 40,000 miles of river and 18 miles of seashore NH is the 45th largest state at 190 miles long and 70 miles wide. NH is bordered by Canada on the north and by Massachusetts on the south. On the east is the Atlantic Ocean and Maine and on the west is Vermont. New Hampshire's scenic rivers, mountain ranges, lakes and agricultural lands define the state's culture and geography but also create physical boundaries and barriers to the resources that improve health. The topography lends itself to difficult driving and long distances between places, particularly for

rural residents. Access to primary and specialty medical, oral, behavioral health care can be a significant challenge due to New Hampshire's geographical location and landscape.

Over 37% of the population and 84% of the landmass in New Hampshire is considered rural;¹ most of the land area lies north and west of the capital Concord. The majority of New Hampshire towns are considered rural, with non-rural areas located in the south east and south central regions and primarily rural areas in the western, central and northern sections. The White Mountain National Forest separates the northernmost rural section of the state, which consists of Coos County. Coos County, known as the North Country, has the largest landmass of any county but the smallest population by county. The three most urban or metro areas are Manchester, Nashua and Concord, all located in the state's southern tier where the majority (53%) of the population lives. NH's population is disproportionate as density increases from North to South. Population density ranges from 20 people per square mile in Coos County to 775 people per square mile in the Greater Nashua region.²

In July 2013, the NH DHHS, through the Bureau of Drug and Alcohol Services (BDAS) and Division of Public Health Services (DPHS) established a strategic partnership to align multiple regional and local public health partnerships into one integrated system. The Regional Public Health Networks (RPHNs), a network of 13 NH regions, integrates multiple public health initiatives and services into a common network of community stakeholders for communities with comparable public health issues and priorities in order to improve health outcomes specific to these regions. In place of counties or other geographically defined areas, DPHS, including RHPC, uses these Public Health Regions (PHRs) when reporting on geographic areas of the state. This ensures both consistency and use of NH-appropriate definitions. RHPC defines rurality for PHRs using population and population density measures (Figure 1). PHRs with a population of 100,000 or less and with a population density of 150 people per square mile or less are considered rural.

PHRs that don't meet these criteria are categorized as non-rural. The Greater Nashua PHR has the highest population and population density in NH with 223,563 residents and 457 people per square mile, while North Country - which has the largest land mass of the PHRs - is the least densely populated Region with only 18.4 people per square mile.

Rural hospitals are a crucial part of New Hampshire's healthcare delivery system and make up 17 of the 26 acute-care hospitals in the state. Rural hospitals provide essential emergency department services, inpatient care, long-term care, and care coordination services to areas that otherwise would not have access. Populations served in rural hospitals tend to be older, poorer, are more likely to have chronic diseases and depend on public programs for healthcare coverage. Thirteen of the 26 hospitals are Critical Access Hospitals (CAH). There are 14 Rural Health Clinics in New Hampshire. All but one is hospital owned, and of those, all 13 are owned by CAHs. There are 11 Federally Qualified Health Centers

¹ Economic Research Service, United States Department of Agriculture, 2017 New Hampshire State Data. Accessed on 10/09/2018 from <https://data.ers.usda.gov/reports.aspx?ID=17854>; Division of Forests and Lands, New Hampshire Department of Natural and Cultural Resources. Retrieved on 10/09/2018 from <https://www.nhdf.org/reports/forest-statistics>.

² New Hampshire State Plan on Aging. Bureau of Elderly and Adult Services, DHHS. October 2015 – September 2019. Accessed on 10/09/2018 from <https://www.dhhs.nh.gov/dcbcs/beas/documents/stateplan.pdf>.

(FQHCs) and one Look Alike FQHC in New Hampshire providing services at 47 sites. Six FQHCs and the one Look Alike are located in rural areas, and two are homeless programs located in non-rural areas.

In national rankings, New Hampshire often is in the top ten, in its health care delivery system as well as in population health and overall well-being.^{3,4} However, overall state rankings miss the considerable disparities that exist between the rural and non-rural areas of the state, which this report intends to reveal.

Methodology

This needs assessment was designed to include identifying geographic areas and populations at Public Health Region levels that:

- Lack access to preventive and primary care services;
- Experience shortage of primary care and dental providers;
- Experience key barriers to access to health care
- Demonstrate the highest need for health services, such as levels of poverty, the elderly, percent or number unserved and underserved, designation as a MUA/P or HPSA.

It is widely accepted that measuring the health status of a population or region is best achieved by using primary care measures. As the first point of contact for all medical concerns and the primary source of care continuity and care coordination to other networks of care, primary care measures reveal access to, delivery of and utilization of care, essential to determining the health status of the population. The “New Hampshire State Health Improvement Plan (NH SHIP) 2013-2020, Charting a Course to Improve the Health of New Hampshire” ([pdf](#)) was developed with input from partners from the diverse sectors, agencies and organizations that address population health in New Hampshire. It identifies priority areas for improvement with measurable objectives and targets for health outcomes; areas for needed attention in public health capacity; and, recommendations for evidence-based interventions and actions. It includes measurable objectives, recommended strategies for improvement, and performance measures with time-framed targets for each priority. The NH SHIP priorities and objectives are intended to provide support, guidance, and focus for public health activities throughout the state. The NH SHIP is the state’s public health roadmap, providing evidence-based strategies to guide the direction of many of our actions. Reaching our objectives indicates that we have significantly improved the health of our people.

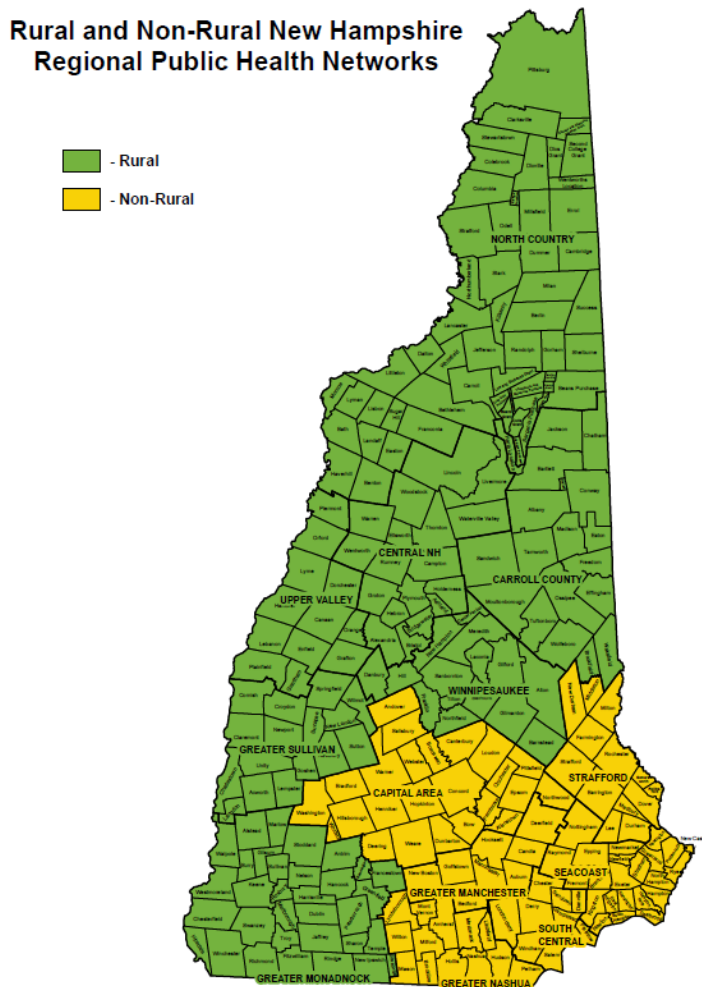
Because there are no national standardized measures or consensus as to which health behaviors and outcomes best predict primary care access and utilization, the indicators contained in the report were selected from the NH State Health Improvement Plan Priority Areas as the most likely to be impacted by primary care and most indicative of the population’s health status. Demographic data highlights population risk factors associated with access to and utilization of primary care.

³ Commonwealth Fund, Health System Data Center. Retrieved on 10/11/2018 from <http://datacenter.commonwealthfund.org/scorecard/state/31/newhampshire/>.

⁴ United Health Foundation, America’s Health Rankings. Retrieved on 10/11/2018 from https://assets.americashealthrankings.org/app/uploads/ahr_hwc_2018_report_summary_022818a.pdf.

To ensure the RHPC fully benefits from the statewide Needs Assessment, the PCO intends to demonstrate both rural and non-rural regional needs. Because a number of federal definitions of rural exist, NH DPHS determines rurality using our own, pre-defined Public Health Regions, as previously stated. This ensures both consistency and use of NH-appropriate definitions. For most data elements, the data was aggregated first to the level of the [NH Public Health Regions \(PHRs\)](#), which are then sub-classified into either rural or non-rural categories, allowing the differences in this important distinction within the state to be examined (Figure 1). Finally, data was aggregated to the state level.

Figure 1.



Selected indicators were classified under the following categories (see Appendix A):

- Demographics
- Barriers to Care
- Workforce
- Substance Use and Mental Health
- Maternal Health

- Preventive Care
- Health Outcomes

The New Hampshire (NH) Primary Care Office (PCO) coordinates with the NH Primary Care Association (PCA) and other offices within the Division of Public Health Services (DPHS) to obtain primary care data for the statewide Needs Assessment. The NH PCO has a scheduled, annual meeting with the NH PCA to review and update the statewide Needs Assessment report.

Data statistics (rates and accompanying intervals at the 95% confidence level) were compiled by the Bureau of Public Health Statistics and Informatics at the NH Department of Health and Human Services and by Community Health Institute/John Snow, Inc. (JSI). The data was then analyzed and visualized using Tableau software. Several data elements were only available at the state level due to small numbers. Where comparisons are shown, the PHR-level data was compared to the statewide results. For the rural to non-rural comparisons, the two classifications were compared to each other as the dominance of the non-rural counts in the statewide data would mask and diminish differences if compared at that level. Where available, confidence intervals were calculated at the 95% level to test the significance of differences noted. Indicators with slightly overlapping confidence intervals for estimated rates suggest these relationships warrant further investigation using statistical analysis to compute a p-value to assess statistically significant differences at the 0.05 confidence level. Data included in this report comes from the following sources:

Vital Records – Division of Vital Records Administration (DVRA), a division of the New Hampshire Department of State. DVRA is responsible for recording births, deaths, marriages, and divorces. Datasets utilized include Birth Certificates, 2015-2018; Death Certificates, 2010-2019

BRFSS - The Behavioral Risk Factor Surveillance System (BRFSS) is a collaborative project between all of the states in the United States (US) and participating US territories and the Centers for Disease Control and Prevention (CDC). The BRFSS is administered and supported by CDC's Population Health Surveillance Branch, under the Division of Population Health at the National Center for Chronic Disease Prevention and Health Promotion. The BRFSS is a system of ongoing health-related telephone surveys designed to collect data on health-related risk behaviors, chronic health conditions, and use of preventive services from the noninstitutionalized adult population (≥ 18 years) residing in the United States. This dataset utilizes 2016-2017 data.

American Community Survey (ACS) - The American Community Survey (ACS) is an ongoing survey by the U.S. Census Bureau. It regularly gathers information previously contained only in the long form of the decennial census, such as ancestry, citizenship, educational attainment, income, language proficiency, migration, disability, employment, and housing characteristics. The Census Bureau randomly sample addresses in every state, the District of Columbia, and Puerto Rico. This dataset utilizes 2014-2018 data.

Cancer Registry - The New Hampshire State Cancer Registry (NHSCR) is a statewide, population-based cancer surveillance program that collects incidence data on all cancer cases diagnosed or treated in the State of New Hampshire. This dataset utilizes 2013-2017 data.

NH Uniform Healthcare Facility Discharge Dataset (UHFDDS) - The New Hampshire UHFDDS contains data on health care encounters reported by hospitals licensed by the New Hampshire Department of Health and Human Services, as well as from select specialty facilities. UHFDDS contains patient-level data with demographic variables including age, sex, and county or state of residence, and clinical variables including primary and secondary diagnoses and procedures. Drug and alcohol related visits include acute alcohol and/or drug poisoning as well as injuries/conditions related to acute drug and/or alcohol use. Records with diagnosis codes describing intentional self-harm or assault were not included in the alcohol/drug count, nor were records with only codes for chronic drug or alcohol related conditions, not indicating acute use. Dataset reflects 2018 data.

All-Payer Claims Database (APCD) – Managed by the NH Comprehensive Healthcare Information System (CHIS), the APCD contains claims data from commercial health insurers, public/government insurance programs, and self-insured employer plans. Data reflects claims in 2019.

Data Report

Demographics:

Based on the rural PHR definition, approximately 70% of the state's ~1.36 million residents live in non-rural areas; with the most populated PHR regions being Greater Nashua and Greater Manchester, which together account for just under 30% of the state's population (15.6 and 13.7 percent, respectively).⁵ The remaining 30% of New Hampshire residents live in rural areas of the state. The data within this report will expose the significant disparities that exist between rural and non-rural regions of the state relative to demographic (see Figure 2) and behavioral risk factors, preventive care, workforce supply, and health outcomes. With the exception of a few indicators, New Hampshire's rural PHRs lead in associated risks to access and utilization of primary care according to the selected indicators for this report, with Carroll County ranking at the top of many areas of risk/poor outcomes explored and North Country trailing close behind.

Seventeen percent (17%) of the state's residents are 65 years or older; a 2% increase over the last four years. Senior populations are more abundant in rural regions, with about one-fifth (20.7%) of rural residents 65 years or older compared to just 15.4% of non-rural residents. Carroll County PHR has the highest volume of senior residents at 26.2%, followed by North Country (22.4%) and Greater Sullivan (21.5%). All non-rural PHRs of the state, except for Seacoast PHR, trail rural PHRs of the state when considering the volume of senior residents 65 years or older. Rural PHRs also have higher rates of disability among the 18-64 year old population compared to non-rural PHRs, with North Country rates (17.3%) more than doubling the four PHRs with the lowest rates in the state, and no non-rural PHRs breaking 10 percent. The distribution of veterans in NH ranges from a low of 7.4% in Upper Valley to a high of 11.6% in Winnepesaukee, with rural areas showing a statistically higher proportion of veterans, overall. Those PHRs with the highest proportion of seniors 65 years or older, also have the highest proportion of veterans in the state, which comes as no surprise considering more than 50% of New Hampshire veterans are 65 years or older.⁶

⁵ NH Office of Strategic Initiatives. "2019 Population Estimates of New Hampshire Cities and Towns." July 2020. Accessed on March 21, 2020 at <https://www.nh.gov/osi/data-center/documents/population-estimates-2019.pdf>.

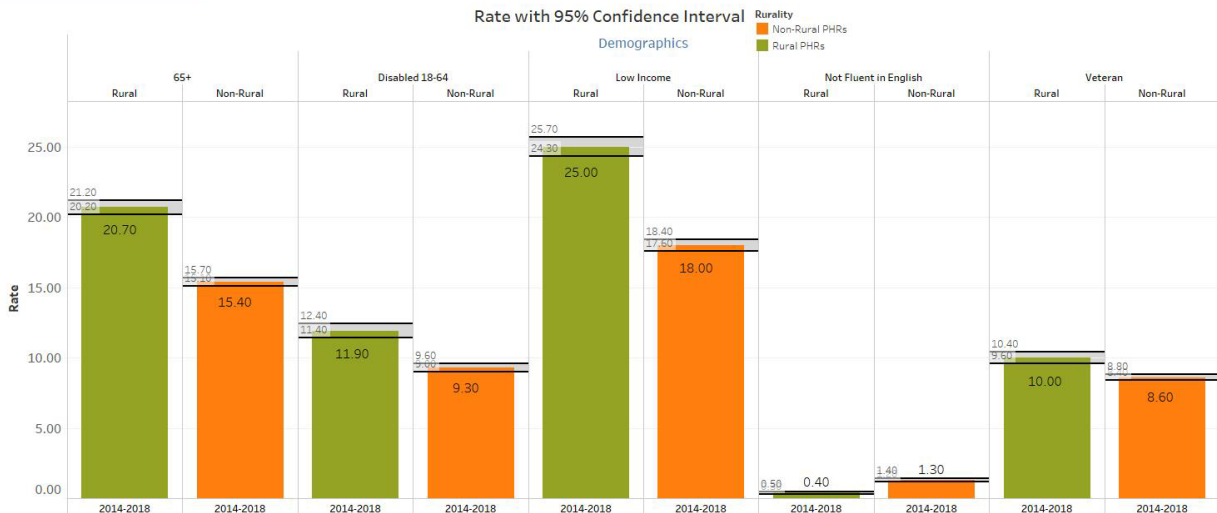
⁶ Economic & Labor Market Information Bureau, NH Employment Security. "Veterans in New Hampshire 2019." Accessed on March 23, 2021 at <https://www.nhes.nh.gov/elmi/products/documents/veterans-2019.pdf>.

As a whole, New Hampshire has the lowest rate of poverty (<200%) in the country at 20.1 percent. However, this figure belies the significant income disparities that exist between rural and non-rural regions of the state. The low income population is about 40% higher in rural regions than non-rural regions (25 and 18 percent, respectively). While the lowest rates of poverty exist in non-rural South Central and Seacoast PHRs (14.6 and 12 percent, respectively); the highest rates, found in rural North Country (33.2%), Central NH (30.5%) and Carroll County (27.4%), carry over twice the rate of poverty.

Just over 14% of NH residents are enrolled in Medicaid. The Affordable Care Act and New Hampshire’s expansion of Medicaid brought a 42% increase in Medicaid/Children’s Health Insurance Program enrollment from 2013-2018.⁷ This in turn reduced uninsurance from 9.3% in 2014, to 7.7% in 2018; a 17.2% reduction. However, the rural rate of uninsurance is statistically higher at 9.9% compared to 6.9% in non-rural areas. PHRs Carroll County (13.2%) and Central NH (11.9%) uninsurance rates are significantly higher than in non-rural PHRs.

Limited English Proficiency (LEP) is found to represent only 1% of overall population, which has not changed in the last four years. While this potential barrier to care is relatively low, the LEP population is predominantly concentrated in the non-rural parts of the state, with rural areas accounting for just 0.4% of the LEP population. The highest rate is in Greater Manchester, at 2.5 percent, followed by Greater Nashua at 1.7 percent.

Figure 2.



Barriers to Care:

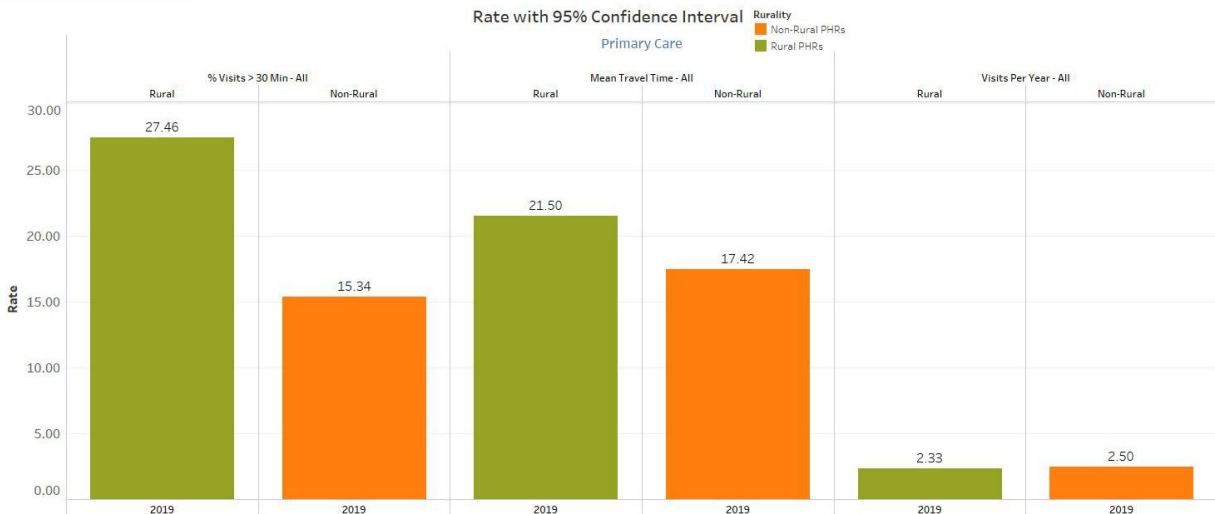
Barriers to health care can result in delays to appropriate care and unmet health needs, which impacts our social, physical, oral, mental health and, ultimately, our quality of life. Health care coverage, cost, access to a usual source of care, and travel time indicators are designed to help answer the question of whether significant barriers to care exist. Looking first at general access to

⁷ Health Insurance & Health Reform Authority. “New Hampshire and the ACA’s Medicaid Expansion.” October 1, 2020. Accessed on March 23, 2021 at <https://www.healthinsurance.org/new-hampshire-medicaid/>.

care, rural residents were slightly more likely, though not statistically, to avoid seeing a doctor due to cost (10.4% v 8.8%) and more likely to report not having a personal health care provider (13.7% v 12.1%). Carroll County has the highest rates of these barriers to care; and interestingly, the second highest rate of no personal health care provider in the state is in rural Upper Valley, where Dartmouth Hitchcock Medical Center (DHMC) - the state's largest health care system - is located. While rural disparities continue to exist, the data exposes notable reductions in these metrics by about 20% across all geographic levels compared to 2016 figures.

Due to the geographic barriers rural residents face, it should come as no surprise that there are travel time differences between rural and non-rural residents, as presented in Figure 3. A greater proportion of rural residents traveled more than 30 minutes to primary care appointments compared to non-rural residents (27.5% v. 15.3%). The difference in mean travel time between rural and non-rural residents is less striking, with data reflecting just a four-minute difference. While a longer travel time in non-rural NH may be explained by bypass behavior, which describes travelling farther for care as a matter of choice between many systems of care, travel for rural residents often is necessary to access the nearest source of care. There is very little difference in the amount of routine health care received between rural and non-rural residents (2.3 v. 2.5 visits per year). Rural Winnepesaukee and Carroll County populations have the highest rates of travel time and lowest number of visits.

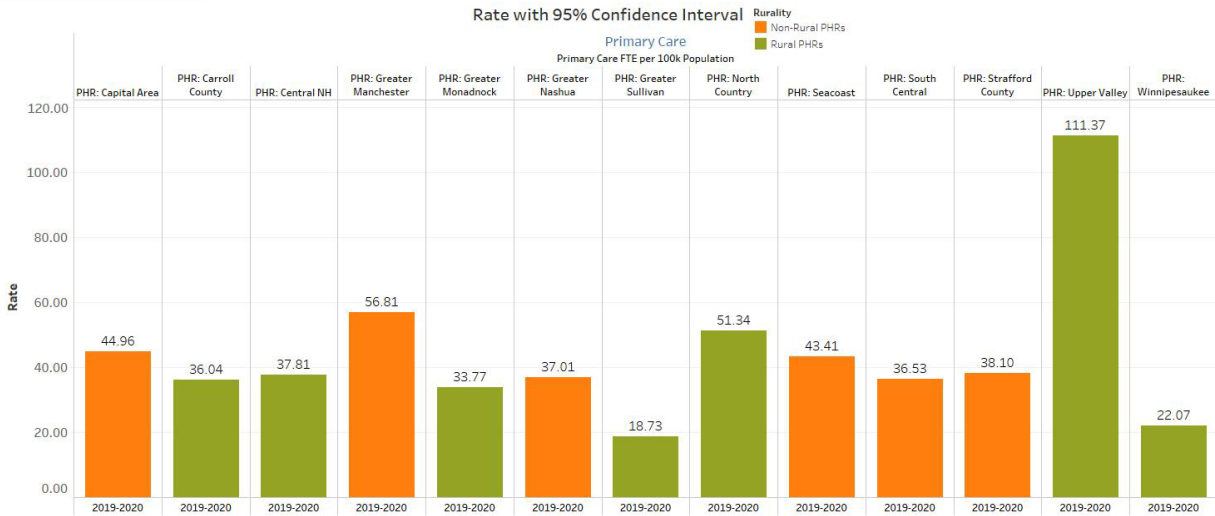
Figure 3.



Workforce:

When looking at the availability of physician primary care (primary care FTE per 100k population) by rurality, at face value it appears that there is little difference between rural and non-rural areas (41.4 v 43.1). However, exploring the data by PHR (Figure 4) provides us with a critical insight: Upper Valley, which contains DHMC, is skewing the results and masking the lack of physician availability in other rural areas of the state. The primary care availability in Upper Valley is twice that of the second-most populated area, Greater Manchester (56.8), and about six times greater than Greater Sullivan (18.7), which has the least availability of physician primary care. The proportion of primary care physicians over 50 years old is higher in rural areas, though by an insignificant margin (65.6% v 62.1%).

Figure 4.



The provider to population ratio for dentists shows dentist availability is proportionally 15% lower in rural compared to non-rural NH (44.1 v 52.1). As with physicians, Upper Valley has the greatest availability of dentists (84.8). Licensing data shows significant improvements in narrowing the gap between rural and non-rural for certain oral health indicators since the 2016 report (Figure 5). While in 2016, the availability of pediatric dentists was about 60% lower in rural compared to non-rural areas, this imbalance has shifted, with survey data demonstrating that there is now 23% more pediatric dentist availability in rural than in non-rural areas (16.9 v 13.1). Possible explanations of this shift include the utilization of different data sources for the 2016 report (PCSAs) and this year's report (NH licensing list), which may not be comparable; and the addition of satellite offices in rural areas from primary, central locations of the state, which the Director of Workforce Development at Bi-State Primary Care Association explained is a result of the expansion of practices purchased from retiring dentists. The availability of general dentistry and proportion of dentists over 55 years old is now comparable between rural and non-rural regions (82.2% v 81.7%; 42.1% v 40.2%), a shift from 2016 data indicating rural dentists were older and more often general dentists than in non-rural areas.

Figure 5.



Lastly, the availability of psychiatrists for primary mental health care is limited in New Hampshire, 5 FTE per 100k population. As with physicians and dentists, psychiatrists are overrepresented in Upper Valley (17.2 FTE/100k), and as a result, the true gap between rural and non-rural provider availability is masked unless the data is explored by PHR level (Figure 6).

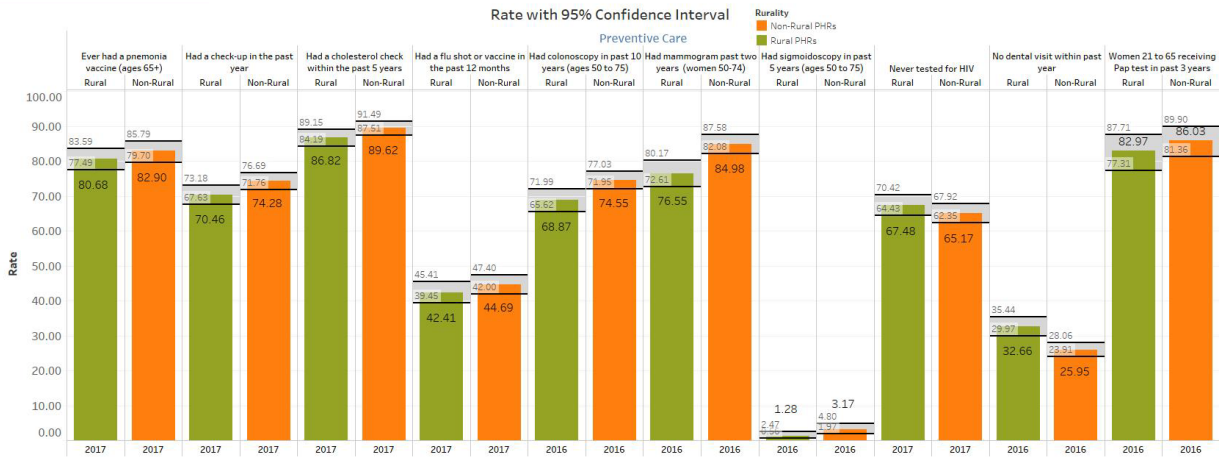
Figure 6.



Preventive Care:

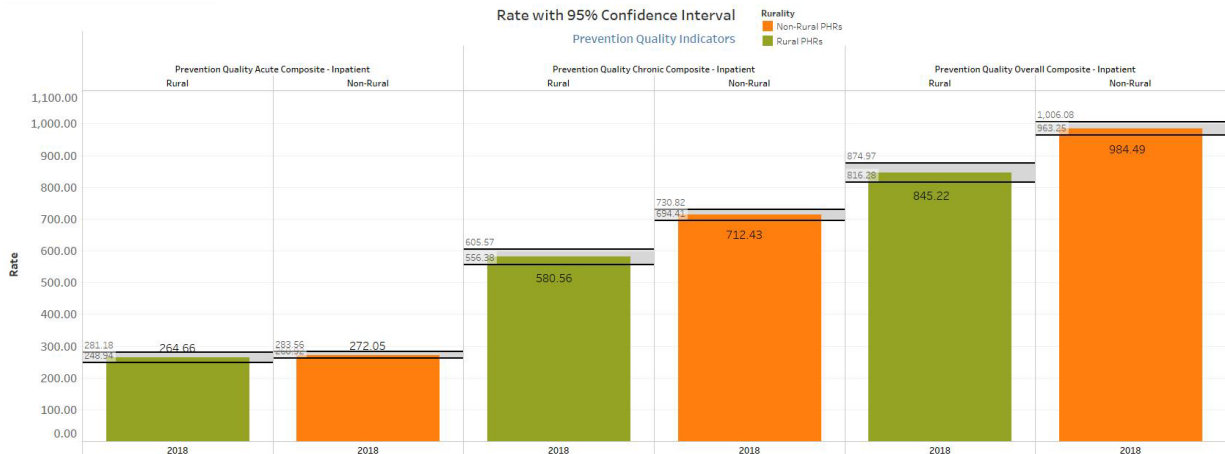
The question underlying the measurement of the various barriers to care is whether they appear to be limiting individuals from getting the care they need. The BRFSS data provides several metrics designed to answer this question. With the exception of two indicators – mammography in past two years and no dental visit within the past year – the selected preventive care indicators did not show any statistically significant observable differences when comparing rural to non-rural. However, the significance of the differences, determined by confidence intervals, in many cases was found to be close enough to warrant further exploration with additional statistical testing. A consistent pattern across many measures lends credibility to the overall observation that rural residents of the state exhibit somewhat worse access to routine health care. Looking first at general access to care, rural residents were slightly less likely to have had a checkup in the past year (70.5% v 74.2%) and statistically more likely to report no dental visit in the past year (32.7% v 26.0%). A similar pattern is observed when examining the timely access to preventive services. Across all preventive services explored, rural populations were less likely than non-rural populations to have had the screening tests and immunizations selected for this analysis (Figure 7).

Figure 7.



Prevention Quality Indicators (PQIs) replaced Ambulatory Care Sensitive Conditions (ACSC) as a measure of inpatient admissions that could have been avoided with proper access to primary care. Statistically, rural NH had lower rates of PQIs for the chronic composite and overall composite measures than non-rural NH (Figure 8). In other words, non-rural residents were more likely to be admitted to the hospital for preventable medical complications than their rural counterparts. The highest rates of chronic and overall PQI admissions are in Greater Manchester and Strafford County. PQI risk is influenced by demographics, with language barriers and race increasing risk, which could partially explain why PQI rates are higher for non-rural populations in NH.⁸ Interestingly, rural North Country has the highest rate of acute PQI admissions – bacterial pneumonia and urinary tract infections - by a large margin (~33% more than the second highest rate in non-rural Strafford County).

Figure 8.

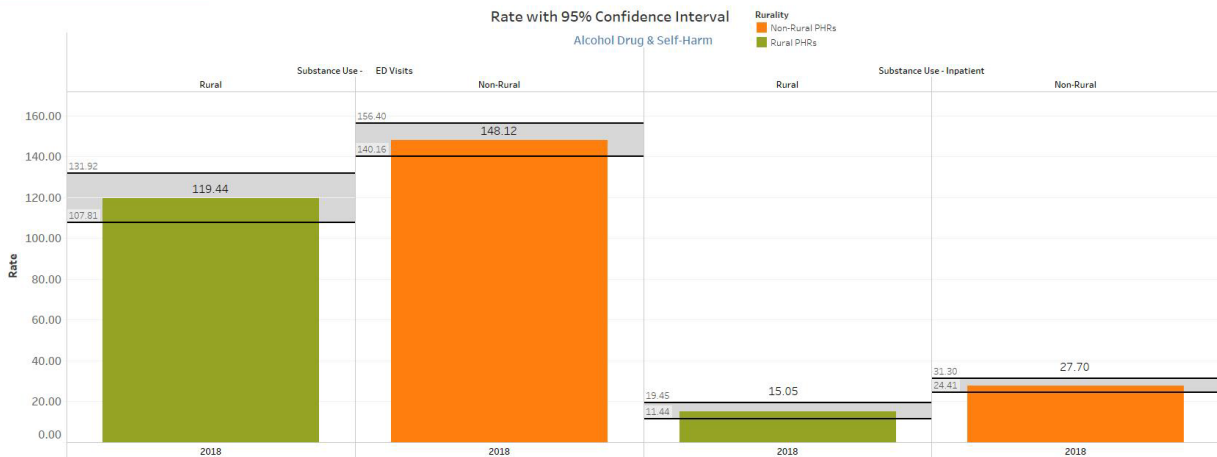


⁸ Agency for Healthcare Research and Quality. “Expanding Use of the AHRQ Prevention Quality Indicators: Report on the Clinical Expert Review Panel.” November 7, 2009. Accessed on December 3, 2020 at https://www.qualityindicators.ahrq.gov/Downloads/Modules/PQI/PQI_Summary_Report.pdf.

Substance Use and Mental Health:

Approximately 15% of New Hampshire residents smoke tobacco, with rates higher, though not statistically, in rural areas (17.7% v 14.8%). According to SAMHSA’s National Survey on Drug Use and Health (NSDUH), 2.5% of NH residents 12 years and older needed but did not receive treatment for alcohol or illicit drug use between 2017 and 2018, which falls in the middle of the national data ranked by state. Consistent with the national trend,⁹ acute alcohol- and drug use-related emergency department (ED) and inpatient admissions are statistically higher for non-rural residents than their rural counterparts, by 19% and 46%, respectively (Figure 9). Rates of ED and inpatient admissions for self-inflicted harm is comparable between rural and non-rural NH. The rate of suicide is 17% higher in rural than in non-rural NH. Rural NH may be disproportionately impacted by suicide, due in part to associated risk factors more prevalent in rural such as veteran status and lack of health insurance.

Figure 9.

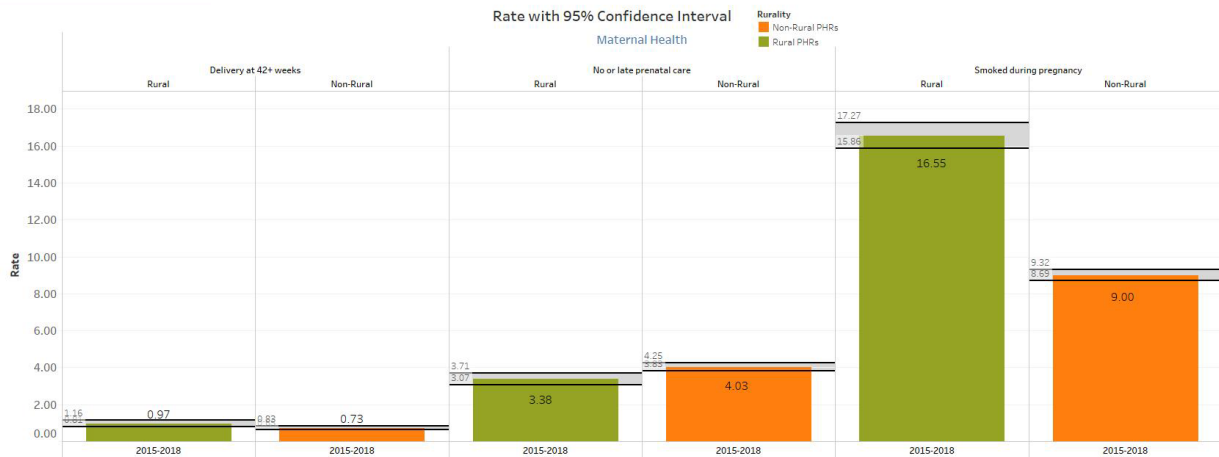


Maternal Health:

The maternal health indicators explored revealed considerable differences between rural and non-rural populations (Figure 10). The overall percentage of post-term delivery dates in NH is low (0.8%); however, when analyzed by rurality, rural NH has proportionally 30% more post-date deliveries than non-rural (1.0% v 0.7%). Rural Carroll County has the highest rates in the state, with post-date delivery rates 2.4x higher than in non-rural Capital Area, which has the lowest rates in the state (1.44% v 0.6%, respectively). The most striking disparity within maternal health is found in smoking during pregnancy. Smoking during pregnancy is proportionally almost twice as high in rural compared to non-rural areas (16.6% v 9.0%). Greater Sullivan and North Country stand at over 21% of pregnant women smoking during pregnancy, followed closely by Carroll County (18.7%). Geographic differences in prenatal care received are slight, albeit significant, with a greater proportion of delayed or no prenatal care in non-rural areas (4.0% v 3.4%); though the highest rate in the state belongs to rural Winnepesaukee (6.4%).

⁹ Schroeder, Shawnda, et al. “Rural and Urban Utilization of the Emergency Department for Mental Health and Substance Abuse.” Rural Health Reform Policy Research Center. Policy Brief, June 2017.

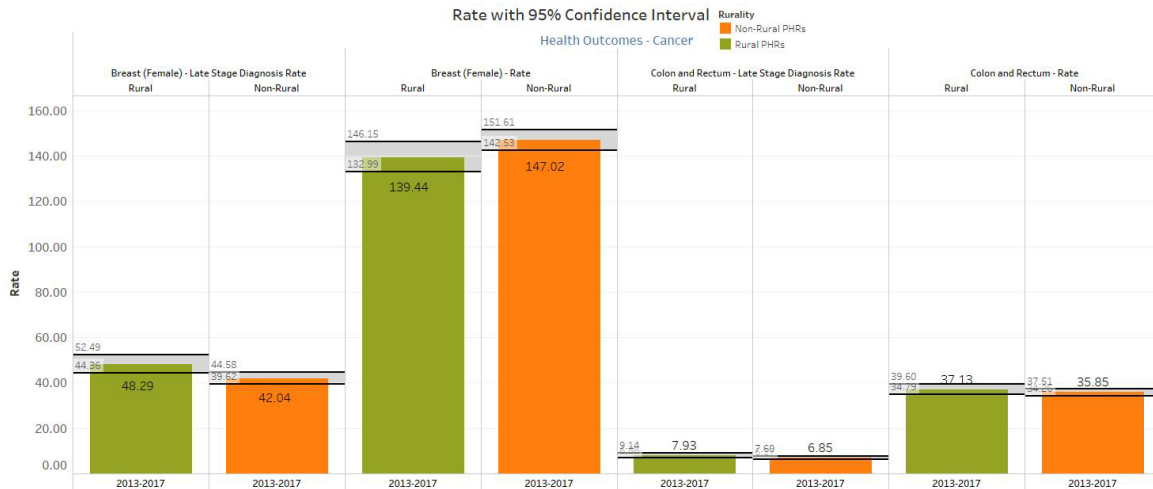
Figure 10.



Health Outcomes:

The above categories of health care access and utilization help to identify disparities that exist within the state across geographic locations. This section aims to answer the question of whether geographic differences carry over to health outcomes. Rural New Hampshire has a higher rate of death, overall (1028.4 v 805.1), though not statistically when age-adjusted; and of suicide (19.6 v 16.3), regardless of age-adjustment. The highest rates for both death overall and suicide are in Carroll County and North Country. There is no statistical difference between rural and non-rural rates for cholesterol or high blood pressure, though rural NH rates are relatively higher than non-rural. Looking at cancer outcomes (Figure 11), the rate of late-stage breast cancer diagnosis in rural NH is proportionally higher at 34.6% of all stages of breast cancer compared to 28.6% in non-rural areas, and highest in Carroll County followed by North Country. Though the slight overlap of the confidence intervals (19.7%-23.1% v 18.0%-20.3%) warrants additional testing, late-stage colon and rectum cancer rates are also proportionally higher (21.4% v 19.1%) in rural than in non-rural NH, and statistically so in Carroll County and Greater Sullivan compared to non-rural PHRs. While non-rural NH is meeting the Health People 2020 target for late-stage diagnosis (42.4), rural NH is far behind, even exceeding the 2007 baseline for late-stage cases (44.7). Because cervical cancer is so rare, a statistical analysis was not considered useful.

Figure 11.



Implementation Plan

As revealed in the data report, New Hampshire’s most vulnerable populations exist in rural areas. The implementation plan aims to target rural regions of the state in order to reduce the health disparities that exist by improving on the utilization, delivery and access of primary care in these areas. As previously mentioned, rural hospitals are an essential part of New Hampshire’s healthcare delivery system and provide primary care coordination services to areas that otherwise would not have access. As payment models shift from volume to value, hospitals are working to advance population health efforts within their institutions and improve the health of the communities they serve. CAHs have committed funding and staff time to Community Health Needs Assessments (CHNAs) and community benefits programming since the passage of the Patient Protection and Affordable Care Act in March 2010. Many hospitals have also created and implemented innovative programs to better manage the health of their patient populations. While these efforts have helped CAHs better understand the populations they serve, they also recognize that certain parts of their service area are disproportionately impacted by chronic conditions and socioeconomic factors. All of these elements affect patient and hospital efforts to work in partnership to manage patient health. To help hospitals identify and more effectively manage the health of NH’s high-need populations, the RHPC has created the NH CAH Hotspotting project and partnered with the Foundation for Healthy Communities’ Population Health Initiative.

In New Hampshire, fourteen Rural Health Clinics (RHCs) provide primary care in rural, underserved communities across the state, and are predominantly provider based and hospital affiliated. NH RHCs have unique technical assistance needs and face challenges in the delivery of primary care in rural areas which are often isolated by geography and weather. New Hampshire RHCs vary in size and structure. All but one RHC are affiliated with a Critical Access Hospital; organizational structure and shared staffing with the hospitals vary by RHC. About half of all NH RHCs have access to MAT providers or the hospital has a “Doorway” program that provides these services for their patients outside of the RHC. RHCs’ technical assistance (TA) needs range and include areas of finance, administration, workforce, clinical, strategy and access. In addition, RHC staff may not have easy

access to peer learning and supports. The results from the 2020 TA needs assessment conducted for the NH RHC TA Network demonstrate similarities and differences in operations and identified needs among NH RHCs. Most reported they have care management systems and routinely screen for social determinants of health (SDoH) data (employment, housing, safety, education, food security, transportation). In addition, all reported their RHC had implemented telehealth and were able to keep staff and patients safe from COVID-19. RHCs varied in their use of data for tracking and proactive outreach and engagement, and in the level of behavioral health resources and staffing provided on-site or in the community. Commonly identified needs includes billing and coding, cost reports, recruitment and retention of non-clinical or support staff, use of registries, and social determinants of health data. For the next three years, we will be offering technical assistance on a broad range of topics. We plan to deeply explore multiple topics that the RHCs help select such as telehealth, finance or behavioral health integration.

RHPC contracts with the NH PCA, Bi-State Primary Care Association, to, among other services, aid in health center planning and development. Each month, the PCO and PCA meet to share data and coordinate efforts. During these meetings, the PCA and PCO discuss efforts around our common goals, which include

1. Participation at regional clinician conferences,
2. The Legislative Primary Care Workforce Issues Commission priorities,
3. Shortage designation, and
4. Recruitment/Retention efforts.

The NH PCO serves as the point of contact to the PCA and other entities for access to and use of relevant statewide and sub-county data to support applications for new and expanded capacity of Federally Qualified Health Centers. There are 11 Federally Qualified Health Centers (FQHCs) and one FQHC Look-Alike (LAL) with sites in New Hampshire, three of which offer homeless programs located in non-rural areas. Six FQHCs and the one FQHC LAL are located in rural areas. All of the FQHCs and Look-Alike provide access to primary and preventive medical, dental, behavioral and mental health care services, and treatment for substance use disorders. They also help patients connect to services that address the SDoH that impact health and wellbeing. FQHCs are open to all, regardless of insurance coverage or ability to pay for services.

As has been the trend across the country, births in rural counties have been on the decline in New Hampshire. For CAHs, low volume births and staffing challenges for labor and delivery units raise concerns about financial feasibility of continuing these community services as well as questions about the quality of care that can be provided. Between 2003 and 2017, eight CAHs closed their labor and delivery units citing both of these difficulties. In 2017, when Franklin Regional Hospital's parent organization, Lakes Region General Hospital shuttered their previously mid-volume unit, the DPHS started to examine the maternity care deserts that were developing.

Data was examined to try and tell the story of why particular hospitals were more vulnerable to closure when some were mid-volume in the year that they closed their unit. Looking at the payer mix, it was found that hospitals where higher volumes of births were covered by Medicaid (typically around 60% or more) were more likely to have closed their units. RHPC's Rural Health Manager and DPHS Maternal and Child Health Section have begun meeting with representatives from the

Northern New England Perinatal Quality Improvement Network (NNEPQIN) and NH Medicaid to ensure these essential community services remain available.

In addition to supporting the continuation of labor and delivery unit closures, the collaborative group began to examine where labor and delivery units had shuttered and what some of the unintended consequences may be in these areas. Coordinating NH Vital Records as well as Emergency Medical Services data, the Maternal and Child Health staff and the Rural Health Manager began to examine births that occurred in unplanned locations. These locations were deemed unplanned if women; 1) gave birth at home unintentionally, 2) gave birth during transport to a hospital with a labor and delivery unit, 3) gave birth in a hospital without a labor and delivery unit. While most of the unplanned births are in the southeast corner of the State of New Hampshire where the population is most dense, an examination of rates showed that a higher percentage of unplanned location births occurred in the areas with the lowest concentration of hospitals that maintain labor and delivery units. As these investigations continue, the team is looking to correlate these unplanned location births with weather patterns, outcomes, characteristics of the mom (parity, gestational age, etc.), and driving distance to a birth hospital from their homes. This work will continue as closures become a growing concern in NH.

A State Health Assessment (SHA) and State Health Improvement Plan (SHIP) Advisory Council was established in July 2020. The SHA will describe the status of health and well-being in New Hampshire; utilize input from state and local level stakeholders obtained through public forums; identify disparities in social determinants that impact health, health outcomes, and access to care; map health care service delivery, utilization, inter-entity collaboration, and identification of gaps or redundancies; utilize existing data for statewide and local planning; and identify priorities for the SHIP. The State Health Assessment will be completed in August 2021. The State Health Improvement Plan will guide the Department of Health and Human Services in assessing, planning, implementing, and monitoring improvement in the health and well-being of New Hampshire's population. The SHIP will focus on strategies to improve health outcomes and reduce inequities; and strengthen public health and human service delivery systems. The SHIP will identify priorities and evidence-based practices, integrate services, and leverage resources across the state. The State Health Improvement Plan needs to be completed by August 2022.

Workforce Recruitment and Retention:

The Legislative Commission on the Interdisciplinary Primary Care Workforce was established in 2010 to recommend policies and programs to increase the number of NH individuals in health professions serving NH's rural and underserved areas, with a focus on primary care.

Commission membership is diverse and includes rural and non-rural representation from the House of Representatives; DHHS; Department of Labor; hospitals; public and private health science schools, including Dartmouth Hitchcock, Rivier University, and the University of New Hampshire; provider associations; practicing providers; the AHEC; and the Citizen's Health Initiative. The Commission is currently working to coordinate efforts for the following priorities: a clinical placement program, a rural residency track, additional funding for the State Loan Repayment Program (SLRP), and sustainable funding for the NH Area Health Education Centers (AHEC). The PCO Director serves as the Vice Chair of the Commission, overseeing the scheduling of agenda topics. The Health Professions Data Center Manager records meeting

minutes, which are posted on the state website. In this role we are able to coordinate efforts throughout the state that involve both internal and external partners.

The RHPC has worked to further integrate the workforce development programs within the office. The grant programs often combine funding in order to support existing programs or to extend their reach. State match funding supports shortage designation work, RHC designation analysis, and the assessment of barriers to primary care access report, which is updated as necessary. State match funding also supports contracts for the State Loan Repayment Program (SLRP). State match and Medicaid funds support a contract with the NH Recruitment Center for the coordination of recruitment and retention initiatives with rural safety net providers to include oral health and behavioral providers. With workforce as a primary RHPC strategic approach, New Hampshire can better determine areas of need that will improve our ability to identify and understand its workforce shortages. Due to the fact that NH’s rural regions are more likely to be medically underserved compared to their non-rural counterparts, much of the population served by the RHPC Workforce Programs are in rural areas.

Number and Type of Shortage Designations within the NH Public Health Regions (PHRs)

	<i>Rurality</i>	<i># of HPSAs</i>	<i># of MUPs</i>	<i># of MUAs</i>	<i># of Governor's Exceptions</i>
<i>Capital Area</i>	NR	0	7	1	0
<i>Carroll County</i>	R	0	0	1	0
<i>Central NH</i>	R	17	15	0	6
<i>Greater Derry</i>	NR	0	0	0	0
<i>Greater Manchester</i>	NR	0	0	7	4
<i>Greater Monadnock</i>	R	3	0	0	4
<i>Greater Nashua</i>	NR	0	2	0	0
<i>Greater Sullivan</i>	R	1	11	0	2
<i>North Country</i>	R	1	0	0	15
<i>Seacoast</i>	NR	1	0	4	0
<i>Strafford County</i>	NR	0	0	1	0
<i>Upper Valley</i>	R	2	2	0	3
<i>Winnepesaukee</i>	R	1	18	0	9

Note: # denotes the count of designations in/designated towns that fall within each PHR

NR = Non-rural

R = Rural

RHPC developed the Health Professions Data Center (HPDC) to coordinate the collection of provider data with participation from all health professions licensing boards in the state. The HPDC is the state’s first coordinated approach to the collection of primary care workforce data on a consistent basis by surveying providers during their respective license renewal cycles. Survey tools were developed with collaboration by our contracted vendor, HRSA’s National Center for Workforce Analysis (Minimum Data Sets), the Office of Minority Health and Refugee Affairs, the Legislative Commission on Primary Care Workforce Issues, the PCA, and the health professions licensing boards. The PCO has partnered with the Office of Professional Licensure and Certification (OPLC), the regulatory agency which oversees all of the health professions licensing boards, to implement surveying of physicians, physician assistants, advanced practice registered nurses (APRNs), mental health practitioners (i.e. clinical social workers, mental

health counselors, marriage and family therapists, and pastoral psychotherapists), psychologists, licensed alcohol and drug counselors (LADC/MLADCs), and dental providers (dentists/RDHs) during license renewals. With the Health Professions Surveys, the PCO collects supply and capacity data from providers in a consistent manner to inform stakeholders on the current and anticipated health care provider landscape of the state, as well as other healthcare access planning and workforce assessment initiatives, including

- Federal shortage designations – provider surveys will act as a means to validate physicians or remove physicians that are fed into the SMDS from the NPI database to assist the PCO with shortage designation.
- Strengthened recruitment/retention initiatives – the Data Center will inform scholarships, loan repayment, and waiver programs.
- The expansion of educational and employment training programs – informing NH’s public and private workforce investments
- Stronger emergency preparedness
- Informing policy recommendations for the Governor’s Office and legislature

As of 2019, the HPDC surveys are now a requirement of license renewal for licensed NH health care providers. As a result, the PCO will soon be able to more accurately describe the supply and capacity of the mental health and dental workforces along with physician/psychiatrist data to provide a more comprehensive, clear picture of the landscape and where gaps may exist.

The RHPC has chosen to use its resources to leverage existing partnerships, increase funding to recruitment and retention programs that are demonstrating success, take the leadership role in workforce data collection and be the source of technical assistance (TA) to Rural Health Clinics (RHCs). The PCO will continue to work congruously with our programs under the Rural Health and Primary Care Section, the NH Division of Public Health Services, Bi-State Primary Care Association, Area Health Education Centers, and other entities to seek ways through which partnerships can be maintained and strengthened. This enables RHPC and our stakeholders to assist with the growth and support of health centers and other primary care providers to encourage the provision of quality care and equitable health for all in New Hampshire. The PCO will collaborate with internal stakeholders, the PCA, the AHECs and other external partners to conduct annual reviews of the Statewide Primary Care Needs Assessment to ensure ongoing collaborative efforts around actively addressing barriers to primary care.

Appendix A

Subgroups	Indicator	Source
Demographics	65+	ACS
Demographics	Percent Not Fluent in English	ACS
Demographics	Disabled	ACS
Demographics	Veteran	ACS
Demographics	Low Income	ACS
Demographics	Uninsured	ACS
Demographics	Medicaid	APCD
Barriers to Care	Delayed/Avoided Care due to Cost	BRFSS
Barriers to Care	No Personal Doctor/Health Care Provider	BRFSS
Barriers to Care	Mean Travel Time to Primary Care	APCD
Barriers to Care	Visits per Year	APCD
Barriers to Care	% Visits >30 Minutes Away	APCD
Workforce	Primary Care Physician (PCP) FTE per 100k population	Licensing data
Workforce	% PCPs 50+ Years Old	Licensing data
Workforce	Dentists to Population Ratio	Licensing data
Workforce	Pediatric Dentists to Population Ratio	Licensing data
Workforce	% General dentists	Licensing data
Workforce	% General Dentists 55+ Years Old	Licensing data
Substance Use and Mental Health	Needing but not Receiving Treatment for Illicit Drug Use	NSDUH
Substance Use and Mental Health	Needing but not Receiving Treatment for Alcohol Use	NSDUH
Substance Use and Mental Health	Drug related ED Visits	UHFDDS
Substance Use and Mental Health	Alcohol related ED Visits	UHFDDS
Substance Use and Mental Health	Drug related inpatient Stays	UHFDDS
Substance Use and Mental Health	Alcohol related inpatient Stays	UHFDDS
Substance Use and Mental Health	Current Smoker	BRFSS
Substance Use and Mental Health	Suicide	Vital Records
Maternal Health	No/Late Prenatal Care	Vital Records
Maternal Health	Smoked during Pregnancy	Vital Records
Maternal Health	Delivery at 42+ weeks	Vital Records
Preventive Care	Check-up in Past Year	BRFSS
Preventive Care	No Dental Visit within Past Year	BRFSS
Preventive Care	Ever Received Pneumonia Vaccine (65+)	BRFSS
Preventive Care	Cholesterol Checked (past 5 years)	BRFSS
Preventive Care	Flu shot (in past 12 months)	BRFSS
Preventive Care	Colonoscopy in past 10 years (50-75)	BRFSS
Preventive Care	Mammogram in past 2 years (50-74)	BRFSS
Preventive Care	Sigmoidoscopy in past 5 years (50-75)	BRFSS
Preventive Care	Never tested for HIV	BRFSS
Preventive Care	Pap test in past 3 years (21-65)	BRFSS
Preventive Care	PQI - Acute composite	UHFDDS
Preventive Care	PQI - Chronic composite	UHFDDS
Preventive Care	PQI - Overall composite	UHFDDS
Health Outcomes - Cancer	Breast	Cancer Registry
Health Outcomes - Cancer	Cervical	Cancer Registry
Health Outcomes - Cancer	Colon + Rectal	Cancer Registry
Health Outcomes - Cardiovascular	High blood pressure	BRFSS
Health Outcomes - Cardiovascular	High cholesterol	BRFSS
Health Outcomes - Mortality	All deaths	Vital Records
Health Outcomes - Mortality	Suicide	Vital Records