The State of Primary Care and Primary Care Capacity in New Hampshire

EXISTING ASSESSMENTS AND REPORTS AND CONSIDERATION OF BEST PRACTICES

Institute for Health Policy and Practice

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An Introduction from IHPP

Why We Worry About Primary Care

Considerations from "The State of Primary Care and Primary Care Capacity in New Hampshire: Existing Assessments and Reports and Consideration of Best Practices"

A well-functioning primary care system is necessary for the health and well-being of a population. However, primary care faces many challenges:

- An increasing need for community-based primary care services, but an insufficient supply of providers.
- Reimbursement for primary care cannot sustain a comprehensive primary care system.
- The lack of capacity, resources, or expertise to meet the social needs of patients despite the recognition of the value of these services complicates comprehensive whole-person treatment approaches.

And these are just a selected few of the challenges. These issues, among others, have led to increased attention and focus on primary care and ways to ensure its survival by professional organizations, advocates, think tanks, and governmental agencies, including the National Academy of Sciences Engineering and Medicine, Milbank Memorial Fund and The Physician's Foundation, and the Centers for Medicare and Medicaid Services.

The Institute of Health Policy and Practice at the University of New Hampshire commissioned a comprehensive review of primary care to better describe what myriad sources have reported on as to the status, issues, and needs for primary care in New Hampshire specifically. The full report follows this introduction.

Key findings from this review

There is no single, universal definition of primary care, which makes having a single calculation of need near to impossible. Despite the variation in definitions, estimates for the amount of total healthcare spend that goes to primary care is consistently below 10% (and closer to 5% by many definitions) in the US overall and for NH specifically.[1]

Primary care demand will almost inevitably outpace supply of providers (and some would say that it already does). The Association of American Medical Colleges predicts a shortage of primary care physicians between 17,800 and 48,000 by 2034. One reason that provider availability is likely to get worse in the near future is that much of the current workforce is nearing retirement age, which is particularly important in NH. The report by the AAMC noted that in 2020, 34.2% of the active physicians in NH were 60 years of age or older.

Every part of NH is impacted by a lack of available primary care services. While the need exists for all types of care, dental health and mental health provider needs are particularly acute. In addition, whether examining primary care, dental health, or mental health; the northern, more rural regions of NH are experiencing the greatest deficits with respect to accessible professional health services.

[1] See in full report: *Figure 1. Health care spending in the United States* (Jabbarpour *et al.,* 2019).

While many providers report accepting new patients, wait times were roughly two or more weeks. The clinical consequences of these wait times are unclear.[2]

The United States has made great strides in improving the use of preventative care and the treatment and management of chronic conditions over time. This care is a critical part of primary care. NH has consistently high rates of preventative health screenings, although rates in rural regions of the state are often lower than non-rural regions. The gains in screening, prevention, and chronic disease care are at-risk if primary care continues to deteriorate, and differences that already exist between outcomes in rural and non-rural regions may worsen.[3]

The location or type of providers from whom people receive primary care differs with the kind of insurance people have. This means that transforming primary care for everyone will require an approach that focuses on multiple providers and care settings. Focusing on FQHCs will benefit people in rural parts of the state and those with Medicaid coverage; hospital systems and their practice structures are the most common for those who are commercially insured; and nursing facilities were a common (but not dominant) care settings for people with Medicare insurance. Thus, there is no one-size fits all solution to address primary care needs: a multi-faceted approach is necessary.[4]

Where do we go from here?

There is focused attention on primary care at the national level for many reasons. Some states have considered or implemented focused regulatory approaches to increase investment in primary care. This report combines information from many sources to indicate that focused attention on investing in primary care is also warranted in NH.

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[2] See in full report: *Figure 27. Wait times (in days) for outpatient, primary care physicians, PAs, and APRNs in NH in SFY 2019 (adapted from SORH Report, 2021).*

[3] See in full report: *Figure 6. Barriers to primary care and preventive care rates in rural and non-rural NH (adapted from SORH Report, 2021).*

[4] See in full report: *Figure 22 a-c. Percent of all member days for primary care by place of service, patient rurality, and payer type: a) commercial, b) Medicaid, and c) Medicare (Analysis prepared by the UNH IHPP Center for Health Analytics, 2022, in support of the Advanced Nursing Education Workforce (ANEW) project, funded by HRSA).*

Executive Summary

Introduction

The Institute for Health Policy and Practice (IHPP) of the College of Health and Human Services at the University of New Hampshire (UNH) contracted with Sarah Mason Eck of Scientific Health to provide a review of existing New Hampshire (NH) assessments and reports surrounding practices in primary care.

The primary goals of this assignment were to:

1. Review and synthesize data from within existing state, regional, and national assessments and reports regarding primary care and capacity in NH with a particular focus on infrastructure, access (barriers and utilization), clinical quality measures, provider workforce, and payment systems.
2. Review the literature for evidence-based best practices in primary health care, with a focus on primary care delivery models, payment methods, and spending measurement.

Methodology

To better understand the status of primary health care in NH, a literary review and synthesis of findings from within pertinent state, regional, and national assessments and research reports was conducted. Specifically, the results from within these resources were reviewed, compared, and summarized. The majority of research for this review was conducted in November 2022.

Additionally, a literary review of documents presenting evidence-based, best current and proposed practices of primary care delivery, payment, and spending was performed.

Resource materials were provided by the IHPP and USNH. Additional articles, reports, and assessments were discovered during the research and review process and used to supplement IHPP provisions.

Top-Line Considerations

The research for this project yielded ten high-level considerations:

1. Definitions of primary care vary considerably across the literature and until the health care industry standardizes definitions for related parameters, the development of specific and consistent assessments and benchmarks will remain challenging and may not be comprehensive.
2. Compared to national averages, New Hampshire residents are generally healthy; however, there are significant health disparities within the State, and there are pockets of regions that have particularly vulnerable populations.
3. Some smaller providers (such as FQHCs) in rural NH have sought to integrate primary and preventive care, and as a result, have experienced increased primary care utilization, exceeding national clinical quality measures in some key primary care services.
4. There is a workforce shortage, which may particularly impact the number of health care providers in NH.

5. National reports demonstrate an inverse relationship between spending on primary care and emergency department (ED) visits, hospitalizations, and avoidable hospitalizations.
6. State and national assessments offer great insight on the current status of primary care in NH; yet, the “how” and “why” behind some of the findings remain to be discovered.
7. Primary care spending as a proportion of total health care spending varies consistently across studies by payer type, state, and age.
8. Nationally, primary care spending is declining. Increased funding and a shift in resources has been documented to advance high-quality primary care and improve patient outcomes while reducing overall costs.
9. Current evidence-based best practices for achieving high-quality primary care focus on implementing patient-centered and advanced primary care models.
10. There is an opportunity to continue to optimize payment and spending models and measurement related to primary care.

Identified strengths, weaknesses, opportunities, and challenges for primary care in NH are detailed in the following graphic, as well as in **Appendix A**.

STRENGTHS	WEAKNESSES
• Compared to other states in the United States, NH ranks 12th for number of primary care physicians per capita. • Smaller providers, such as FQHCs are realizing increased utilization in primary care services. • APRNs have independent practice authority in NH • NPs are being leveraged, proportionally even more so in rural areas • Primary care services pivoted rapidly to using telehealth mechanisms for delivering care during the pandemic and this was received favorably by patients and providers • Nursing schools have high enrollment rates • The FQHC model has proven successful, possibly due to its focus on community, integrated behavioral health, and the consistent representation of community members on the Board of Directors	• Many in workforce reaching retirement age, particularly physicians and psychiatrists • Workforce shortage is projected • Matriculation rates low • Pockets of primary care shortages across the State, in both rural and non-rural areas • Compared to United States averages, NH CAHs have "razor-thin" margins, despite federal assistance • Closure of nine maternity wards in rural areas • Dental (and mental) health shortages are pressing

OPPORTUNITIES	CHALLENGES
• Increase primary care spending by redirecting health care expenditures with focus on Health Professional Shortage Areas (HPSAs) • Promote policy that enables the delivery of primary care services using telehealth strategies • Bolster telehealth strategies to reach HPSAs • Loan repayment programs to incentivize all primary care prescribing physicians • Increase understanding of the repayment programs run by the DHHS in NH • Policies/education to facilitate preventive screenings and ensure coverage • Seek provider & patient input across different subpopulations in the State to more thoroughly understand gaps and to inform strategies for closing these gaps • Conduct population-based surveys to identify provider needs and patient experiences • Identify what may incentivize matriculation into positions within NH • Through provider inquiry, determine strategies that would entice providers to work in HPSAs • Continue to leverage all-payer claims database for modeling and to inform health care policy and practice	• No public matriculation from DO- or MD-granting schools • Recruitment of workforce (may have been easier during pandemic) of out-of-state providers • People experiencing poverty have more difficulty with access, which is compounded by the distance to care in rural regions of the State • Population in NH is made up of more older adults, who may require more care than in other parts of the country • Lowest Medicare reimbursement rate in the nation (49% the national median) • Little to no documentation found assessing the qualitative reasons for workforce departures, patient experience, out-migration, etc. • Only MD-granting school in the State yields an average of six primary care physicians

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Section 2.0 - Background

Primary care represents over 50% of physician office visits annually and impacts up to 90% of total health care costs (by the way of referrals, testing, procedures, and hospital stays) (Jabbarpour et al., 2019; National Center for Health Statistics, 2018). For many, primary care is the first (and in some cases, the only) point of contact with the greater health care system. This emphasizes the importance of optimizing primary care service delivery for improving clinical outcomes across the nation. To address and enhance primary health care delivery mechanisms, it is imperative to first standardize the definitions and metrics related to primary care.

In 2021, the National Academies of Sciences, Engineering, and Medicine (NASEM), updated the definition of high-quality primary care (Committee on Implementing High-Quality Primary Care et al., 2021):

> **High-quality primary care is the provision of whole-person, integrated, accessible, and equitable health care by interprofessional teams that are accountable for addressing the majority of an individual's health and wellness needs across settings and through sustained relationships with patients, families, and communities.**

Further underscoring its value, the NASEM has indicated that primary care is the sole component in health care in which "increased supply is associated with better population health and more equitable outcomes" (Committee on Implementing High-Quality Primary Care et al., 2021). However, currently, the investment in primary care optimization and delivery may be falling short for achieving its greatest potential as a critical element of the greater health care system.

> ***"Primary care is widely viewed as being in crisis despite its purported central role in addressing population issues related to healthcare cost, quality, access, and equity" (McMahon et al., 2021).***

Compared to the number of lives it impacts, primary care has been largely underfunded, which has been measured in the literature by dollars invested, types of services rendered, organizational priorities, and funding for training programs, among many other parameters. Despite being a crucial touchpoint for patient care, a mere average of 5-7% of the total health care investments in the United States support primary care (**Figure 1**) (Jabbarpour et al., 2019; National Center for Health Statistics, 2018).

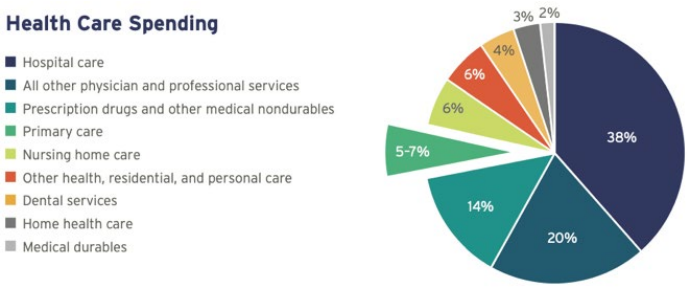


Figure 1. Health care spending in the United States (Jabbarpour *et al.,* 2019).

There has been a call for restructuring the payment mechanism of primary care. For example, research has suggested that the primary care fee-for-service (FFS) payment model is failing to evolve at the same speed as the practice of medicine. Newer methods have been proposed and will be discussed in **Section 5.10** of this review.

In addition to being largely underfunded, primary care physicians are projected to be in high demand compared to supply (Association of American Medical Colleges, 2021), as depicted in **Figure 2a**. This report, entitled, 'The Complexities of Physician Supply and Demand: Projections from 2019-2034,' also predicted a shortage of primary care physicians between 17,800 and 48,000 by 2034 (**Figure 2b**).

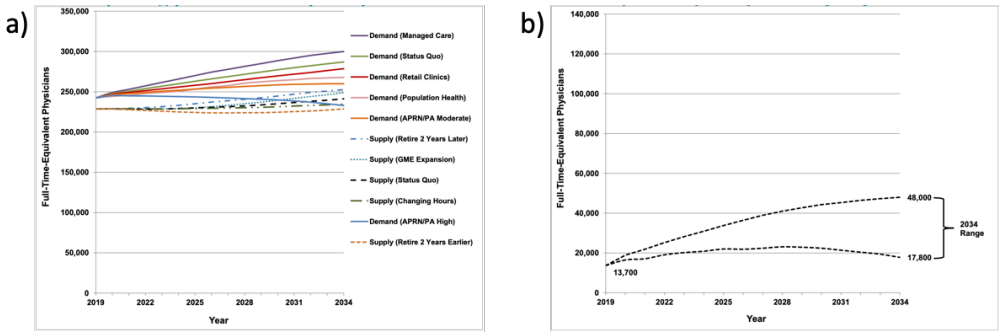


Figure 2. Projected supply and demand (a) and shortfall range (b) for primary care physicians, 2018-2033 (from Association of American Medical Colleges, 2020 report).

This review uses literary findings to serve as a foundation for better understanding the primary care delivery system in NH, with a particular focus on population health, access to services, and the workforce, as well as spending and payment.

Section 3.0 - Objectives

There were two main objectives of this research report. First, to better understand the current primary care environment, potential threats to the existing infrastructure, and potential opportunities for improvement of primary care service delivery in NH. Second, to identify best-known practices for primary care delivery, payment and spending, and measurement as they are presented in contemporary literature.

Section 4.0 - Methods

This review and synthesis of the literature was executed to evaluate the current primary care landscape in NH. Specifically, assessments and reports were reviewed to identify common themes related to primary care facilities, providers, and payers. Matters related to the State's population demographics, health indicators, access and barriers to care, and the provider workforce, as well as the price of care and payment methods were considered. National assessments were reviewed to compare the status of NH primary care indicators to other states in the United States.

To evaluate the current status of primary care in NH, several measures were considered:

- Population Demographics
- Health Indicators Across Populations Served
- Barriers to Access
- Health Care Facilities Infrastructure
- Services and Utilization
- Health Care Providers / Workforce
- Payment and Spending

Through the assimilation of findings from within the resources, challenges and potential opportunities were established. A review of evidence-based research and peer-reviewed articles was conducted to identify standards and best practices in primary care today.

Section 5.0 – Results

In this section of the report, a variety of findings from national-, regional- and state- level assessments of primary care are presented to better elucidate the primary care infrastructure in NH, at the level of facilities, workforce, clinical services, and outcome measures, as well as payment models. An overview of evidence-based findings that promote best clinical practices related to primary care delivery will also be presented.

Section 5.1 - Existing Assessments and Reports

5.1.1 National, Regional, and Statewide Reports on Primary Care

There are several current reports and studies investigating NH primary care, at statewide, regional, and national levels. **Table 1** outlines information about the most commonly referenced assessments in this document, including the type, or perspective of the report, the publishing organization, and the title and date the material was published.

Table 1. Key assessments and reports included in this literary review.

Type	Organization	Title Report (Year Published)
National	Association of American Medical Colleges (AAMC)	State Physician Workforce Data Report, 2021 (2022)
	Patient-Centered Primary Care Collaborative (PCPCC)	Investing in Primary Care: A State-Level Analysis (2019)
	Primary Care Collaborative (PCC)	Primary Care Spending: High Stakes, Low Investment (2020)
Regional	New England States Consortium Systems Organization (NESCSO)	The New England States' All-Payer Report on Primary Care Payments (2020)
State	Rural Health and Primary Care Section Bureau of Public Health Systems, Policy, and Performance Division of Public Health Services Department of Health and Human Services	Annual Report on the Health Status of Rural Residents and Health Workforce Data Collection (2021)
	Rural Health & Primary Care Division of Public Health Services New Hampshire Department of Health and Human Services	Primary Care Needs Assessment (2021)
	Bi-State Primary Care Association	New Hampshire Primary Care Sourcebook (2021)
	Gerontology Institute at University of Massachusetts and Tufts Health Plan	Healthy Aging Data Report Highlights from New Hampshire (2019)
	New Hampshire Psychological Association	Mental Health Practice in New Hampsire (2021)

Appendix B lists these resources in a table with key outcomes presented as they are defined by the authors.

5.1.2 Defining Primary Care

Perhaps **one of the largest challenges in discussing and measuring parameters related to primary care is the fact that primary care lacks a standardized definition in the United States**. Indeed, it seems there is a general consensus in the literature that there is no consensus about what exactly constitutes primary care. Although the primary care definitions for evaluating primary care metrics varied across studies, the definitions were typically provider-focused or provider- and service- focused.

Table 2 outlines the key national and regional assessments referenced within this review of the literature, along with the definitions each applied for measuring primary care. The state-based reports did not specify exact primary care definitions. Homeopathy and naturopathy, home-based care services, and outpatient rehabilitation were not included in any of the listed assessments.

Table 2. Assessment type, title, and the definitions of used to assess primary care.

Primary Care Assessment and Definition Type			Preventive Health Services	Family Medicine	General Practice	Internal Medicine	Pediatrics	Geriatrics	Ob/Gyn	NP/PA	Behavioral Health Specialist
National	State Physician Workforce Data Report, 2021 (2022)	One definition		✓	✓	✓	✓	✓			
	Investing in Primary Care: A State-Level Analysis (Provider-Based Definition)	Narrow		✓	✓	✓	✓	✓			
		Broad		✓	✓	✓	✓	✓	✓	✓	✓
	Primary Care Spending: High Stakes, Low Investment (2020)	Narrow	✓	✓	✓	✓	✓				
		Broad	✓	✓	✓	✓	✓	✓	✓	✓	
Regional	The New England States' All-Payer Report on Primary Care Payments (2020)	Definition #1 (Defined PCPs, *Select Services)		✓*	✓*	✓*	✓*			✓*	
		Definition #2 (Defined PCPs, All Services)		✓	✓	✓	✓			✓	
		Definition #3 (OB/GYNs, Selected OB/GYN Services)							✓		
		Definition #4 (Defined PCPs, *Selected OB/GYN Services)							✓*		

Some definitions were more straightforward than others. While the 'State Physician Workforce Data Report' used one primary care definition that was specifically provider-based, other researchers shared results in the context of several definitions. For example, as seen in **Table 2,** **most studies applied a "narrow" definition and a "broad" definition for primary care.** However, the service and provider characteristics within each of these types of definition also varied across studies. For example, the New England States Consortium Systems Organization (NESCSO) report considered data in the context of four different definitions, which differed by provider and/or services offered. For the two NESCSO definitions with "selected services," a comprehensive list of these services could be found in the document's appendices.

After considering six definitions of primary care, the Milbank Memorial Fund report entitled, 'Standardizing the Measurement of Commercial Health Plan Primary Care Spending,' employed a *provider-based* definition and a *provider- and service-based* definition and proposed this methodology allowed for feasibly measuring primary care spending across insurers (Bailit et al., 2017). The results of this particular study were not included herein, as they were dated compared to more recent studies; however, it may be worth noting that after examining both provider- and service- based definitions, the authors reported that **the list of services had a greater impact on their narrow and broad definitions of primary care than the list of providers.**

In general, the assessments and reports investigating primary care commonly included the following as part of the primary care team: family medicine, general practice, internal medicine, and pediatrics. Physician assistants (PAs), and nurse practitioners (NPs) were also considered with regularity, but not as consistently as may be needed to fully appreciate the provider supply and distribution in the primary care setting. The specialty of geriatrics was included, but not in all reports. It seems that some reports specified adolescent medicine separately, while others included it with pediatrics. When it wasn't specified, it is unknown whether adolescent medicine was included. Registered nurses (RNs), medical assistants, and behavioral health providers, such as psychiatrists and social workers were far less frequently represented in the assessments.

In some of the assessments, the term "nurses" was used broadly and was inclusive of multiple types of nurses. In all cases, however, the nurses included were offering primary care services. In order to accurately represent the assessments and reports considered in this report, the terms used herein reflect those that were presented in the given assessments, report, or data analysis referenced.

For the sake of clarity, in this report, “behavioral health” includes “mental health” and substance use disorder (SUD)” In some reports, “mental health” was used to represent both mental health matters and SUD; in those instances, the term was replaced with “behavioral health” for this report. When it was unclear, the term from the resource was used in this report.

Mobile health workers, and mobile pharmacists were also mentioned across these sources, but at a lower frequency. In most of the national assessments and reports included in this review, dentists and dental health were rarely recognized as components of primary care, though this category was mentioned in several State reports.

Provider sites cited as primary care were heterogenous as well. Some assessments consider “office visits” or “outpatient setting,” while others specified facility types. Federally Qualified Health Centers (FQHCs), Rural Health Clinics (RHCs), Rural Hospitals, Critical Access Hospitals (CAHs), and Community Health Centers (CHCs) were also identified as primary care settings.

The most commonly measured primary care services within State reports fell in the category of preventive medical health. However, behavioral health and preventive dental were also deemed primary care services across sources. Re-occurring, but less common services mentioned included mental health care, substance use treatment, enabling services (*i.e.,* translation services, transportation assistance, etc.), diagnostic lab and radiology services, emergency medical services, pharmaceutical services, case management, telehealth services, chronic care management, advanced care planning, and home visits.

5.1.3 Defining Populations Served

Across the assessments, reports, and literature reviewed, a variety of populations were considered, including, but not limited to: rural and non-rural residents, racial-ethnic minority groups, low-income individuals, underserved populations, and older adults, in addition to different provider types, such as physicians, specialists, and nursing workforces.

Acronyms included herein are written out in **Appendix C**.

Section 5.2 - State Demographics and Social Determinants of Health

To examine primary care in NH, it was important to first consider the physical features of the State and the demographics of NH residents. Due to the many lakes and rivers, mountains and agricultural lands, **84% of the land and 37% of the population in NH are considered rural** (Hernandez et al., 2021; NH Division of Public Health Services, 2021).

The Division of Public Health Services (DPHS) and Rural Health Primary Care (RHPC) identified rurality across 13 public health regions (PHRs) within the State using population and population density measures (**Figure 3**). Specifically, **PHRs with a population of 100,000 or less and with a population density of 150 per square mile or less were defined as "rural," while those not meeting these criteria were defined as "non-rural"** (Hernandez et al., 2021). Seven (blue on map) of the 13 PHRs are considered rural.

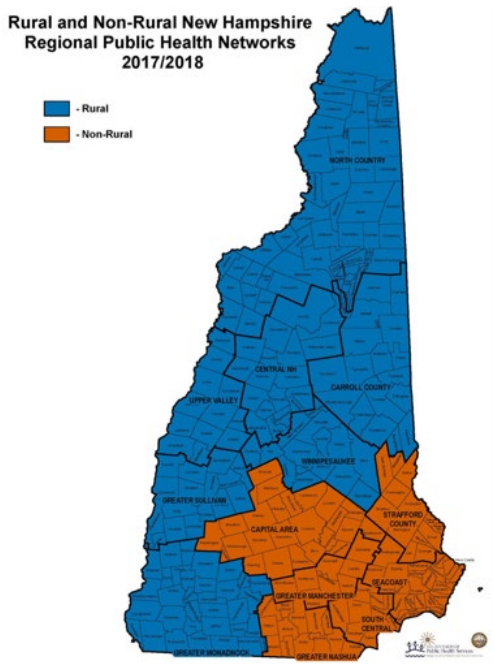


Figure 3. Rural and Non-Rural New Hampshire Public Health Regions (2017/2018) (from State Office of Rural Health, 2021).

Primary health care utilization is often dictated by access barriers, including those that are geographical and physical, as well as those that are social and environmental, which are referred to in the literature as social determinants of health (SDOH). Social determinants of health represent a vast number of factors that influence health, many of which can be grouped into one of the following five domains: economic stability; education access and quality; health care access and quality; neighborhood and built environment; and social and community context (Office of Disease Prevention and Health Promotion, 2022). Access to health care is a challenge in NH, particularly in rural areas (demonstrated in greater detail below), perhaps in part, due to geographic barriers, demographics, and also SDOH. When considering which areas are particularly vulnerable to health care inequities (*i.e.* shortage of health professionals), population to provider ratios and SDOH factors can be measured.

The NH Department of Health and Human Services (DHHS) publication, 'NH Primary Care Statewide Needs Assessment' ("Needs Assessment") which was published in 2021, highlighted some of the **significant demographic disparities between those living in rural PHRs compared to those in non-rural PHRs** (Hernandez et al., 2021). Findings from within the Needs Assessment were reinforced in the annual report entitled, 'Annual Report on the Health Status of Rural Residents and Health Workforce Data Collection' ("SORH Report") which was submitted by the State Office of Rural Health (SORH) for the NH Division of Public Health Services (DPHS) within the NH DHHS (NH Division of Public Health Services, 2021). Like the Needs Assessment, the SORH Report examined age, (dis)ability, income, fluency in English, and veteran status, as well as insurance status and poverty levels in both rural and non-rural PHRs (**Figure 4)**.

Of note, the demographic data from within these two reports was derived from the American Community Survey; however, the Needs Assessment presented data from 2014 – 2018, and the SORH Report included data from 2015 – 2019.

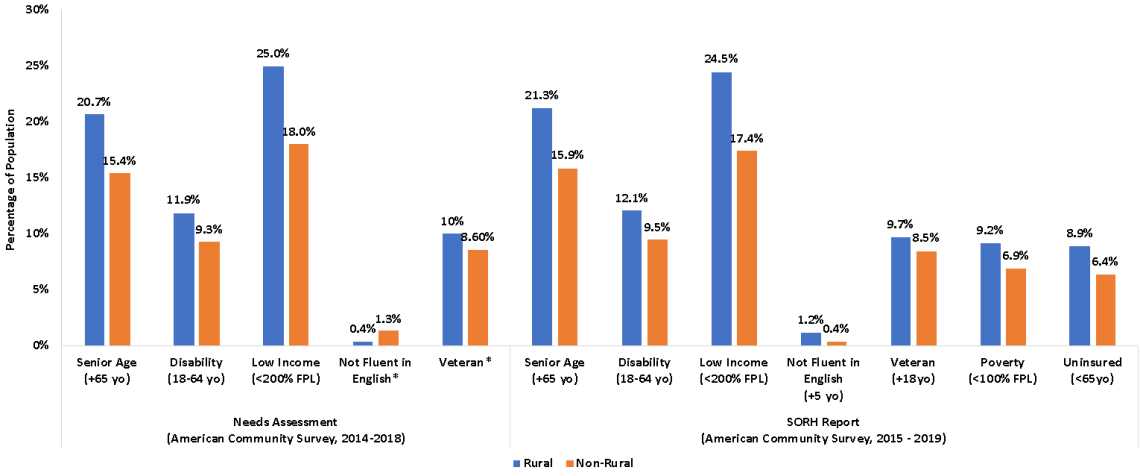


Figure 4. Demographics based on NH rurality designation (adapted from the Needs Assessment, 2021, and the SORH Report, 2021). yo – years old; FPL – Federal Poverty Level

The Needs Assessment also reported on poverty rates for several of the PHRs, noting that North Country, Central NH, and Carroll County had poverty rates more than twice those in non-rural, South Central and Seacoast PHRs (**Figure 5**). A statistically significant difference was also observed between uninsurance rates in rural and non-rural PHRs (9.9% and 6.9%, respectively) (Hernandez et al., 2021).

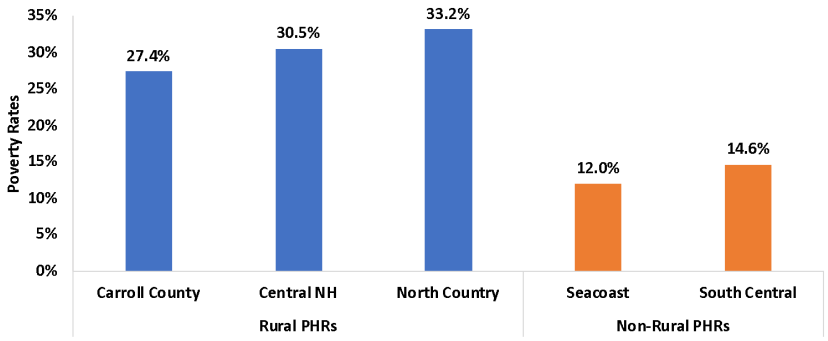


Figure 5. Poverty rates in select PHRs (adapted from Needs Assessment, 2021).

The findings across these two reports agree: compared to non-rural residents in NH, rural residents were older and had higher rates of disability. Moreover, rural residents had lower income levels, higher poverty rates, and were less likely to be insured.

The Needs Assessment highlighted the importance of considering that the Upper Valley, which is home to Dartmouth Health (formerly Dartmouth Hitchcock Memorial Hospital, or DHMC) and many health care providers, is included in the "rural" data. The inclusion of a unique area that is highly populated with providers and service sites for a rural population may skew results and mask the paucity of providers and services available in other rural areas of the state.

In addition to having less favorable SDOH, those in rural NH had greater barriers to care, perhaps with the exception of the Upper Valley, in which there were numerous health professional service sites and providers per capita (see **Figure 26**).

Section 5.3 - Barriers to Care

A critical component of primary care is the ease with which one can access primary care services, particularly since continuity of care is important. As a result, The Needs Assessment and the SORH Report each measured parameters that were related to barriers of care and access of preventive services.

Results in each of these State assessments demonstrated that compared to non-rural residents, **rural residents were more likely to represent "underserved populations," as they experienced greater barriers to primary care, mental health, and preventive care.** Select data from the SORH Report have been adapted and are represented in **Figure 6** to convey some of the identified disparities between rural and non-rural residents. Data on these measures were similar in the Needs Assessment.

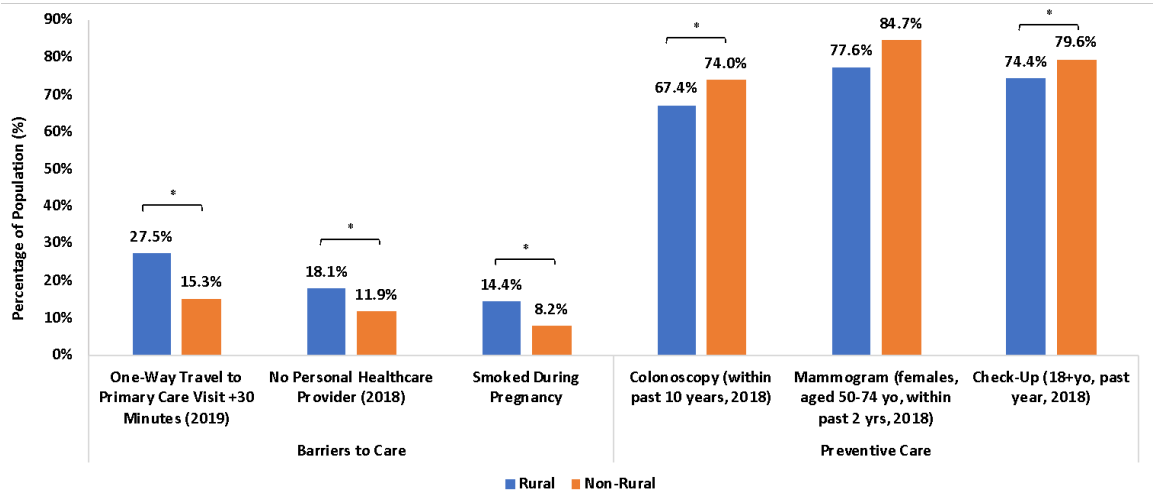


Figure 6. Barriers to primary care and preventive care rates in rural and non-rural NH (adapted from SORH Report, 2021). *statistically significant

The SORH Report and the Needs Assessment each indicated that compared to non-rural regions**, rural regions were associated with higher rates of death, late-stage cancers, suicide, and prenatal smoking** (Hernandez et al., 2021). The SORH Report stated that there was not a statistical significance between death rates and suicide rates in rural and non-rural NH, though each of these rates was higher in rural NH (NH Division of Public Health Services, 2021).

With regard to preventive care considerations, the SORH Report considered only three measures (colonoscopy, mammogram, and check-up in past year) (**Figure 6**). **The Needs Assessment offered a far more comprehensive analysis that included the three measures included in the SORH Report, as well as: vaccination status (flu and pneumonia), cholesterol check, sigmoidoscopy, HIV tests, dental visits, and Pap tests (Hernandez et al., 2021). Every one of the preventive measures listed was more commonly practiced in non-rural areas.** There was a particular disparity between rural and non-rural residents with regard to preventive dental care, as the number of NH residents who *did not* have a dental visit in the prior year was statistically higher among rural residents. **Figure 7** depicts the rate per 100,000 who *did not* have a dental care visit within the prior year.

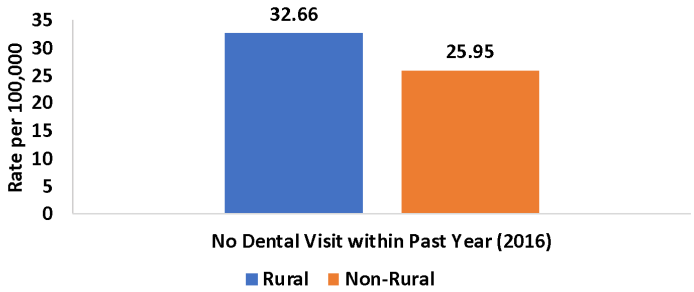


Figure 7. Preventive dental health is more common in non-rural areas (Needs Assessment, 2021).

While these two State reports demonstrated that engaging in preventive measures (such as having an annual dental exam) were less common in rural areas than non-rural areas, the exact reasons for these trends were not clarified, as the patient population would need to be surveyed.

The Needs Assessment identified a **statistically significant difference in acute alcohol- and drug-related ED visits between rural and non-rural NH, with rates being 19% higher in non-rural areas.** According to the SORH report, drug- and alcohol-related ED visits were not statistically significantly different between rural and non-rural PHRs (**Figure 8**); however, the authors proposed this parameter had been statistically different in years prior and suggested the change was due to a 38% increase in the rural rate between 2018 and 2019. Drug- and alcohol-related ED rates were quite high in specific non-rural regions, namely Greater Manchester (NH Division of Public Health Services, 2021). Self-inflicted harm rates were statistically higher in rural PHRs (**Figure 8**).

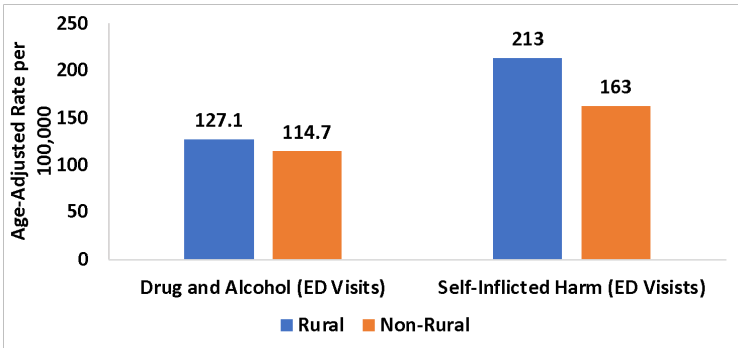


Figure 8. Drug and alcohol related ED visits and self-inflicted harm ED visits (per 100,000) (adapted from SORH Report, 2021).

When the Needs Assessment and SORH Report considered prevention quality indicators, or PQIs, which represent a measure of avoidable inpatient admissions, rates of avoidable admissions were higher in non-rural NH than in rural NH (**Figure 9**). This means that **compared to rural residents in NH, non-rural residents were more likely to be admitted to the hospital for preventable medical complications.**

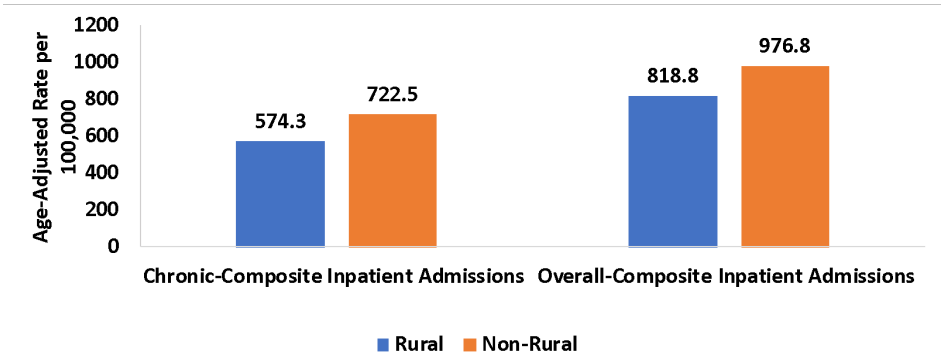


Figure 9. Prevention quality indicators in rural and non-rural NH (rate per 100,000), (adapted from SORH Report, 2021).

The SORH Report noted that PQIs for both overall and chronic conditions were particularly high in the Greater Manchester PHR. So far, the data suggest that Greater Manchester has notably higher rates of substance-related ED visits and avoidable ED admissions.

Given the barriers for residents in rural NH, as identified by the Needs Assessment and the SORH Report, perhaps it is not surprising that some regions in NH have also been identified as health professional shortage areas at the national level.

Section 5.4 - Identified Health Professional Shortage Areas (HPSAs)

As defined by the Health Resources and Services Administration (HRSA), a Health Professional Shortage Area (HPSA) is a geographic area, population, or facility with a shortage of primary care, dental, or mental health providers and services (Health Resources and Services Administration, 2022b). The scoring criteria across each of these disciplines (primary care, dental, and mental health) considered population-to-provider ratios, percentage of population below 100% of the federal poverty level (FPL), and time-to-travel to the nearest source of care outside the HPSA designation. Each area with a HPSA designation also had a HPSA Score, which ranged from 0 to 26 for dental and 0 to 25 for primary care and mental health. The higher the HPSA Score, the greater the priority.

It appears that many of the HPSAs in NH, as identified by the HRSA, aligned with the areas defined as “rural” by the DPHS and in areas where NH data suggested higher rates of barriers to care (**Figure 10**).

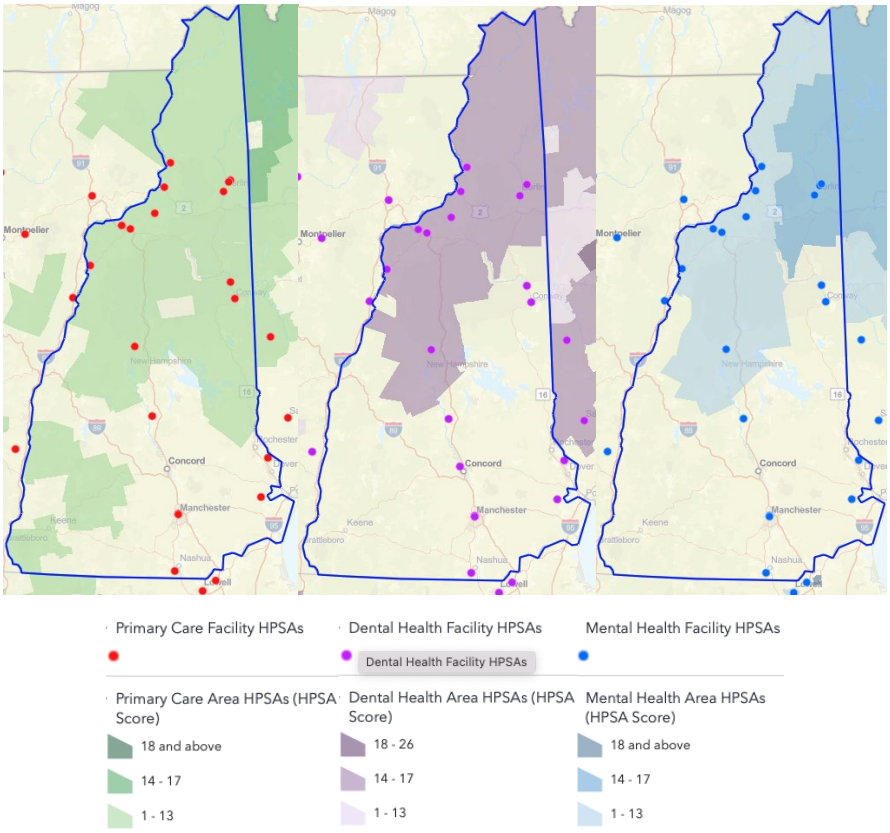


Figure 10. Primary care, dental care, and mental health professional shortage areas (HPSA) and care facility points in NH as determined by the HRSA (*HRSA Map Tool*, 2022).

The maps in **Figure 10** allow common trends to be observed: **whether examining primary care, dental health care, or mental health care, northern, more rural areas of NH are experiencing greater deficits with respect to accessible professional health services. However, there are a handful of sites across southern NH that are represented on each of the three shortage maps, including: Manchester, Nashua, and the greater Rochester/Newmarket area.**

The HPSA areas in NH have been further examined and are tabulated in **Table 3**. **Table 3** is sorted in descending order, from highest priority to lowest, as determined by the HPSA Score. **Of the 54 care and service sites identified by the HRSA and listed in Table 3, 16 have an HPSA Score of 20 or higher and 26 sites have an HRSA Score of 15 or higher,** indicating that the needs and gaps in care at these services sites warrant closer examination.

Each site included in **Table 3** has been identified as an area or facility lacking adequate health resources in one way or another; however, it is clear from these data that dental health (cells highlighted orange) and mental health (cells highlighted yellow) practices have been identified by the HRSA as having particularly large deficits.

Table 3. Health Professional Shortage Areas as determined by HRSA and sorted by HPSA score (0-26 for dental, 0-25 for primary care or mental health), with the higher the score, the higher the priority).

Discipline	HPSA Name	Designation Type	County	HPSA Score	Rural Status
Dental Health	GREATER SEACOAST COMMUNITY HEALTH	FQHC	Strafford County, NH	26	Non-Rural
Dental Health	Harbor Homes, Inc.	FQHC	Hillsborough County, NH	26	Non-Rural
Dental Health	MANCHESTER, CITY OF	FQHC	Hillsborough County, NH	26	Non-Rural
Dental Health	AMOSKEAG HEALTH	FQHC	Hillsborough County, NH	26	Non-Rural
Dental Health	AMMONOOSUC COMMUNITY HEALTH SERVICES INC	FQHC	Grafton County, NH	24	Rural
Dental Health	Lamprey Health Care, Inc.	FQHC	Rockingham County, NH	24	Non-Rural
Dental Health	HealthFirst Family Care Center, Inc.	FQHC	Merrimack County, NH	24	Rural
Dental Health	White Mountain Community Health Center	FQHC Look-alike	Carroll County, NH	24	Rural
Mental Health	AMOSKEAG HEALTH	FQHC	Hillsborough County, NH	23	Non-Rural
Dental Health	Coos County Family Health Services, Inc.	FQHC	Coos County, NH	22	Rural
Mental Health	GREATER SEACOAST COMMUNITY HEALTH	FQHC	Strafford County, NH	22	Non-Rural
Mental Health	Northern New Hampshire Correctional Facility	Correctional Facility	Coos County, NH	21	Rural
Mental Health	FCI - Berlin	Correctional Facility	Coos County, NH	21	Rural
Mental Health	HealthFirst Family Care Center, Inc.	FQHC	Merrimack County, NH	20	Rural
Mental Health	AMMONOOSUC COMMUNITY HEALTH SERVICES INC	FQHC	Grafton County, NH	20	Rural
Mental Health	SPRINGFIELD MEDICAL CARE SYSTEM INC	FQHC	Windsor County, VT	20	Rural
Mental Health	MANCHESTER, CITY OF	FQHC	Hillsborough County, NH	19	Non-Rural
Mental Health	ROWE HEALTH CENTER	Rural Health Clinic	Grafton County, NH	19	Rural
Primary Care	HealthFirst Family Care Center, Inc.	FQHC	Merrimack County, NH	19	Rural
Mental Health	NORTH COUNTRY PRIMARY CARE	Rural Health Clinic	Grafton County, NH	18	Rural
Primary Care	MANCHESTER, CITY OF	FQHC	Hillsborough County, NH	18	Non-Rural
Primary Care	AMOSKEAG HEALTH	FQHC	Hillsborough County, NH	18	Non-Rural
Mental Health	Mid-State Health Center	FQHC	Grafton County, NH	16	Rural
Primary Care	GREATER SEACOAST COMMUNITY HEALTH	FQHC	Strafford County, NH	16	Non-Rural
Mental Health	Coos County	High Needs Geographic HPSA	Coos County, NH	15	Rural
Primary Care	White Mountain Community Health Center	FQHC Look-alike	Carroll County, NH	15	Rural
Mental Health	Coos County Family Health Services, Inc.	FQHC	Coos County, NH	14	Rural
Mental Health	Lamprey Health Care, Inc.	FQHC	Rockingham County, NH	14	Non-Rural
Mental Health	WEEKS MEDICAL CENTER - LANCASTER	Rural Health Clinic	Coos County, NH	14	Rural
Mental Health	WEEKS MEDICAL CENTER WHITEFIELD	Rural Health Clinic	Coos County, NH	14	Rural
Mental Health	White Mountain Community Health Center	FQHC Look-alike	Carroll County, NH	14	Rural
Mental Health	WEEKS MEDICAL CENTER - GROVETON	Rural Health Clinic	Coos County, NH	13	Rural
Mental Health	Harbor Homes, Inc.	FQHC	Hillsborough County, NH	12	Non-Rural
Primary Care	Northern New Hampshire State Correctional Facility	Correctional Facility	Coos County, NH	12	Rural
Primary Care	FCI - Berlin	Correctional Facility	Coos County, NH	12	Rural
Primary Care	Mid-State Health Center	FQHC	Grafton County, NH	11	Rural
Primary Care	MOUNT WASHINGTON VALLEY RURAL HEALTH	Rural Health Clinic	Carroll County, NH	11	Rural
Primary Care	Lamprey Health Care, Inc.	FQHC	Rockingham County, NH	11	Non-Rural
Mental Health	MOUNT WASHINGTON VALLEY RURAL HEALTH	Rural Health Clinic	Carroll County, NH	10	Rural
Mental Health	Grafton-SA	High Needs Geographic HPSA	Belknap County, NH | Carroll County, NH | Grafton County, NH | Merrimack County, NH	10	Rural
Primary Care	LI-Northern Grafton	Low Income Population HPSA	Grafton County, NH	10	Rural
Primary Care	LI - Plymouth/Hebron/Campton	Low Income Population HPSA	Grafton County, NH	10	Rural
Primary Care	Harbor Homes, Inc.	FQHC	Hillsborough County, NH	10	Non-Rural
Primary Care	Moultonborough Area	Geographic HPSA	Belknap County, NH | Carroll County, NH | Strafford County, NH	9	Partially Rural
Primary Care	LI-Southern Sullivan County	Low Income Population HPSA	Sullivan County, NH	9	Rural
Primary Care	AMMONOOSUC COMMUNITY HEALTH SERVICES INC	FQHC	Grafton County, NH	9	Rural
Primary Care	ROWE HEALTH CENTER	Rural Health Clinic	Grafton County, NH	9	Rural
Primary Care	WEEKS MEDICAL CENTER - GROVETON	Rural Health Clinic	Coos County, NH	9	Rural
Primary Care	Coos County Family Health Services, Inc.	FQHC	Coos County, NH	8	Rural
Primary Care	LI-Coos County	Low Income Population HPSA	Coos County, NH	8	Rural
Primary Care	WEEKS MEDICAL CENTER WHITEFIELD	Rural Health Clinic	Coos County, NH	7	Rural
Primary Care	Hillsborough	Geographic HPSA	Cheshire County, NH | Hillsborough County, NH | Merrimack County, NH | Sullivan County, NH	6	Partially Rural
Primary Care	NORTH COUNTRY PRIMARY CARE	Rural Health Clinic	Grafton County, NH	5	Rural
Primary Care	WEEKS MEDICAL CENTER - LANCASTER	Rural Health Clinic	Coos County, NH	5	Rural

HPSA FTE Short - This attribute represents the number of full-time equivalent (FTE) practitioners needed in the Health Professional Shortage Area (HPSA) so that it will achieve the population to practitioner target ratio. The target ratio is determined by the type (discipline) of the HPSA.

HPSA Score - This attribute represents the Health Professional Shortage Area (HPSA) Score developed by the National Health Service Corps (NHSC) in determining priorities for assignment of clinicians. The scores range from 0 to 26 where the higher the score, the greater the priority.

Notably, of the 16 sites with an HPSA Score of 20 or higher, ten fell under the "dental care" discipline. In fact, all ten dental practices identified fell into the top 11 highest ranked by HPSA Score, while 15 of the 19 of the mental health practices identified as HPSAs fell into the top 30 highest ranked by HPSA Score. **It is evident, from HRSA calculations and related HPSA Score designations, that there are some substantial dental health and mental health shortages in NH.**

Importantly, the HRSA automatically designates some facilities as HPSAs, including: FQHCs, FQHC Look-Alikes, Indian Health Facilities, and CMS-Certified Rural Health Clinics, among others.

While the aforementioned areas and facilities have each been identified as HPSAs, the next section of this report considers the primary care facilities in NH, their locations, and how they are working to optimize patient care in the primary care setting.

Section 5.5 - Facilities

Quantifying primary health care facilities in NH would be difficult, due to the fact that no common, prevailing definition for exactly what constitutes "primary care" has been established in the literature. However, there are several reports, both at the state- and national- level that have reported primary care service site counts in NH. **Figure 11** shows a variety of primary care sites superimposed on the map of NH (*HRSA Map Tool*, 2022).

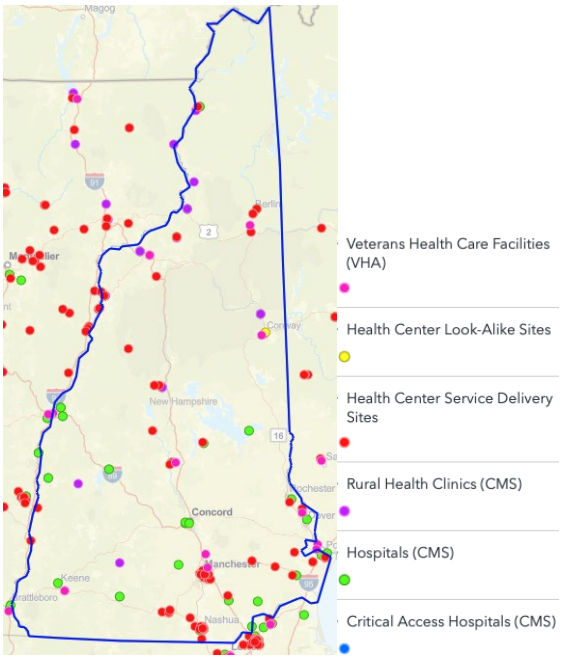


Figure 11. Variety of primary care sites in the NH as presented on the HRSA interactive maps website (*HRSA Map Tool*, 2022).

The NH Needs Assessment offered a summary of the primary care facilities in NH and the populations they served (Hernandez et al., 2021). Of the 26 acute-care hospitals in the State, 17 were considered rural at the time the data were collected. Thirteen of the 26 statewide acute care hospitals were CAHs. Of the 14 RHCs in NH, 13 were owned by CAHs. Across the State, there were 11 FQHCs. Six of the 11 FQHCs and one FQHC "Look Alike" existed in rural NH. There were three, federally-funded, homeless health care programs located in non-rural NH. Collectively, the FQHCs provided services at 47 sites across the State.

Information on the Rural Health Information Hub (RHIhub) differed some from that provided in the NH Needs Assessment (*New Hampshire State Guide*, 2022). For example, rather than 11 FQHCs, this site indicated NH provided a count of 22 FQHCs; though, these were described as "sites located outside of Urbanized Areas," according to July 2022 data from HRSA. Additionally, the RHIhub indicated NH had 13 CAHs, 15 RHCs and four short term/prospective payment system (PPS) hospitals. A map of the rural healthcare facilities designated by the RHIhub is shown in **Figure 12**.

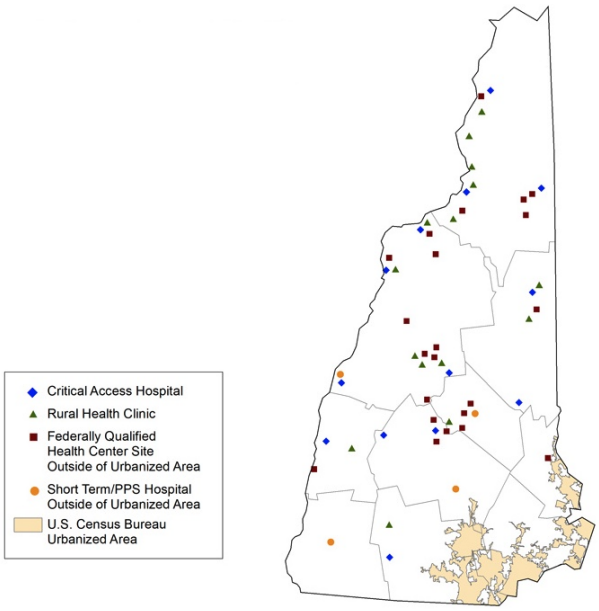


Figure 12. Distribution of *rural* hospitals as denoted by RHIhub using July 2022 data from HRSA (RHIhub websites, accessed November 2022).

Rural provider types play a particularly important role in offering primary care services in areas where populations generally have less favorable SDOH and therefore are especially vulnerable. In NH, CAHs and FQHCs are key players in the primary care landscape and these provider types will be investigated in greater detail.

Some urgent care facilities have begun to offer primary care services. For example, the Convenient MD website indicated that primary care providers are available, with “next day appointments” that “start on time and last longer” (Convenient MD, 2023). However, with the rapidly changing and ever-evolving climate of primary care, currently little is understood about the delivery of primary care services in these clinics. National and State assessments did not appear to include urgent care facilities in their analyses.

5.5.1 Critical Access Hospitals (CAHs)

Many eligible rural hospitals have been certified by the Centers for Medicaid and Medicare Services (CMS) as CAHs, a status that was first established in 1997 to reduce financial liability to rural hospitals and to ensure services would be available in rural communities. In addition to providing 24-hour emergency services, having no more than 25 beds, and hospitalizing individuals for less than four days, hospitals with a CAH designation must be more than 35 miles from another hospital, unless in a mountainous setting, in which this specification is reduced to 15 miles.

The 13 CAHs in NH are depicted on a map in **Figure 13**. According to an article in the NH Business Review, CAH status qualifies these hospitals to receive cost-based reimbursement at 101% of allowable costs for all Medicare services, as well as be eligible for investments in capital improvements (Kitch, 2019). However, despite these advantages, CAH administrators were quoted in the article, sharing challenges associated with financially sustaining these practices and their claims were reflected in the numbers.

For example, the article noted **that key profitability indicators across the 13 CAHs in NH were well below national medians: operating margin (0.18% NH vs. 2.74% US), total margin (-0.29% NH vs. 0.93% US), and return on equity (0.47% NH vs. 5.32% US)** (Kitch, 2019).

Figure 13. Critical Access Hospitals in NH, 2019 (Kitch, 2019).

The article noted that of all the states, **NH had the lowest Medicare reimbursement rate, falling at 49% of the national median.**

The financial challenges have had consequences that directly impact aspects of primary care. For example, **nine of the State CAHs have closed maternity units since 2000** (Kitch, 2019). The impact of labor and delivery (L&D) unit closures in rural NH has been examined (McMorrow et al., 2021). McMorrow and colleagues reported that following the closure of eight L&D units, the median driving time to the nearest labor and delivery unit nearly doubled, increasing from 18 to 39 minutes. Moreover, the percent of women living more than 30 minutes from an open L&D unit increased from 20.2% to 27.3%, respectively, between 2000 and 2018. These authors noted that reduced proximity to an open L&D unit was associated with an increased likelihood of fewer than recommended prenatal visits and increased births happening while traveling to a hospital for delivery, or unexpected home births. Other equity issues were presented: the researchers noted that individuals living farthest from functional birthing facilities had the highest socioeconomic disadvantages, making the increased cost of travel particularly burdensome.

To address some of the financial challenges, many (nine) of the 13 CAHs have opted to affiliate with larger health care systems. In addition to serving patients in rural areas, seven of the 13 CAHs in NH represented the largest municipal employer and four others were the largest private employer within their respective communities.

5.5.2 Federally Qualified Health Centers (FQHCs)

As non-profit, community-based organizations, FQHCs are governed by a board of directors, accept patients regardless of ability to pay, and offer a sliding fee scale for individuals with incomes below 200% of the FPL. The board of directors has specific bylaws and at least 51% of the board members are patients served by the given health center (defined by at least one service in the prior 24 months, where both the service and site where the service received are within the HRSA-approved scope of project) (Health Resources and Services Administration, 2018). Non-patient members of the board of directors are included to provide relevant expertise and skills (Health Resources and Services Administration, 2018).

The important role FQHCs have played in the NH primary care landscape in recent years can be seen from the increased levels of utilization.

The Bi-State Primary Care Association ("Bi-State") is the member organization of the FQHCs, RHCs, and FQHC "Look-Alikes," across the State (**Figure 14**). Importantly, while all FQHCs in NH are represented in the Bi-State organization, not all CHCs or RHCs are part of this organization. These data are representative of only the providers within the Bi-State organization.

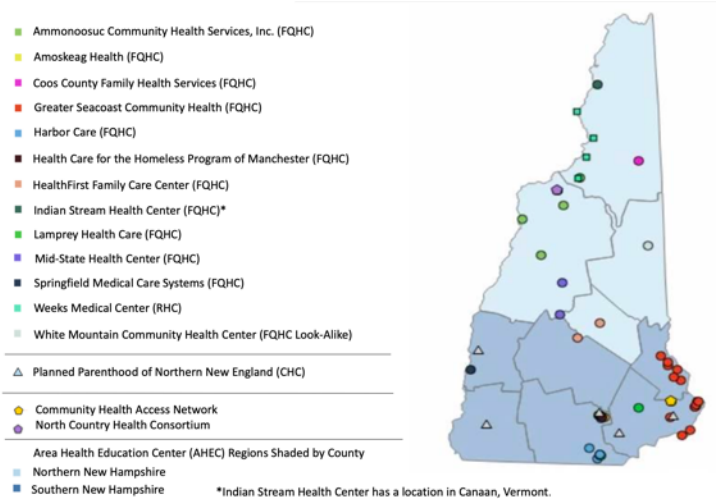


Figure 14. Bi-State FQHC site locations in NH as of 2019 (Bi-State Primary Care Association, 2021).

The 11 FQHCs in NH were part of the Bi-State association and existed at 47 different sites in eight counties across the State, including mobile health clinic sites. Mobile health clinics are important for increasing access to services, especially in underserved areas. As of now, mobile health clinic sites are not often considered in assessments measuring primary care, although these settings may represent a first-point of service for many.

Section 5.6 - Services and Utilization

One of the public policy priorities identified by Bi-State in NH in 2021, was the integration of primary care and preventive care, as well as reproductive health care services for underserved populations (Bi-State Primary Care Association, 2021). **According to the Bi-State, "comprehensive" care means primary care and preventive medical, dental, and oral care, mental health care, and enabling services.** There has been an effort among Bi-State member facilities to integrate these care services. The importance of integrated care is discussed in greater detail in **Section 5.10** of this report.

Each of the **Bi-State provider site types offered non-clinical services, such as translation and interpretation, accessible transportation, and assistance navigating financial issues** to improve access to community-based primary and preventive health care and improve health outcomes (Bi-State Primary Care Association, 2021).

Bi-State reported that the 14 CHCs (11 of which are FQHCs) located across all NH counties provided comprehensive and enabling primary care services in medically underserved areas, and that those services were tailored to the needs of its surrounding community. These centers also integrated oral health into primary care services, and provide dental, behavioral health, and mental health services, as well as treatment for Substance Use Disorder. The four Bi-State member RHC facilities located in rural, underserved, areas provided outpatient primary care services and laboratory services. Other Bi-State sites in NH included an FQHC Look-Alike and Planned Parenthood.

Table 4 outlines the number of sites and visits reported by Bi-State member facilities (Bi-State Primary Care Association, 2021). The four RHCs included in the table below represent four sites of the Weeks Medical Center, an RHC located in Coos County, NH.

Table 4. The number of sites, patients serviced, patient visits conducted, satellite sites/clinics, and counties served for each type of site (Bi-State Primary Care Association, 2021).

Type of Site	Number of Sites	Patients Served	Visits Conducted	Number of Satellite Sites	Counties Served
CHCs	14	119,735	511,103	57	10
FQHCs	11	94,776	417,265	47	8
Rural Health Clinics	4	9,375	65,322	4	1
FQHC Look-Alikes	1	2,498	10,000+	1	1

Bi-State also reported on the proportion of NH residents who received care at a CHC or FQHC (**Figure 15**). One in eleven NH residents received care at a CHC, with 35% of those being commercially insured, 30%being Medicaid insured, 20% being Medicare insured, and 15% uninsured. One in fourteen received care at a FQHC with the following insurance status distribution: 35% commercially insured, 32% Medicaid insured, 19% Medicare insured, 14% uninsured. Furthermore, NH FQHCs served more than 22,500 children, 3,000 veterans, 7,000 homeless individuals, and 14,000 uninsured individuals. They also served 8% of all Medicare enrollees and 17% of all Medicaid enrollees.

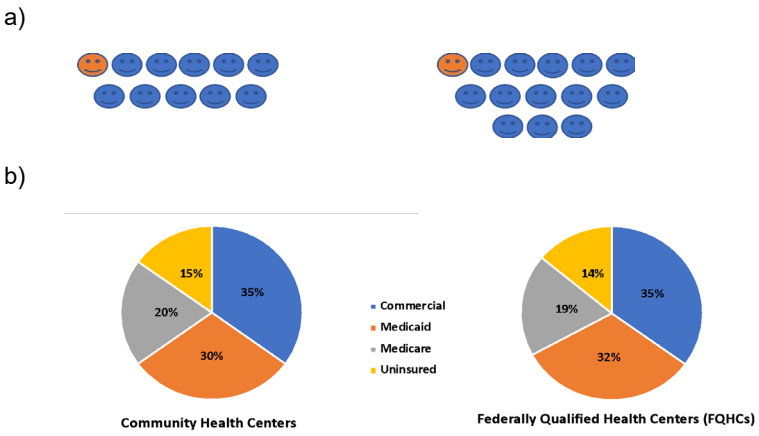


Figure 15. The proportion of NH residents receiving care (a) and the payer mix of those receiving care (b) at CHCs and FQHCs in NH in 2019 (adapted from Bi-State Primary Care Association, 2021).

Utilization of CHCs and FQHCs across NH increased between 2014 and 2019, as demonstrated by an increase in patient visits, the number of Medicare patients served, and the total number of patients served (**Figure 16**). Moreover, in 2019, the percent of NH residents served by FQHCs was more than 7%, up over a percentage point since 2009 (Bi-State Primary Care Association, 2021).

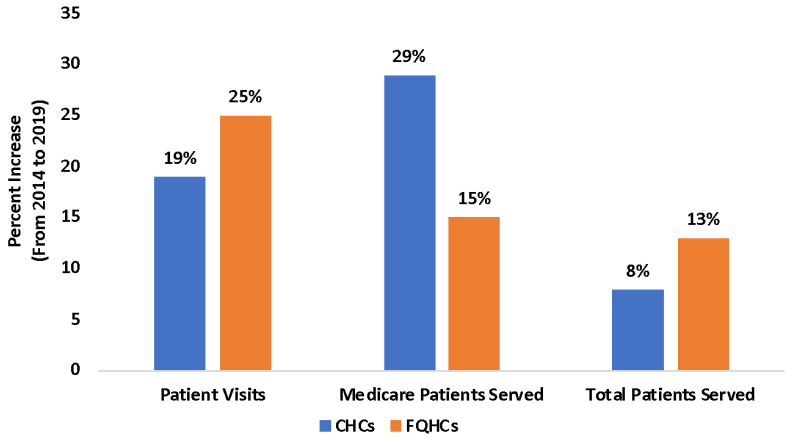


Figure 16. Percent change in utilization measures across CHCs and FQHCs in NH from 2014 to 2019 (adapted from Bi-State Primary Care Association, 2021).

Reportedly, the FQHCs in NH improved patient access to integrated primary care services, and this was reflected in the increased utilization over this time period. The 2019 data suggested that **NH FQHCs served a number of traditionally underserved populations, including children, Veterans, and older adults, as well as those who were enrolled in Medicaid, were homeless, or uninsured** (**Figure 17**).

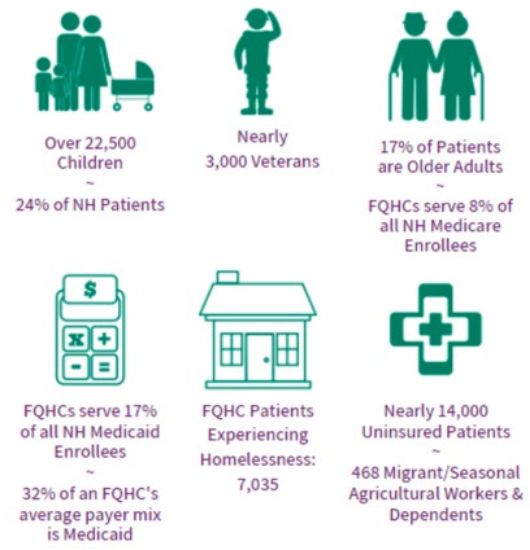


Figure 17. Populations served by FQHCs in NH in 2019 (Bi-State Primary Care Association, 2021).

There has been a growing demand for integrated primary care and preventive care services, including dental health, mental health, substance use disorder treatment, and vision services across the FQHCs in NH (**Figure 18**). **Of importance, 100% of the FQHCs in NH had integrated oral health into primary care. Prior to a bill that was passed in 2022, which provided almost 85,000 adults on Medicaid with basic dental care benefits, only 16% of dentists accepted Medicaid (Timmins, 2022). Because FQHCs are required to accept Medicaid, expanding services to include dental may continue to increase access to underserved populations.**

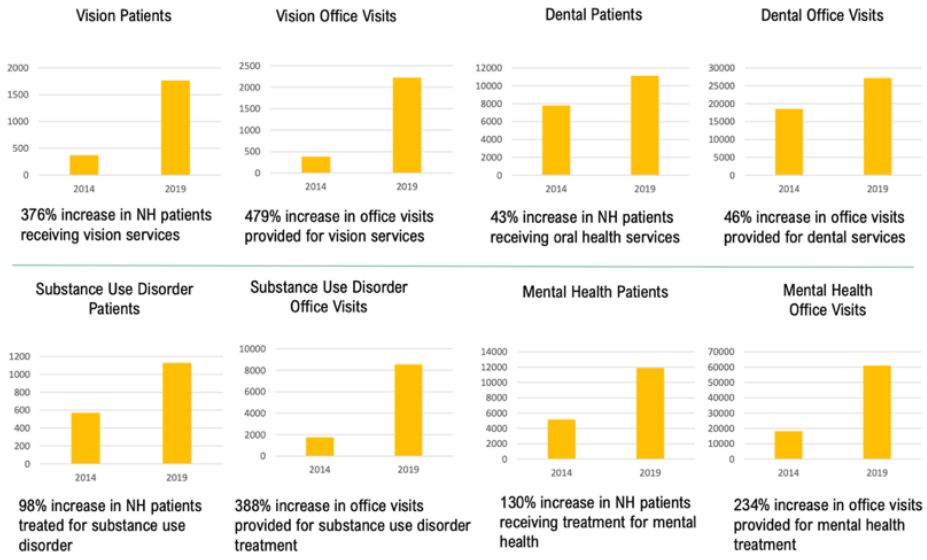


Figure 18. Percent change in utilization of specific integrated services at FQHCs across NH from 2014 to 2019 (Bi-State Primary Care Association, 2021).

According to Bi-State's NH Sourcebook report from 2021, **NH FQHCs have exceeded national FQHC average rates for clinical quality measures for primary care services** (Bi-State Primary Care Association, 2021). These findings are depicted in **Figure 19**.

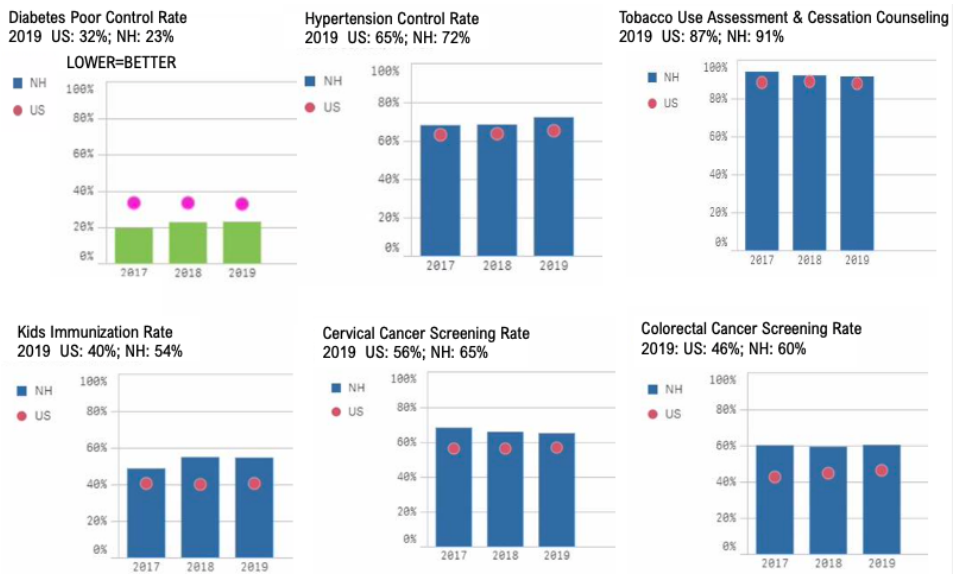


Figure 19. Average clinical quality outcome measures for NH and United States FQHCs in 2017, 2018, and 2019 (from Bi-State Primary Care Association NH Sourcebook, 2021).

Examining the number of Patient-Centered Medical Homes (PCMHs) in each state has been one method for determining the presence of advanced primary care models (Neumann, 2019). The Kaiser Family Foundation (KFF) website had a page entitled, 'States that Reported Patient Centered Medical Homes In Place,' which had state-reported data from SFY 2015 – SFY 2023 (Kaiser Family Foundation, 2022). In SFY 2015 and SFY 2023, the United States had a total of 29 and 24 PCMHs, respectively. Although the KFF website suggested that New Hampshire had no PCMHs across the reporting period, the National Committee for Quality Assurance website identified 42 NH practices as PCMHs (National Committee for Quality Assurance, 2023).

5.6.1 Consumer Utilization as Measured by Claims Data

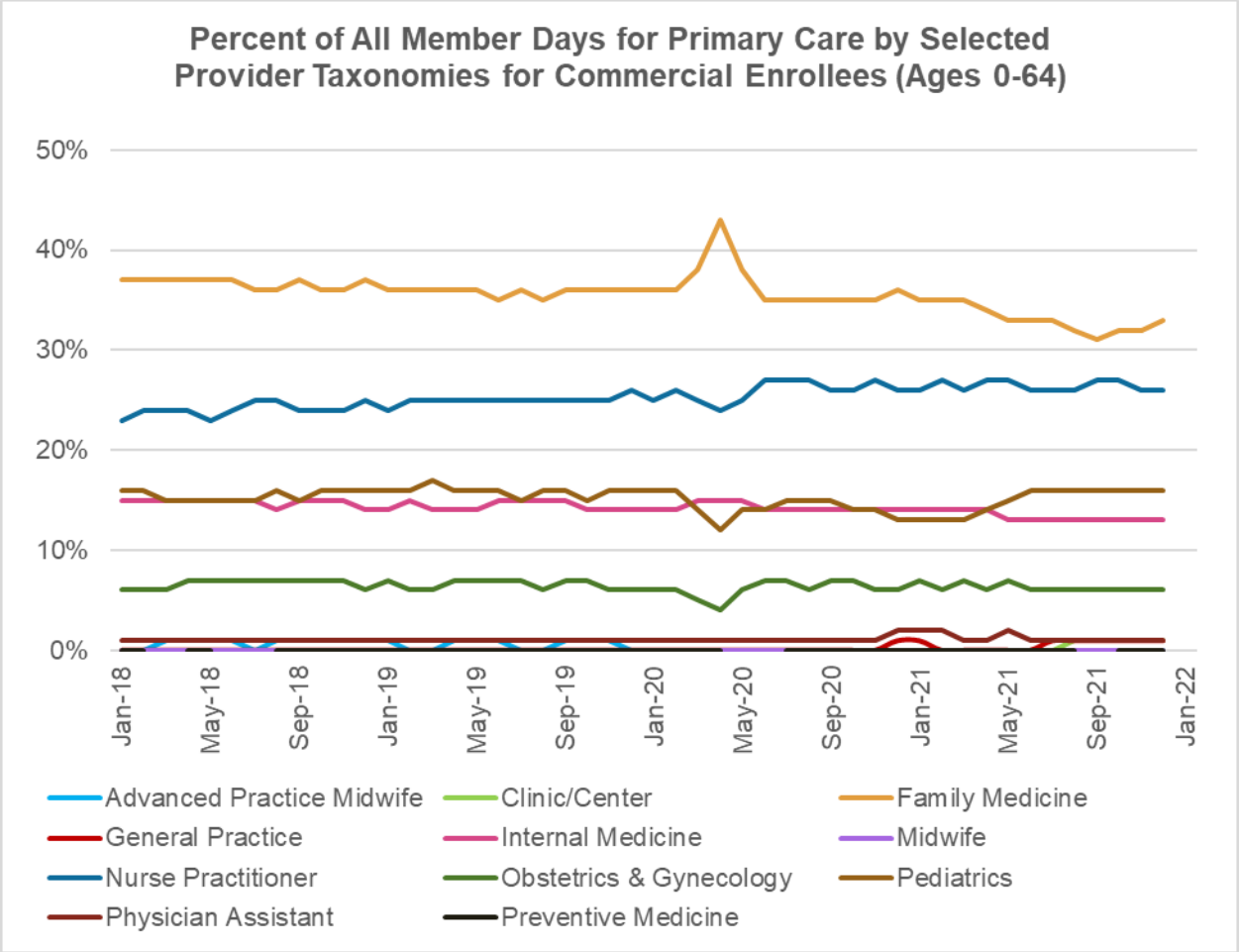
The next three figures represent data from an analysis of data from the NH Comprehensive Healthcare Information System (CHIS, NH's All-Payer Claims Database) provided by IHPP (IHPP, Center for Health Analytics, 2022).

For the analysis of primary care by provider type, "primary care" was defined by presence of specified procedure code on a claim billed by a specified provider taxonomy at a specified place of service. The procedure codes included CPTs, revenue and HCPC codes and were generally visit type of codes.

Figure 20 a-c depicts the percent of all member days for primary care across provider types and payer types. This data depicts which primary care provider type patients engage with by different types. For example, of commercial members who used primary care services, 37% and

33% sought care from family medicine providers (orange line, **Figure 20a**) at the beginning and end of the data collection period, respectively. Of note, the "family medicine providers" taxonomy designation may include providers such as ARNPs and PAs. There was a noticeable increase among commercial members who used family medicine providers (and a very slight increase in those using internal medicine) in early 2020, while there was a decline in the use of pediatric (brown line), NPs (navy line), and obstetrics/gynecology (OB/GYN) providers (dark green line) at this same time (**Figure 20a**). As the pandemic continued, during late summer of 2020, an increase was seen in the use of pediatricians, NPs, and OB/GYN across the Commercial payer group. Slight increases in PA and pediatric provider utilization were also seen among the Commercial payer category in early 2021, while the use of family medicine providers returned to, and even fell below, pre-pandemic levels during early 2021 (**Figure 20a**).

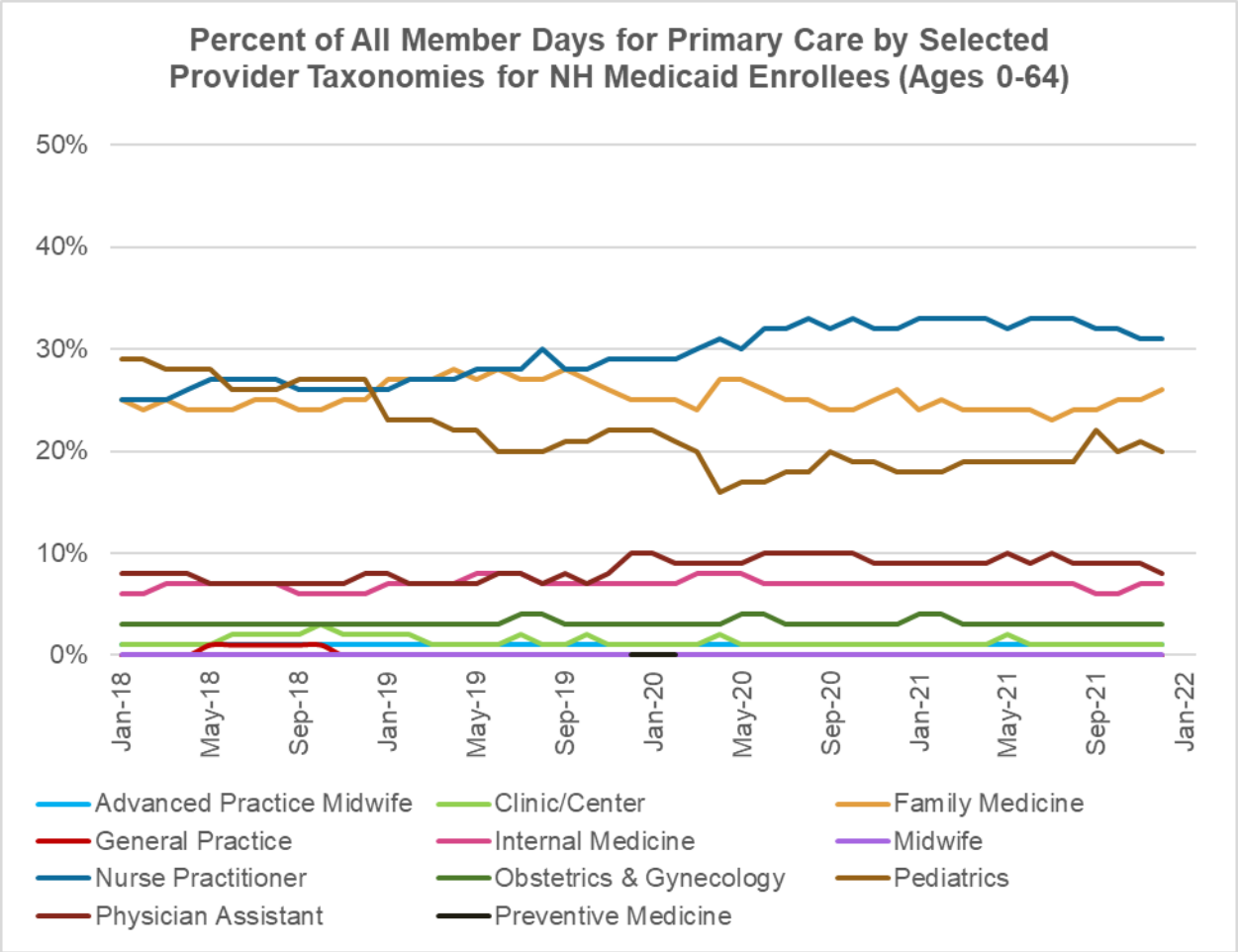
a)



For the NH Medicaid payer group, increased utilization was observed in specific provider types in early 2020 (between January and May): clinics, NPs, family medicine, and OB/GYN (**Figure 20b**). During the same time period, a relatively large decline in utilization was observed for pediatric providers. Later in the pandemic, it appears that utilization of pediatric providers stabilized some, but not to pre-pandemic levels. The utilization of pediatric care providers declined from January 2018 to December 2021, from 29% to 20%, respectively, in the Medicaid

payer category. During this same time frame, an increase in NPs was recorded across this payer group, from 25% to 31%. The use of most other provider types by the Medicaid payer group remained relatively stable, with slight increases and decreases occasionally, from January 2018 to December 2021.

b)



In early 2020, between January and May, an increase in family medicine and NPs was observed, while a clear decline in PAs was observed across the Medicare payer classification (**Figure 20c**). Note that Medicare data have a longer lag time than other payers, therefore data were only available through September 2020. Utilization of PAs returned to pre-pandemic levels by September 2020 for the Medicare payer category. Slight declines were observed in the utilization of OB/GYN (dark green line) and internal medicine (pink line) providers both at the beginning of 2019 and 2020. For the Medicare payer group, the use of different provider types was relatively stable between January 2018 and December 2020 (**Figure 20c**).

c)

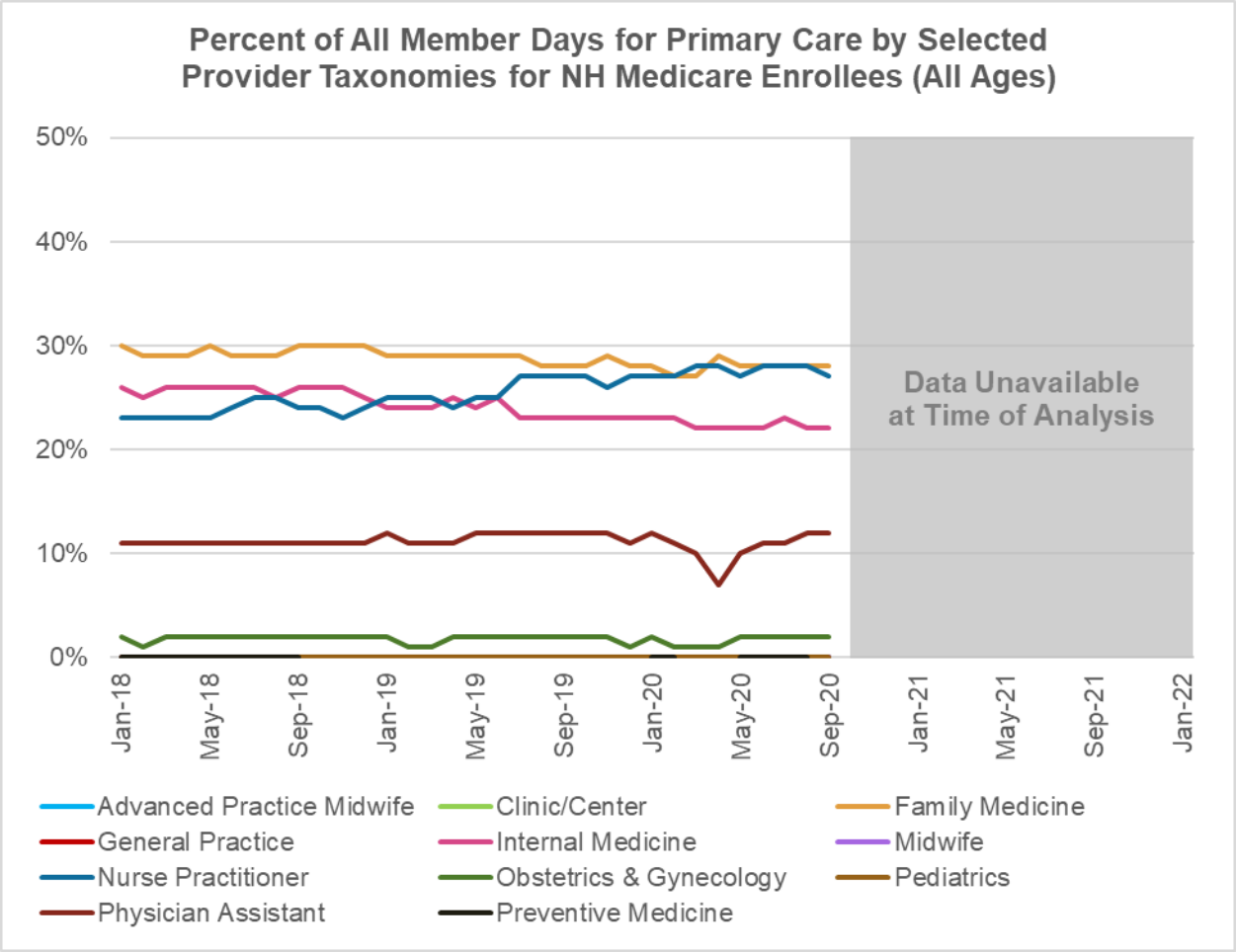
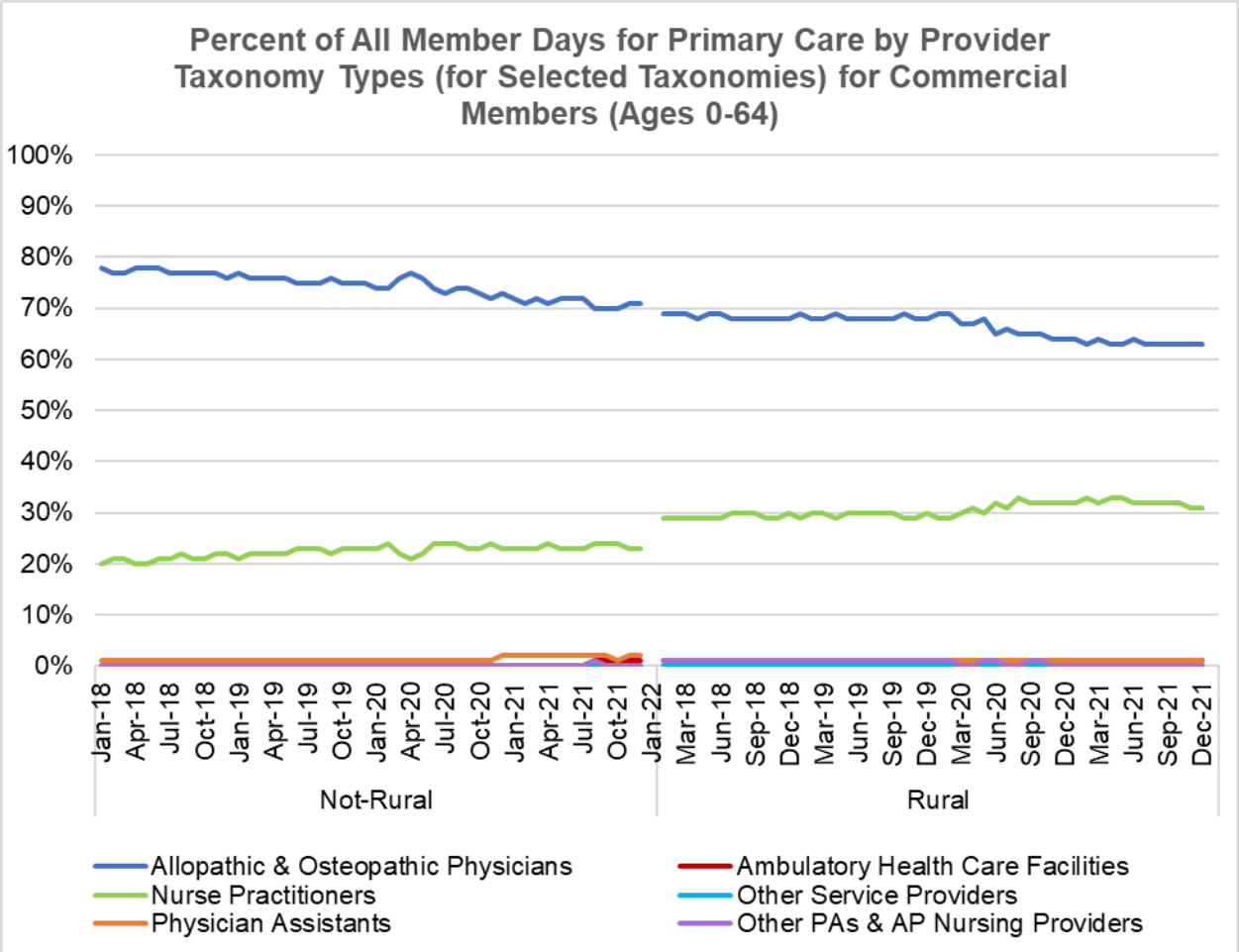


Figure 20 a-c. Percent of all member days for primary care by provider and payer: a) Commercial, b) Medicaid, and c) Medicare (Analysis prepared by the UNH IHPP Center for Health Analytics, 2022, in support of the Advanced Nursing Education Workforce (ANEW) project, funded by HRSA).

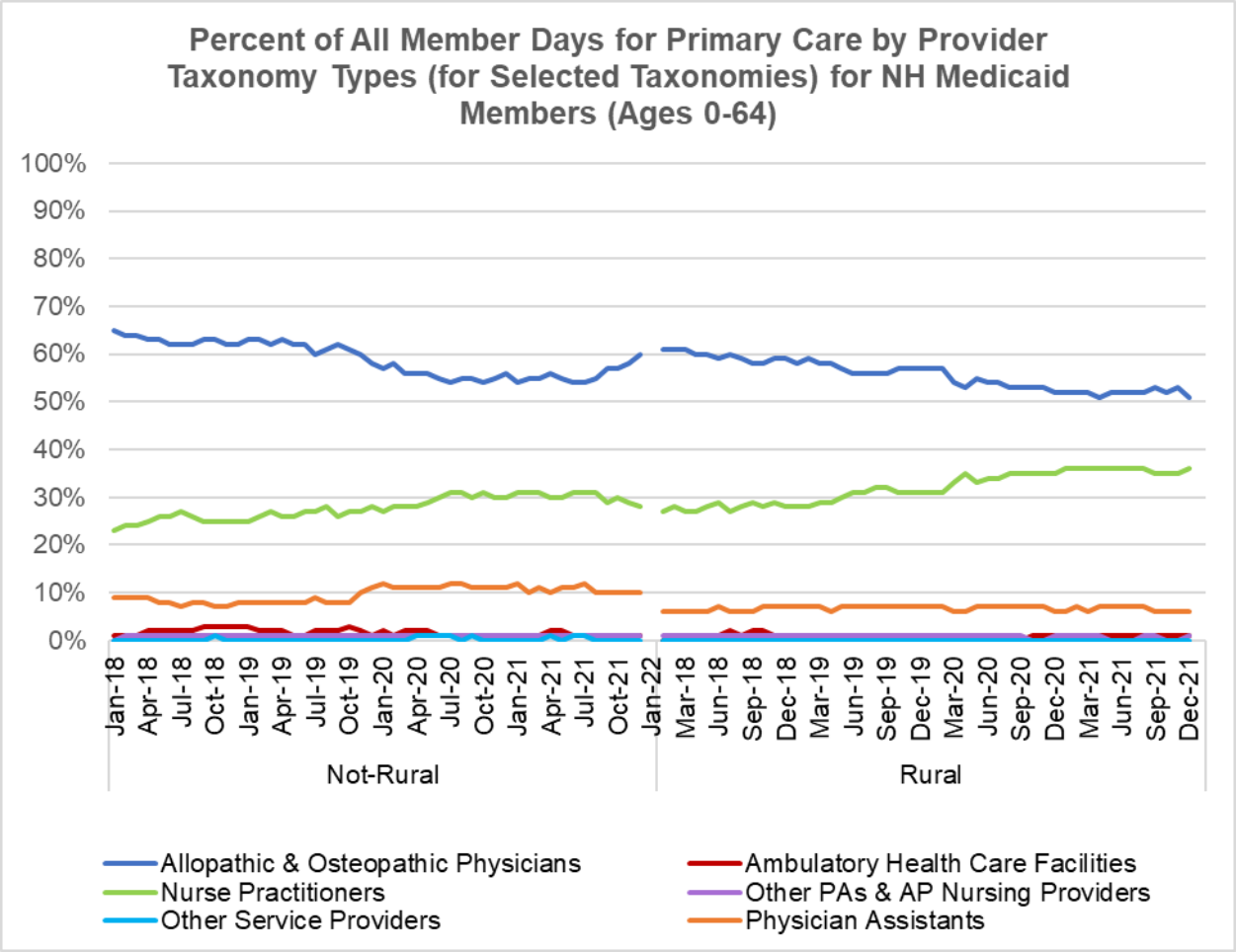
While most **Commercial and Medicare visits were with family medicine providers, those with Medicaid insurance saw a greater percentage of NPs** (navy blue lines). Interestingly, **NP utilization trended upward over the data collection period among each of the payer categories.** Internal medicine was most commonly leveraged by Medicare enrollees and least commonly used by Medicaid members, though it is important to note that services from a variety of providers at FQHCs are coded as "FQHC" in billing, not by specific clinician types, such as NPs. This provides an example whereby the data about the specific type of provider may be somewhat masked due to the nature of the methods available for data collection and classification. Compared to the Commercial and Medicare payer categories, individuals with **Medicaid insurance had a higher percent of all member days receiving services from a health care clinic or center (light green line), a finding that aligns with the increased utilization noted by Bi-State across its FQHC facility members.** Perhaps worth noting is that primary care provider utilization as a whole has largely rebounded from the sharp declines attributed to the COVID-19 pandemic across provider and payer types, and levels have somewhat stabilized.

The CHIS analysis also allows for the examination of primary care provider utilization across different rurality designations (defined by PHRs) and by payer type (**Figure 21a-c**). **Immediately noticeable from these data, is that regardless of payer type or rurality, allopathic and osteopathic physicians (blue lines) were the most commonly visited provider type. Second to the allopathic and osteopathic physicians, NPs (green lines) were also visited far more frequently than the other provider types.** It is also evident that compared to those in non-rural NH, **a greater proportion of people seeking primary care in rural areas received services from NPs (green lines), while a greater proportion of those in non-rural areas received care from allopathic and/or osteopathic physicians (blue lines), regardless of payer classification.** Accordingly, there was a greater difference between the physician and NP utilization rates among residents seeking primary care services in non-rural regions than in rural regions. The patient population could be surveyed to better understand why this trend exists: are rural RNs easier to access than physicians or is preference playing a role in the type of primary care provider one seeks?

a)



b)


Percent of All Member Days for Primary Care by Provider Taxonomy Types (for Selected Taxonomies) for NH Medicaid Members (Ages 0-64)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
Jul-20
Oct-20
Jan-21
Apr-21
Jul-21
Oct-21
Jan-22
Mar-18
Jun-18
Sep-18
Dec-18
Mar-19
Jun-19
Sep-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Mar-21
Jun-21
Sep-21
Dec-21
Not-Rural
Rural
Allopathic & Osteopathic Physicians
Ambulatory Health Care Facilities
Nurse Practitioners
Other PAs & AP Nursing Providers
Other Service Providers
Physician Assistants

c)

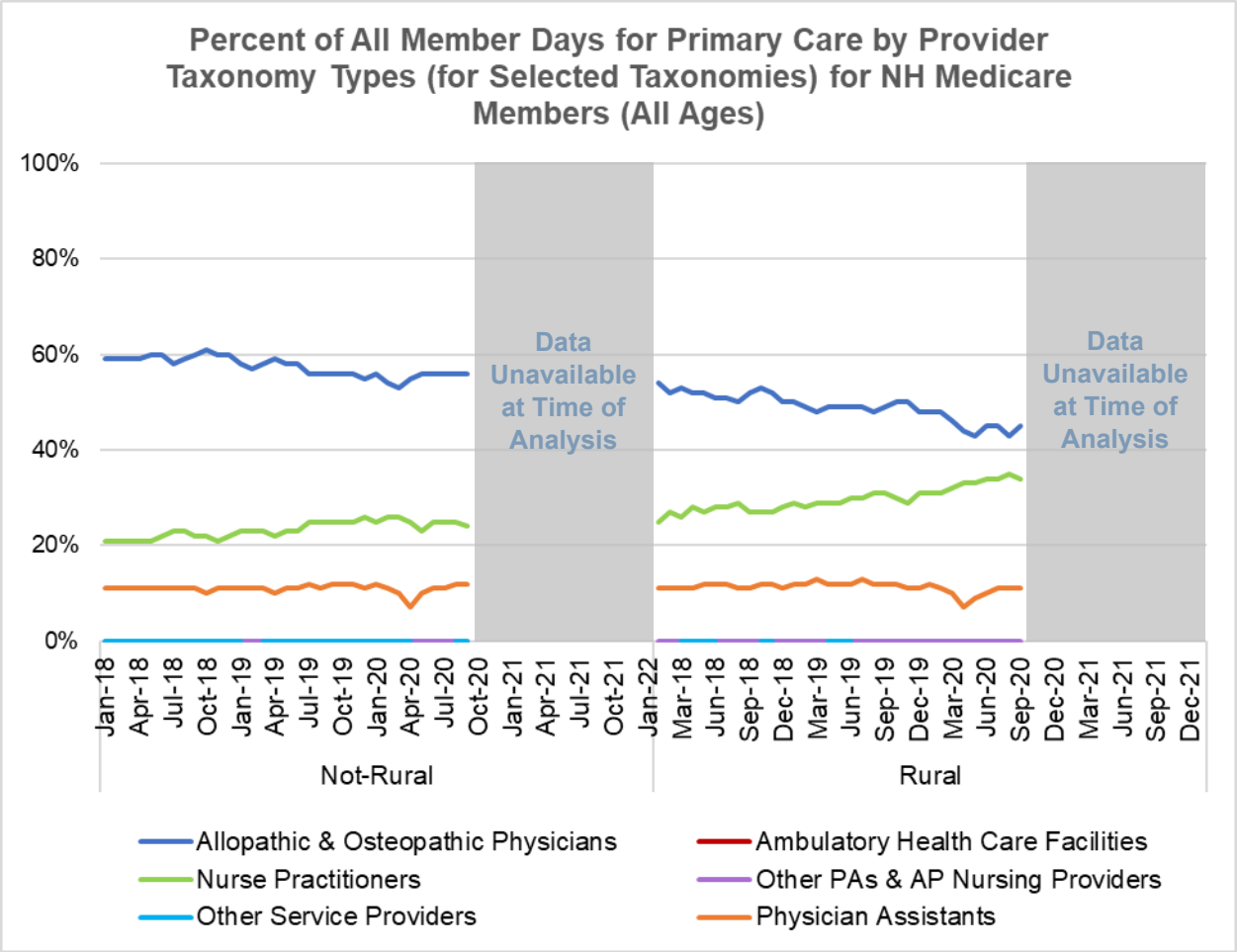


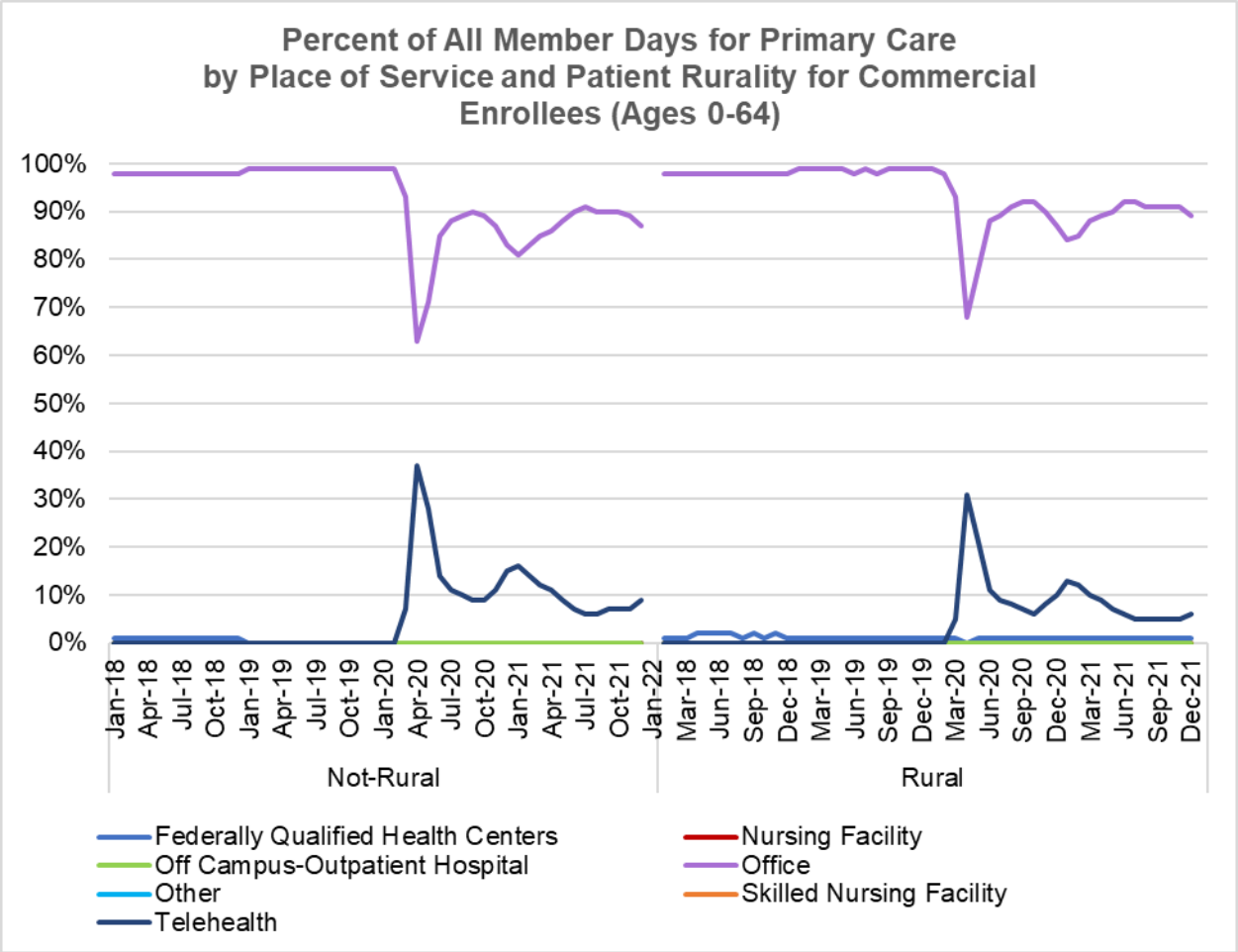
Figure 21 a-c. Percent of all member days for primary care by rurality designation and provider type: (a) Commercial, b) Medicaid, and c) Medicare (Analysis prepared by the UNH IHPP Center for Health Analytics, 2022, in support of the Advanced Nursing Education Workforce (ANEW) project, funded by HRSA).

Regardless of payer type, in non-rural areas, fewer residents sought care from NPs, and instead, sought care from physicians. Was this because of resident preference or due to a shortage of NPs (relative to physicians) in more urban areas? As was suggested from the data in **Figure 20a-c**, **individuals in NH with either Medicaid or Medicare insurance types were more likely than those with Commercial insurance to receive primary health care services from PAs** (orange lines). **Figure 21** demonstrates that ambulatory health care facilities (red lines), other clinicians (purple lines) and other service providers (turquoise lines) did not represent a large percent of primary care service utilization, regardless of rurality or payer group.

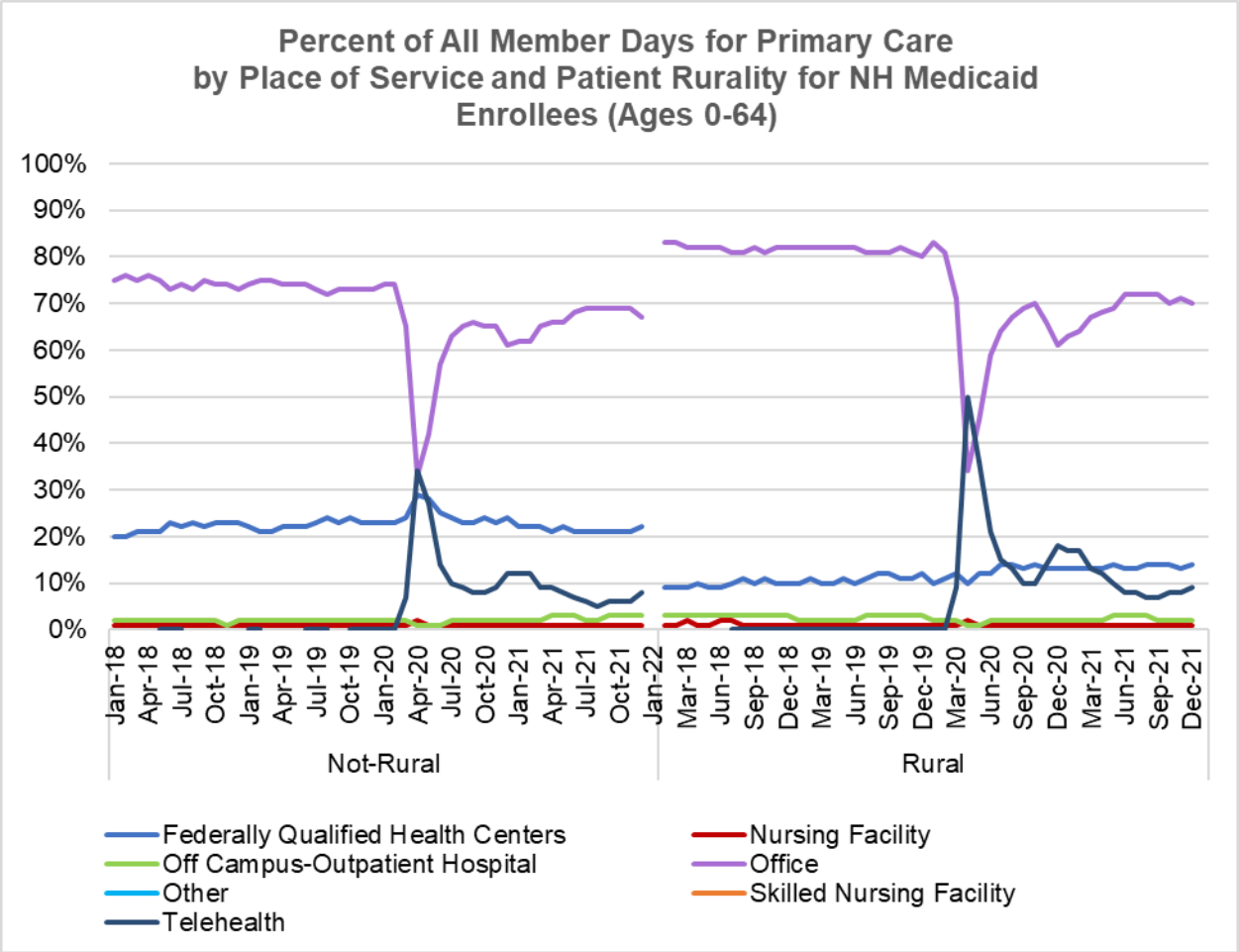
Finally, data in **Figure 22** sheds light on the types of primary care settings in which NH residents sought health services, both in rural and non-rural areas of the State. It appears from these data that **most NH residents received primary care services during office visits**

(purple line), regardless of payer type classification. However, compared to Medicaid and Commercial payer groups, Medicare enrollees were less likely to seek primary care during office visits. Office visit rates were impacted dramatically by the COVID-19 pandemic, with all office visits dropping precipitously in early 2020, except those in the Medicare classification (particularly rural Medicare), which remained stable during that time, despite being lower than all other payer categories to begin with. In contrast to the decline observed in office utilization in early 2020, there was a clear increase in nursing home utilization by Medicare payer type during that same time (**Figure 22c**). In the middle of 2020, office visits increased again for the Commercial and Medicaid payer groups, however, that was followed by a decrease in early 2021, and subsequent increase, but not to pre-pandemic utilization levels (**Figure 22a,b**). Telehealth visits (navy lines) across payer types increased almost simultaneously with the plummeting rate of office visits (**Figure 22a-c**), though telehealth services were less common among Medicare patients. **These data suggest that NH providers transitioned rather quickly from using face-to-face primary care visits to telehealth mechanisms for offering care services.** It is interesting, however, that for each of the payer types, telehealth services immediately increased, then dropped, and then trended upward again for a period of time, before falling again. The reasons underlying these findings are unclear, though there are likely several.

a)



b)


Percent of All Member Days for Primary Care by Place of Service and Patient Rurality for NH Medicaid Enrollees (Ages 0-64)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
Jul-20
Oct-20
Jan-21
Apr-21
Jul-21
Oct-21
Jan-22
Mar-18
Jun-18
Sep-18
Dec-18
Mar-19
Jun-19
Sep-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Mar-21
Jun-21
Sep-21
Dec-21
Not-Rural
Rural
Federally Qualified Health Centers
Off Campus-Outpatient Hospital
Other
Telehealth
Nursing Facility
Office
Skilled Nursing Facility

c)

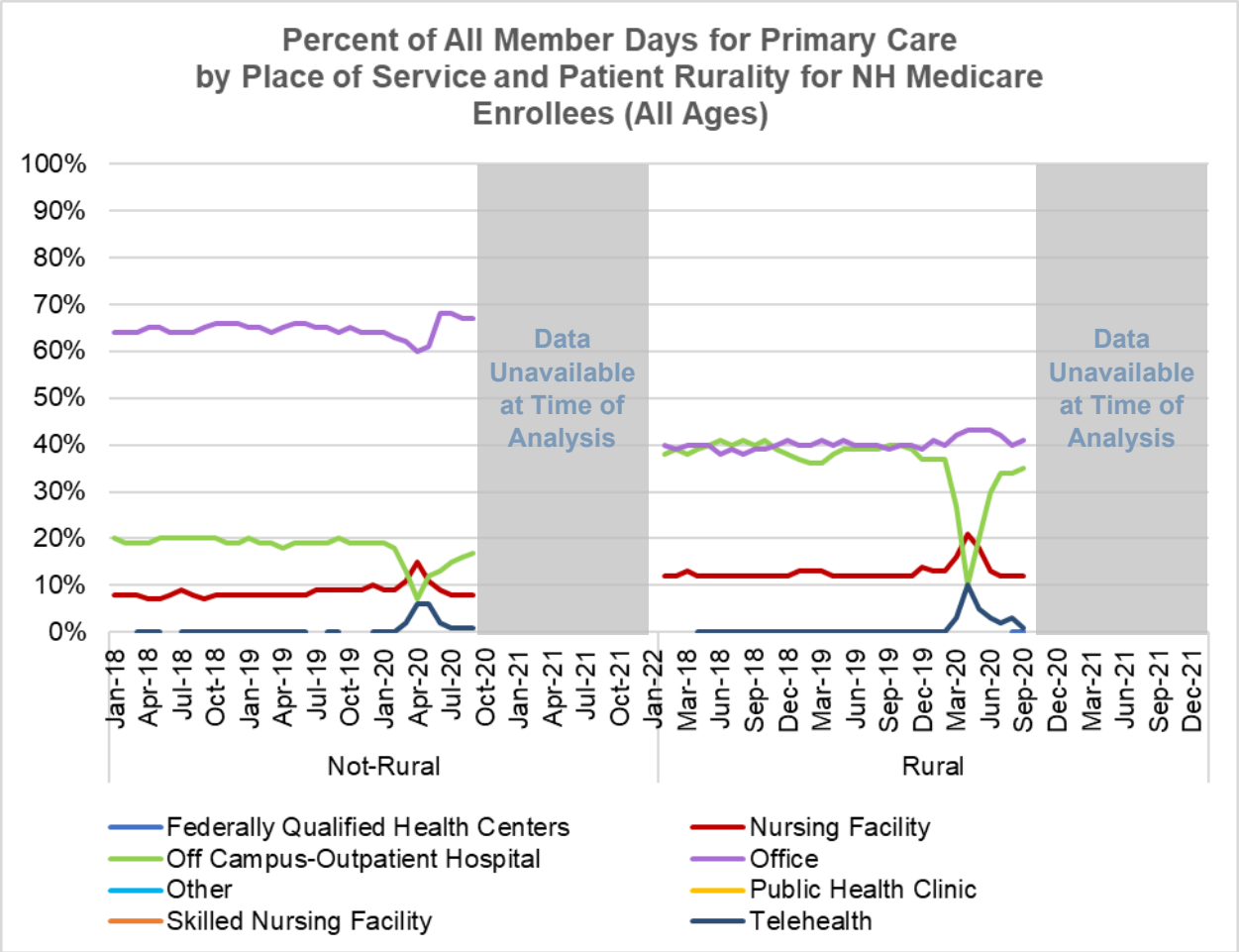


Figure 22 a-c. Percent of all member days for primary care by place of service, patient rurality, and payer type: a) commercial, b) Medicaid, and c) Medicare (Analysis prepared by the UNH IHPP Center for Health Analytics, 2022, in support of the Advanced Nursing Education Workforce (ANEW) project, funded by HRSA).

Perhaps not surprisingly, FQHC practice settings (blue lines), which are required to accept Medicaid (**Figure 22b**), were used more commonly among those with Medicaid insurance (particularly in non-rural areas) than those enrolled in Medicare (**Figure 22c**) or who were commercially insured (**Figure 22a**). **The findings from the preliminary analysis provided by IHPP corroborate those reported by Bi-State: an increase in FQHC utilization was realized over the data collection period.**

Compared to other payer types, Medicare enrollees were more apt to use off-campus outpatient hospitals[5] (light green lines) for primary care services (**Figures 22a-c**).

5.6.2 Expansion of Primary Care Service Capacity During the COVID-19 Pandemic

In some ways, the onset of the COVID pandemic forced health care providers to pivot from delivering services using traditional mechanisms to devising and implementing more creative mechanisms for reaching patients. For example, car-side screening and testing for COVID, and car-side vaccinations also became an option. Moreover, mobile health vans and telehealth also expanded as modalities to provide services.

In fact, in response to the COVID-19 pandemic, the NH Health Care Consumers and Providers COVID-19 Coalition, which included more than **50 health care and social service advocates and providers, identified telehealth as the single most important tool for mitigating barriers to accessing health care during the pandemic.** In response, a bipartisan group of legislators created a bill, HB 1623, which helped facilitate the delivery of telehealth services. Reportedly, **for the first time, several health centers experienced a 0% no-show rate for behavioral health visits due to telehealth.** Patients receiving treatments weekly or monthly stated they were fond of telehealth because among other reasons, they did not miss as much time away from work (Bi-State Primary Care Association, 2021). **When considering effective access modalities, these data suggest that telehealth services may be worth sustaining.**

Despite telehealth providing a key strategy for reaching patients during the pandemic, a national study demonstrated that roughly 50% of primary care nurses reported they did not employ this technology at all in 2015, 2017, and even in 2020 (Smiley et al., 2021). Roughly 30% of nurses reported providing telehealth services for 1-25% of their time, while 26%-75% of time was spent providing telehealth by fewer than 10% of nurses. ***Why* telehealth technology wasn't harnessed by a greater percentage of nurses as a greater proportion of their time offering services was not assessed.**

[5] Off-campus outpatient hospitals were defined as they are by CMS: "a portion of an off-campus hospital provider-based department which provides diagnostic, therapeutic (both surgical and nonsurgical), and rehabilitation services to sick or injured persons who do not require hospitalization or institutionalization."

Section 5.7 – Workforce

This section includes a synopsis of reports examining different aspects of the primary care workforce in NH. Workforce capacity can be analyzed by provider count, practice site, or full-time-equivalent (FTE). The chief reports included in this section were the State Physician Workforce Data Report by the Association of American Medical Colleges (AAMC) and the Annual Report on the Health Status of Rural Residents and Health Workforce Data Collection, which was submitted by the SORH for the DHHS in NH.

5.7.1 National-Level Reporting

For a "big-picture" view of how NH's workforce compares to those within other states, we reviewed a pertinent report entitled, 'State Physician Workforce Data Report' that was published by the AAMC (Association of American Medical Colleges, 2022).

The 2021 report included state-level information on physician supply, provider undergraduate and graduate medical education, and retention (Association of American Medical Colleges, 2022). In this report, primary care physicians (MDs or DOs) were defined as those who self-designated primary specialty was one of the following: adolescent medicine (pediatrics), family medicine, general practice, geriatric medicine (family practice), geriatric medicine (internal medicine), internal medicine, internal medicine/pediatrics, or pediatrics. Residents and fellows were counted as primary care residents and fellows if they were in one of the aforementioned programs. Compared to the rest of the United States, in 2020, the Northeast had a greater number of active primary care physicians per 100,000 population. However, the map in **Figure 23** demonstrates that **compared to most of its neighboring states, NH has fewer primary care providers per 100,000 population.**

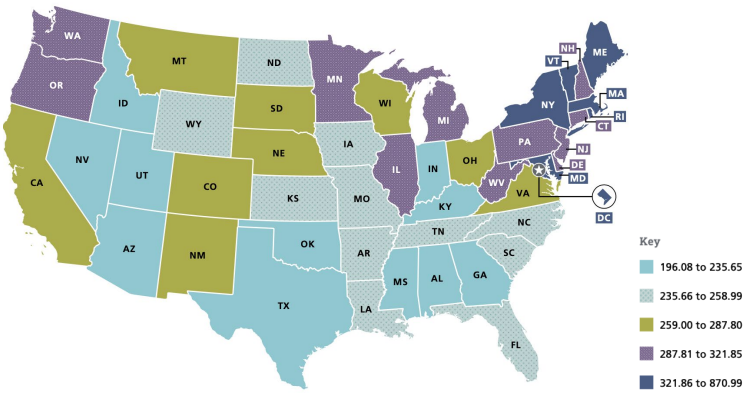


Figure 23. Active primary care physicians per 100,000 population, 2020 (adapted from the 2021 State Physician Workforce Data Report).

The number of total active physicians (federal and nonfederal, licensed and working at least 20 hours per week) in the United States was 286.5 per 100,000, while the number of *patient care physicians* (subset of active physicians, self-reported direct patient care) was 247.5 per 100,000 and the active *primary care physicians* (definition above) across the United States was only 94.4 per 100,000 (**Figure 24**). **New Hampshire ranked ninth in the country for total active physicians per population, having reported 322.9 per 100,000 population.** The number of direct patient care physicians in NH was reported as 293.4 per 100,000 population, ranking the

State as the eighth highest. **For primary care providers, NH's rank fell to 12th, with 105.8 primary care physicians per 100,000 population.**

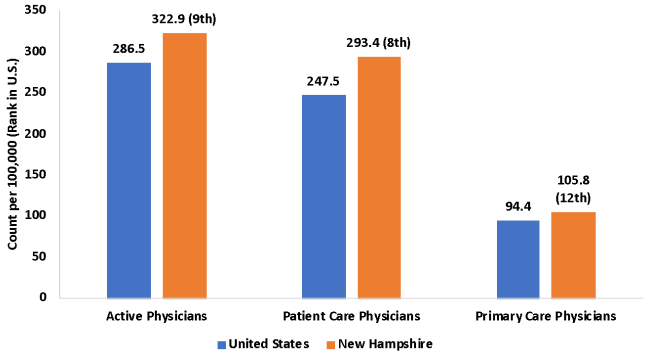


Figure 24. Physician count in United States and in NH per 100,000 (NH state rank in parentheses), by provider setting type (adapted from SORH Report, 2021).

The report by the AAMC noted that in 2020, **34.2% of the active physicians in NH were 60 years of age or older**, a proportion that placed NH in the 21st rank. Perhaps of interest, neighboring state, Maine, ranked the highest for reporting 39.3% of active physicians aged 60 years or older.

The proportion of physicians in NH who identified as Asian, Black or African American, or Hispanic/Latino/Spanish origin were 12.2% (rank 33rd), 1.6% (44th), and 2.9% (34th), respectively. New Hampshire reported 0.3% of active physicians were Native American or Alaska Native, which ranked the State at 35th, while 1.4% of NH physicians identified as "other," ranking the State at 26th for this category. Perhaps not surprisingly, NH ranked 11th for having a relatively high percentage (75.5%) of active physicians who identified as "white" in 2020. **The cultural diversity of providers in NH is limited.**

National reports have also considered the role of RNs in primary care. Nearly two-thirds of RNs work in hospital settings (Committee on the Future of Nursing 2020–2030 et al., 2021; U.S Department of Health and Human Services et al., 2019). The 2018 National Sample Survey of RNs identified 30 unique settings where nurses provided direct primary care (U.S Department of Health and Human Services et al., 2019). Nurses in these settings worked to improve maternal health outcomes, support rural communities, coordinate patient care and care transitions as well as provide and facilitate urgent and preventative health services. It should be noted that nurses in these settings provided care to patients with the most social risk factors and also had the lowest annual earnings.

The American Association of Colleges of Nursing has also projected a shortage of RNs that will be exacerbated as the Baby Boomers continue to age (American Association of Colleges of Nursing, 2020). Moreover, there has been a recent decline in the number of younger RNs (Auerbach et al., 2022). A population analysis that calculated RN FTEs based on a 40-hour work week between 1982 to 2021 and across different age categories findings were remarkable: **from just prior to the onset of the COVID-19 pandemic in 2019 to 2021, there was a 4% reduction in the number of RNs under the age of 35 years old; a 0.5% decline in RNs between 35 and 49 years old and a 1% reduction in RNs older than 50 years old.** The RN loss was greatest in the hospital setting (3.9%), while other settings experienced an increase in

RNs (1.6%). The authors noted that a sustained loss in young RNs would have significant and "ominous" impacts in the future on care. The American Association of Colleges of Nursing has identified factors contributing to the nursing shortage, including, but not limited to: a shortage of nursing school faculty, which restricts nursing program enrollment; a significant proportion of the workforce is near retirement age; changing demographics (aging population) means higher demand; and insufficient staffing is increasing workload, administrative burden, and impacting job satisfaction and causing burnout (American Association of Colleges of Nursing, 2020).

5.7.2 State-Level Reporting

At the state-level, aspects of primary care, including workforce, are often considered in the context of rurality. This allows for evaluating provider supply and demand.

In addition to detailing the health status of NH residents (presented earlier in this report), the SORH Report also examined information on primary care providers in rural and non-rural regions for determining projected workforce needs. These data were collected in SFY 2019.

The medical provider landscape in NH has fluctuated some in recent years, with data from 2019 demonstrating smaller gains (<5%) in the medical provider workforce (physicians and PAs) and more moderate gains in mental health practitioners and alcohol and drug counselors (NH Division of Public Health Services, 2021). Of importance, however, is that a larger "gain" is more easily realized when the numbers are smaller to start with. For example, the net gain of only 27 alcohol and drug counselors reflected a 13.5% increase, which may seem relatively large, until the baseline count of 200 is considered. **A 3.2% loss was realized across licensed psychologists in NH, as well as a 1.4% loss in Advanced Practice Registered Nurses (APRNs), during the data collection period, which ended in 2019** (NH Division of Public Health Services, 2021).

To determine how many licensed primary care providers in NH were actively practicing, the SORH study included individuals who were either practicing full-time or part-time and those practicing as *locum tenens* for a year or longer (NH Division of Public Health Services, 2021). Compared to PAs and APRNs, of whom 95.2% and 77.8%, were actively practicing, respectively, there were considerably fewer physicians (64.4%) who were actively practicing. Therefore, **more than a third of licensed physicians in NH were not actively practicing in 2019.**

5.7.2.1 Demographics

The data reflect that as has been the case historically, physicians continued to be predominantly male (34.3% female), while PAs (67.9%) and APRNs (86.9%) were more often females. Similar to the value described in the AAMC's State Physician Workforce Data Report, 85.2% of reporting physicians identified as "non-Hispanic White" and this rate was even higher for PAs (94.5%) and APRNs (86.9%). As for age, **fewer than 16% of physicians reported being under 40 years of age, while over half of PAs were under 40 years of age.**

Perhaps not surprisingly, the Health Professions Data Center (from which the SORH Report workforce results were derived) identified significant demographic disparities between providers in rural and non-rural areas of the State (NH Division of Public Health Services, 2021). Compared to their counterparts in non-rural regions of NH, physicians practicing in rural NH were *more likely* to:

- be either less than 40 years old or older than 60 years old,
- have graduated in the last ten years,
- have practiced in NH for fewer than five years, and
- anticipated a reduction from NH practice in five years.

Rural physicians were less likely to practice a primary care specialty or work in outpatient settings. Rural APRNs were less likely than non-rural counterparts to practice primary care mental health specialty or provide mental health services in an outpatient setting. **Compared to non-rural colleagues, rural PAs and APRNs were more likely to work more than 40 clinical hours a week on average** and were less likely to have graduated from a New England or NH school. **Long work hours should be noted when considering provider burnout.** Moreover, data show that NPs – particularly in rural areas – were commonly sought after for primary care (Doyle et al., 2023). These findings of nurse utilization, coupled with the SORH findings of declines in actively practicing APRNs and APRNs practicing long hours, might mean the nursing supply could be compromised in NH.

5.7.2.2 Distribution

The number of medical providers in rural NH is limited (NH Division of Public Health Services, 2021), as demonstrated by the distribution of total provider FTE in rural areas of NH, which ranged between 25% and 35%, while non-rural providers accounted for roughly 65% to 75% of total FTE (**Figure 25**). Specifically, 35.3%, 25.5%, and 31.8% of physicians, PAs, and APRNs, respectively, practiced in the lesser populated regions of NH. **Yet, 37% of NH residents live in rural NH, so of the provider population in NH, distribution does not match that of the residents.** In 2019, between roughly 50% and 60% of these FTEs practiced in the outpatient setting.

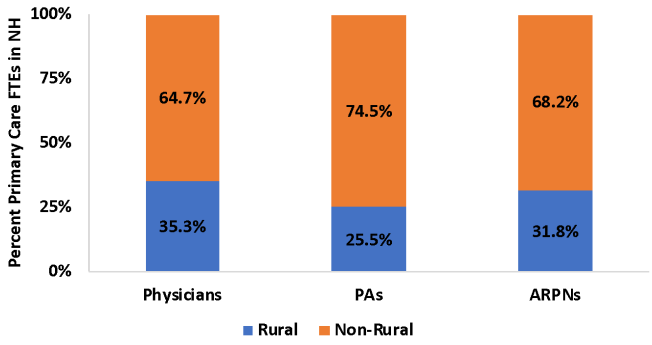


Figure 25. Percent of primary care providers practicing in rural and non-rural NH by provider type (adapted from SORH Report, 2021).

According to the SORH Report, the highest percent of total FTEs across each provider types was in the non-rural, Greater Manchester PHR (physicians, 18.3%; PAs, 20.3%; and APRNs, 20.6% of total FTE), while the lowest percent of total FTEs were reported in the rural, Central NH PHR (physicians, 1.5%; PAs, 0.9%; and APRNs, 1.3% of total FTE), which is rural. **However, the Needs Assessment reported FTEs differently, which was reflected in differing results.** For example, rather than measuring provider type distribution by a percentage of the total FTE, the Needs Assessment study considered physician FTEs per

100,000 population. Using this metric, these authors reported a significantly higher rate of primary care physicians in the rural, Upper Valley, home of Dartmouth Health, and the only medical school in the state (**Figure 26**).

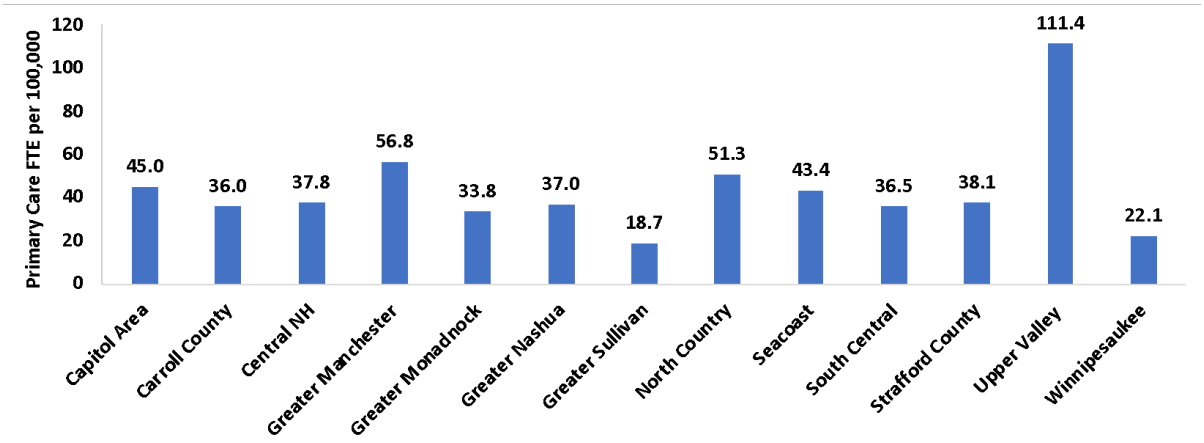


Figure 26. Primary care physician FTE per 100,000 by PHR designation in NH (adapted from Needs Assessment, 2021).

The SORH Report indicated that similar to the rate described for Greater Manchester (18.3% of total FTE), the Upper Valley accounted for 18% of the total physician FTE. Yet, the data presented in the Needs Assessment suggested that primary care provider availability in the Upper Valley was twice that of the second-most populated area, Greater Manchester and six times greater than in Greater Sullivan, which, in the Needs Assessment study, had the lowest provider rate (18.7 per 100,000) (Hernandez et al., 2021). **It seems that although there was overlap across much of the population demographic and health indicator data between the SORH Report and the Needs Assessment, different results were offered, which may be worth noting.**

Table 5 outlines the distribution of physicians, PAs, and APRNs across outpatient primary care and primary care specialty settings, as presented by the SORH Report. Family medicine represented the most commonly practiced primary care specialty (physicians, 46.4%; PAs, 75.4%; and APRNs, 65.5% of total FTE), and OB/GYN was the least commonly primary care practice, with less than 10% FTE in this category across provider type (**Table 5**). Physicians were more likely to practice internal medicine than the PAs and APRNs.

Table 5. Proportion of provider type across primary care and primary care specialty settings (from SORH Report, 2021).

Specialties		Physicians	PAs	APRNs
*Outpatient, Primary Care Practice by % of Total FTE		25.7%	18.9%	27.0%
**Primary Care Specialty by Total Primary Care FTE (%)	*Family Medicine/General Practice*	46.4%	75.4%	65.5%
	Internal Medicine	24.1%	19.6%	10.1%
	Pediatrics	19.9%	1.3%	13.1%
	Obstetrics and Gynecology	7.3%	1.5%	7.5%
	Gynecology only	1.1%	0.2%	1.7%
	Geriatric Medicine	1.9%	0.0%	1.1%
	Adolescent Medicine	1.0%	2.0%	1.0%

** Primary care practice as indicated by primary care specialty and outpatient, primary care hours*
*** Indicated primary care hours in outpatient, primary care practice*

Less than 20% of PA practice (as measured by percent of total FTE) took place in the outpatient primary care[6] setting, while between 25% and 30% of physicians and APRN practice took place in this setting (blue rectangle, **Table 5**). Perhaps also worth noting is that as measured by percent of total FTEs, PAs did not report engaging in geriatric medicine practices (grey rectangle, **Table 5**), and only at a very limited level in pediatrics as a primary care specialty, compared to physicians and APRNs (orange rectangle, **Table 5**).

5.7.2.3 Provider Availability and Accessibility

Another way to characterize accessibility is by examining whether providers are accepting new patients and how long one must wait for an appointment.

The availability of primary care providers may be determined by whether they are accepting new patients and how long it takes for established and new patients to obtain care. In the outpatient, primary care setting in NH, new patient acceptance rates were relatively high across provider types, with 75.6%, 92.6%, and 88.5% of physicians, PAs, and APRNs accepting new patients, respectively. **However, average wait times for routine appointments for established patients were twice as long for those waiting to see a physician (10.3 days), compared to approximately 5 days for seeing a PA or APRN.** New patients waiting for a routine appointment with a physician, PA, or APRN experienced longer wait times: 19.4, 15.3, or 13.2 days, respectively (**Figure 27**).

[6] The outpatient, primary care setting in the SORH report was defined as a setting that was not specifically: hospital/inpatient/day surgery center services only (hospitalist, ER, etc.), extended/Institutional care only (nursing home/SNF, residential treatment, etc.), substance use disorder treatment centers, state/federal prison clinic, city/county correctional facility, rehabilitation facility (OT/PT/ST), corporate/educational institution or Veterans Administration (VA), a non-traditional setting (e.g. home care, mobile services, etc.), other NON-outpatient setting, and a non-direct patient care office setting (radiologists, pathologists, etc.).

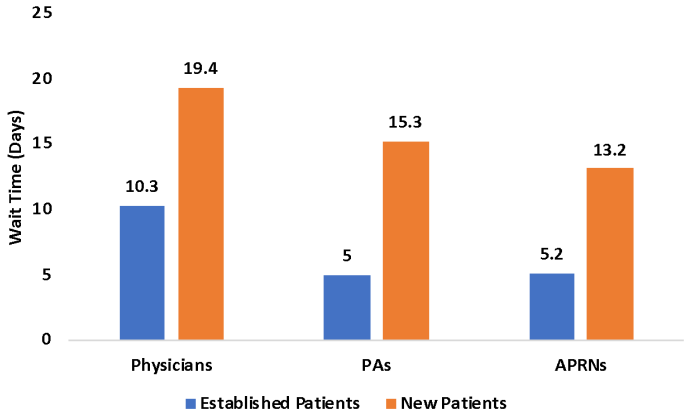


Figure 27. Wait times (in days) for outpatient, primary care physicians, PAs, and APRNs in NH in SFY 2019 (adapted from SORH Report, 2021).

While more than three-quarters of primary care physicians, PAs, and APRNs were accepting new patients during the reporting period, wait times were roughly two or more weeks. To see a PA, a new patient may need to wait three times longer than an established patient (**Figure 27**).

5.7.2.4 Provider Capacity / Projected Retention

To evaluate potential provider capacity in five years, the Health Professions Data Center considered older age (+60 years old) and retention indicators (NH connections, and less than five years practicing in NH) (**Table 6**).

The 2019 age data presented in the SORH Report indicated that 33.1% of physicians were 60 years of age or older. This finding was not dissimilar to the 2020 data presented above, in the nationwide AAMC report (34.2% of the active physicians in NH were 60 years of age or older).

It is plausible that workforce retention may be bolstered when employees have ties to the state in which they practice; and therefore, this was measured by the SORH study. **In NH, only 23% of physicians indicated having ties to NH, while more than half of PAs (60%) and APRNs (60.2%) reported having ties to the State** (NH Division of Public Health Services, 2021). The anticipated reduction in capacity (by FTE) was higher for physicians (29.3%) than for PAs (18.7%) and APRNs (23.2%).

Compared to PAs and APRNs, NH physicians are older, have fewer ties to the State, and have a higher anticipated reduction in work capacity in the next five years. As seen in the preliminary analysis of claims data provided by IHPP, there is a high demand for physicians across payer and rurality groups (Figure 21).

Table 6. Provider retention indicators and projected provider capacity in NH (SORH, 2021).

Retention	Physicians	PAs	APRNs
60+ Years Old	33.1%	8.1%	24.1%
NH Ties	23.0%	60.0%	60.2%
Less than 5 Years Practicing in NH	22.5%	40.8%	44.1%
*Anticipated Reduction in Capacity (by FTE) in 5 Years	29.3%	18.7%	23.2%

** Indicated by an anticipation of reduced hours, practice in another state, or no clinical practice*

Taken together, these recent data suggest that **compared to other primary care provider types, physicians were not only older, but also, they had fewer ties to NH and reported the highest anticipated reduction in capacity in five years. However, nearly a quarter of APRNs also indicated reduced capacity in five years.**

Matriculation into the state by students from institutions within that state is another mechanism for assessing workforce capacity. The schools with the highest student-to-population ratio are concentrated in the Northeast (Association of American Medical Colleges, 2022). However, **New Hampshire is one of only nine states in the United States that does not have a public academic institution that grants either MD or DO degrees** (**Figure 28**). Moreover, according to the report by the AAMC, **NH had the lowest in-state matriculation rate of states with an MD- or DO- granting school, with only 12.5% of the new medical students from NH who matriculated into the State.** This suggests one challenge (and perhaps opportunity) facing NH may be retaining those who graduate with an MD or DO (from the single private school, Dartmouth) to be part of the workforce in NH.

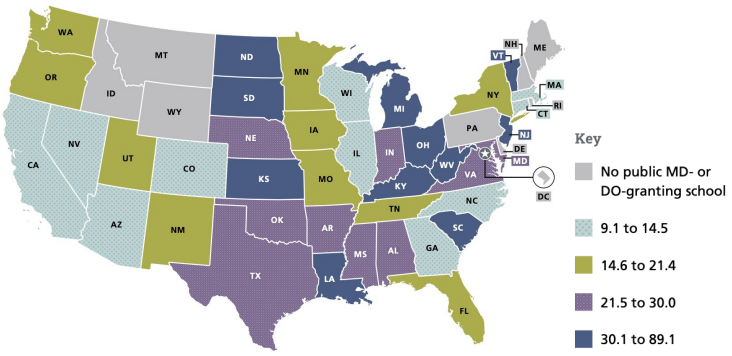


Figure 28. Students enrolled in public schools per 100,000 population for academic years 2019-2020 and 2020-2021 (adapted from the 2021 State Physician Workforce Data Report, 2022).

The single DO- and MD- granting institution in NH, the Geisel School of Medicine, provided data from 2013 to 2023 representing the placement of its students for residency and internship programs following graduation. These data were compiled and are depicted in **Figure 29**. Some students opted not to share their placement data. For this figure, primary care was defined as family medicine, internal medicine (pediatric, preliminary, primary), obstetrics and gynecology, and pediatrics (Geisel School of Medicine at Dartmouth, 2023).

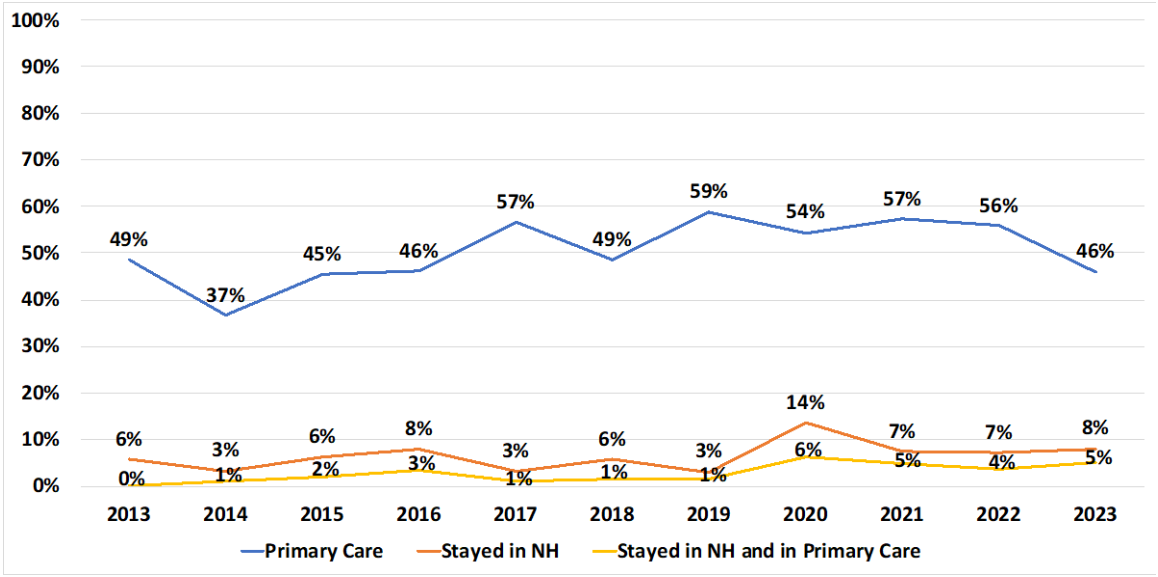


Figure 29. Placement of Geisel Students of Medicine Graduates for Residency/Internships (Geisel School of Medicine at Dartmouth, 2023).

Of reporting students graduating from the Geisel School of Medicine between 2013 and 2023, between 37% (2014) and 59% (2019) students were "matched," or placed, into residency or internship programs in primary care (**Figure 29**). With the exception of one year (2020), fewer than 10% of reporting students graduating from the Geisel School of Medicine between 2013 and 2023 stayed in NH, with only a subset of these students practicing in primary care. More exactly, of reporting students graduating from the Geisel School of Medicine between 2013 and 2023, between 0% (2013) and 6% (2020) were placed in NH to practice in primary care. In recent years, more of the students that were matched in NH were practicing primary care. **Further inquiry could determine *how* to appeal to students and to increase matriculation into the state.**

New Hampshire has a number of nursing schools, and according to a news article published in October 2021, enrollment in NH nursing programs increased despite the ongoing pandemic (Lally, 2021). However, **it was unclear from the assessments identified at the time of this literary review where students are matriculating to and why.**

Another factor in nursing school is attrition. While enrollment in NH nursing programs may be elevated, the National League for Nursing reported a national attrition/dropout rate of 20% for nursing programs. A report from Marshall University examined the reasons underlying failure to complete bachelor of nursing programs and revealed some strategies that may factor into degree completion (Elkins, 2019). However, in addition to supporting students to graduation, it is important to identify how to recruit them to stay and practice in the State.

It would be speculating to suggest that RNs may not matriculate into the State due to compensation, though compared to the other New England states, NH reported lower median annual earnings for primary RN positions in 2020 (Smiley et al., 2021) (**Table 7**).

Table 7. Median annual earnings in primary RN positions in New England states (adapted from Smiley et al., 2021).

State	2015	2017	2020
Connecticut	$75,000	$75,000	$80,000
Massachusetts	$75,633	$76,000	$79,655
Rhode Island	$70,000	$70,000	$77,400
New Hampshire	$64,000	$66,500	$75,000
Vermont	$62,000	$61,000	$73,492
Maine	$60,000	$63,000	$68,800

In summary, what is driving the anticipated reduced capacity for NH primary care providers – particularly physicians and nurses – in the future is unclear. As noted above, the American Association of Colleges of Nursing proposed some factors contributing to the national decline in RNs, many of which may apply to physicians as well. **However, unless these populations are surveyed, it may not be known which factors are most relevant for New Hampshire recruitment and retention efforts.**

5.7.2.5 Behavioral Health as a Primary Care Specialty in NH

Measuring the quality of behavioral health care services represents a crucial component of reducing service inequities (Alegría et al., 2018; Kilbourne et al., 2018). With behavioral health being an increasingly important issue -- particularly in the context of the COVID-19 pandemic -- determining the availability and accessibility of behavioral health providers, both in rural and non-rural regions is relevant. **Currently in NH, a large proportion of the behavioral health workforce is over 60 years old** (NH Division of Public Health Services, 2021). Indeed, according to the HPDC data from 2019, 62.8% of psychologists in NH were 60 years of age or older, while roughly one-third of Mental Health Practitioners (MPHs) and alcohol and drug counselors (LADCs/MLADCs) fell into that age category (NH Division of Public Health Services, 2021). Data surrounding behavioral health services offered by individuals with a Masters in Social Work were not readily available at the time this report was composed.

Figure 30 depicts the percent of licensed behavioral health providers who were actively, clinically practicing at the time the data were collected (SFY 2019). Approximately **40% of licensed psychiatrists were not clinically practicing in NH**, compared to only about a quarter of other behavioral health provider types.

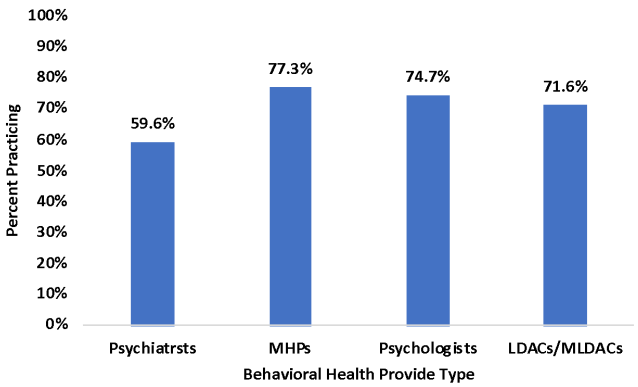


Figure 30. Behavioral health providers who are actively, clinically practicing in NH (adapted from SORH, 2021).

Most of the licensed psychiatrists in the State were male (67.8%), though other behavioral health provider types were proportionally female-dominant, ranging from 52.2% to 81.9% female. Per the SORH Report, behavioral health providers in NH were not ethnically or racially diverse, with ~10% or less of this population accounting for an ethnicity or race other than "non-Hispanic White" (NH Division of Public Health Services, 2021). A 2016 article published in *'Psychiatric Services'* reported that there were 270 psychiatric mental health nurse practitioners (PMHNPs) licensed to practice in NH and that 49 of these worked in one of the ten Community Mental Health Centers (CMHCs) or NH Hospital (NHH).

The demographic characteristics describing psychiatrists were not dissimilar to those for the medical physicians surveyed: around 40% of these licensed provider types were not actively practicing, only about a third were female, and almost all of them identified as "White."

Rural regions of NH not only had fewer medical providers in SFY 2019, but also, there were fewer behavioral health practitioners compared to non-rural areas (NH Division of Public Health Services, 2021). The total FTE of behavioral health providers in rural regions is represented in **Figure 31** and ranged from approximately a quarter to a third of providers statewide. **According to the SORH Report, psychiatrists were slightly more likely (58%) to practice in outpatient settings compared to other settings; however, other behavioral health providers were *far* more likely to practice in outpatient settings compared to other practice settings** (**Figure 31**).

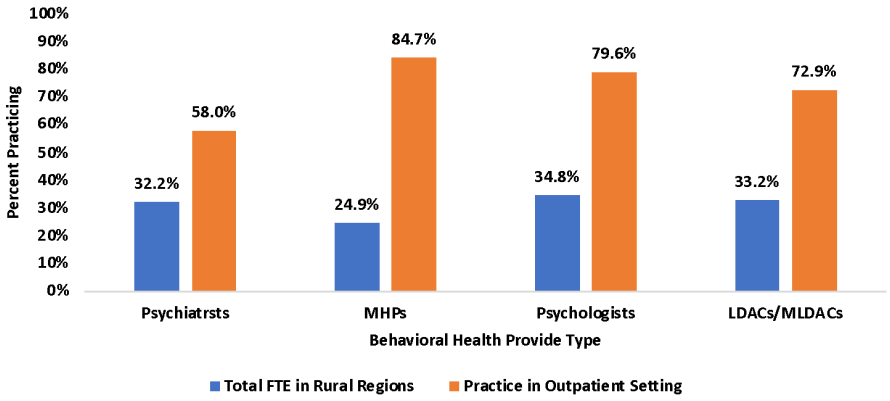


Figure 31. Total FTE in rural regions and practice in outpatient settings by behavioral health provider type (adapted from SORH, 2021).

The SORH Report indicated that psychiatrists, as a percent of total FTE, were highest in non-rural Greater Manchester (15.8%) and lowest in rural Greater Sullivan (2.2% of total FTE). However, the Needs Assessment indicated that the Upper Valley had the highest rate of psychiatrists, with 17.19 FTE per 100,000 population (Hernandez et al., 2021). Similar to the SORH report, the Needs Assessment found that Greater Sullivan had the lowest rate, at 18.73 FTE per 100,000).

For improving the quality of behavioral health care, attention should be directed toward workforce training and capacity (Kilbourne et al., 2018). To understand the capacity of the behavioral health workforce in NH, the HPDC data were used to examine provider age and parameters related to retention (**Table 8**). Of the behavioral health providers, it appeared that a significant proportion of psychologists (62.8%) were older than 60 years of age, while a high

proportion of MPHs and LADCs/MLADCs were younger. Ties to the State appeared to be more widespread across these two younger provider types. Given that so many psychologists were over 60 years of age, perhaps it is not surprising this category of behavioral health providers was also anticipating the greatest reduction in capacity in the next five years. However, we cannot assume that retirement is driving this projection. **Further inquiry would be necessary to target factors driving the projected reduction in capacity.**

Table 8. Behavioral health provider retention indicators and projected provider capacity in NH (from SORH, 2021).

Retention	Psychiatrists	MHPs	Psychologists	LADCs/MLADCs
60+ Years Old	42.5%	32.1%	62.8%	35.9%
NH Ties	34.5%	89.5%	68.7%	95.2%
Less than 5 Years Practicing in NH	28.2%	15.4%	5.2%	27.0%
*Anticipated Reduction in Capacity (by FTE) in 5 Years	35.3%	22.3%	42.9%	21.2%

**Indicated by an anticipation of reduced hours, practice in another state, or no clinical practice*

The ability for someone who is struggling with a behavioral health issue to see a provider in a timely manner is critically important. The percentage of psychiatrists, MHPs, psychologists, and LADCs/MLADCs accepting new patients in the outpatient setting was 78%, 79%, 78%, and 94.6%, respectively (NH Division of Public Health Services, 2021) (data other types of providers, such as social workers, was not available). Moreover, for those accepting patients, the wait times (in days) ranged from roughly five days for an existing patient to more than a month, or over 36 days for a new patient (**Figure 32**).

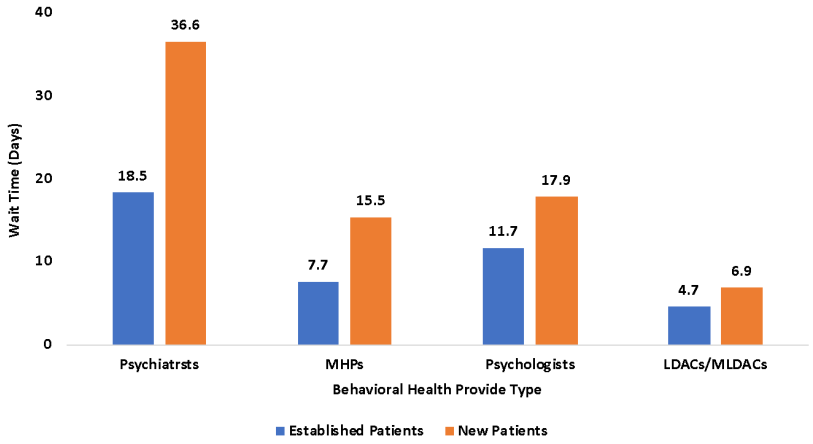


Figure 32. Wait times for established and new patients to see a mental health provider in NH (adapted from SORH, 2021).

Compared to medical primary care providers, behavioral health providers seemed to be less accessible in terms of the number accepting new patients and with regard to the wait time for an appointment. These data align with the HPSA Score findings in Table 3, which clearly highlighted the need to focus on the accessibility of mental health professionals.

Some of the aforementioned findings were reiterated in the report entitled, 'Mental Health Practice in New Hampshire,' which was published by the NH Psychological Association (New

Hampshire Psychological Association's Behavioral Healthcare Advocacy Committee, 2021). This report outlined findings from a survey that was sent to 4,500 "mental health and substance use emails," (email list generated by NH Psychological Association and the NH Mental Health Coalition). The survey solicited 347 voluntary responses. The survey methodology had some limitations: email duplication possible; voluntary nature yields sampling bias; representation of respondents may have been skewed geographically (*i.e.*, only one respondent from the Great North Woods; 66% respondents from South Central/Merrimack Valley); unclear who responded as "other," which accounted for 4.1% of the respondents, though the authors suggested that MLADCs could have been included in this category.

Despite these data collection biases, the findings offered a qualitative aspect (and even a personal, subjective touch), many of which seemed to align with those found in the SORH Report. It is important to consider the breakdown of provider types that responded:

- Licensed clinical social workers (39.9%)
- Clinical psychologists (34.4%)
- Licensed clinical mental health counselors (16.5%)
- Other (4.1%)
- Licensed marriage and family therapists (1.5%)
- LADCs (1.2%)
- Licensed pastoral psychotherapists (<1%)

The following findings were reported:

- Practitioners are aging
    - (22% have been practicing ≥30 years, 18% practicing ≤5 years)
- More child therapists are needed
    - (only 13% offered services to children <4 and 33% to children ages 5-12)
- Telehealth services are leveraged across respondents
    - 64% offered both "in-person" and telehealth
    - 7% offered only "in-person" services
    - 23% offered only telehealth
- Importance of continuing to reimburse for audio-only as well as video telehealth methods, since some clients do not have reliable broadband or internet technology
- Workforce shortage is leading to waitlists
    - 56% respondents had waitlists; 31% had waitlists 2 months or longer

- Thirteen percent (13%) of respondents planned to retire within 2 years and 20% planned to decrease work hours in that time period (only 4% indicated planning to increase work hours or add one or more insurance panels to practice)
- Insurance companies may hinder access to care
    - only 55% are Medicare providers, an issue for a State that is demographically increasing in the number of older adults and how much of the population is made up of older adults
- Twenty-eight percent (28%) have left at least one insurance panel and 30% plan to leave one or more panels within the next year
- Twenty-seven percent (27%) of respondents were not in-network with any form of insurance

An interesting discovery revealed in this report was that **47% of survey respondents indicated they would offer training for students if the licensed supervisor in the practice could bill insurance companies for the trainees' clinical services**. This finding suggests there is potential for workforce development and training, and proposes a mechanism for achieving it.

Finally, the NH Psychological Association's report should be referred to for learning about respondent feedback in terms of their level of satisfaction/dissatisfaction with insurance companies with regard to following five variables: claims processing, customer service/provider relations, reimbursement rates, frequency and/or complexity of audits, and ability to determine whether plan is regulated by NHID or is a self-funded/ERISA plan (New Hampshire Psychological Association's Behavioral Healthcare Advocacy Committee, 2021).

The findings from this survey reinforced underlying themes presented in other national and state assessments: the provider demographic is growing older; workforce shortages are impacting care and are not accommodating the demand for services; and technologies, such as telehealth, should be leveraged and reimbursed by insurance companies to improve access of care.

5.7.2.6 Dental Health as a Primary Care Specialty

While some reports about primary care included dentists, most did not. However, from news articles to *Nature* articles, there has been a call for integrating oral health into primary care (Donoff, 2017; Molayem, 2021).

As indicated earlier, only about 16% of dentists in NH currently accept Medicaid and it has been proposed this number needs to "at least double to truly expand access to dental care" (Timmins, 2022). **Because of the recent bill that passed providing nearly 85,000 on Medicaid with basic dental care benefits, a chief concern now is recruiting enough dental providers to fulfill the projected increase in demand.**

The Needs Assessment considered dentists in its workforce analysis and reported that compared to rural NH, dentist availability was proportionally 15% higher in non-rural NH. Once again, the rural Upper Valley, which had the highest rate of medical physicians and psychiatrists, was an exception, as it also had the highest availability of dentists (84.8 per 100,000 population) (Hernandez et al., 2021). Nonetheless, **licensing data has demonstrated**

that pediatric dentistry has become more available in rural areas in recent years. In 2016, the availability of pediatric dentists in the rural areas was about 60% lower than in non-rural areas; at the time of this report, the difference was only 23%, suggesting the gap is closing.

Section 5.8 - Payment and Spending

Evaluating primary care spending, costs, prices, and payment models in a consistent manner remains challenging in the absence of a standardized definition of what exactly constitutes primary care. Because of the disparate and inconsistent primary care definitions related to spending, the data presented in this section will be accompanied with an explanation of the way in which primary care was defined, often in more way than one. The results from any single study cannot be compared directly to the results produced from other studies, since different definitions and methodologies were employed.

5.8.1 National Analysis of Primary Care Spending

Several recent studies have examined primary care spending across the United States. Two noteworthy studies came from the Patient-Centered Primary Care Collaborative (PCPCC), or the Primary Care Collaborative (PCC). The first analysis was published in 2019 and was believed to be the first report characterizing primary care spending in 29 states across the nation at the state-level. The second version, published in 2020, included a cross-sectional analysis of all 50 states. New Hampshire data was not included in the first analysis. **Each report has demonstrated clinical and economic benefits associated with increased spending on primary care.**

Together with the Robert Graham Center, and support from the Milbank Memorial Fund, the PCPCC published its state-level analysis of primary care spending across 29 states in the United States (Jabbarpour et al., 2019). This study used public and private payer data collected from the 2011-2016 Medical Expenditure Panel Survey (MEPS) and the Agency for Healthcare Research and Quality (AHRQ) to conduct a cross-sectional analysis at the state-level. Unfortunately, NH was not included in this analysis. Nonetheless, some helpful information could be gleaned from the report.

Table 9 describes the definitions for primary care (one narrow and one broad) employed in the PCPCC study, each of which were provider-based. The narrow definition included spending related to primary care physicians in offices and outpatient settings, while the broad definition included all that in the narrow definition as well as other members of the primary clinical team, including nurses, NPs, PAs, OB/GYNs, and behavioral health professionals (psychiatrists, social workers, and psychologists). The exact licensure of the professionals included in the PCPCC study was not specified.

Table 9. Primary care definitions as defined in the 2019 PCPCC study, each definition provider-based (adapted from Jabbarpour et al., 2019).

Definitions - Provider-Based	Description
Narrow Definition	Spending related to primary care physicians in offices and outpatient settings, including: racticing family medicine, general practice, geriatrics, general internal medicine, and general pediatrics.
Broad Definition (favored by PCPCC)	Spending related to primary care physicians in offices and outpatient settings and othe members of the primary care team, including nurses, NPs, PAs, OB/GYNs, and behavioral health professionals (psychiatrists, psychologists, and social workers). Due to limitations of MEPS, excludes homeopaths and naturopaths.

The analysis yielded several findings. First, the study reiterated that there was a lack of agreement about how to measure primary care investment. Second, between 2011 and 2016, spending on primary care as a percentage of overall health care expenditures was low, and the rate varied considerably across states, across payer types, and across age groups. Specifically, the authors reported that **the national average for primary care spending between 2011 and 2016 across public and private payers was 5.6% when applying the narrow definition and 10.2% when using the broad definition.**

The 2019 study examined utilization rates by state in the context of primary care spending. The trends depicted in **Figure 33** demonstrate that **as primary care spending increased, ED visits, hospitalizations, and avoidable hospitalizations decreased** (Jabbarpour et al., 2019).

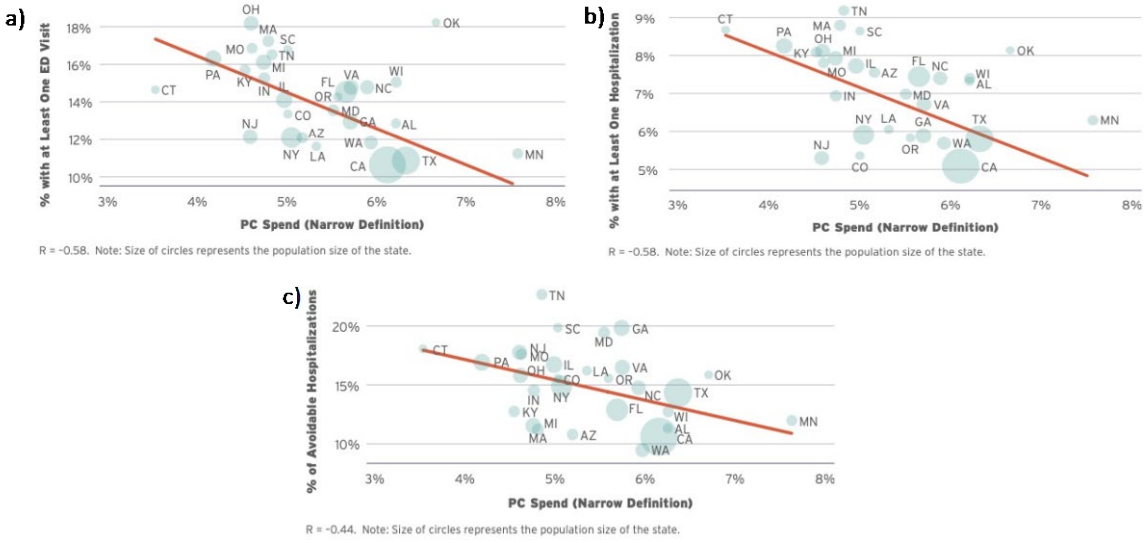


Figure 33. Primary care spending (using the narrow definition) versus percent with at least one ED visit (a), at least one hospitalization (b), or avoidable hospitalizations (c) (adapted from Jabbarpour et al., 2019).

A year after publishing the first known state-level report on primary care spending, the PCC published a similar follow-up report, this time with data from FAIR Health, a non-profit organization that collects and oversees the largest national database of privately billed insurance claims (Kempski & Greiner, 2020). Data from New Hampshire was included in the analysis. The narrow and broad definitions used in the 2020 report are described in **Table 10**. Unlike the earlier report by Jabbapour *et al.,* 2019, the narrow and broad definitions in this report specified services in addition to providers.

Table 10. Primary care definitions as defined in the 2020 PCC study (adapted from Kempski and Greiner, 2020).

Definitions: Provider- and Service- Based	Providers	Services
Narrow Definition	Spending related to services by primary care physicians, specifically family and internal medicine, pediatrics, and general practice physicians, in office and outpatient settings.	Services included evaluation and management visits, preventive visits, care-transition or coordination services, and in-office preventive services, screening, and counseling.
Broad Definition	All of the clinicians, services, and settings in the narrow definition of primary care and adds other members of the primary care clinical team, including the same services in the narrow definition but provided by nurse practitioners (NPs), physician assistants (PAs), geriatricians, adolescent medicine specialists, and gynecologists, and preventive services provided in a broader range of settings.	Same services in the narrow definition and preventive services provided in a broader range of settings.

The 2020 analysis expanded upon the 2019 assessment, in that all 50 states were included with data from the state-level that was age-adjusted and timely. The plans included employer-sponsored, individual, small and large group, and Medicare Advantage plans.

Top-performing states were determined by the percentage of total health care spending that was designated as primary care. Compared to other states, **New Hampshire was identified as "top-performing" using the narrow spend definition of primary care and "medium-performing" using the broad spend definition of primary care.** The average primary care spending as a percentage of total health care spending for the United States was 4.67% and 7.69%, respectively, when the narrow and broad definitions were applied (**Figure 34**). New Hampshire state primary care spending as a percentage of total health care spending and adjusted for age, was 5.11% and 8.99%, respectively, using the narrow and broad definitions. **Compared to the national average using either the narrow or broad definition, NH spent a greater percentage of total health care spending on primary care, but this was under 10% by all methods.**

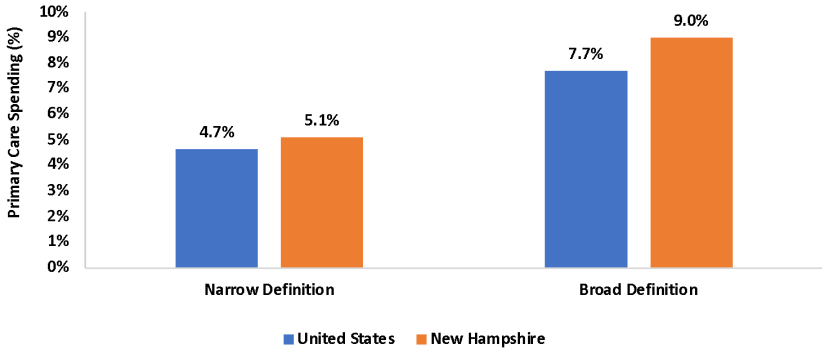


Figure 34. Primary care spending rate (as percentage of total health care spending) in United States on average and NH (adapted from Kempski and Greiner, 2020).

Unlike the 2019 PCC national primary care spending report, the 2020 analysis considered the percent change in primary care spending between 2017 and 2019 (Kempski & Greiner, 2020). On average, the United States reported a negative percent change in primary care spending as a percent of total spending (-0.21 and -0.11, respectively, using the narrow and broad definitions). **Compared to the United States average, New Hampshire, had an even greater**

decline in the percent spending on primary care as a percentage of total health care spending between 2017 and 2019 (-0.65 and -0.72, respectively, using the narrow and broad definitions). New Hampshire was one of 39 states with a decline in the percent of primary care spending as a total of health care spending.

Between 2017 and 2019, there was a declining trend in the percent of primary care spending as a total of health care spending across most (39) states in the United States.

By looking at state-level spending in conjunction with data surrounding utilization (hospitalization, avoidable hospitalizations, and ED visits), the authors could assess the potential value associated with investing in primary care (**Figure 35**).

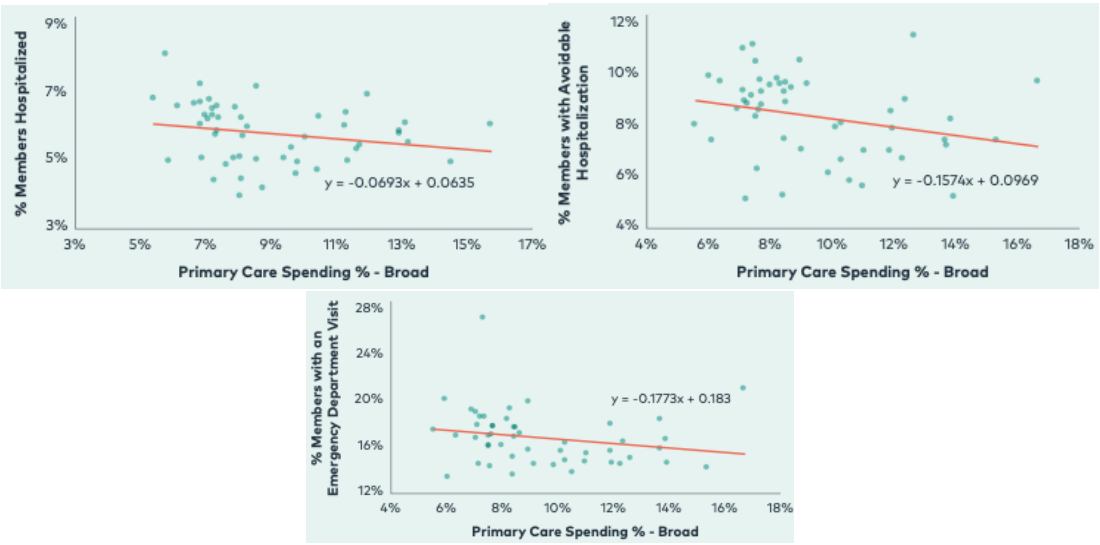


Figure 35. Percentage of members hospitalized, with avoidable hospitalizations, and ED visits versus primary care spending percentage (using broad definition) at the state level (Kempski and Greiner, 2020).

The two national studies describing cross-sectional analyses of primary care spending at the state level reported similar results. An association was found between increased primary care spending (as a percent of total health care spending) and fewer hospitalizations, avoidable hospitalizations and ED visits.

In contrast to the aforementioned findings from the PCC, which suggested that investing in primary care can reduce utilization rates, some research has suggested that a greater investment in primary care is not associated with improved health system performance for complex targets, such as a reduction in preventable hospital admissions (van Gool et al., 2021). However, these authors reported finding modest improvements in breast and cervical cancer screening rates associated with an increased investment in primary care. This review also noted that higher screening rates with the same amount of investment were realized in countries where general practitioners were more aware of health promotion and preventive activities.

Primary care spending rates seem to decline with age. The PCC data supported this, showing that the average primary care spending rate in the United States for those who were 0-5 years old was 16%, which declined steadily to 3.5% for 25- to 34- year-olds, and then stabilized, with only a 3.2% primary care spending rate for 75+ - year-olds. This finding is not surprising, since

older individuals experience more comorbidities and chronic conditions and therefore, become more reliant on specialty providers (Liddy et al., 2016; Soni, 2001).

5.8.2 Primary Care Payment by Payer Type in NH and Surrounding States

The NH Insurance Department (NHID) published the "2021 Final Report of Health Care Premium and Claim Cost Drivers" with Gorman Actuarial, Inc. on October 18, 2022 (Smagula et al., 2022). The report measured primary care spending by asking insurers to report on primary care per member per month (PMPM) by market segment from 2019 through 2021. The definition of primary care was not offered by NHID, but rather, each insurer was asked to provide their definition of primary care. Typically, primary care (as defined by the insurers) was specified by provider type and included providers such as general practitioners, family practice, internal medicine, pediatrics and geriatric medicine. **Figure 36** was produced in the NHID report by Smagula *et al.,* (2022) and depicts primary care allowed claims by PMPM for 2019, 2020, and 2021 in NH. Of the total fully-insured allowed claims, primary care spending was the highest in 2021 (6.0%) and the two-year annualized trend from 2019 to 2021 was 5.2%. Compared to the group markets, the individual markets experienced more variation; however, across all payer types, there was a significant increase in primary care PMPMs from 2020 to 2021. The decreased utilization exhibited in 2020 may be reflective of the COVID-19 pandemic. Of note, the Federal Employees Health Benefits Program (FEHBP) was not included in this dataset.

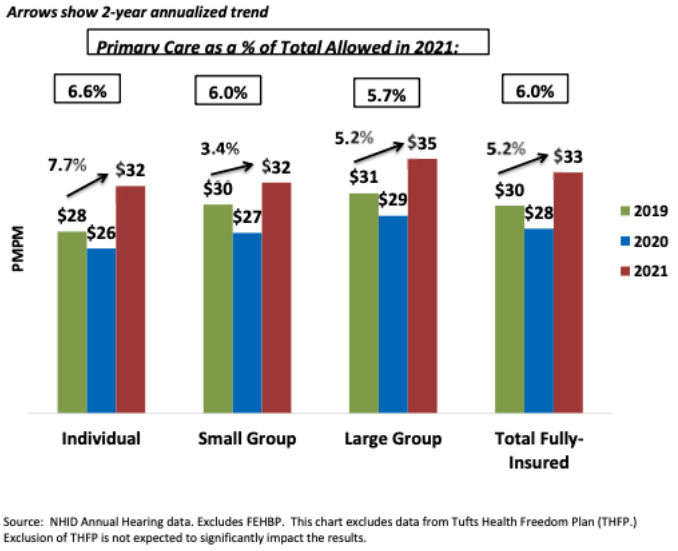


Figure 36. Primary care allowed claims PMPM in New Hampshire by payer (adapted from Smagula et al., 2021).

The non-profit corporation, New England States Consortium Systems Organization (NESCSO), formed a Primary Care Workgroup ("Workgroup") with representatives from each of the six New England states to advance the vision of patient-centered primary care in New England. To this end, the Workgroup leveraged standardized data to evaluate primary care payments as a percentage of total health care expenditures, which were outlined in the New England States' All-Payer Report on Primary Care Payments (New England States Consortium Systems Organization & Onpoint Health Data, 2020). The data in this report were considered in the context of four different definitions for primary care (**Table 11**).

Table 11. Providers and service definitions included in the NESCSO Workgroup study (adapted from the New England States' All-Payer Report on Primary Care Payments, 2020).

Definition	Description
Definition #1 (Defined PCPs, Select Services)	- Selected claims payments for general practice, family medicine, pediatrics, internal medicine, NPs, PAs. - **Excludes OB/GYN services** - Definition #1 is **narrower and service based**
Definition #2 (Defined PCPs, All Services)	- All claims payments for general practice, family medicine, pediatrics, internal medicine, NPs, PAs. - Excludes OB/GYN services - Definition #2 is a broader measure that **does not restrict on service codes**
Definition #3 (OB/GYNs, Selected OB/GYN Services)	- All OB/GYN services payments for OB/GYN practitioners - **Excludes all services provided by PCPs** - Payments reported in Definition #3 can be added to definitions #1 or #2 as desired
Definition #4 (Defined PCPs, Selected OB/GYN Services)	- Selected OB/GYN services payments for general practice, family medicine, pediatrics, internal medicine, nurse practitioner, physician assistant - **Excludes all primary-care services and services provided by OB/GYNs** - Payments reported in Definition #4 can be added to definitions #1 or #2 as desired

Of the four definitions, Definitions #1 and #2 were the focus of the report, likely because when OB/GYN providers or services were added, it impacted the primary care spending as a percent of total health care spending by less than 1%.

Of note, the data generated by this analysis were not adjusted for age, gender, provider reimbursement rates, or other factors that may explain the differences between states within payer types or between payer types.

Across the six New England states, average percent of primary care spending as a total of health care spending across the payer types using Definition #1 ranged from 3.4% for Medicare FFS (lowest) to 8.0% for Medicaid (highest) (**Figure 37**). On average, across the six states and using Definition #1, Medicare Advantage and commercial payer categories spent 5.5% and 6.1% of total health care spending on primary care, respectively. A similar trend was observed when Definition #2 was applied, as the percentage of primary care spending increased from least to most in the following order: Medicare FFS (5.4%), Medicare Advantage (8.4%), Commercial (9.3%), and Medicaid (10.4%) (**Figure 37**).

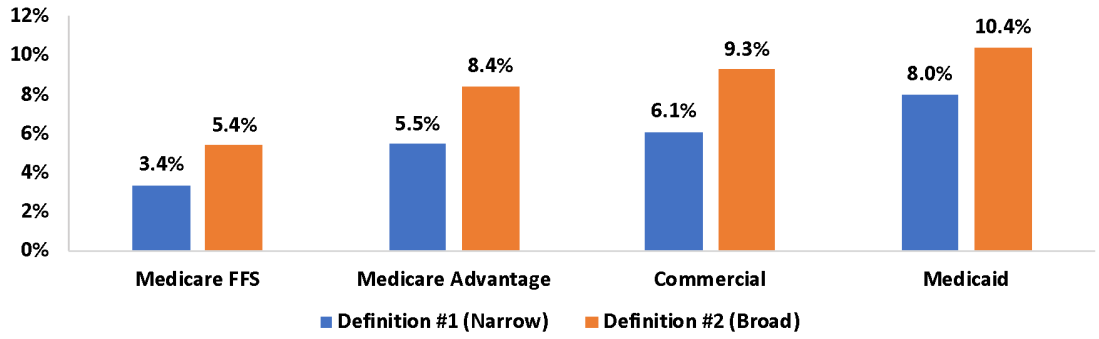


Figure 37. Average primary care spending rate for the six New England states across payer types (adapted from the NESCSO report, 2020).

The NESCSO Workgroup also compared spending by payer type between the states. **Figure 38** depicts the total primary care payments as a percentage of total medical payments (excluding pharmacy) by payer type and by state (New England States Consortium Systems Organization & Onpoint Health Data, 2020).

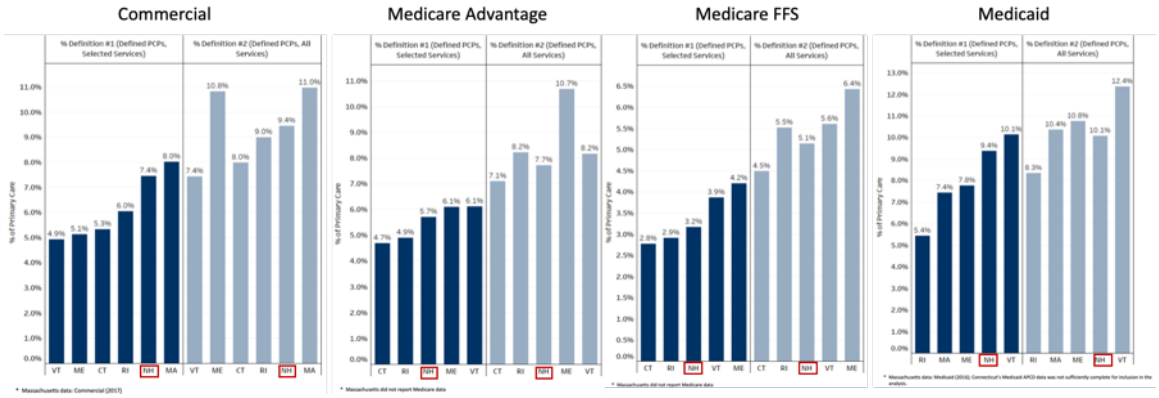


Figure 36. Total primary care payments as a percentage of total medical payments (excluding pharmacy) by payer type and by state and primary care definition (adapted from NESCSO report, 2020). FFS- fee-for-service

The data in **Figure 38** demonstrate that within payer types, there was significant rate variation by state, regardless of the primary care definition applied. **Compared to other New England states, NH ranked either second or third (depending on payer type) in terms of primary care spending as a percentage of total health care spending.**

Using the narrower definition and the broader definition for PCPs, the all-payer combined primary care percentage of total medical payments across all six New England states was 5.5% and 8.2%, respectively. While these values can't be compared directly to the results generated in other reports, the authors noted that these values aligned with similar studies in other states. As indicated earlier in this report, when OB/GYN providers and select OB/GYN services were added to the definition, the estimated primary care services as a percent of the total health care expenditures increased less than 1% (data not shown), suggesting these payments were not too impactful.

Similar to the nationally-based studies by the PCC, NESCSO sought to look at primary care spending and utilization; however, the latter did not use eligibility data to link medical and pharmacy claims, so instead, an overall aggregate PMPM by payer and by age and gender were considered. **The authors reported that payers with higher primary care spending rates had lower PMPM for primary care.** These findings from the NESCSO study complement those presented by the PCC and are shown in **Figure 39**.

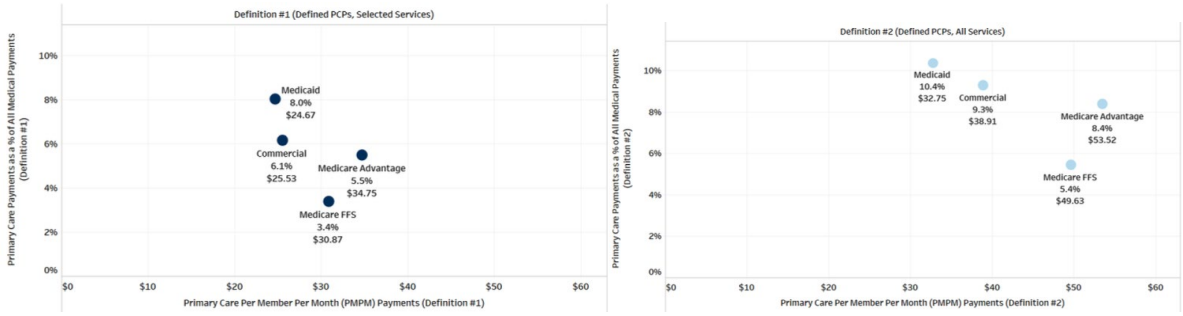


Figure 39. Primary care spending rate versus primary care payments PMPM, averaged across the six states, 2018 (Definition #1, left; Definition#2, right) (from NESCSO report, 2020).

Similar to the 2020 PCC study, the NESCSO also examined primary care expenditures by age, and expanded upon the PCC findings, but also considered gender and payer type. **As was described by Kempski and Greiner (2020), the NESCSO study also demonstrated that primary care spending rates declined with increased age.** Compared to Medicaid, commercial PMPM expenditures for primary care were higher for children, but they were similar for adults. Medicare Advantage primary care spending rates were higher than Medicare FFS rates.

Primary care payments by provider type were examined in the NESCSO study, a factor that was not measured in the PCC studies. Of the primary care expenditures, internal medicine payments were the highest, followed by family medicine, pediatrics, NP, PA and general practice (New England States Consortium Systems Organization & Onpoint Health Data, 2020). **Figure 40** reflects the all-payer highest primary care expenditure provider by specialty across the different states using the narrow definition (Definition #1) and select services (**Table 11**).

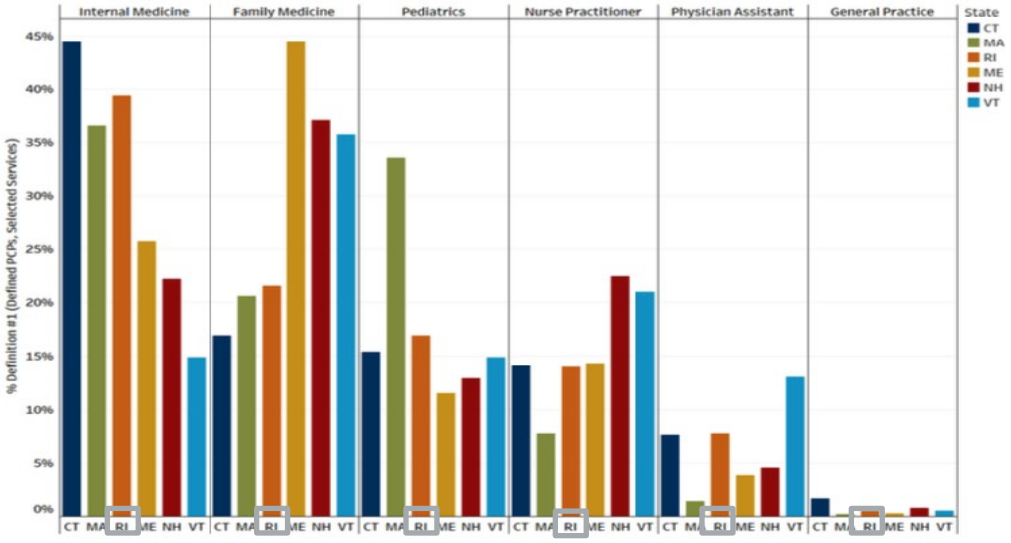


Figure 40. All-payer highest primary care expenditure provider specialty by state, 2018 (NESCSO report, 2020).

Related to other primary care expenditures by provider type in NH, the family medicine specialty had the highest percentage of total primary care payments (**Figure 40**). **Nurse practitioners represented the provider type that had the second-highest payments and, notably, compared to surrounding New England states, NH spent proportionately the most on NP providers** (**Figure 40**). These data align with those generated from the data from the IHPP (Center for Health Analytics, 2022) (**Figures 20 and 21**), which found that family medicine, followed by NPs and internal medicine, were some of the most commonly sought-after providers in NH.

The NESCSO report (2020) also detailed all-payer primary care payments across the six states by services type and highest expenditure service type, each by payer type. Interestingly, unlike the state-level national PCC reports, the NESCSO report considered non-claims payments. Collecting non-claims payments is challenging, since they are not reported to the states' all-payer claims database. To this end, NESCSO worked with consultants from Onpoint Health Data to design a mechanism for collect non-claims payments data using definitions described within the report (New England States Consortium Systems Organization & Onpoint Health Data, 2020). **The NESCSO report indicated that collecting non-claims payments data proved to be significantly challenging. New Hampshire was not able to collect and report on non-claims payment information.**

5.8.3 Prices in New Hampshire

Compared to other New England states, prices relative to Medicare for services at outpatient facilities in NH were third highest, behind Maine (299%) and Vermont (297%) (Whaley et al., 2020). Outpatient facility prices in Connecticut, Massachusetts and Rhode Island were quite a bit lower, at 240%, 192%, and 164%, respectively. The data in **Table 12** were adapted from data derived from the RAND Corporation report entitled, 'Prices Paid to Hospitals by Private Health Plans' (Whaley et al., 2020). In **Table 12**, the data are filtered to list the facilities in descending order from highest outpatient facility prices relative to Medicare to lowest. Interestingly, facility prices do not seem to reflect higher-quality care, as determined by the CMS Star Ratings.

Table 12. New Hampshire facility prices (mean 2016-2018) and quality (2021) (adapted from Whaley, 2020).

Facility	Inpatient Facility	Outpatient Facility	Professional Only	Facility Plus Professional	2021 CMS Star Rating
Parkland Medical Center	360%	517%	259%	402%	3
Portsmouth Regional Hospital	362%	350%	168%	323%	4
Wentworth-Douglass Hospital	303%	336%	166%	296%	5
Mary Hitchcock Memorial Hosp	225%	336%	207%	244%	4
Concord Hospital Inc.	405%	323%	165%	325%	5
Lakes Region General Hospital	523%	310%	153%	389%	4
Frisbie Memorial Hospital	340%	297%	156%	279%	4
Catholic Medical Center	315%	288%	152%	276%	4
Exeter Hospital Inc.	267%	285%	155%	254%	4
Elliot Hospital	230%	284%	157%	240%	4
St. Joseph Hospital	255%	280%	150%	250%	3
Southern NH Medical Center	248%	246%	166%	231%	4
Cheshire Medical Center	166%	212%	205%	200%	2
Franklin Regional Hospital		197%			3
Littleton Regional Healthcare	142%	181%	135%	166%	2
Weeks Medical Center	130%	175%	149%	164%	2
Cottage Hospital		166%			3
Upper Connecticut Valley Hospital		161%			3
Valley Regional Hospital	81%	152%	144%	141%	4
Monadnock Community Hospital		149%			3
Huggins Hospital		127%			4
New London Hospital	115%	121%	141%	122%	3
Androscoggin Valley Hospital		118%			3
Memorial Hospital	84%	103%	155%	105%	2
Alice Peck Day Memorial Hospital		77%			5

Fortunately, although the data were not available for all metrics across the facilities, the outpatient data set was complete, as were the quality ratings by CMS.

Section 5.9 – Challenges and Opportunities

5.9.1 – Challenges in Primary Care in NH

The challenges facing primary care in NH are evident and have been identified not only in state and regional reports and assessment measures, but also in national assessments.

Not unlike other states, **NH has experienced a decline in primary care spending** as a percent of total health care spending in recent years. According to the Needs Assessment from 2021, **many residents in NH (17%) are older** than 65 years of age, a 2% increase over the prior four years. With the aging population, this means potentially more individuals needing health care services and it also means that the **workforce is aging**, with a large proportion in their 7th decade of life.

Moreover, it's clear from the data that rurality plays a role in the health of NH residents, where **individuals living in rural regions are confronted with greater barriers to access to care.** The SDOH are less favorable among rural populations and these individuals are less likely to engage with the health care system. Accessing providers is more of a challenge in rural areas, and wait times are long, particularly for new patients. Finally, while HPSAs are more widespread in rural regions, there are **pockets of health professional shortages**, in both rural and non-rural areas.

5.9.2 – Opportunities in Primary Care in NH

Some of the data reviewed here have suggested that NH has been working to improve primary care. For example, an **increase in pediatric dentists** has been realized in rural areas, the **FQHCs are offering integrated services** across the State, and compared to many states in the nation, NH is investing more in primary care.

Efforts to recruit and retain clinicians continue in NH. Bi-State established its Recruitment Center in 1994, which works with local and national strategic marketing campaigns to bring clinicians in primary care, oral health, mental health, and SUD treatment to the State. In 2021, Bi-State reported that since its inception, the Recruitment Center had worked with 100 different sites and recruited 592 providers to practice in either Vermont or NH (Bi-State Primary Care Association, 2021).

State efforts have been made to create **rules for ensuring adequacy** of the health care system in the context of NH's rural and non-rural regions. State policy and legislation undoubtedly influences the healthcare system statewide. In a presentation from 2014, the NH Insurance Department's Network Adequacy Working Group ("Working Group") presented an objective standard related to access of health care: "Network sufficient to meet the basic access requirement if it meets the standards in the rules" (New Hampshire Insurance Department, 2014). The Working Group compared the approach taken in the NH Statute and Rules those established by the Affordable Care Act (ACA) and noted that many of NH standards were applied retrospectively – rather than prospectively, the latter which is required for initial qualified health plan (QHP) certification. Moreover, the presentation offered insight into the State process for reviewing submissions for QHPs approval, such as considering time and distance to a primary care physician or pharmacy.

Moreover, the NHID presentation specified that health carriers "shall maintain a network that is sufficient in numbers, types, and geographic location of providers to ensure that all services to covered persons will be accessible without unreasonable delay." To balance cost, access, and quality, the Working Group suggested: developing objective standards, encouraging insurance company competition, recognizing consumers have different priorities and preferences, and determining how the health care system is evolving.

At the state level, **policies can play a large role in promoting or hindering the advancement of primary care.** The details of state policies and related impacts are beyond the scope of this review, but examples of policies have been included. Nonetheless, one example that may be particularly pertinent to NH is NPs because of the high use of NPs and their state-determined "scope of practice" (SOP) laws that define legal boundaries and establish practice limitations for these providers to balance safety, access, costs, and competition. Research has demonstrated that **more restrictive SOP laws are associated with adverse effects**, as they limit the capacity of the health care system to meet the needs of its patients (James & Auerbach, 2020). Indeed, other research has found lower spending among individuals with NPs functioning as their primary care physicians (Perloff et al., 2016). According to the Scope of Practice Policy website supported by the HRSA, NH recognizes NPs as primary care providers and authorizes full independent practice and prescribing authority (Health Resources and Services Administration, 2022a). Given the higher proportions of NH residents that engaged with NPs and APRNs in rural NH, it may be worth considering how to further expand and improve access to this type of provider.

5.9.2.1 Information Gaps and Areas for Further Consideration

To wholly embrace potential opportunities for improving statewide primary care, it is crucial to fully understand and interpret the limitations of the current knowledgebase, particularly with regard to NH. The available data assessments – at the state, regional, and national levels – have clearly quantified shortage areas, a reason for concern related to a reduced primary care workforce capacity in the future, and primary care spending shortfalls. Nonetheless, additional quantitative analyses may be helpful. For example, studies that hone-in on primary care utilization rates and encounters by PHR may serve to guide where education in preventive primary care measures could be better established.

New Hampshire has an opportunity to review how other states are working to advance primary care. For example, according to the state-level analysis published by the PCPCC in 2019, eight states – including Maine, Rhode Island, and Vermont – have enacted primary care investment policies (Jabbarpour et al., 2019). The 2020 assessment of primary care spending published by the PCC also identified state innovators, including: Colorado, Massachusetts, Pennsylvania, and Rhode Island (Kempski & Greiner, 2020). This assessment also highlighted the important work of the NESCSO project, and its effort to compare "apples-to-apples" across the six New England states involved.

Moreover, **some critically important *qualitative* questions remain, the answers to which may be employed to drive decision-making around optimizing and targeting efforts unique to NH.** The following questions represent a mere starting-point for discovering the underlying reasons driving primary care shortages in NH:

- Why (*i.e.* retirement, burnout, compensation, etc.) are primary care professionals leaving their profession or leaving the State?
- What could enhance provider commitment to practicing in NH, particularly in HPSAs?
- How could incentives and loan-repayment programs assist in building a committed primary care workforce?
- In what ways could NH reduce provider burnout?
- How can NH increase primary care provider matriculation into the State?
- What service delivery strategies (*i.e.* telehealth) are particularly useful in NH given the vast amount of rural areas?
- In what ways has the increased provider burden and demand impacted patient care?

Another extremely important variable to delivering necessary and sufficient primary care services – and one that did not seem to be represented across state and national assessments – is patient experience. In addition to learning how the patient population feels about (satisfaction) primary care, it is valuable to ascertain experience.

The State Needs Assessment and the SORH Report offered a substantial quantitative foundation for outlining the current primary care landscape with regard to infrastructure and workforce. For further bridging the gaps in our understanding of primary care needs in NH, additional inquiries – both quantitative and qualitative – could be made. **Seeking population-based information through surveys, key stakeholder interviews, and even focus groups,**

may provide a more complete knowledgebase, such that NH can achieve optimal primary care service infrastructure and delivery.

A description of strengths, weaknesses, opportunities, and challenges for primary care as determined by this review are included in the Executive Summary and also in **Appendix A**.

Finally, while determining gaps and opportunities unique to NH is necessary for improving primary care in the State, it is also prudent to identify (inter)nationally-accepted best-practices as they are understood in the context of contemporary primary care practice.

Section 5.10 – Evidence-Based Best Practices for Advanced Primary Care

This section of the review offers a high-level, overview of some recent literature surrounding evidence-based practices in primary care. There is an abundance of literature on the topic of primary care with regard to optimizing this practice. More recently, the health care field is focused on patient-centered and advanced primary care models. Additionally, there is a desire to enhance and standardized the measurement of primary care spending. Herein, the characteristics of patient-centered and advanced primary care will be discussed, as well as payment practices, and spending measurement methodologies.

5.10.1 Patient-Centered, High-Quality Care

The National Academies for Sciences, Engineering, and Medicine (NASEM) published a book called, "Implementing High-Quality Primary Care: Rebuilding the Foundation of Health Care (2021)" (Committee on Implementing High-Quality Primary Care et al., 2021). Herein, the authors defined high-quality primary care as was written in section **2.0 Background** of this report and again here:

> ***"High-quality primary care is the provision of whole-person, integrated, accessible, and equitable health care by interprofessional teams that are accountable for addressing the majority of an individual's health and wellness needs across settings and through sustained relationships with patients, families, and communities."***

The notion that primary care is a 'common good' underscores the value of working toward its optimization, such that it is more accessible, continuous, and coordinated for all.

The Consensus Study Report that highlighted key findings in the NASEM book outlined five implementation objectives for offering accessible high-quality care to all people living in the United States (Committee on Implementing High-Quality Primary Care, 2021). These goals were as follows:

Objective 1. Pay for primary care teams to care for people, not doctors to deliver services. The authors proposed that payers leverage payment models founded on the promotion of high-quality care delivery, rather than those focused on short-term cost savings. To this end, they suggested payers shift from FFS models to hybrid models, and ultimately, to capitated models. Moreover, the issue of payments for primary care could be improved by increased spending toward primary care from the Centers for Medicare and Medicaid Services (CMS), and state payment reform plans.

Objective 2. Ensure that high-quality primary care is available to every individual and family in every community. To this end, the Consensus Study Report made some specific recommendations, such as have payers ask individuals to choose a usual provider and assign non-responding enrollees. If provider cares for uninsured patients, they should assume and document a continued clinical relationship. Other recommended action items for this objective were related to the federal players, such as CMS and how it could aid state Medicaid agencies in implementing and meeting managed care access standards, as well as assess and publish state performance metrics. Additionally, the authors proposed that COVID-era rule revisions and interpretations of Medicaid and Medicare benefits that have promoted aspects of high-quality patient-centered care should be made permanent. Examples of rules worth maintaining, included rules that: promoted integrated team-based care and interdisciplinary care team members; improved access through telehealth; provided parity for non-in-person visits; and eliminated other barriers to care.

Objective 3. Train primary care teams where people live and work. According to the Committee, objective three could be achieved by efforts to expand and diversify the primary care workforce, especially in professional shortage areas (Committee on Implementing High-Quality Primary Care, 2021). And, funding from federal sources should be employed to supplement interprofessional training in community-based health care settings.

Objective 4. Design information technology that serves the patient, family, and the interprofessional care team. This objective called for the Office of the National Coordinator for Health Information Technology (ONC) and CMS to develop electronic health record (EHR) certification standards to: coordinate with primary care functions; be interoperable and accessible to all providers; incorporate user-friendly automated functions that facilitate in decision making; certify that base model EHR technology can meet certification standards with minimal modifying required; and hold health information technology vendors as well as support agencies accountable for failure to meet the standards.

Objective 5. Ensure that high-quality primary care is implemented in the United States. It was suggested in the Consensus Study that this final goal could be addressed with guidance from the formation of a several federal groups and priorities, including: a Secretary's Council on Primary Care at the Department of Health and Human Services, an Office of Primary Care Research at the National Institutes of Health (NIH), and by prioritizing funding for primary care research at the AHRQ. Finally, the NASEM recommended regular collaborations among primary care professional societies and consumer groups (both state and federal) to evaluate the implementation of primary care as defined by the five NASEM objectives.

5.10.2 Advanced Primary Care

The National Alliance of Healthcare Purchaser Coalitions has identified seven attributes that embody “advanced” primary care (National Alliance of Healthcare Purchaser Coalitions, 2020). These characteristics appear throughout the literature and included the following:

- Enhanced access for patients
- More time with patients
- Realigned payment methods
- Organizational and infrastructure backbone
- Disciplined focus on health improvement
- Behavioral health integration
- Referral management

The National Alliance of Healthcare Purchaser Coalitions offered a conceptual map of the advanced primary care model (**Figure 41**).

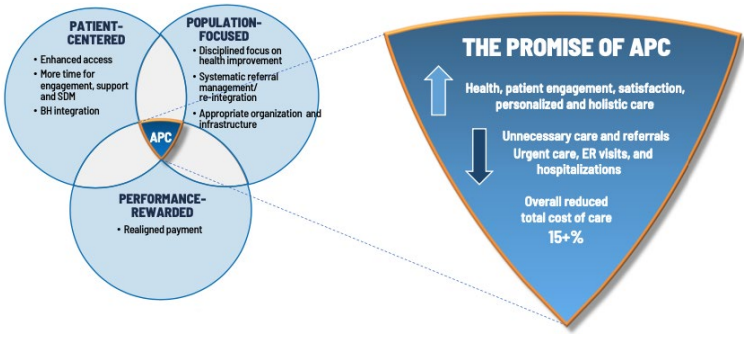


Figure 41. Advanced primary care model (National Alliance of Healthcare Purchaser Coalitions, 2020).

As has been consistent through this literary review, improved access for patients is critically important, as well as revamping the payment structures for primary care. Moreover, focusing on offering quality, value-based care is central to the advanced primary care model.

5.10.2.1 Behavioral Health Integration

One of the attributes listed as part of the advanced primary care model has not been discussed in detail in this report: behavioral health integration, or co-localization. Mental illness accounts for roughly one-third of the world’s disability caused by all adult health conditions, resulting in substantial personal suffering and socioeconomic costs (Lake & Turner, 2017). Prior to the COVID-19 pandemic, nearly 50 million Americans (19.6% of adults) experienced a mental illness. Epidemiological findings have revealed that over 50% of the general population will experience at least one mental disorder in their lifetime (Kessler et al., 2007), with roughly one in five Americans experiencing a mental health disorder in a given year (Substance Abuse and Mental Health Services Administration, 2019).

Therefore, offering behavioral health services (which encompasses services for mental health and SUDs) in conjunction with primary care services may improve accessibility of these services and also reduce health care disparities, particularly across different socioeconomic groups. Indeed, there "should be no wrong door" for individuals with more serious behavioral health disorders who are comfortable with their behavioral health care center as their health home.

Integrating behavioral health into the primary care setting may ultimately reduce the costs individuals with a behavioral health diagnosis spend on medical/physical services. Research has demonstrated that individuals with either mental health or SUDs condition spend more on physical/medical health care costs. For example, a Milliman report examined the total healthcare costs for all individuals, and separately for high-cost patients, in the context of behavioral health diagnoses including mental health and SUDs (Davenport et al., 2020). The study found that individuals with a behavioral health diagnosis, which accounted for only 27.3% of the total population, spent 56.5% of the total health care costs, the majority of which was spent on physical/medical care. The average annual medical/surgical treatment costs for those with a mental health and SUD diagnosis were 6.2 times higher than for those without a behavioral health diagnosis. Thus, assessing for behavioral health conditions in the primary care setting, could allow for identifying and addressing these matters earlier.

5.10.3 Aligning Patient-Centered and Advanced Care Models

According to the PC-PCC and the Robert Graham Center (2018), there are two prominent models that have sought to transform care delivery and payment for achieving more value-based quality primary care: patient-centered medical homes (PCMHs) and the Accountable Care Organization (ACO). The PC-PCC Evidence Report sought to examine the interaction between these two models and stated that "A strong foundation of advanced primary care as embodied in the PCMH is critical to the success of care delivery reforms" (Patient-Centered Primary Care Collaborative and Robert Graham Center, 2018). Using qualitative and quantitative analyses, the PC-PCC report found that **Medicare ACOs with a greater proportion of PCMH primary care providers were more apt to realize savings and that the physicians providing services within this setting context exhibited higher quality scores using a number of process and outcome metrics.**

When these two models work in concert, care is enhanced through better integration and coordination. The clinical teams focus on proactive care in the context of the population's needs, rather than reactive, visit-based care. Importantly, the authors called for additional research into whether their findings would apply when assessing commercial ACOs and other advanced primary care quality measures.

On June 8, 2023, the CMS announced a new primary care model, called the "Making Care Primary (MCP) Model," which is voluntary and will be tested in eight states, including New York and Massachusetts (Centers for Medicare and Medicaid Services, 2023). This accountable care model aims to "improve care management and care coordination, equip primary care clinicians with the tools to form partnerships with health care specialists, and leverage community-based connections to address patients' health needs as well as their health-related social needs (HRSNs) such as housing and nutrition." The MCP Model is a 10.5-year, multi-payer model with three tracks, each expanding upon prior primary care models, including the Comprehensive

Primary Care (CPC), and Primary Care First (PCF) model, and the Maryland Primary Care Program.

The MCP Model plans to bolster primary care by facilitating the delivery of advanced primary care services with a focus on high-quality, whole-person care. Therefore, it appears that the MCP model strives to integrate the advanced primary care model and the patient-centered care model.

According to CMS, its Innovation Center will use the MCP to increase the investment in primary care. To this end, the website suggested that the model will offer primary care clinicians enhanced model payments, tools, and supports to improve the health outcomes for patients, as well as resources to optimize care coordination with specialists. Moreover, the model will support better care integration, such that physical and behavioral health needs are addressed seamlessly and community networks are leveraged to minimize health inequities. The model focuses on meeting health goals and needs, through three main domains: care management, care integration, and community connection. Using a three-track approach, the MCP seeks to meet participants "where they are at," recognizing there will be varying experience in value-based care programs, ranging from under-resourced care participants to those with advanced primary care experience in alternative payment models. This offers flexibility and allows organizations to opt for the participation track that best aligns with their experience towards accountable care. The three tracks are as follows: 1) building infrastructure; 2) implementing advanced primary care; 3) optimizing care and partnerships. These are described in greater detail on the CMS website (Centers for Medicare and Medicaid Services, 2023).

5.10.4 Optimizing Primary Care Payment Models

As was indicated by the NASEM, the United States should work toward implementing a patient-centered, high-quality primary care delivery system. The health care field is aware that fee-for-service payment models – which are commonplace across primary care in the United States – conflict with achieving accessible, patient-centered, high-quality care (Primary Care Payment Models (PCPM) Work Group of the Health Care Payment Learning & Action Network, 2017; Taylor et al., 2020).

The Milbank Memorial Fund published a report in 2020 entitled, 'Prospective Payment for Primary Care: Lessons for Future Models' (Taylor et al., 2020). This report proposed that the current, widespread, FFS method of reimbursement is not working, as it requires primary care practices to increase office visits / volume of patients to ensure revenue. Indeed, the onset of the COVID-19 pandemic resulted in significant office visit reductions and this left many primary care practices without their main source of revenue, resulting in furloughs and even temporary office closures (Basu et al., 2020). In turn, the office closures caused substantial disruptions in access to care when some may have needed it even more, due to the pandemic.

The authors of the Milbank Memorial Fund report explained that although using a prospective payment arrangement for primary care is not new – California, for example, has been using primary care per-patient payments prospectively for decades – that the model is largely underutilized (Taylor et al., 2020). The authors proposed that these prospective payment models, in which primary care practices are prepaid a fixed amount for each patient for a set of covered services over a specific time period are budget-based and therefore, do not require volume of visits, like the fee-for-service model. The report continues to consider attribution, risk

adjustment, and quality performance incentives. Implementation of prospective payment model considerations and risk mitigation are also discussed.

5.10.5 Optimizing the Measurement of Primary Care Spending and Impact

Evidence to support investing in primary care remains limited by the variety of definitions of primary care that exist at this stage in measuring these parameters, as well as a scarcity of standardized methods for calculating primary care spending. Nonetheless, assessing primary care spending and its impact is of great importance, particularly if the evaluation could be utilized broadly, considering different definitions of primary care. Together, Baillieu from the Robert Graham Center for Policy Studies in Family Medicine and Primary Care and colleagues from all over the globe, proposed a systems approach for measuring investment in primary care (Baillieu et al., 2019). The primary care spend model they outlined (**Figure 42**) is characterized by a tiered system that specifies different definitions of primary care, including: overall spending on primary care services, spending on services delivered by primary care professionals, and spending delivered by providers that reflects one of the '4Cs' – first contact, continuous, comprehensive, and coordinated care, first developed by Starfield (Starfield, 1994).

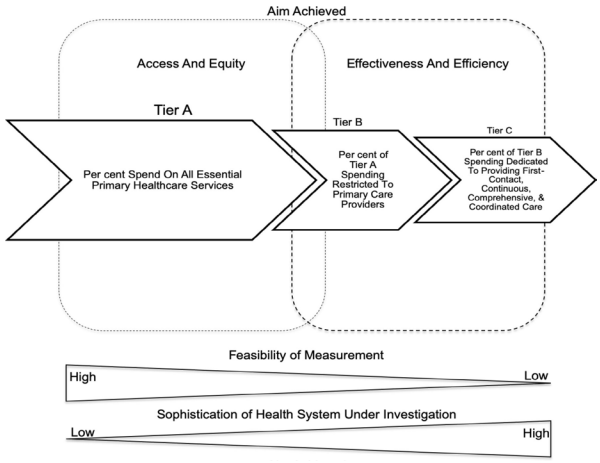


Figure 42. Primary care spend model proposed by Baillieu and colleagues (Baillieu et al., 2019).

Using this system, the authors propose that primary care spending may be measured internationally and across different economic situations. The tiers are described in **Table 13**, starting with Tier A, which is the percentage of money spent on providing essential community and primary care functions to Tier B, which represents the proportion of primary care spending dedicated to the delivery of primary care services provided by ambulatory care givers and Tier C, which includes those providers that embrace and offer Starfield's 4Cs of primary care.

Table 13. The elements of the Primary Care Spend Model proposed by Baillieu *et al.* (2019).

Tier A – Primary Care Functions	Percentage of total health spending on all essential, undifferentiated primary care services that occur at the community level. This may include all public health spending and primary care activities provided to a community by primary healthcare providers, public health officials and community health workers. Activities in this category include: Health promotion and prevention; Diagnosis, treatment, cure and rehabilitation services; Care of acute illness, chronic illness and disability; Palliative care; and the provision of community health programmes.
Tier B – Primary Care Providers	Percentage of total health spending on activities undertaken by primary care providers, and includes the activities of family physicians and general practitioners, primary care nurses, community-based physician assistants and community-based nurse practitioners.
Tier C – Gold Standard Care Delivered in a Manner Consistent with The 4Cs (First-Contact, Continuous, Comprehensive, And Coordinated Care)	Percentage of total health spending on those services by primary care providers who are delivering care according to "Starfield's 4Cs".

The authors concluded that this primary care spend model is versatile and allows for complex comparisons, considers primary care as a factor that impacts the larger health care system, and appreciates different funding mechanisms (Baillieu et al., 2019).

Section 6.0 – Conclusions

For a majority of Americans, the primary care setting is the first point of contact with the health care system. Thus, primary care plays an important role in American health. It's evident from studies in the literature that investing in the primary care system yields improved clinical outcomes, enhanced management of population health, and potentially reduced care costs. Nonetheless, primary care spending remains low relative to total health care spending.

To optimize primary care service delivery and spending, it is necessary to first define primary care. At all levels -- state, regional, and national – there is a desire to standardize the definition for primary care, such that evaluating and measuring aspects of primary care are consistent and the findings are comparable.

In NH, primary care remains an issue of importance, as state-level assessments and reports continue to shed light on the current infrastructure, workforce, and spending and payment practices. The State assessments of primary care seem to offer consistent findings and present similar underlying trends, particularly based on primary care needs in the context of rurality.

By leveraging evidence-supported primary care delivery, spending, and payment practices, as they are published in the literature, NH can continue to improve its primary care system by focusing on the implementation of patient-centered, advanced primary care models.

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Section 8.0 - Appendices

Appendix A. Strengths, Weaknesses, Opportunities, and Challenges for Primary Care in NH

STRENGTHS	WEAKNESSES
• Compared to other states in the United States, NH ranks 12th for number of primary care physicians per capita. • Smaller providers, such as FQHCs are realizing increased utilization in primary care services. • APRNs have independent practice authority in NH • NPs are being leveraged, proportionally even more so in rural areas • Primary care services pivoted rapidly to using telehealth mechanisms for delivering care during the pandemic and this was received favorably by patients and providers • Nursing schools have high enrollment rates	• Many in workforce reaching retirement age, particularly physicians and psychiatrists • Workforce shortage is projected • Matriculation rates low • Pockets of primary care shortages across the State, in both rural and non-rural areas • Compared to United States averages, NH CAHs have "razor-thin" margins, despite federal assistance • Closure of nine maternity wards in rural areas • Dental (and mental) health shortages are pressing

OPPORTUNITIES	CHALLENGES
• Increase primary care spending by redirecting health care expenditures with focus on Health Professional Shortage Areas (HPSAs) • Promote policy that enables the delivery of primary care services using telehealth strategies • Bolster telehealth strategies to reach HPSAs • Loan repayment programs to incentivize all primary care prescribing physicians • Increase understanding of the repayment programs run by the DHHS in NH • Policies/education to facilitate preventive screenings and ensure coverage • Seek provider & patient input across different subpopulations in the State to more thoroughly understand gaps and to inform strategies for closing these gaps • Conduct population-based surveys to identify provider needs and patient experiences • Identify what may incentivize matriculation into positions within NH • Through provider inquiry, determine strategies that would entice providers to work in HPSAs • Continue to leverage all-payer claims database for modeling and to inform health care policy and practice	• No public matriculation from DO- or MD-granting schools • Recruitment of workforce (may have been easier during pandemic) of out-of-state providers • People experiencing poverty have more difficulty with access, which is compounded by the distance to care in rural regions of the State • Population in NH is made up of more older adults, who may require more care than in other parts of the country • Lowest Medicare reimbursement rate in the nation (49% the national median) • Little to no documentation found assessing the qualitative reasons for workforce departures, patient experience, out-migration, etc. • Only MD-granting school in the State yields an average of six primary care physicians

Appendix B. Definitions and Key Findings of Assessments

Perspective	Organization	Title Report (Year Published)	Definition Primary Care	Key Primary Care Findings Reported *
National	Association of American Medical Colleges (AAMC)	State Physician Workforce Data Report, 2021 (2022)	Physicians and residents (MDs or DOs) were counted as primary care physicians if their self-designated primary specialty was one of the following: adolescent medicine (pediatrics), family medicine, general practice, geriatric medicine (family practice), geriatric medicine (internal medicine), internal medicine, internal medicine/pediatrics, or pediatrics.	* In 2020, there were 286.5 active physicians per 100,000 population in the United States, ranging from a high of 466.0 in Massachusetts to a low of 196.1 in Idaho. The states with the highest number of physicians per 100,000 population are concentrated in the Northeast. * There were 94.4 active primary care physicians per 100,000 population in the United States in 2020. Vermont, highest (140.1 per 100,000). Utah, lowest (67.0 per 100,000). * In 2020, 36.7% of active physicians in the United States were female. * More than one-third (33.7%) of active physicians in the United States were age 60 or older in 2020, although this varied by state. Maine, highest percentage (39.3%). Utah, lowest percentage (28.3%).
	Patient-Centered Primary Care Collaborative (PCPCC)	Investing in Primary Care: A State-Level Analysis (2019)	Narrow: Spending related to primary care physicians in offices and outpatient settings. Broad: Spending related to primary care physicians in offices and outpatient settings and other members of the primary care team, including nurses, NPs, PAs, OB/GYNs, and behavioral health professionals (psychiatrists, psychologists, and social workers).	* There is a lack of agreement about how to measure primary care investment. * Between 2011 and 2016, spending on primary care as a percentage of overall health care expenditures was low. It varied considerably across states, across payer types, and across age groups. * New Hampshire was not included in this analysis. * The national average for primary care spend across public and private payers was 5.6% using a narrow definition, as compared to 10.2% using a broad definition. * An association was found between increased primary care spend and fewer emergency department visits, total hospitalizations, and hospitalizations for ambulatory care-sensitive conditions. * Minnesota had the highest percentage of primary care investment using both narrow and broad definitions, and performed well with respect to patient outcomes. Connecticut had the lowest primary care spend using the narrow definition. Using the broad definition, New Jersey's primary care spend was lowest.
	Primary Care Collaborative (PCC)	Primary Care Spending: High Stakes, Low Investment (2020)	Narrow: Spending related to services provided by primary care physicians, specifically family and internal medicine, pediatrics, and general practice physicians, in office and outpatient settings. Services include evaluation and management visits, preventive visits, care-transition or coordination services, and in-office preventive services, screening, and counseling. Broad: Spending related for all of the clinicians, services, and settings in the narrow definition of primary care and/or other members of the primary care clinical team, including the same services in the narrow definition but provided by nurse practitioners (NPs), physician assistants (PAs), geriatricians, adolescent medicine specialists, and gynecologists, and preventive services provided in a broader range of settings.	* Primary care spending percentage across states varied from a low of 3.14% in Kentucky to a high of 9.48% in Michigan in 2019 using a narrow definition of primary care providers and services, and from a low of 5.57% in Pennsylvania to a high of 16.64% in Mississippi using a broad definition of primary care spending. * Negative trend in primary care spending was observed across 39 of the 50 states between 2017 and 2019, a trend that has been found in other assessments. * Per capita health care spending declined by 2.48% between 217 and 2019, but per capita primary care spending declined more (3.78%).
Regional	New England States Consortium Systems Organization (NESCSO)	The New England States' All-Payer Report on Primary Care Payments (2020)	* Definition #1 (Defined PCPs, Select Services): - Selected claims payments for general practice, family medicine, pediatrics, internal medicine, NPs, PAs. - Excludes OB/GYN services - Definition #1 is narrower and service based * Definition #2 (Defined PCPs, All Services): All claims payments for general practice, family medicine, pediatrics, internal medicine, NPs, PAs. - Excludes OB/GYN services - Definition #2 is a broader measure that does not restrict on service codes * Definition #3 (OB/GYNs, Selected OB/GYN Services): - All OB/GYN services payments for OB/GYN practitioners - Excludes all services provided by PCPs - Payments reported in Definition #3 can be added to definitions #1 or #2 as desired * Definition #4 (Defined PCPs, Selected OB/GYN Services): - Selected OB/GYN services payments for general practice, family medicine, pediatrics, internal medicine, nurse practitioner, physician assistant - Excludes all primary-care services and services provided by OB/GYNs - Payments reported in Definition #4 can be added to definitions #1 or #2 as desired	* Average primary care spending as a percentage of total medical payments across six New England states and across payment types was 5.5% using the narrower definition (#1) and 8.2% using the broader definition (#2). * Additional investigation is necessary for determining how to measure primary care payments as a percentage of total payments and the per member per month for primary care. * Primary care payments varied across states and more work is required to better understand how relative payments (i.e., percent of total cost of care, primary care PMPM) correlate with population-level outcomes (i.e., health status indicators, rates of recommended care, rates low-value care, avoidable acute care, and growth in payments). * Policy Recommendations from this report included: - Standardize an approach to collecting data related to non-claims payments. - Standardize a more consistent approach to reporting on Medicaid services and payments. - Standardize an approach that incorporates both the percentage of total cost of care and per member per month (PMPM) payments going to primary care * Technical Recommendations from this report included: - Develop a standardized approach to evaluating the association between primary care payments and performance outcomes. - Develop a plan to track and collect payment information in regard to "remote care management." - Standardize an approach to incorporating pharmacy expenditures in total healthcare expenditures. - Measure the impacts of COVID-19 on primary care payments, total healthcare expenditures, and other outcome measures. - Plan to evaluate the broader Definition #2 (Defined PCPs, All Services) of primary care used in the current study.
State	Rural Health and Primary Care Section Bureau of Public Health Systems, Policy, and Performance Division of Public Health Services Department of Health and Human Services	Annual Report on the Health Status of Rural Residents and Health Workforce Data Collection (2021)	No specific definition of primary care offered. The following indicators were considered and measured: - NH demographic data - Barriers to care - Workforce - Substance use and mental health - Maternal health - Preventive Care - Health Outcomes Medical Health Providers: Physicians, APRNs, PAs Behavioral Health Providers: LADCs/MLADCs, MHPs, Psychiatrists	* Rural residents were more likely to be older, disabled, low income, uninsured, and veterans than non-rural residents * Rates of inpatient admissions that could have been avoided with proper access to primary care were higher in non-rural areas, particularly in Greater Manchester * Rural Winnipesaukee and non-rural Greater Manchester have particularly high rates of alcohol and drug-related admissions and ED visits * Suicide rates are higher in rural NH, but increased minimally (3%) in rural regions, while a 12% increase (15.4 to 17.2 per 100,000) was observed in non-rural NH; self-inflicted harm rates based on ED visits were higher in rural NH * Medical practice in rural NH is limited; with exception of the Upper Valley, which is home to Dartmouth Health * A significant proportion of NH physicians and psychiatrists are older than 60 years of age * A high proportion of each provider type is accepting new patients, but wait times range from < 15 to 36 days, depending on the provider type * Data on providers will be expanded to include dentists starting in 2022
	Rural Health & Primary Care Division of Public Health Services New Hampshire Department of Health and Human Services	Primary Care Needs Assessment (2021)	No specific definition of primary care offered. Data presented for physicians, dentists, pediatric dentists, and psychiatrists. Services considered: - Substance use and mental health - Maternal health - Preventive Care - Health Outcomes	* Considerable disparities exist between rural and non-rural regions of NH * Rural regions have higher rates of death, disability, low income residents, uninsured residents, late-stage cancers, suicide, and prenatal smoking * Rural NH more likely to be medically underserved compared to non-rural NH * Presence of Dartmouth Health (formerly DHMC) in the Upper Valley skews results, masking lack of physicians in other rural areas of NH * Fourteen RHCs, with needs including: billing and coding, cost reports, workforce recruitment and retention, use of registries, and health data on SDOH * Limited English is concentrated in non-rural regions of NH (mostly Manchester and Nashua) * Non-rural residents more likely to have acute alcohol and drug use related ED visits and inpatient admissions * Non-rural residents more likely admitted to hospital for preventable medical complications
	Bi-State Primary Care Association	New Hampshire Primary Care Sourcebook (2021)	No specific definition of primary care offered Examined data surrounding member facilities and utilization rates Considered primary care in the context of COVID	* Focus of organization is to ensure that all individuals in NH have access to affordable and high-quality primary medical, mental health, substance use, and oral health care, regardless of insurance status or ability to pay. * Public policy priorities focus on stabilizing the State's public health and safety-net system while increasing access to integrated health care services * Bistate has 14 Community Health Centers in NH, served nearly 120k residents at 57 locations in 2019. * Demand for FQHC services have increased in NH * FQHCs have improved access to oral care by integrating oral health into primary care services. * Clinical quality outcomes from FQHCs in NH exceed national averages. * Funding is largely federal, Medicaid and Medicare reimbursement are prospective and no payer reimburses FQHCs for full cost of providing services * Workforce recruitment is another focus of Bi-State, recruiting over 592 providers since its inception in 1994.

*** When possible, the key findings presented here use the exact verbiage presented in the literature.**

Appendix C. Acronyms

AAMC – Association of American Medical Colleges

ACA – Affordable Care Act

AHRQ – Agency for Healthcare Research and Quality

APRNs – Advanced Practice Registered Nurses

CAHs – Critical Access Hospitals

CHCs – Community Health Centers

CMS – Centers for Medicaid and Medicare Services

DHHS – Department of Health and Human Services

DPHS – Division of Public Health Services

DPHS – Division of Public Health Services

ED – Emergency Department

FPL – Federal Poverty Level

FQHCs – Federally Qualified Health Centers

FTE – Full-Time-Equivalent

HPSA – Health Professional Shortage Area

HRSA – Health Resources and Services Administration

IHPP - Institute for Health Policy and Practice

MEPs – Medical Expenditure Panel Survey

NASEM - National Academies of Sciences, Engineering, and Medicine

NESCSO - New England States Consortium Systems Organization

NH – New Hampshire

NPs – Nurse Practitioners

OB/GYN – Obstetrics/Gynecology

PAs – Physician Assistants

PC-PCC – Patient-Centered Primary Care Collaborative

PCC – Primary Care Collaborative

PCMHs – Patient-Centered Medical Homes

PHRs – Public Health Regions

PMPM – Per Member Per Month

PPS – Prospective Payment System

QHP – Qualified Health Plan

RHCs – Rural Health Clinics

RHIhub – Rural Health Information Hub

RHPC – Rural Health Primary Care

RNs – Registered Nurses

SDOH – Social Determinants of Health

SORH – State Office of Rural Health

SUDs – Substance Use Disorders

USNH - University System of New Hampshire