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COVID-19 & RURAL HEALTH EQUITY IN NORTHERN NEW ENGLAND

Phase I Research Report

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HERE
HEALTH EQUITY
& RURAL EMPOWERMENT

TABLE OF CONTENTS

EXECUTIVE SUMMARY

INTRODUCTION

When public health experts predicted a surge of COVID-19 cases across Northern New England, some expected that even a small number of cases could overwhelm rural healthcare infrastructure and that the pandemic would write the final chapter for the region's rural communities. Rural communities are on average older and in poorer health than their urban counterparts, and many rural communities have significant underlying social vulnerabilities. In both New Hampshire and Vermont, cases have overwhelmingly clustered in older populations living in congregate facilities. Rural hospitals have struggled to stay open amid dwindling populations and financial pressure; many hospitals have shuttered their doors, leaving vast areas without access to emergency and maternal healthcare. Adding to concern, the region is a popular refuge and locale for seasonal homes for those living in New York and Boston metropolitan areas, placing Northern New England at risk for overflow and resurgence.

The COVID-19 pandemic has highlighted significant issues of equity that shape vulnerability to infection, poor outcomes, and broader impacts on health and well-being. Recognizing underlying rural inequities that may exacerbate the threats of the pandemic and the need to document and address emergent challenges, this research aims to understand the impacts of the COVID-19 pandemic on health equity in rural Northern New England. Launched in March 2020, the objectives of this research are twofold: (1) to describe the immediate impacts of the pandemic on rural health systems and communities in New Hampshire and Vermont; (2) and to identify longer-term concerns and opportunities for advancing rural health equity.

Oriented by the lens of health equity, this research underscores that health is about much more than the prevalence of disease or the biomedical treatment of disease. Following this approach, health equity involves a broader perspective that encompasses medical *and* social determinants of health, such as poverty, discrimination, education, transportation, housing, and access to healthcare. This research seeks to situate the COVID-19 pandemic within a broader context to explore its impacts on the region's most vulnerable populations and responses to protect these populations.

The first phase of research consisted of 50 qualitative interviews conducted with key informants from health systems, social service organizations, public health entities, mutual aid groups, and town and city/governments from across Vermont and New Hampshire. The research focused on four geographic areas that included the Upper Valley, the Greater Sullivan/Windsor County area, the Northeast Kingdom (NEK) of Vermont, and the North Country of New Hampshire. Additional interviews were conducted with representatives of state and regional organizations as well as some organizations outside of these focus areas. The second phase of research examining the next period of pandemic response will begin in June 2020.

KEY FINDINGS

Vermont and New Hampshire have registered very low numbers of COVID-19 cases thus far despite bordering two states with the largest outbreaks.

This study has revealed significant strengths within health systems, social service organizations, and communities across both states that contributed to low rates of infection, facilitated a robust health system response by rural institutions, and mitigated the worst impacts of the pandemic on the region's most vulnerable populations. Importantly, this study demonstrates that poor outcomes for vulnerable populations are not inevitable: small, resource-constrained rural institutions were able to mobilize public health and health systems responses that prioritized vulnerable populations.

Despite the low case numbers, the pandemic has had significant financial and operational impacts on healthcare organizations. This study highlights the urgent need for strategic support to temper the devastating financial and social impacts of the crisis. Left unsupported, the pandemic threatens the stability of already fiscally stressed rural health systems and communities. The pandemic also threatens to deepen rural poverty and decimate smaller institutions. Strategic investments are necessary to mitigate the broader impacts on well-being and position rural communities to leverage new opportunities for rural renewal.

The primary findings of this research are described in five sections: pandemic response, protection of vulnerable populations, rural health systems impacts, telehealth as a tool for health equity, and broader impacts on rural health and well-being. Key findings are as follows:

1. Pandemic Response:

Rural healthcare organizations with limited hospital and minimal ICU beds prior to the pandemic rapidly responded to create critical care capacity and mount an effective public health response. A high level of integration of health systems, social service organizations, and communities facilitated effective local and regional responses. Key challenges emerged around the rural health workforce and access to PPE and diagnostics. Ensuring adequate protection and support for healthcare workers and first responders, including childcare, represents a key priority for the next phase of the response. Rural healthcare institutions have significant experience and capacity in performing many of the functions involved in contact tracing, including case finding and providing social support to persons in quarantine and isolation, and may play a vital role in the next phase of the public health response.

2. Vulnerable Patients and Populations:

Across the region, there was a robust integrated response by health systems, social service organizations, and communities to protect medically and socially vulnerable populations. There were significant efforts to identify and engage with isolated elders, individuals with chronic illness, homeless populations, and individuals with behavioral health challenges. Existing partnerships and investment by health systems facilitated effective, coordinated responses to mitigate the impacts on vulnerable populations. Despite the protection afforded by these collaborative efforts to mitigate the impact of the virus on vulnerable populations, the region as a whole remains susceptible to SARS-CoV-2 infection, and medically and socially vulnerable individuals remain at risk. Looking ahead, rural leaders expressed concern over sustaining efforts to protect and engage vulnerable populations, especially as the region reopens, as well as secondary health impacts of the pandemic. Enabling access to resources and funding to institutionalize these supports is a key priority for ensuring continued protection of vulnerable populations.

3. Telehealth as a Tool for Health Equity:

Telehealth's rapid expansion during the early pandemic response demonstrated its potential as a promising tool for advancing health equity in rural environments. Telehealth was especially effective in reducing geographical barriers to care and increasing the utilization of behavioral services. Telehealth may be less effective for in-person care for some vulnerable populations, including persons in the early stages of substance use recovery, patients with severe mental illness, and socially vulnerable patients. Limited broadband coverage represents a barrier to accessing telehealth in remote, rural regions. Twenty-three percent of Vermonters lack broadband coverage, and about half of Northeast Kingdom residents have access to high-speed internet.[i] In some areas of the North Country of NH, around 20 percent of the population lacks access to the internet (Figure 3 [ii]). In these contexts, achieving parity in reimbursement for a full range of telehealth modalities represents a key policy priority. Also, organizations serving populations across the bi-state region emphasized the need to extend licensing waivers to enable the delivery of telehealth across the NH/VT border beyond the pandemic period.

4. Health Systems Impacts:

Many healthcare organizations entered the pandemic with significant fiscal challenges, and the pandemic has had major economic impacts across the sector. Federal and state assistance blunted the immediate financial impacts on many hospitals and health centers; however, even those on solid financial footing at the onset of the pandemic may not have the reserves to withstand a prolonged period of depressed revenues. Many health systems leaders worry about the stability of rural healthcare organizations and the health and economic impacts on communities. With critical access hospitals and community health centers forming the backbone of rural healthcare delivery, prioritizing support for these rural institutions is crucial for maintaining access to healthcare for residents of remote, rural regions.

5. Broader Impacts on Health and Well-being:
The pandemic has profoundly impacted communities across the region. As elsewhere in the US, unemployment has spiked in Vermont and New Hampshire from low pre-pandemic rates.[iii] The pandemic has highlighted underlying vulnerabilities within rural communities. Yet amid concerns about dramatic unemployment, rising food insecurity, substance use, mental health challenges, and economic dislocation, rural leaders have highlighted new opportunities to fortify efforts to address longstanding challenges, and the pandemic has revealed the resilience and resourcefulness within communities. The transition of many sectors of the economy to remote work, combined with growing migration out of cities, offer opportunities for regions with population decline. Strategic supports to capitalize on rural strengths will position rural communities for long-term recovery. Investment in rural broadband will be foundational for rural economies to fully benefit from broader shifts toward telework, opening up new opportunities for employment among rural residents and attracting workers to the region.

PRIORITIES FOR ACTION, POLICY, AND RESEARCH

Pandemic Response

- Securing adequate supply and quality of PPE and diagnostics to enable safe resumption of health services and preparedness for future waves of the epidemic
- Ensuring adequate support for the health workforce in VT and NH for the duration of pandemic (i.e., childcare, mental health support, isolation, and surge staffing).

Rural Health Landscape

- Determining policy, regulatory, and financial supports needed for healthcare organizations for the long-term pandemic response and recovery

Telehealth

- Achieving regulatory reform for telehealth, including full reimbursement for telephone- and computer-based visits
- Enabling providers to deliver telehealth across the VT/NH state border

Vulnerable Patients and Populations

- Enhancing and sustaining protections for most vulnerable patients and populations, including residents of congregate living facilities, socially isolated elders, and the homeless population

Broader Impacts

- Generating evidence to guide policymaking to mitigate impacts and leverage opportunities.
- Ensuring representation of rural communities in decision-making processes
- Prioritizing investments in internet and communications infrastructure

INTRODUCTION

"I just think that this takes already a very difficult system in rural health and just makes it all the more of a crisis situation."

HEALTHCARE EXECUTIVE, CENTRAL VERMONT

BACKGROUND

In early March, epidemic models forecast a surge of COVID-19 patients across Northern New England. The pandemic had already revealed stark disparities across urban settings with earlier outbreaks and had strained the capacity of the country's best-resourced settings. Northern New England's rural communities and health systems in Northern New England appeared uniquely vulnerable to the pandemic. While the region has among the nation's strongest health indicators,[iv] its rural regions are older, and on average, in poorer health.[v] Rural hospitals have struggled to stay open amid the dwindling population, financial pressure, and growing health workforce shortages. Some healthcare facilities have shuttered their doors, leaving vast areas with less access to care. Adding to concern, the region is a popular refuge for the New York and Boston metropolitan areas, [vi] leading many to fear that even a small number of imported cases could collapse rural health systems and spread the disease to older populations.

Launched in mid-March as the region prepared for the anticipated surge, the research seeks to assess the immediate impacts of the COVID-19 pandemic on rural health equity in Vermont and New Hampshire, identify mid- to longer-range concerns and opportunities for rural health and health systems, and identify priorities for future research, action, and policy. By examining experiences within Northern New England, this study aims to inform strategies to mitigate the longer-term impact of the pandemic on already fragile populations and health systems in Northern New England. Also, this study seeks to identify critical lessons for other regions.

METHODS

The first phase of research[1] consisted of 50 qualitative interviews conducted with key informants from health systems, social service organizations, public health entities, mutual aid groups, and town and city governments from across Vermont and New Hampshire. The research focused on four geographic areas: the Upper Valley, the Greater Sullivan/Windsor County area, the Northeast Kingdom of Vermont, and the North Country of New Hampshire. Additional interviews were conducted with representatives of state and regional organizations as well as some organizations outside of these focus areas. All interviews were conducted and recorded via Zoom and transcribed for review and analysis. A full list of organizations is included in the Appendix.

[1] This study was reviewed and approved by the Dartmouth College Committee for the Protection of Human Subjects (CPHS #32038).

"Those of us who've spent whole careers working in rural environments are so conscious of, and think a lot about the way in which rural environments lead to poor health outcomes. The way social determinants of health in rural environments lead to poor outcomes, we're so immersed in that kind of literature and understanding. And here we appear to be in a place where our rural environment may be, to some extent, protecting and sheltering us. And I want to be really cautious about not saying that too soon, but it sure looks that way."

PRIMARY CARE LEADER, UPPER VALLEY

FINDINGS

Vermont and New Hampshire registered low overall levels of cases in the first months of the pandemic, and these cases were concentrated in higher population areas around Burlington and the southern part of New Hampshire, outside the focus area of this analysis. By early May, both states reported declining rates of infection, while Vermont reported the lowest growth rate in the nation [vii] despite bordering New York state, the largest global outbreak in April.[viii] Most rural communities have seen only a small number of confirmed cases, and many have not yet registered a case.

Despite low numbers of cases in rural regions of the bi-state region, this study revealed significant impacts on rural health systems, population health, and communities in New Hampshire and Vermont.

This study found that rural regions were able to mount an effective response that stemmed the spread of the disease, created the capacity to respond to a surge, and protected their most vulnerable populations. Several factors, including high levels of integration of regional health systems and community partners, accountability of institutions to their populations, high levels of community participation, and significant attention to addressing gaps, facilitated this success.

Also, the study points to significant concerns about long-term impacts on the rural health system, population health, and communities. The major findings of this research are described in five sections: pandemic response, protection of vulnerable populations, rural health systems impacts, telehealth as a tool for health equity, and broader impacts on rural health and well-being. Each section describes experiences from the first phase of the response, highlights challenges, and describes key priorities for the pandemic response and long-term recovery.

STRENGTHS IN THE RURAL NORTHERN NEW ENGLAND PANDEMIC RESPONSE

Integration: Integration of health systems, public health entities, social service organizations, and community infrastructure enabled efficient collaboration

Equity: Prioritization of vulnerable populations

Accountability: Many institutions are embedded in communities and felt accountable to them

Rural Ethos: Social values that combine pragmatism, compassion and solidarity created conditions for swift, effective responses that prioritized vulnerable populations

Proximity/lack of anonymity: Connectedness within small towns facilitated efforts to identify vulnerable populations and tailor support to them

Community participation: High levels of community participation and civic participation contributed to rapid and robust efforts to meet needs across the region

Agility: Lean institutions were able to pivot quickly to respond

SECTION I: PANDEMIC RESPONSE

"It felt as though we had to get everybody up to speed and we had to almost build critical care nurses overnight [and] to make them respiratory therapists too. … And then trying to make sure that we had enough staff that if we had this huge influx, do we have the people that take care of them? And I will say we've got such strong employees that most of them are willing to like just roll up their sleeves and be like, 'I'll stay here as long as I can possibly work and then take a nap and come back. Do what I have to do.' So that was really great to see."

HEALTHCARE LEADER, NORTH COUNTRY

In early March, disease forecasts predicted a surge in COVID-19 patients that would exceed the capacity of the bi-state region's health systems and strain the state public health infrastructure of Vermont and New Hampshire. Many states grappled with significant challenges, including conflicting guidance and lack of a national strategy, massive shortages of personal protective equipment (PPE), diagnostics, and other essential supplies, and as well as varying deficits in public health infrastructures.

Critical access hospitals and community health centers form the backbone of the rural health system in large parts of both states; New Hampshire counts 13 critical access hospitals, and Vermont has eight.[ix] Designated by the Centers for Medicare and Medicaid Services to provide emergency care in areas without access to larger hospitals, critical access hospitals provide no more than 25 beds and have 96-hour limits on inpatient stays.[x] Most critical access hospitals have only limited intensive care units (ICU) and ventilator capacity. They rely heavily on Dartmouth-Hitchcock Medical Center, the University of Vermont Medical Center, and academic medical centers in Maine for specialized and critical care.

When the bi-state region registered its first case in NH on March 2, 2020, rural areas of Vermont and New Hampshire had minimal clinical capacity to deliver the continuum of clinical services required to test and treat COVID-19 patients. Coös County, the northernmost county of NH, counted three ICU beds for 32,119 people, and the three-county Northeast Kingdom of Vermont had only nine beds for a population spread across 2,027 square miles.[xi] As shown in Figure 1[xii], critical care capacity is minimal, with seven Vermont counties having no ICU beds. Primary care capacity, a key component of the response, is also strained; in both New Hampshire and Vermont, only about 60 percent of primary care needs are met.[xiii] Also, regions with the lowest levels of health systems capacity have higher concentrations of populations considered at severe risk for COVID-19 as well as higher levels of underlying social vulnerability.

HEALTH SYSTEMS RESPONSE

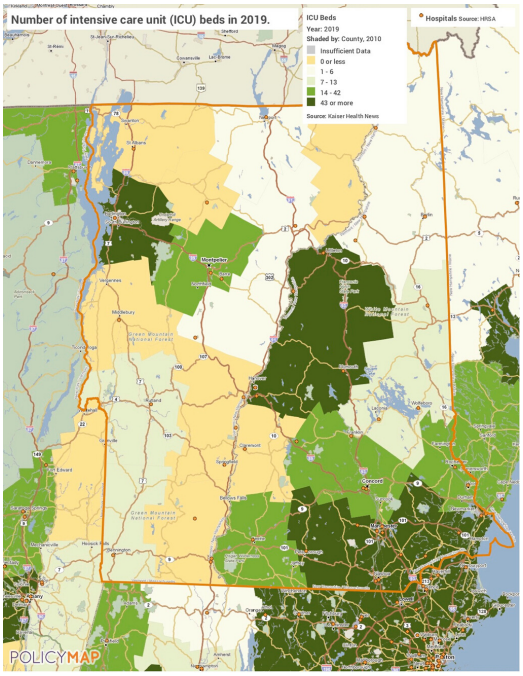


Figure 1: Number of ICU beds in 2019 (PolicyMap, Kaiser Health News)

Despite these underlying challenges, rural health systems organized robust local responses in the most rural areas of the region, even as state capacity was strained. Within days, critical access hospitals, as well as smaller rural hospitals, across the bi-state region mobilized to create the capacity to respond to an anticipated surge of critically ill patients. Rural hospitals redeployed and trained health providers from other services and repurposed infrastructure. Also, small hospitals worked with regional partners to establish local alternative care sites (ACS) to expand overall hospital capacity. These early efforts significantly expanded regional hospital and ICU capacity for hospital and ICU care. They highlighted the agility of the healthcare leaders across the region to respond to the crisis. Rural health workers described their experience treating a broader spectrum of patients in the rural environment and lean organizational structures as essential factors that enabled them to pivot quickly to respond to the crisis. Many also emphasized the essential role of organizations outside the health sector in support of the response. Rural colleges designated campus facilities as alternative care sites, and businesses offered other forms of assistance.

Community health centers and other primary care providers pivoted quickly to address the dual challenge of managing COVID-19 cases while modifying routine care delivery to sustain services and mitigate risk. Primary care leaders employed a range of strategies to respond to this need. Some created respiratory clinics or COVID-19 treatment areas and divided staff into COVID-19 exposed and non-exposed providers. Many primary care providers also prepared to staff COVID-19 treatment areas in the event of a surge. Despite significant constraints in testing capacity, approximately 80 percent of health centers in New Hampshire and 60 percent of Vermont's health centers had COVID-19 testing capacity in place by May 8.[xiv]

Primary care physicians adopted a broad range of strategies to sustain essential in-person care. Several facilities delivered care and administered routine vaccines in parking lots, while others expanded mobile or home-based care. Many offices did not have telehealth in place at the onset of the pandemic, but they converted to new platforms within days. Despite this lack of pre-existing infrastructure, 71 percent of health center visits in Vermont and 80 percent of visits in New Hampshire were being conducted remotely, as of May 8 (See Section 3 on Telehealth).[xv]

In many locations, community health workers played an integral role in sustaining care delivery and addressing the social determinants of health. Those interviewed as part of the study described efforts to support vulnerable patients access health services, including assisting with pharmacy deliveries and telehealth supports. (See Section 3 on Telehealth and Section 2 on Vulnerable Populations). Also, home-based care organizations modified practices to limit patient exposures.

RURAL STRENGTHS

Several factors facilitated a robust health systems response across the bi-state region. First, all of the regions had both active and latent networks bringing together health systems, public health entities, and communities. The North Country Health Consortium brings together an integrated delivery network with public health entities, social service providers, and community health organizations. In the Northeast Kingdom (NEK), the NEK Prosper accountable community organization mechanism brings together a broad spectrum of health partners. Across the region, many of the hospitals have formal linkages to community and regional social service infrastructure through population health positions or departments, and some regions have formalized collaborations between healthcare and public health entities. Many partners had already engaged in preparedness activities together through these structures and were able to leverage these partnerships to mount an integrated pandemic response. Respondents consistently described the long history of collaborating and trusting relationships as key factors facilitating a strong pandemic response.

Many also emphasized the critical role of collaboration with regional academic medical centers in responding to a novel threat. Dartmouth-Hitchcock Health rapidly established a wide range of programs through Project ECHO, a virtual platform for tele-education and mentoring, to provide technical expertise and guidance to regional health systems on challenges related to COVID-19. Many smaller hospitals also described strong support from Dartmouth-Hitchcock in planning their responses.

In addition, existing strong connections between the health systems and communities also served as an enabling factor in both the health systems and public health response. Communities mobilized support for healthcare workers and systems in a wide range of ways. Many of the hospitals and primary care facilities engaged in public health outreach and education with communities. Some respondents suggested that the trusting relationship contributed to high levels of compliance with public health measures. Furthermore, many of the health systems and social services actively coordinated public health responses to address the structural barriers to compliance with these public health measures, including lack of access to transportation, supplies, and other materials.

RURAL HEALTH WORKFORCE

"Yeah. Like I said, I mean the first challenge was kind of preparing and sort of thinking that we'd be short. And it's really tough because my health center, there's two doctors. And there are three NPs and a PA but we're just not very deep. And so it's small, but it doesn't take much to sort of create a crisis. And similarly at the hospital, there's a group of basically four hospitalists that cover the hospital. There's one of us on [at] any time and there's two of us that do it part time...But again, it doesn't take much. It wouldn't take many people being out with a fever for there to be a real problem."

PRIMARY CARE LEADER, NORTHEAST KINGDOM

The rural health workforce shortage emerged as a significant underlying vulnerability in the context of the health system response. Before the pandemic, both rural New Hampshire and Vermont were affected by healthcare workforce shortages.[xvi] Many rural hospitals and primary care practices operate with a small handful of providers, and many of these providers are older and close to retirement. Health systems leaders expressed concern that a small number of infections could quickly debilitate rural health organizations, and many also feared exposing older providers to infection. Healthcare organizations adopted a range of strategies to mitigate risk. Some healthcare organizations relegated older providers to administrative roles, thinning the ranks of the providers.

Many organizations faced staffing challenges related to the limited access to childcare and school closures. One healthcare executive from northern New Hampshire reported having 8–15 percent of staff out daily. Many respondents cited the State of Vermont's designation of childcare sites for healthcare workers and first responders in Vermont as a critical difference in the statewide responses to the pandemic. Healthcare organizations in New Hampshire reported losses of healthcare workers due to a lack of adequate childcare. Ensuring adequate childcare for healthcare providers and other first responders across the bi-state region for the duration of the pandemic represents a priority.

In addition, concerns arose over broader support for the health workforce, including adequate housing for healthcare workers worried about protecting vulnerable family members and others in the community. Several respondents described concern about the impacts of the pandemic on the health workforce, particularly around mental health and burnout. Although few providers had experienced the situations seen by their urban counterparts, many worried about the impact of stress related to preparation, anxiety about exposures, and the added toll of caring for families without usual support.

"That's definitely something that we're seeing around [the] workforce and first responders. We are seeing a need for housing in regards to essential workers sleeping in cars and tents to not put family members at risk. That is definitely being addressed in Vermont. I can't say that it's being addressed well in New Hampshire."

PUBLIC HEALTH LEADER, SULLIVAN COUNTY

PPE AND ESSENTIAL SUPPLIES

"A huge, materials resources has been a challenge since day one. We couldn't do what we said what we should do because we didn't have the material resources to do so."

HEALTH SYSTEMS LEADER, LAKES REGION

Health systems and public health leaders consistently reported difficulty accessing personal protective equipment, diagnostics, and other essential supplies. Statewide shortages of PPE have diminished somewhat; however, many remain concerned about the availability of PPE across the health system and other high-risk settings, including congregate living facilities, as services resume. Challenges related to the lack of access to high-quality diagnostics and low numbers of testing sites in remote regions of New Hampshire persist. Some providers expressed concern that pressure to resume services amid financial pressures to recover lost revenue (See Section 4: Health System Impacts) without adequate diagnostics in place represents a risk to healthcare workers.

GOVERNMENT RESPONSES

"I mean, I guess I feel like the lack of support was a measurement or is a measurement of the inadequacy of our public health system in the state of New Hampshire. I mean, we're still waiting six to nine days for test results to come back. The lag time between the technology being in existence and it getting to the hospitals was just, I just don't understand at all."

HEALTHCARE LEADER,
LAKES REGION

Many commentators have described the devolution of public health authority from federal to state levels. In both New Hampshire and Vermont, many respondents cited early institution of public health measures, including the closing of schools and stay-at-home orders at the state level, as critical to curbing the spread of infection across the bi-state region. There were also key differences in public health infrastructure and state responses in the early phase of the pandemic across the bi-state region.

"On the other hand, I've heard a sentiment that, people expressing, whether or not folks up in the North Country are receiving less than [the] standard of care, because of the lack of availability of testing. And so, I think it feeds into a narrative that is already there, that the North Country doesn't matter, anywhere north of the Notches, people in Concord don't pay attention to."

HEALTHCARE EXECUTIVE, NORTH COUNTRY

Many respondents highlighted decisions in Vermont, including the designation of childcare centers, payment of hotels for homeless individuals, and monitoring of out-of-state vehicles as examples of strong state leadership. In Vermont, more respondents also spoke to the integral role of district health authorities in regional responses, including in proactively addressing risks to elders in congregate living settings. In New Hampshire, many described coordination with state health authorities in Concord, but noted a lack of county or regional public health leadership or infrastructure in the response.

Across both states, respondents expressed concern that the statewide public health responses depended heavily on strained primary care infrastructure. Gaps in primary care coverage emerged as a prominent challenge around testing, which had to be ordered by primary care providers in the earliest phases of the pandemic. Primary care providers also pointed to a lack of guidance in making decisions around testing and treatment. These concerns were most pronounced in the North Country, where some respondents further suggested that the limited number of testing kits and sites in the most remote areas reflected regional inequities in the state response.

The high reliance on local healthcare infrastructure has important implications for the next phase of the pandemic response, which will require a significant expansion of public health activities to resume many activities. Testing capacity is now in place at many regional health centers and hospitals, and many of these existing institutions have significant experience and capacity in performing the functions involved in contact tracing, including case finding and providing social support to persons in quarantine and isolation. Leveraging this local infrastructure will be important for the duration of the pandemic; however, the early phase has underscored the need for state and federal investments in public health infrastructure and primary care across both states as part of a long-term pandemic preparedness strategy.

"One of the things that struck me over and over in this crisis is that every time anybody nationally or state gets in front of the media, they say if you have concerns, call your primary care provider, call your primary care provider. Over and over that's what everyone has said. Every time I hear that, I think, what if you don't have a primary care provider? What are people supposed to do?"

PRIMARY CARE PROVIDER,
UPPER VALLEY

"The big challenge was, in my opinion, New Hampshire doesn't have a robust public health program. New Hampshire does as well as it can, but centers such as us or such as other [Federally Qualified Health Centers] FQHCs truly have become the front line of public health in these situations, and that was a mission that was hoisted upon us without really any financial backing to do that. So it's been eye opening for us and I hope eye opening for policy makers to make some decisions."

HEALTHCARE EXECUTIVE,
NORTH COUNTRY

"On the government level, we really have quite a paradox between Vermont and New Hampshire, and everything that they've done in approaching this has been a real show in contrasts. Vermont's organization and fast action, I really think has been a model in many ways, and the degree of spread, and the management of it and the community resources have clearly been so much stronger in Vermont than in New Hampshire. But the fact that Massachusetts is so high and New Hampshire isn't any worse than it is is saying something is happening that's working in some way."

NONPROFIT SECTOR LEADER,
UPPER VALLEY

PRIORITIES FOR RESEARCH, ACTION, AND POLICY

The early trajectory of the epidemic has important implications for health systems and public health. Although this study finds evidence of strong levels of preparedness across the rural health system and social service networks, healthcare organizations remain largely untested by the pandemic. The population remains largely susceptible to SARS-CoV-2 and the future introduction of cases. Most experts predict that the pandemic may last 18–36 months, or until a vaccine is developed. Across the region, health systems leaders highlighted the need to ensure sufficient access to PPE, high-quality diagnostics, and other essential supplies. Second, health systems leaders emphasized the need to ensure adequate support for healthcare workers, including reliable childcare, alternative housing for quarantine and isolation, and access to mental health services.

SECTION II: VULNERABLE PATIENTS AND POPULATIONS

"We have a much older population in the North Country than elsewhere in the state, and so, limited nursing home capacity, really beyond what we already have. And so, we're somehow going to have to figure out a way to care for those folks. ... So, I think, hopefully, this might be a springboard for some work on, how do we care for an older population in a rural environment?"

HEALTHCARE LEADER,
NORTH COUNTRY

The bi-state region has a high proportion of populations who are older and more medically vulnerable (see Figure 2 [xvii]). Vermont and New Hampshire rank fourth and ninth in the nation for the largest percentage of adults age 65 or older.[xviii] In Vermont, 19.4 percent are 65 or older;[xix] 18.1 percent of New Hampshire's population are 65 or older.[xx] Both medically and socially vulnerable populations are concentrated in more rural regions with more limited health systems resources.

"We've also taken the approach that we have a responsibility because of our social mission to try to assist our local community and our local businesses, as things start to open up. Again, to provide information but also to be a source of testing and technical expertise to them. I believe at this point, we're the only hospital in the State of Vermont that is doing a regular asymptomatic testing program for the community. We are doing asymptomatic testing five days a week, Monday through Friday and doing a drive-up testing program that we have set up on the South end of our campus here at the hospital."

HOSPITAL EXECUTIVE, CENTRAL VERMONT

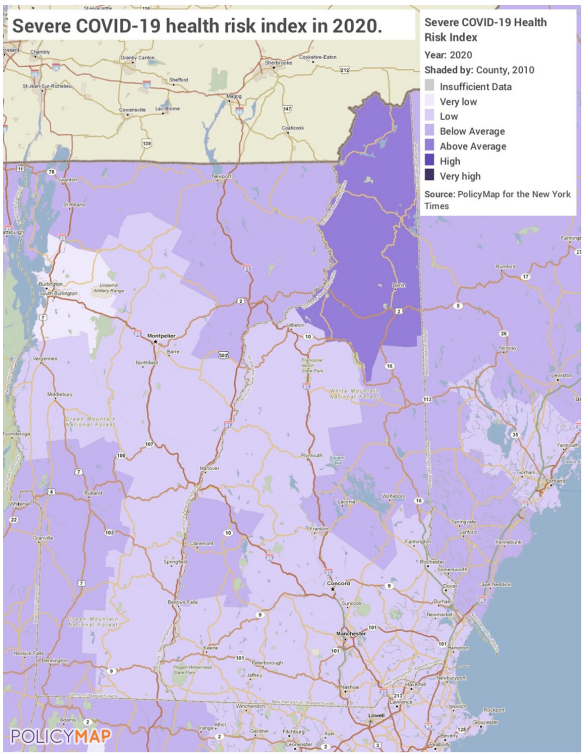


Figure 2: Severe COVID-19 health risk index in 2020 (PolicyMap, Policy Map for New York Times)

MOBILIZATION OF SYSTEMS AND COMMUNITIES TO PROTECT VULNERABLE POPULATIONS

Reports from many settings have highlighted insufficient attention to vulnerable populations and sharp disparities in outcomes. In contrast, efforts to protect medically and socially vulnerable populations were central to the early pandemic response by health systems, social services, and community-based organizations across the bi-state region. Moreover, many rural regions had a significant infrastructure in place to support an integrated response to protect vulnerable populations. Leaders in rural hospitals voiced their commitment to vulnerable communities and viewed this as part of their organizational mission.

Health systems deployed community health workers, and home health professionals continued to provide essential services for medically and socially vulnerable people. Community health workers interviewed as part of this study described a wide range of efforts to address medical and social needs among diverse patients, including isolated elders, new mothers, low-income or homeless individuals, and those with behavioral health issues.

Primary care providers also described their efforts to develop lists of vulnerable patients in the early days of the pandemic to ensure contact and follow-up with these individuals.

"We have patient navigators, and I've used the patient navigators a lot in that area for trying to help people to figure out how they can get their groceries. Some people have family, some people have neighbors. But as this thing goes on, it's harder and harder for people to find people that want to continue doing this. And then also, some of these people, again, it's a fairly elderly community. So a lot of those people are really trying to honor the, you know, stay in place, try to minimize your contact."

MENTAL HEALTH PROVIDER,
NORTH COUNTRY

".. .in my current role as a community health worker, we've joined very closely with our RN care coordinators, so they have a list that we contact... between myself and the other community health worker that I work closely with and the RN, we have a little over a hundred patients that we're doing patient outreaches, making sure that the patients do have the essentials."

COMMUNITY HEALTH WORKER,
UPPER VALLEY

Throughout the region, social networks and contacts were leveraged to meet immediate needs. Rural organizations built on existing connections and infrastructure to develop efficient communication and streamline efforts across sectors.

The Upper Valley region reactivated Upper Valley Strong, an emergency response structure bringing together more than 50 regional health, town, and nonprofit leaders to coordinate activities across the health system and community. The newly created Greater Sullivan County Public Health Network and Windsor COVID-19 Response Team coordinated activities in the southern corridor of the Upper Valley region. These networks benefited from significant financial investment and dedicated staff support from Dartmouth-Hitchcock Health. In the North Country of New Hampshire and Northeast Kingdom of Vermont, longstanding regional coalitions enabled communication and cooperation across sectors to address the needs of medically and socially vulnerable community members. Other communities had teams in place to provide coordinated outreach to elders in congregate living facilities.

Communities throughout the region mobilized grassroots efforts to meet the needs of vulnerable populations. Village committees divided towns and organized efforts to deliver groceries and medications to older and medically vulnerable people. Many in the study offered accounts of the Herculean efforts to sustain food and social service assistance, including sending school-based nutrition along bus routes and reorganizing food pantries to offer curbside pickup and home delivery.

Accounts from across the interviews point to a rural ethos — a constellation of pragmatism, compassion, and solidarity— that translated into a protective response amid a rapidly unfolding public health crisis. A strong foundation of existing networks, coupled with the agility of regional efforts and the rural ethos, reflects a vital strength of the rural response.

"Let's create this list of all our vulnerable people, including those who are not necessarily yet followed by care management." And it was kind of remarkable ...how quickly we all just started putting names in and we just started fulfilling the sheet that's in the [electronic health record] with names. It was amazing how fast all of us could think of people who we'd worry about, who are isolated, who could get sick and have a hard time calling for help, it was amazing."

PRIMARY CARE LEADER, UPPER VALLEY

"Our immediate focus was around being a convener of cross-sectional work amongst all the agencies. So working with our field service coordinator from [the] agency of human services, we coordinated a response team... And really trying to get agencies to talk with each other because our area is very large and we don't need to duplicate services, especially now. So getting folks communicating through that process, that's been instrumental. We've had seven smaller sub teams really working on creative ways and then reporting back to the larger team twice a week."

SOCIAL SERVICE PROVIDER, NORTHEAST KINGDOM

"We have a team that we've identified here within [hospital]. We have a primary care PA and then some other folks that we've set up, they will be our mobile outreach team. If somebody needed to go into one of these group homes or nursing homes or congregate living homes, we have a protocol set up with what our PPE protocols would be, how they would go onsite, what they would do there, all of that. We've set that up with a number of group homes. I don't believe we've had to use much at this point, which is great news but we've also helped them with their policies on visitation, infection control, those sorts of things. We have worked with those populations."

HOSPITAL EXECUTIVE, UPPER VALLEY

"A shining moment of opportunity happens in smaller communities. So if you live in Wheelock and there's 800 folks there, they're working really hard to do some neighbor-to-neighbor outreach, making sure everybody has a mask. Those are some sweet spots that small communities can happen. I know Craftsbury has been doing a lot of work around doing some mailings and making a phone tree for the 1,000 people that live there. And I think there's opportunities for those smaller communities to do that kind of work."

SOCIAL SERVICE PROVIDER,
NORTHEAST KINGDOM

"We need to be cautious I guess... if we get a surge... the larger net of impact will be on the second, third, and fourth waves. We already have a chronic care management issue in the Lakes region. We already have an inappropriate ED utilization issue in the Lakes region. We already have a mental health crisis and a drug crisis in the Lakes region. If all of those get worse than they are, whether we get a surge or not, that will be a health crisis beyond what I think we can handle, quite frankly."

HEALTHCARE LEADER,
LAKES REGION

"I think the chronic care patients with multiple comorbidities are going to be in trouble. Then patients with dual-diagnosis of either substance abuse and mental health issues, or substance abuse and chronic condition, or mental health and chronic condition. Just like any crisis, the vulnerable are going to suffer more so. What resources are we going to put in place for the vulnerable? The people that don't have a voice, the elderly, the children, the people with chronic conditions. That's going to get a lot worse before it gets better. To me, that's a priority, a public health priority."

HEALTHCARE LEADER,
LAKES REGION

PANDEMIC PRESENTS IMMEDIATE AND LONG-TERM THREATS TO VULNERABLE POPULATIONS

Although the robust and integrated response offered protection to mitigate the impact of COVID-19, the population as a whole remains susceptible to infection; consequently, the region faces a long-term threat that poses a particular risk for vulnerable populations. Some worry that low rates of infection may reduce the perception of risk in the event of future waves of the epidemic and decrease adherence to public health measures.

As they look beyond the pandemic's immediate outcomes, participants emphasized the need to focus on its secondary health impacts on medically and socially vulnerable populations. The early pandemic response focused on reducing morbidity and mortality from COVID-19. As detailed throughout this report, these early efforts successfully stemmed the spread of the epidemic, despite the region bordering New York and Massachusetts. Yet, as participants looked ahead, many expressed concerns about health impacts beyond COVID-19. Participants noted that fear of the health system may have prevented some from seeking care for urgent, non-COVID-19 conditions; those with chronic conditions or cancer may delay routine care; the deferral of preventative care; the disruption of services for highly vulnerable populations; and the sequelae of substance use, mental health challenges, domestic and family violence, and food insecurity (see Table, Health Impacts of COVID-19 in Rural Northern New England).

HEALTH IMPACTS OF COVID-19 IN RURAL NORTHERN NEW ENGLAND

Health impacts	Underlying health and equity challenges in NNE	Pandemic response and concerns
COVID-19 mortality and morbidity	• Higher percentage of older populations with significant underlying illness • Elders in congregate living settings • Concern about vulnerable populations (homeless, elderly) and ability to adhere to social distancing, access care	• Prioritization of vulnerable populations across the response • High mobilization of social integrated response • Concern about populations not connected to care
Urgent non-COVID-19 conditions: stroke, heart attack, injury	• Higher percentage of older populations with underlying illness	• Concern that fear of health system prevented some from seeking urgent care
Deferred care	• Chronic diseases (diabetes, cardiovascular disease) • Vaccination, well-child care • Oral health	• Significant efforts to sustain essential care through telehealth, modified visits • High rates of deferred care • Concern about deferred care (cancer, diabetes, cardiovascular disease) • Concern about the disruption of services to frail elderly • Concern about populations not connected to care
New and emerging concerns	• Opioid epidemic • Housing insecurity	• Trauma/burnout • Mental health impacts • Substance use • Impacts on social determinants of health (food security, housing, domestic violence)

Medically and socially vulnerable populations in the region share many challenges, but distinct concerns arise in relation to specific sub-populations. The sections below highlight concern specific to older populations, populations with chronic illness, homeless populations, and populations with behavioral health challenges.

Older Adults - Participants in the study expressed concern for older populations and the sufficiency of protections in place for this population. Elders living in nursing homes and congregate facilities were identified as an area of particular concern by participants, reflecting the disproportionate concentration of COVID-19 cases within these settings in the region. In New Hampshire, 82.3 percent of cases have occurred in long-term care facilities,[xxi] and infections have been reported in nearly one in four registered nursing homes in NH. [xxii] In Vermont, 10 nursing homes had reported outbreaks, and 24 percent of cases are associated with an outbreak at a congregate living facility. [xxiii] Participants noted both the threat of COVID-19 infection as well as concern over the impact of long-term social isolation on well-being.

Protecting elders in congregate facilities over the long-term may be especially challenging in the context of rural workforce shortages. Care in these settings involves high-touch, intimate work. Yet, as participants noted, this challenging work is often compensated at levels similar to lower-wage service sector positions. Thus, recruiting and retaining this workforce is a perennial challenge. In addition, as these workers often take positions at multiple facilities or places of employment, this increases the potential for exposure and transmission to elders.

As attention has shifted from bracing for a surge of COVID-19 patients to the process of resuming services and re-engaging patients, healthcare organizations face the challenge of how to reopen in ways that do not compromise the safety of medically vulnerable populations.

"The social isolation, I also think, is a big thing for our frail elders. Right now, in our nursing homes, which the long term population is largely Medicaid. They are in their rooms. They don't eat together. They don't have social activities together. Their families can't visit them. I don't have data on it, but I am seeing the health and psychological consequences of that already. We had seven deaths at a nursing home, in the last two weeks. None of them COVID, or even, infectious related. I have nothing to prove it, but I'm convinced that social isolation, that's a big number for us for 2 weeks, played a role there. It wasn't as bad in the first week, but as it wears on, and we see more, and more, and more, of this, you begin to wonder, are we helping, or are we hurting. Long term."

GERIATRIC CARE LEADER,
UPPER VALLEY

"I don't know how to put it, just more concern that they're going to somehow be forgotten, or abandoned, because business, it's going to be 'Okay, everybody, now you can get your haircuts and now you can go out again.' ... I'm very, very concerned about the impact on the economy, [but I'm also] concerned that people who may still be at risk, might be at even more risk if more things start to open, and yet it's not safe for them to partake of those things."

SOCIAL SERVICE LEADER,
WINDSOR COUNTY,UPPER VALLEY

"How many people are suffering just because they don't want to ask for help or don't know that they can or whatever?"

COMMUNITY LEADER,
UPPER VALLEY

"I bet there will be people who, because of distance, don't get care as soon as they should, and that will be a worry. And I think we all fear that kind of stoic New Englander out on a farm somewhere in Vermont who just stays home with his or her bad cough."

PRIMARY CARE PROVIDER,
UPPER VALLEY

"I wonder just how many more people there are out there that aren't getting care partly because we're discouraging them from coming in, partly because they are afraid to go to the emergency room or think we're not even open, think we can't even be seen. I'm worried about the late effects, the long-term effects of deferred and delayed care."

PRIMARY CARE PROVIDER,
UPPER VALLEY

"We have seen a number of incidences where we're admitting at a much higher rate out of our emergency department than we would traditionally, which would indicate that when people are showing up in our emergency department, they're very sick. And at least the anecdotal evidence that they haven't sought primary care or whatever healthcare services in as timely a manner as maybe they wouldn't have prior to the pandemic. Again, it's anecdotal at this point, but, we've seen it enough times that we think that there's probably something to it."

HOSPITAL EXECUTIVE,
UPPER VALLEY

"There are efforts at larger levels of using some of the government's power to forestall evictions, you can do that by rule. But that doesn't take care of the loss of rent payments, which would only build up. There should be a lot of mitigation strategies, rather than wait for somebody who becomes homeless and then react to it."

SOCIAL SERVICE LEADER,
UPPER VALLEY

"We know people's mental health and substance use disorders are ramping up big time"

SOCIAL SERVICE LEADER,
UPPER VALLEY

Many in the study expressed concern about the durability and sufficiency of existing supports and efforts being sustained over time. In this context, some participants expressed deep concern about "ageism" and noted the possibility that, as society returns to a new normal, elders and other vulnerable populations may be "abandoned." In a similar vein, maintaining efforts to identify vulnerable community members who are less embedded in networks of care is a key priority area for the long-term pandemic response.

Populations with Chronic Illness - Populations with chronic illness face the dual threat of the higher risk of complications from COVID-19 and the consequences of deferred care. Throughout our interviews with health systems leaders and healthcare providers, we heard consistent concerns about patients' deferring care and fear of engaging in healthcare settings. These concerns are greatest for patients with underlying illnesses who consume the highest levels of care but who are at risk for more severe forms of illness. Although many patients with chronic conditions have been able to maintain contact with providers via telehealth visits, certain procedures require in-person care (e.g., assessing hemoglobin A1C for patients with diabetes, administering vaccinations, providing dental care). In addition, providers expressed worry that patients may not be aware that clinics and hospitals are resuming routine care.

Many described the need for clear communications strategies with patients as they resume services. Some accounts from more recent interviews describe emerging evidence of the consequences of deferred care.

Homeless Populations - Populations without access to adequate housing and safe spaces in which to self-isolate are at high risk of contracting COVID-19. Prior to the pandemic, homeless populations were found to have all-cause mortality 5-10 times higher than the general population.[xxiv]

Although data specific to COVID-19 remains limited, unstable living conditions, densely occupied shelters, higher rates of comorbidities, and often limited connections to healthcare represent significant challenges to protecting homeless populations.[xxv] Reports from elsewhere in the United States indicate that homeless populations were poorly protected, resulting in high rates of infection.[xxvi] In contrast, there is no evidence to suggest the clustering of cases among homeless populations in rural areas of the region. Accounts from those we interviewed in social services point to swift and effective responses to mitigate the impact of COVID-19 in this highly vulnerable group.

Our participants described how homeless shelters in the region initially implemented measures to reduce density to promote social distancing, increased cleaning in facilities, and encouraged more frequent handwashing among residents and staff. Participants noted that their initial strategies changed over time as shelters were able to access state funding to move people out of congregate shelters and into motel rooms. Stays on eviction have offered housing stability for individuals and families who have lost or reduced income; however, participants noted concern about long-term vulnerability as these temporary orders are lifted and accumulated past rent is due.

Populations with Behavioral Health Challenges - Other populations of particular concern included those with mental health and substance use challenges. The region entered the pandemic in the midst of a continued substance use crisis. While transitions to telehealth appeared to reduce barriers to engaging in behavioral healthcare (as detailed in Section 3), many participants reflected on how the pandemic is exacerbating mental health and substance use issues.

"And then mental health wise, I don't know that there's enough supports in our society in general to help people that are going to be too afraid to leave their houses, even when they can leave their houses or they're dealing with ... I've just heard lots of increased anxiety, depression, and then abuse of alcohol and drugs and things, which, yeah. So for people who didn't even have problems before. And then the people who had problems that are deciding, you know, they're relapsed or whatever."

COMMUNITY LEADER,
UPPER VALLEY

"There was one other individual ... that passed away in the community that was obviously a suicide. So we're definitely having to kind of keep a greater eye open. And in fact, just a few moments ago, I had one of the primary care providers come in and talk with me about a woman she saw yesterday who has a pretty significant history of trauma. And we're going to reach out to that individual today and just see if there's something we can do and try to knock down the risk factors for that person."

.MENTAL HEALTH PROVIDER,
NORTH COUNTRY

"So we came into this with limited staffing. And why is that? Well, I think that's partly there's limited staffing in the whole universe. There just are a shortage of psychiatrists and social workers and psychologists and clinicians. And also, I think that community mental health has lower salaries than other places. So it might be less incentivized as far as that goes. But that's a big concern. And particularly, as we anticipate that there is going to be a mental health curve, as they say, that we're anticipating that there's going to be a large need for mental health services and response going forward, staffing is really number one on the list in terms of the challenges."

MENTAL HEALTH LEADER,
UPPER VALLEY

"So if you've noticed, we don't talk about opioid epidemic any more, do we? This has completely overshadowed it. It's still there and so it's become challenging for those patients to get the care they need. The last thing they need is social isolation. That probably won't bode well."

HEALTHCARE LEADER,
NORTH COUNTRY

Reflecting on the long-term horizon of the pandemic, many participants anticipated the growing need for behavioral health services. Yet, meeting this need will be especially challenging as rural areas already lacked adequate workforce capacity, especially in community mental health.[xxvii]

Others noted concern about the longer-term consequences of shifting priorities away from substance use challenges.

PRIORITY FOR ACTION: SUSTAINING EFFORTS TO PROTECT VULNERABLE POPULATIONS AMIDST REOPENING

Despite high levels of medical and social vulnerability in the region, small rural institutions were able to respond rapidly to mitigate the worst impacts of the pandemic on vulnerable populations. Existing partnerships and investment by larger health systems enabled robust, coordinated responses to protect the most vulnerable. Leaders across the region articulated the tension between remaining vigilant against the continued threat of the disease and the necessity to reopen, particularly in relation to protecting vulnerable populations. The challenge of sustaining the current intensity of the protective response toward vulnerable populations may be magnified in rural environments with limited transportation, fewer resources, and workforce challenges. As leaders looked ahead, they noted the critical importance of sustaining and institutionalizing current efforts. Enabling access to resources and funding to institutionalize these supports is a key priority for ensuring continued protection of vulnerable populations.

SECTION III: TELEHEALTH AS A TOOL FOR HEALTH EQUITY

"The other thing that I hope comes about, is that I hope that tele-health does not become a moment in time."

HEALTHCARE EXECUTIVE, NORTH COUNTRY

EXPANSION OF TELEHEALTH

Prior to the pandemic, many rural hospitals benefited from growing telehealth collaborations with Dartmouth-Hitchcock's Connected Care program and other medical centers; however, telehealth was primarily limited to the provision of specialty care between academic medical centers and rural settings. Very few primary care and behavioral service providers had telehealth services in place at the start of the pandemic, and licensing requirements limited the utilization of telehealth across the NH/VT border. Relaxation of telehealth regulations, including the lifting of privacy restrictions and reimbursement for telehealth and telephone visits, enabled a vast expansion of telehealth across a broad spectrum of clinical and social services across the region. In the bi-state region, a temporary waiver on state licensing requirements also enabled the delivery of care by telehealth across the NH/VT border. Most healthcare organizations converted most of their in-person activities to telehealth within the span of a few days. Social service organizations also migrated large parts of their in-person operations to virtual platforms. Remote visits employed a range of technologies, from videoconferencing to telephone-based visits. One behavioral service center also reported using Facebook to deliver some of its services.

"Interestingly, one of the clinics that we work with says that they've had a significantly reduced no show and cancellation rate in their primary care clinic and they thing that it's because transportation is a non-factor when you're conducting telehealth visits. So that's a piece of it. People who've been challenged by transportation are even more so now."

PUBLIC HEALTH LEADER, NORTH COUNTRY

OPPORTUNITIES AND LIMITATIONS FOR RURAL HEALTH EQUITY

Health systems leaders and providers from across the region consistently described the expansion of telehealth within their systems as a promising tool for addressing long-standing rural health equity challenges. Many highlighted its effectiveness in increasing access for patients with transportation constraints, including elderly patients. Behavioral healthcare providers across the bi-state region consistently reported a precipitous drop in no-show rates.

In addition, geriatric providers described it as an important tool in closing gaps in access to care at skilled nursing facilities that struggle to recruit providers. Another area highlighted was the effectiveness of telehealth in delivering behavioral services for teens and adolescents.

> "Pretty universally though, the success of telehealth is rate limited by the patient or client's access to the infrastructure that allows them to engage in that mode. So, in pockets of Coös County, for example, where there is no broadband internet, that's a very real issue for patients"
>
> PUBLIC HEALTH LEADER, NORTH COUNTRY

Health systems leaders and providers also described areas of limitations and structural challenges related to telehealth. Participants found telehealth to be a less effective substitute for in-person care for some vulnerable populations, including persons in early stages of substance use recovery, patients with severe mental illness, patients requiring home health services, and socially vulnerable patients. Providers saw in-person visits as critical for establishing trusting relationships for patients in the early stages of recovery and noted that some telehealth platforms prompted paranoia in some patients with severe mental illness. Health centers also described challenges in converting wrap-around patient support/social work services for vulnerable populations to virtual platforms. Providers also encountered challenges related to privacy and confidential delivery of care remotely to patients in home environments with limited personal space. They believed that some patients were reluctant to have healthcare providers view their home and family environments. Others noted more limited success in utilizing telehealth in pediatric settings with young children.

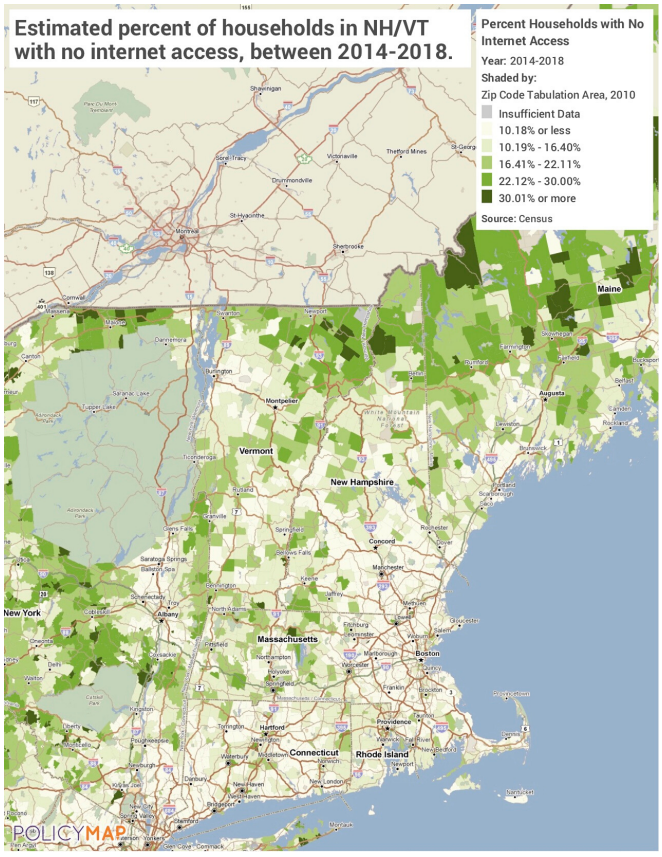


Figure 3: Estimated percent of households in NH/VT with no internet access, between 2014-2018 (PolicyMap, US Census)

One of the key barriers to the success of telehealth was limited access to digital infrastructure. Twenty-three percent of Vermonters lack access to broadband internet, and around half of addresses in the Northeast Kingdom is without high-speed internet.[xxviii] In some areas of the North Country of New Hampshire, close to twenty percent of the population lacks access to the internet (Figure 3[xxix]). Additionally, many rural households lack access to computers and digital technology. To address this, providers reported delivering some care using the telephone. Early in the pandemic, lower rates of reimbursement for telephone consultation represented a significant concern for providers in regions with low internet coverage. In addition, providers reported that older populations preferred telephone-based visits, particularly for behavioral health services.

VOICES ON TELEHEALTH

"One thing I wanted to add, too, about insurance coverage, I think we were talking about equity issues. And I think there are some class issues and equity issues that are involved here, which I'm sure you've already thought about. I was talking.. [with a colleague]..about how important I think it is to continue to have telephone services. And to not have telephone services is biased against who? It's biased against poor people who don't have equipment and don't have money to get equipment."

MENTAL HEALTH LEADER,
UPPER VALLEY

"The nursing homes for example, you can't get medical directors in rural nursing homes. You cannot get providers in rural nursing homes. But you know what, now that we can do this, or we can do the visits through telehealth, all of a sudden you have companies, and get reimbursed for them. So...the biggest barrier is that we could do these, but we couldn't get reimbursed. Now that you can make money doing this, we see there are some companies that literally have expanded overnight to be able to provide. Is this a great thing? All of a sudden now, rural nursing homes will actually get much better medical care than what they were getting, for better or worse?"

GERIATRIC LEADER,
UPPER VALLEY

"And so in a very short time we completely converted the way we're providing care, and that's been pretty, what's the right word? It's been both upsetting, and disquieting, and disturbing to providers. And it has also been fantastic, and amazing, and wonderful, to learn very quickly how much you can get done on and feel comfortable about. "

PRIMARY CARE LEADER,
UPPER VALLEY

"And some individuals, particularly in the early stages of recovery, they're not comfortable with those mediums for self-help. There's a lot of those individuals, too, particularly in our female substance misuse population, that have significant trauma histories. So it's difficult under the best of circumstances to help create sort of a therapeutic alliance or build a rapport. So a lot of those individuals are at risk."

BEHAVIORAL HEALTH PROVIDER,
NORTH COUNTRY

"...thinking about going forward, I think we're all kind of excited. I know my colleagues nationally, most of us share this sort of opening up of a future of medicine that allows us more flexibility in terms of meeting people's needs via teleconference or even telephone care and actually getting paid to do that. It would be nice. So we're hopeful that continues. "

PRIMARY CARE PROVIDER,
NORTHEAST KINGDOM

IMPLICATIONS FOR RURAL HEALTHCARE DELIVERY

A key component of the successful migration to telehealth has been its integration into existing healthcare delivery systems. Primary care patients accessing telehealth were already medically homed and continuing care with a provider familiar with the clinical and social histories of patients and community resources. Few practices reported enrolling new patients via telehealth. Both providers and health systems leaders cautioned against viewing telehealth as a solution to the deficit in primary care providers. Many also reflected concern that an increase in standalone telehealth services delivered from outside the region might weaken the health system and compromise patient health.

Second, one of the central successes in the bi-state region, where many healthcare organizations serve patients from both states, was the ability to use telehealth across the NH/VT border enabled by the temporary waiver on licensing requirements. Ensuring continued ability to deliver telehealth across state lines to increase access to care represents a priority. In addition, access to telehealth may help to limit travel and contact with the health system for highly vulnerable patients reliant on distant academic medical centers as reopening occurs.

KEY PRIORITIES

Achieving permanent reform to enable rural healthcare institutions to continue to use telehealth represents a key policy priority for the rural health system and community. Rural hospitals cited the following three key priorities for the bi-state region related to telehealth: continued reimbursement, ability to use telehealth across the Vermont-New Hampshire state line, and inclusion of telephone-based services as a modality to ensure equity of access. Many highlighted the need for additional research on the experiences of vulnerable populations. Additional research is also required to measure patient and population health outcomes, and to determine ways to integrate it into the rural health landscape permanently.

SECTION IV:
HEALTH SYSTEMS IMPACTS

"I think this is taking a whack at the healthcare infrastructure that's being felt across the board, but rural health systems are pretty fragile, and it doesn't take much to just, sort of, really, throw them over the edge. And so, I think we're all concerned about that. And, certainly, very concerned about how this plays out. Whether it plays out at a second and third wave, whether it's a slow burn for a long time, all those things seem very challenging at this point."

HEALTHCARE EXECUTIVE,
NORTH COUNTRY

PRE-EXISTING FINANCIAL INSTABILITY OF RURAL HOSPITALS

While the pandemic has revealed significant strengths within the rural health system in its ability to respond to immediate needs in the context of COVID-19, the crisis adds to longstanding concern about the stability of the rural health system. Several Vermont and New Hampshire hospitals were operating in the red before the pandemic. In April, a New Hampshire Public Radio review of public filings of NH hospitals found several NH hospitals operating at a deficit.[xxx] According to the Green Mountain Care Board, in the fiscal year 2019, seven of fourteen hospitals experienced operating losses, and six experienced losses overall.[xxxi]

IMMEDIATE IMPACTS OF THE PANDEMIC

The early phase of the COVID-19 pandemic has had staggering financial impacts on health systems across the United States. Healthcare organizations experienced a significant financial impact due to the cancelation of elective procedures, drop in patient volume, and a related decrease in routine diagnostic services. Additionally, many incurred significant costs sourcing PPE and other materials and preparing for the epidemic. A recent projection from the American Hospital Association estimates hospitals across the nation will lose $50.7 billion a month, from March to June.[xxxii]

Early data from the bi-state region paints a grim portrait of deep losses across the health sector. Recent reports from New Hampshire suggest that several hospitals have lost 40 to 60 percent of their revenue, amounting to hundreds of millions of dollars a month shortfall. Vermont health networks estimate a similar financial impact.[xxxiii] The New Hampshire Hospital Association reported losses of more than $300 million in revenue. Federal CARES Act funding offset just over 30 percent of these losses in NH.[xxxiv] Rural NH hospitals received an additional $112 million in CARES Act support; however, not all U.S. rural hospitals benefited from this funding.[xxxv]

"I think the financial state of healthcare is going to be suffering for many years to come…I say to people all the time, "If Lakes Region General Hospital existed in Kansas or Nebraska, it would be gone. It wouldn't exist anymore." Rural community hospitals don't really exist across the country anymore, and they're closing at an extremely rapid rate. I know everyone thinks it's such a tragedy that Lakes doesn't do OB anymore, well 12 OB departments in the state of New Hampshire closed since 1995. Two in Maine and zero in Vermont. What does that tell you? think the viability of healthcare, in my state anyway, is threatened."

HEALTHCARE LEADER,
LAKES REGION

Financial losses have also been dramatic for the region's primary care providers. Eight health centers in New Hampshire temporarily suspended services, and health visits fell to 57.5 percent of pre-COVID-19 levels; as of May 29, activity is at 66 percent with five centers temporarily closed.[xxxvi] In Vermont, 13 health centers temporarily closed, and visits fell to just under 50 percent of current volume; as of May 29, 2020, activity is at 60 percent with seven health centers temporarily closed.[xxxvii] This precipitous drop in volume has had significant financial impacts across the primary care landscape. The Bi-State Primary Care Association reported that an analysis by Capital Link of New Hampshire's federally qualified health centers found that 43 percent of health centers in New Hampshire would exhaust all of their operating reserves and 43 percent had less than 30 days on cash on hand.[xxxviii] Federally Qualified Health Centers (FQHC) and some community health centers benefited from a combination of COVID-19 funding and relief through the CARES Act; however, this government support did not fully offset the immediate impacts. Most anticipate a significantly sustained depression of revenue even as health systems reopen, as lingering fear of the health system reduces patient visits, and their payer mix shifts in the wake of growing unemployment. The financial picture is most bleak for private primary providers that did not benefit from government assistance earmarked for health centers; many expressed concerns that some would not withstand the immediate crisis.

LONG-TERM IMPACTS OF THE PANDEMIC

Many healthcare leaders interviewed as part of this study reported that support from the federal and state governments blunted the immediate impacts of this loss in revenue; however, they expressed concern about their ability to weather a prolonged pandemic. Many healthcare executives worry that lingering fear of the health system may cause patients to delay a broad spectrum of care, including elective surgical procedures, further suppressing revenues. In addition, health systems must maintain high levels of preparedness for future cases and will continue to incur additional costs, particularly around PPE and other enhanced workforce safety measures. Few had estimated the combined impacts of intermittent periods of closures and surging numbers of cases over 18 to 36 months.

Many healthcare leaders described fear about the ability of some healthcare organizations to remain solvent if the current situation continued into the summer. In the immediate term, many are most concerned about those institutions that entered the pandemic with significant underlying deficits. Lakes Regional General Hospital, a larger hospital serving the Lakes Region of New Hampshire, had $112 million in debt and was forced to furlough 600 staff early in the pandemic.[xxxix] Many fear it will not reopen, leaving a large region without a hospital.

Similarly, Springfield Hospital was recently rescued from bankruptcy by a $1.3 million loan but was initially barred from seeking loan assistance.[xl] Many worry it will not survive the crisis. In the longer-term, even those organizations on more solid financial standing, including one that entered the year with operating gains, may need significant support to remain viable.

Adding to financial concerns, many healthcare leaders worry that short-term financial impacts pandemic will also exacerbate existing workforce shortages. Many of those forced to furlough staff fear that these workers will seek employment out of the region, permanently depleting already short workforces. Of especially great concern is the loss of dentists, which are particularly difficult to recruit to the region.

Many feared that the combined effects of the pandemic could significantly decrease access to care and undermine health for the rural residents in the region. Data from elsewhere highlights points to rising mortality rates following hospital closings.[xli] Many cited existing barriers to care, including limited transportation, which deeply affects patients receiving care at distant academic medical centers, as well as the social impacts of receiving care outside of the community. Many also feared that the pandemic might accelerate the loss of rural primary care for populations with the greatest health and social needs. Decreasing local access to care for vulnerable patients with limited access to transportation and high reliance on ancillary support services represents a particularly great area of concern for providers familiar with these patients.

"Yeah. Oh boy, is that a worry? I don't know if you saw, but this weekend or I think it was Friday, Lakes Region Hospital just shut its doors. Just like overnight, just laid off, furloughed 500 people, said,"We're going to keep the ER open and the intensive care unit open, but otherwise we can't afford to run a hospital." We're living in a state that's had nine small community hospitals closed in the last five years or seven years, I forget the number of years...The financial capacity to weather this is overwhelming. I worry about DH, and DH has got very, very, very deep pockets and much more resource and capacity. But, no, you're absolutely right that there's going to be a long and difficult recovery. And, as we all know, this is not... The worst of this may be over in a month, but it's not going away. This is going to be sustained for some period of time, and whether we can get back to some kind of business as usual is really, really hard to predict."

HEALTHCARE LEADER,
UPPER VALLEY

"One day I woke up and the whole world had tipped upside down. We went from a very robust organization in terms of patient flow ... to one where it was almost a ghost town and there were no patients in our waiting room and we had significant cancellations and no shows because of the fear of COVID-19 ...So at that point, initially we were very concerned about how we could keep our doors open up and then after that, how do we re-engage our patients?"

HEALTHCARE EXECUTIVE,
NORTH COUNTRY

"Now staff is sitting back and saying, "Is our hospital going to make it?" I mean, we're in a good place but is our hospital going to make it, what's going to happen if we furlough more people, we're really a tiny place. If Plymouth State University isn't able to open back up, how are the finances going to look at this community? I think that's a really big concern too because two or three groups going under in this town and the entire town is going to be very problematic. So, I think there's a lot of concern out there about those things as well."

HEALTHCARE LEADER,
NORTH COUNTRY

"But, I mean, I can't imagine the Lakes Region of New Hampshire, not having a hospital there, especially with the huge number of transients that come in in the summer, the influx around the lake. So, I mean, I think it is a concern."

HEALTHCARE EXECUTIVE,
LAKES REGION

"Littleton is 26 minutes by DHART Flight to Dartmouth. Accessing Dartmouth in an emergency is a pretty fast reality for folks in the area, but once the patient lands in a Dartmouth bed, the experience for that patient and that family is not as good as it could be at a local hospital from a social/emotional perspective. Because it's harder for families to get to Dartmouth."

PUBLIC HEALTH LEADER,
NORTH COUNTRY

At the same time, many expressed concerns about the ability of larger academic health systems to absorb additional patients when volumes increased to pre-pandemic levels if rural hospitals were to close. Prior to the pandemic, regional academic centers operated at high occupancy and lacked bed space to accommodate all high-acuity referrals. In addition, many worried about the expanded need for ground and air transport, particularly in the winter months, when more rural regions are inaccessible by road and helicopter.

Beyond revenue loss, the closure of hospitals may have far-reaching impacts on the employment and wealth of rural counties. A 2006 study on the impact of rural hospital closures estimated a per-capita income reduction of four percent, and the unemployment rate increase by 1.6 percent.[xlii] In Northern New England, healthcare workers account for about 10 percent of the workforce in each state.[xliii] In the most remote, rural communities, healthcare workers often represent the highest paid workforce. Loss of institutions may further impede efforts to retain and attract residents and undermine revitalization opportunities highlighted by the pandemic.

HEALTH SYSTEMS PRIORITIES

Across the board, health systems leaders highlighted the need for investments to stabilize rural health institutions for the duration of the pandemic. In addition, many interviewed as part of this study saw an opportunity to address persistent challenges, including policies and regulations governing the organization of hospitals and health centers and policies addressing chronic primary care shortages. Others voiced a desire for legislation to enable new configurations and collaborations across institutions in response to local realities. Many also expressed optimism that, given the appropriate set of policy incentives, rural environments may become more desirable, facilitating the ability to attract and retain health workers from other regions.

SECTION V: BROADER IMPACTS ON HEALTH AND WELL-BEING

"I think there'll be a fair amount of unemployment and illness that is, indirectly, related to the dislocation that has happened. So, certainly, a lot of stress and stress related illness, that will exacerbate existing conditions, and may tip people over the edge. We're concerned about basics: food insecurity, access to prescription drugs, other sorts of functions of economic distress."

HEALTH LEADER,
NORTH COUNTRY

"I'm enormously concerned about the economy and what that will do to us, to our community in the long run. We are a really economically fragile community to begin with and I just worry very much about health effects over the next year and couple of years as people are scraping by worse than they have been already."

PRIMARY CARE PROVIDER,
UPPER VALLEY

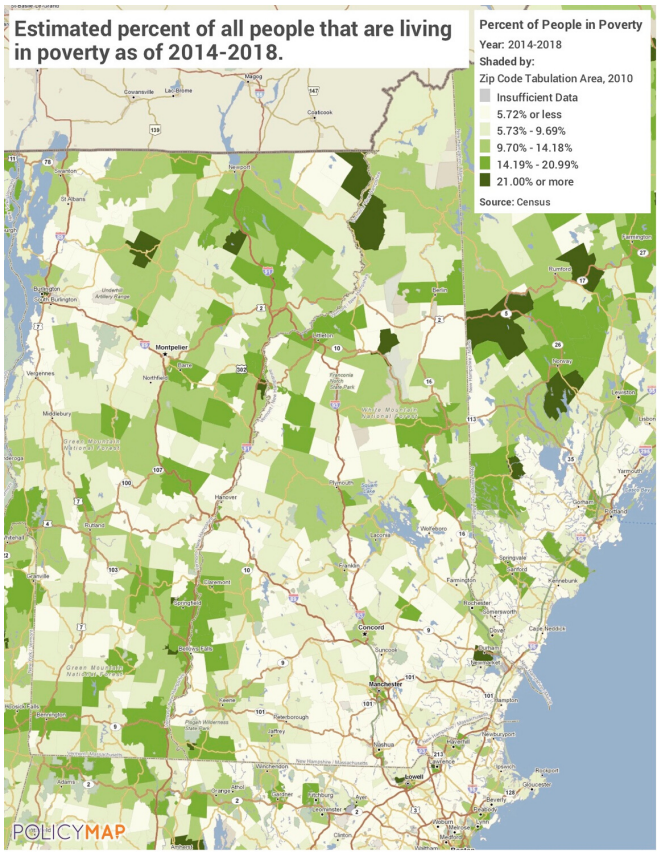
LOSSES AND OPPORTUNITIES IN RURAL COMMUNITIES

The regional economy is driven by diverse sectors, including healthcare, education, agriculture, engineering/technology, tourism, and services (i.e., retail, food service, etc.). As such, the impact of the pandemic across sectors has been varied. The service sector, including retail and restaurants, and businesses involved in tourism have been among the hardest hit by closures and stay-at-home orders in NH and VT.[xliv] There was an awareness that tourism and second-home ownership is a 'double-edged sword' in the region concerning COVID-19; regional economies depend on the influx of people "from the outside," yet several participants were worried about those from areas with high rates of infection relocating to rural areas and potentially spreading infection and overwhelming small hospitals. Overall, participants voiced deep concern about the ability of local small businesses to weather declines in revenue and anticipated "devastating" long-term impacts on local economies and the deepening of rural poverty.

The healthcare sector also endured steep financial losses, as detailed more fully in Section 4 of this report. More broadly, participants expressed concern about the potential loss of institutions, including rural hospitals as well as colleges and universities, that anchor many communities in the region.

Despite the challenges, the overall reshaping of the US economy may offer unique opportunities to rural regions. Local farms and general stores enabled continued access to food and other necessities amid disruptions to global supply chains.[xlv] Agriculture and other rural industries, such as logging, that easily accommodate social distancing may be especially resilient. The transition of many sectors of the economy to remote work, combined with growing migration out of cities offer opportunities.[xlvi] Many described the arrival of city residents as a longer-term opportunity for regions with population decline. Investment in rural broadband will be foundational for rural economies to fully benefit from broader shifts toward telework, opening up new opportunities for employment among rural residents and attracting workers to the region.

Figure 4: Estimated percent of all people living in poverty as of 2014-2018 (PolicyMap, US Census)



"They were either high tech, and medical, and IT kinds of things or people were working in the service industry. So the question is, if you know half of the population is working in the service industry, in this region, is the service industry going to come back? Are the hotels going to come back? Is the tourism going to come back? What's going to happen? Will retail come back? Will people have found other ways to get what they need or will the natural inclination to be a community come back? I don't think we've dealt with anything like this before to really know."

NONPROFIT SECTOR LEADER, UPPER VALLEY

"I think some of the things I would think of in terms of opportunities would be recognition that for any economic recovery in rural areas, we've got to have broadband everywhere."

PRIMARY CARE PROVIDER, UPPER VALLEY

POVERTY AND UNEMPLOYMENT

According to the American Community Survey, New Hampshire has one of the lowest state poverty rates at around 7.7 percent in the U.S.; Vermont's poverty rate is 11.3 percent. The national average is 13.4 percent.[xlvii] Prior to the pandemic, New Hampshire and Vermont had low rates of unemployment. Pre-pandemic unemployment rates hovered at 2.4 percent and 2.5 percent respectively for Vermont and New Hampshire (see Figure 4[xlviii]). Nationally, the seasonally adjusted unemployment rate for April 2020 In the pandemic rose to 14.7 percent, an increase of 11.1 percentage points from April 2019.[xlix] More than 15 percent of the New Hampshire labor force has lost work; the unadjusted unemployment rate for April rose sharply to 17.2 percent according to the New Hampshire Employment Security.[l] Estimates for the Vermont April unemployment rate in Vermont put it at approximately 20 percent.[li]

"A lot of people that have been furloughed, or laid off from work, or their jobs have ended, are people that typically identify themselves as a working person. I think that's going to have impacts that are beyond just the economic. It's going to get reflected in other places that could be divorce, or domestic violence, or child abuse, or things such as that."

SOCIAL SERVICE LEADER,
UPPER VALLEY

"We're actually now we're serving probably 90 households a day, and typically we're at the 50 range. So there's some new level of people coming to the [the food shelf] ... but somewhat invisible, more new people. I sometimes overhear the interviews of registration: 'I've never been here before, I just lost my job.' So, there's some of that occurring. I think that's going to grow over time with more economic dislocation, and then if there's a second wave in the fall of the virus."

SOCIAL SERVICE LEADER,
UPPER VALLEY

Figure 5: Traffic announcement for state foodbank delivery at Thetford Academy

Given the diversity of the region's economy, the immediate financial impacts of the pandemic in the region have been uneven, with workers in some sectors having opportunities to transition seamlessly to remote work. In contrast, others have been furloughed or laid off. For those more adversely impacted, participants expressed that the immediate effects of lost income were somewhat lessened by short-term economic supports (e.g., stimulus and unemployment payments). Relatedly, many in the study expressed that there was a widespread expectation of re-employment that may have mitigated the immediate impacts of furloughs and layoffs. Yet, as participants reflected on the long-term horizon, several expected a cascade of social consequences to come from widespread unemployment.

Overall, there were deep concerns about the ability of local economies to recover and the anticipation of long-term economic dislocation among many in rural communities.

FOOD INSECURITY

Food security emerged as a primary area of concern. Food banks in New Hampshire and Vermont have seen increased demand. According to a statewide survey by the University of Vermont in March, food insecurity in Vermont increased to 24.3 percent from 18.3 percent prior to the pandemic.[lii] In April, Vermont Foodbank distributed approximately 1.6 million pounds of food, which is a 78 percent increase above the norm and is expecting to spend an additional $1 million through September.[liii] According to the New Hampshire Food Bank, which supplies food to more than 400 agencies, the demand for food has increased by 44 percent compared to a year ago.[liv]

Stakeholders from community-based organizations, social service agencies, and healthcare organizations serving predominantly low-income patients described increasing demand for food assistance.

VOICES ON HEALTH AND WELL-BEING

"The folks at [community-based and social service organizations] are doing herculean work to strengthen, to hold together the food web in our region. I think there have been several really small community food shelves that wanted to close, and through sheer force of will [the people within the network] have convinced them either to stay open or found other folks to come in and help keep those things open. I understand that they're making weekly phone calls to all the food pantries to say, "What do you need? What are you running out of? How can we make sure we fill your stock back up again so that people can get access to food when they need it?"

PUBLIC HEALTH LEADER,
UPPER VALLEY

"We are in regular contact with our area senior centers... We do regular outreach to them. We do dinners with them, provide a number of different services. We also have a standing relationship with our local food shelf. We also have relationships with other food shelves in surrounding communities. We have a program where we will, working with the local food shelves, where we'll provide bags of non-perishable foods and through our practices, to people who are food insecure."

HOSPITAL EXECUTIVE,
CENTRAL VERMONT

"If I think about some of the more rural communities in our area that don't have centralized access to transportation, because the buses have still been running here in White River. People in White River have been easily able to come and do our curbside food shelf. But when I think about people who live out in Stratford, Vermont, or Corinth Vermont or some of those places who may not have transportation, and people who used to take them to the grocery store might not want to transport them anymore. I know that some of those rural communities have really come together with their own local volunteers to start groups to deliver food to people, so people can call and get help. But if a little town like that hasn't had a group of volunteers offering to do that, I don't know what happens with people. I think it's hard in the rural areas."

SOCIAL SERVICE LEADER,
UPPER VALLEY

"So we've had some people like on back roads that it turned ... like, one person who's disabled, sounds like he lives alone, has been getting food from like the West Lebanon food shelf. And now can't leave this house and needs ... He didn't know that Bradford has food shelf and I don't think he's connected to any social services, including like Meals on Wheels, which he would qualify for. So I just think that the knowing ... I just got off a call about economic development services before this, and I just feel like there's so many services in our region, but people do not know what those are and they don't have people to navigate. I get so many calls from ...people just asking super basic stuff and it's really just connecting them with the service they should already be connected with."

COMMUNITY LEADER,
UPPER VALLEY

As schools shifted to remote learning, communities, in partnership with social service and health systems, rapidly mobilized to meet needs among families who rely upon school-based meals. More broadly, creative collaborations across sectors facilitated access to food for vulnerable community members.

To adhere to social distancing guidelines, many organizations modified their processes (e.g., drive-through services). Meals-on-Wheels, for example, shifted from daily delivery to once per week delivery of meals to limit potential contact. While such modifications have been useful in promoting continued access to food, some participants raised specific concerns regarding isolated elders who may now have less frequent contact with volunteers. Others noted transportation challenges as a barrier to accessing food resources in their communities.

RURAL HOUSING AND HOMELESSNESS

The COVID-19 pandemic cast into stark relief the scale of housing challenges in the region. Prior to the pandemic, both states lacked adequate housing units, and shelters were at or above capacity.[lv] The limited supply of housing in rural communities resulted in low vacancy rates and rising rents for properties in much of NH and VT.[lvi] Individuals and families often turned to 'doubling up' in this context. However, with calls for social distancing and rising fears of exposure, such precarious housing arrangements became untenable strategies. Several participants described situations in which individuals were suddenly 'kicked out' their housing and found themselves homeless. Whereas the scale of homelessness in rural communities has previously been difficult to assess accurately,[lvii] several participants noted that efforts to identify and house individuals in the context of COVID-19 have allowed some communities to produce a more accurate census of the population experiencing homelessness.

Several participants expressed hope that greater attention to housing needs in the context of the pandemic may represent an opportunity to build on longstanding advocacy efforts by social service and community organizations.

"You know what, I think there's going to be more resources, because the federal government and state are really putting... Like yesterday, I was on this very exciting call. The focus of it was to end homelessness, and that there's resources being put into that right now. The whole focus of this committee was what we can do. Now that people are identified in the hotels, how can we really use case management to address people's needs and really make a dent in this? The talk was for general assistance to move the dealing of homelessness away from the committees to a local structure. Well, that didn't happen, and we kept our current structure, and it's, I think, revitalizing."

COMMUNITY HEALTH LEADER, WINDSOR COUNTY

BROADBAND AND RURAL DIGITAL DIVIDE

Enabling widespread access to broadband throughout the region was identified as a top priority across participants. Lack of access emerged as a key equity issue in the region as rapid transitions to telehealth, remote learning, and remote work necessitated access to technology and the internet among community members. Yet, many areas in the region — particularly in the more remote and rural regions — broadband internet access remains extremely limited. Twenty-three percent of Vermonters lack access to broadband internet, and this number is twice as high in the Northeast Kingdom of the state.[lviii]

The Federal Communications Commission estimates that at least 14.5 million people in rural areas lack access to broadband.[lix] In addition, participants noted that even in areas with better overall coverage, lower-income individuals and families might face financial challenges and lack of technology that limit their access.

"So in terms of opportunity, what I'm thinking about is just sort of the recognition that everyone's got to have broadband in their home. Nothing about a pandemic works if you can't work from home and if your kids can't get schooled. And we have loads of folks around here who don't have broadband access. I had a mom and a little kid in my office just yesterday or who's lives right up the road from me, not more than a mile from my house and they have no internet and couldn't get it installed until mid June. So her kid is having no online schooling at all, her learning disabled seven year old. So broadband would be, I'm not sure that's an opportunity, but certainly a recognition that it's essential making it like electricity and that sort of thing."

PRIMARY CARE PROVIDER, NORTHEAST KINGDOM

VOICES ON VULNERABLE POPULATIONS

"I think those are the communities around here, my service area Ryegate, Groton, I don't think there's a lot of community organization there. Borderline here in Newbury. I think that that's where I'm really concerned about sort of longterm health outcomes. More poverty, more isolation, potentially more substance use, potentially more, I don't know, child neglect, domestic violence. All of those things seem like they could spike. I mean they spike during times of economic distress anyway and then we add this imposed isolation on people. I think we're going to see really poor house health outcomes over the next year or two. And part of that also is the deferred care that I was talking about in the beginning."

PRIMARY CARE PROVIDER,
UPPER VALLEY

"I worry about that, how is all of this impacting children who might be living in households that aren't super healthy or safe? At least the after school program and the children's program gave them a break from being home, which was a reprieve for them.... DCF is only investigating real serious claims, so I feel like there's a lot of children and probably elders and disabled people experiencing disabilities that might not be being treated so well. And our government organizations aren't working at full capacity or intervening when they used to."

SOCIAL SERVICE LEADER,
UPPER VALLEY

"The other population that I have run into here are individuals who are experiencing domestic violence. Typically, an individual that was experiencing domestic violence could go to court, at least get a temporary order, and typically, the person that might be prompting the violence is asked to leave the home, right? Or is ordered to leave the home. Now, with this situation where people can't be evicted, some individuals, I know of one case in particular, she had to go back home and live with her parents, because the perpetrator did not have to leave. So not only did that create a problem for her in terms of her housing, but also for her work, as her work was 60 miles from where she's now living."

SOCIAL SERVICE PROVIDER,
NORTH COUNTRY

Thus, there was an overall sentiment that the rural 'digital divide' reflects and may deepen disparities in both health and education as telehealth and remote learning strategies continue. Investment in rural broadband is a key advocacy priority to ensure equitable long-term access to health, education, and work opportunities.

SECONDARY IMPACTS OF THE PANDEMIC ON RURAL POPULATIONS

While the scale of particular challenges — food and housing insecurity— has been brought into fuller view as communities responded to COVID-19, other significant risks may be more hidden. In particular, some participants shared their concerns about domestic violence, and child abuse/neglect as households became increasingly isolated and under significant stresses. Several participants noted that reports made to Child and Family Services in Massachusetts had plummeted by as much as 50 percent as contact with mandated reporters through school and healthcare was limited.[lx]

Mental health and substance use also were key concerns among participants. Entering the pandemic, the region was contending with an ongoing crisis in substance use. Many anticipated a 'wave' of mental health and substance use challenges in the coming months as populations continue to contend with social isolation, stress, and financial insecurity (see Section 2, Vulnerable Populations, for a more detailed discussion.)

"So I think there's a lot of outreach happening there. And a lot of these folks, despite their age, still grow their own food. So there's a lot of them, I've heard, when I've been in that office that say, "Everybody thought I was crazy for growing that garden and doing all that canning. Well they're smiling now."

BEHAVIORAL HEALTH LEADER,
NORTH COUNTRY

"We should really learn from what we've been through in a way that we can make lives better for our communities going forward... Mental health is the key priority. Structures for food sufficiency, how to work collaboratively between and within systems... Technology and the appropriate use thereof. Can we capitalize for those poor, frail elders who really have to struggle and are not seeking healthcare? How can we really maximize that telehealth component so that we can better meet their needs and their family's needs?"

HEALTH LEADER,
WINDSOR COUNTY

LOOKING AHEAD: A VISION OF EQUITY AND OPPORTUNITY IN NORTHERN NEW ENGLAND

Amid concerns about dramatic unemployment, rising food insecurity, and economic dislocation, rural leaders highlighted new opportunities to fortify efforts to address longstanding challenges. Even as rural communities have endured dramatic losses of jobs, the pandemic has revealed the resilience and resourcefulness within communities.

Health systems and social service organizations collaborated to provide a robust integrated response. Communities leveraged the strong New England tradition of civic involvement to mobilize grassroots efforts to meet the needs of rural residents. The prevailing ethos within Northern New England — a constellation of pragmatism, compassion, and solidarity — translated into a protective response amid a rapidly unfolding public health crisis. Strategic supports to capitalize on these strengths will position rural communities in Northern New England for long-term recovery.

PRIORITIES FOR ACTION, POLICY, AND RESEARCH

Pandemic Response

- Securing adequate supply and quality of PPE and diagnostics to enable safe resumption of health services and preparedness for future waves of the epidemic
- Ensuring adequate support for the health workforce in VT and NH for the duration of pandemic (i.e., childcare, mental health support, isolation, and surge staffing).

Rural Health Landscape

- Determining policy, regulatory, and financial supports needed for healthcare organizations for the long-term pandemic response and recovery

Telehealth

- Achieving regulatory reform for telehealth, including full reimbursement for telephone- and computer-based visits
- Enabling providers to deliver telehealth across the VT/NH state border

Vulnerable Patients and Populations

- Enhancing and sustaining protections for most vulnerable patients and populations, including residents of congregate living facilities, socially isolated elders, and the homeless population

Broader Impacts

- Generating evidence to guide policymaking to mitigate impacts and leverage opportunities.
- Ensuring representation of rural communities in decision-making processes
- Prioritizing investments in internet and communications infrastructure

CONCLUSION

This report describes the key findings from a rapid study that focused on documenting the impacts of the COVID-19 pandemic on health systems and communities in rural Vermont and New Hampshire during the early pandemic response. Interviews with leaders from health systems, social services, community organizations, and town/city governments yielded insights into the profound impact that the pandemic has had across the bi-state region. Robust, integrated responses across health systems, social services, and communities effectively mitigated morbidity and mortality in the region, despite bordering states with high levels of infection. There were significant efforts to protect the region's most vulnerable populations. The effective early pandemic response reflects strengths within the region, which facilitated agile, creative, and collaborative efforts to meet immediate needs.

The COVID-19 pandemic has also laid bare underlying vulnerabilities within rural health systems and communities. Workforce shortages and financial instability threaten the viability of rural healthcare organizations. The dramatic loss of jobs, increasing food insecurity, limited affordable housing, social isolation of elders, and ongoing behavioral health challenges represent significant threats to the region's long-term recovery.

Yet the strengths identified in the region's early response to the COVID-19 crisis point to opportunities to disrupt a trajectory of decline for the region. Strategic supports at the state and federal levels will be necessary to augment robust local, regional efforts to sustain the successes of the early-stage response, mitigate longer-term secondary health impacts, and position the region for a more rapid recovery.

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APPENDIX

PARTICIPATING ORGANIZATIONS

Affordable Housing, Education, and Development (AHEAD)
Ammonoosuc Community Health Services
Bi-State Primary Care Association
Bradford Resilience
Coös County Family Health Center
Dartmouth-Hitchcock Centers for Health and Aging
Dartmouth-Hitchcock Community and Family Medicine
Dartmouth-Hitchcock Community Health Workers
Dartmouth-Hitchcock Population Health
Emergency Management, Regional Departments
Gifford Health Care
Good Neighbor Health Clinic
Greater Sullivan County COVID-19 Response
Hardwick Neighbor to Neighbor
Health First Family Care Center
Lakes Regional General Hospital
Little Rivers Health Care
Mascoma Community Health Center
Mid-State Health Center
Mt. Ascutney Hospital and Health Center
North Country Health Consortium
North Country Public Health Network
Northeast Kingdom Community Action
Northeast Kingdom Council on Aging
Northeast Vermont Regional Hospital
Northern Counties Health Care
Northern New England Perinatal Improvement Network (NNEPQIN)
Organized Acts of Kindness (OAKS)
Public Health Council of the Upper Valley
Senior Solutions, Council on Aging for Southeastern Vermont
Speare Memorial Hospital
Stowe Family Practice
TLC Family Resource Center
Upper Connecticut Valley Hospital
Upper Valley Haven
Valley Health Connections
Vermont Department of Health, Regional Offices
Visiting Nurse and Hospital for VT and NH (VNH)
West Central Behavioral Health
Windsor Community Health Clinic

REFERENCES

[i] "Emergency Broadband Action Plan | Department of Public Service," Vermont Department of Public Service, May 26, 2020, https://publicservice.vermont.gov/content/emergency-broadband-action-plan; Katherine Sims, "Bringing Broadband to the NEK," VTDigger, February 25, 2020, https://vtdigger.org/2020/02/25/katherine-sims-bringing-broadband-to-the-nek/.
[ii] PolicyMap, "Estimated Percent of Households with No Internet Access, between 2014-2018," Policy Map, n.d., https://plcy.mp/wrH7K0W.
[iii] Adam McCann, "COVID-19 Unemployment Claim Increases by State," WalletHub, May 28, 2020, https://wallethub.com/edu/states-with-the-biggest-increase-in-unemployment-due-to-coronavirus/72730/.
[iv] Andrew Joseph, "Coronavirus Pandemic Could Take a Crushing Toll on Rural Areas, Data Show," STAT (blog), April 16, 2020, https://www.statnews.com/2020/04/16/rural-communities-coronavirus-toll/.
[v] "About Rural Health | CSELS | OPHSS | CDC," Centers for Diseases Control, March 25, 2020, https://www.cdc.gov/ruralhealth/about.html.
[vi] Jessica Carson, "Rural Areas with Seasonal Homes Hit Hard by COVID-19," Carsey School of Public Policy | UNH, April 8, 2020, https://carsey.unh.edu/publication/snapshot/rural-areas-seasonal-homes-hit-hard-COVID.
[vii] Bob Audette, "Vermont COVID-19 Growth Rate Lowest in Nation," The Bennington Banner, May 15, 2020, https://www.benningtonbanner.com/stories/vermont-covid-growth-rate-lowest-in-nation,604810.
[viii] Jennifer Millman, "New York Has Most COVID-19 Cases in World, Deaths Top 7k as Curve Starts to Flatten - NBC New York," NBC New York, April 9, 2020, https://www.nbcnewyork.com/news/local/new-york-has-most-covid-19-cases-in-globe-cuomo-warns-of-more-death-even-as-curve-flattens/2366721/.
[ix] "Rural Health for New Hampshire Introduction -," Rural Health Information Hub, January 31, 2019, https://www.ruralhealthinfo.org/states/new-hampshire; "Rural Health for Vermont Introduction," Rural Health Information Hub, June 7, 2019, https://www.ruralhealthinfo.org/states/vermont.
[x] "Critical Access Hospitals (CAHs) Introduction," Rural Health Information Hub, August 20, 2019, https://www.ruralhealthinfo.org/topics/critical-access-hospitals.
[xi] Fred Schulte et al., "Millions Of Older Americans Live In Counties With No ICU Beds As Pandemic Intensifies |," Kaiser Health News, March 20, 2020, https://khn.org/news/as-coronavirus-spreads-widely-millions-of-older-americans-live-in-counties-with-no-icu-beds/.
[xii] PolicyMap and Kaiser Health News, "Number of Intensive Care Unit (ICU) Beds in 2019," Policy Map, n.d., https://plcy.mp/CwHtN9S.
[xiii] "Designated Health Professional Shortage Areas Statistics," Second Quarter of Fiscal Year 2020, Designated HPSA Quarterly Summary (Bureau of Health Workforce Health Resources and Services Administration (HRSA), U.S. Department of Health & Human Services, March 31, 2020), https://data.hrsa.gov/Default/GenerateHPSAQuarterlyReport.
[xiv] "New Hampshire Health Center COVID-19 Survey Summary Report," Text, HRSA Bureau of Primary Health Care, May 22, 2020, https://akaprod-bphc.hrsa.gov/emergency-response/coronavirus-health-center-data/nh; "Vermont Health Center COVID-19 Survey Summary Report," HRSA Bureau of Primary Health Care, June 2, 2020, https://akaprod-bphc.hrsa.gov/emergency-response/coronavirus-health-center-data/vt.
[xv] "New Hampshire Health Center COVID-19 Survey Summary Report"; "Vermont Health Center COVID-19 Survey Summary Report."

REFERENCES

[xvi] Jason Moon, "New Data Shows a Widespread N.H. Shortage of Health Care Workers," NHPR, February 7, 2019, https://www.nhpr.org/post/new-data-shows-widespread-nh-shortage-health-care-workers; "VTPM Healthcare Industry Needs Assessment Survey Data" (Vermont Talent Pipeline Management, June 19, 2018), https://docs.wixstatic.com/ugd/e92786_17d7096537384be9bb117a264b2beb4f.pdf; "The Vermont Primary Care Practitioner Workforce 2018 Snapshot," A Statewide Workforce Shortage in Internal Medicine/Adult Primary Care Persists (Vermont Area Health Education Centers (AHEC), January 2019), http://contentmanager.med.uvm.edu/docs/vermont_primary_care_practitioner_workforce_2018_snapshot_f3_19/ahec-documents/vermont_primary_care_practitioner_workforce_2018_snapshot_f3_19.pdf?sfvrsn=2.
[xvii] PolicyMap and New York Times, "Severe COVID-19 Health Risk," Policy Map, n.d., https://plcy.mp/KXyyvpd.
[xviii] Christine Himes and Lillian Kilduff, "Which U.S. States Have the Oldest Populations? - Population Reference Bureau," PRB (blog), March 16, 2019, https://www.prb.org/which-us-states-are-the-oldest/.
[xix] "U.S. Census Bureau QuickFacts: Vermont," U.S. Census Bureau, 2019, https://www.census.gov/quickfacts/VT.
[xx] "U.S. Census Bureau QuickFacts: New Hampshire," U.S. Census Bureau, 2019, https://www.census.gov/quickfacts/NH.
[xxi] "COVID-19 Summary Dashboard," New Hampshire Department of Health and Human Services, June 6, 2020, https://www.nh.gov/covid19/dashboard/summary.htm.
[xxii] Jason Moon, "Nearly A Quarter of Nursing Homes in N.H. Impacted By Coronavirus," New Hampshire Public Radio, June 5, 2020, https://www.nhpr.org/post/nearly-quarter-nursing-homes-nh-impacted-coronavirus.
[xxiii] Vermont Department of Health, "Weekly Summary of Vermont COVID-19 Data: Reflecting Cases Identified between March 5 - June 3, 2020," June 5, 2020, https://www.healthvermont.gov/sites/default/files/documents/pdf/Weekly-Summary-of-Data.pdf.
[xxiv] Travis P. Baggett et al., "Mortality among Homeless Adults in Boston: Shifts in Causes of Death over a 15-Year Period," JAMA Internal Medicine 173, no. 3 (2013): 189–95.
[xxv] Jack Tsai and Michal Wilson, "COVID-19: A Potential Public Health Problem for Homeless Populations," The Lancet Public Health 5, no. 4 (2020): e186–87, https://doi.org/10.1016/S2468-2667(20)30053-0.
[xxvi] Emily Mosites et al., "Assessment of SARS-CoV-2 Infection Prevalence in Homeless Shelters — Four U.S. Cities, March 27–April 15, 2020," MMWR. Morbidity and Mortality Weekly Report 69 (2020), https://doi.org/10.15585/mmwr.mm6917e1.
[xxvii] Kathleen C. Thomas et al., "County-Level Estimates of Mental Health Professional Shortage in the United States," Psychiatric Services 60, no. 10 (2009): 1323–28.
[xxviii] Sims, "Katherine Sims"; "Emergency Broadband Action Plan | Department of Public Service."
[xxix] PolicyMap, "Estimated Percent of Households with No Internet Access, between 2014-2018"; "U.S. Census Bureau QuickFacts: New Hampshire."
[xxx] Todd Bookman, "As COVID-19 Drains Hospitals, Some in N.H. 'Barely Keeping the Lights On,'" New Hampshire Public Radio, April 21, 2020, https://www.nhpr.org/post/covid-19-drains-hospitals-some-nh-barely-keeping-lights#stream/0.
[xxxi] Vermont Green Mountain Care Board, "Fiscal Year 2019 Vermont Hospital Budgets Year-End Actuals Reporting," https://gmcboard.vermont.gov/sites/gmcb/files/Board-Meetings/FY19%20Actuals%20Report-%20updated%202.26.20%2012pm.pdf.

REFERENCES

[xxxii] "Hospitals and Health Systems Face Unprecedented Financial Pressures Due to COVID-19," American Hospital Association, May 2020, https://www.aha.org/guidesreports/2020-05-05-hospitals-and-health-systems-face-unprecedented-financial-pressures-due.
[xxxiii] Garry Rayno, "Financial Ills Spread across State's Healthcare Providers from COVID-19," Manchester Ink Link, May 13, 2020, https://manchesterinklink.com/financial-ills-spread-across-states-healthcare-providers-from-covid-19/; Paula Tracy and InDepthNH.org, "NH Health-Care Industry Details COVID-19 Losses To Committee," InDepthNH.org, April 20, 2020, http://indepthnh.org/2020/04/20/nh-health-care-industry-details-covid-19-losses/; Katie Jickling, "UVM Health Network Projects $152 Million Loss This Year Due to Covid-19," VTDigger, May 1, 2020, https://vtdigger.org/2020/05/01/uvm-health-network-projects-152-million-loss-this-year-due-to-covid-19/; Bookman, "As COVID-19 Drains Hospitals, Some in N.H. 'Barely Keeping the Lights On.'"
[xxxiv] Steve Ahnen, "NHHA Statement on Governor Sununu's Decision to Provide $20M in Hospital Relief Funding Allocation," New Hampshire Hospital Association, May 15, 2020, https://www.nhha.org/index.php/blog/1574-nhha-statement-on-governor-sununu-s-decision-to-provide-20m-in-hospital-relief-funding-allocation.
[xxxv] Jesse Drucker, Jessica Silver-Greenberg, and Sarah Kliff, "Wealthiest Hospitals Got Billions in Bailout for Struggling Health Providers," The New York Times, May 25, 2020, sec. Business, https://www.nytimes.com/2020/05/25/business/coronavirus-hospitals-bailout.html.
[xxxvi] "New Hampshire Health Center COVID-19 Survey Summary Report."
[xxxvii] "Vermont Health Center COVID-19 Survey Summary Report."
[xxxviii] Kristine Stoddard and Bi-State Primary Care Association, "New Hampshire's Community Health Centers During the COVID-19 Pandemic," n.d., ttps://bistatepca.org/uploads/pdf/Bulletins/NH%20Udpate%20files_CD/GOFERR%20Testimony_NH%20CHCs%20during%20COVID-19%20Pandemic%204-23-20.pdf.
[xxxix] Todd Bookman, "The Grim Picture Facing Hospitals," Concord Monitor, April 25, 2020, https://www.concordmonitor.com/Granite-State-News-Collaborative-34032232.
[xl] Katy Savage, "Judge Rules Springfield Hospital Can Apply for SBA Loan," VTDigger, May 7, 2020, https://vtdigger.org/2020/05/07/judge-rules-springfield-hospital-can-apply-for-sba-loan/.
[xli] Kritee Gujral and Anirban Basu, "Impact of Rural and Urban Hospital Closures on Inpatient Mortality," Working Paper, Working Paper Series (National Bureau of Economic Research, August 2019), https://doi.org/10.3386/w26182.
[xlii] George M. Holmes et al., "The Effect of Rural Hospital Closures on Community Economic Health," Health Services Research 41, no. 2 (2006): 467-85.
[xliii] Riley Sullivan, "Declining Access to Health Care in Northern New England," Federal Reserve Bank of Boston, April 10, 2019, https://www.bostonfed.org/publications/new-england-public-policy-center-regional-briefs/2019/declining-access-to-health-care-in-northern-new-england.aspx.
[xliv] David Gelles, "'This Is Going to Kill Small-Town America,'" The New York Times, April 14, 2020, sec. Business, https://www.nytimes.com/2020/04/14/business/coronavirus-small-towns.html.
[xlv] John Lippman, "Upper Valley General Stores Get a Boost from Local Shopping in the Pandemic," Valley News, May 2, 2020, https://www.vnews.com/General-stores-join-front-lines-during-coronavirus-34112609.
[xlvi] Bonnie Kristian, "The Great Coronavirus Migration," The Week, March 20, 2020, https://theweek.com/articles/903397/great-coronavirus-migration.rting.html.

REFERENCES

[xlvii] Art Woolf, "Vermont Poverty Rate at 11.3 Percent," Burlington Free Press, October 10, 2018, https://www.burlingtonfreepress.com/story/news/2018/10/10/vermont-poverty-rate-percent/38106341/.
[xlviii] PolicyMap and US Census Bureau, "Estimated Percent of All People That Are Living in Poverty as of 2014-2018.," Policy Map, n.d., https://plcy.mp/27BLdq8; "U.S. Census Bureau QuickFacts: New Hampshire"; "U.S. Census Bureau QuickFacts."
[xlix] "News Release: The Employment Situation - April 2020" (US Department of Labor: Bureau of Labor Statistics, n.d.), https://www.bls.gov/news.release/pdf/empsit.pdf.
[l] Kristen Carosa, "NH Unemployment Hits Record 16.3% in Wake of COVID-19 Pandemic," WMUR, May 20, 2020, https://www.wmur.com/article/nh-unemployment-hits-record-163-in-wake-of-covid-19-pandemic/32598613.
[li] Timothy McQuiston, "Weekly Unemployment Claims Keep Falling, Still over 2,100," Vermont Business Magazine, May 21, 2020, https://vermontbiz.com/news/2020/may/21/weekly-unemployment-claims-keep-falling-still-over-2100.
[lii] Meredith T. Niles et al., "Food Access and Security During Coronavirus: A Vermont Study," College of Agriculture and Life Sciences Faculty Publications, 2020, https://scholarworks.uvm.edu/calsfac/21; "UVM Survey: How Is Coronavirus Affecting Food System, Food Insecurity?," University of Vermont, March 30, 2020, https://www.uvm.edu/uvmnews/news/uvm-survey-how-coronavirus-affecting-food-system-food-insecurity.
[liii] "Vermont Foodbank Partner for COVID-19 Hunger Relief Fund Donation Drive," NBC5, May 6, 2020, 5, https://www.mynbc5.com/article/nbc5-vermont-foodbank-partner-for-covid-19-hunger-relief-fund-donation-drive/32358929.
[liv] Tim Callery, "NH Food Bank, National Guard Hold Mobile Food Pantry for North Country Families," WMUR, April 27, 2020, https://www.wmur.com/article/food-bank-national-guard-mobile-food-pantry-north-country-families/32281396.
[lv] Grace Elletson and Erin Petenko, "Vermont's Homeless Population Is Declining, but the Shelters Are Full," VTDigger, November 29, 2019, https://vtdigger.org/2019/11/29/despite-dropping-homeless-population-vermonts-shelters-are-full/; Shawne Wickham, "No Vacancy: Housing Crunch Has Shelters Full and Homeless Camps Growing," UnionLeader.com, December 14, 2019, https://www.unionleader.com/news/social_issues/no-vacancy-housing-crunch-has-shelters-full-and-homeless-camps-growing/article_8a73049c-ca10-5a32-b767-de8131a6e654.html.
[lvi] Britta Greene, "Housing Crunch a Challenge For Upper Valley Businesses," May 11, 2018, https://www.nhpr.org/post/housing-crunch-challenge-upper-valley-businesses; Elizabeth Gribkoff, "Study: Affordable Housing 'out of Reach' for Many Vermonters," VTDigger, June 14, 2018, https://vtdigger.org/2018/06/14/study-affordable-housing-reach-many-vermonters/.
[lvii] Elizabeth Carpenter-Song, Joelle Ferron, and Sara Kobylenski, "Social Exclusion and Survival for Families Facing Homelessness in Rural New England," Journal of Social Distress and the Homeless 25, no. 1 (2016).
[lviii] "Emergency Broadband Action Plan | Department of Public Service."
[lix] "Eighth Broadband Progress Report," Federal Communications Commission, August 21, 2012, https://www.fcc.gov/reports-research/reports/broadband-progress-reports/eighth-broadband-progress-report.
[lx] Melissa Hanson, "Reports of Suspected Child Abuse in Massachusetts Drop by 50% during Shutdowns," masslive, May 23, 2020, https://www.masslive.com/coronavirus/2020/05/reports-of-suspected-child-abuse-in-massachusetts-plummet-by-50-during-shutdowns-as-advocates-warn-of-underreporting.html.