Per Ostmo: So now I'll hand things off to our presenter, Dr. Katherine Ahrens from the Maine Rural Health Research Center. Take it away, Dr. Ahrens.

Katherine Ahren...: Great. Okay. Can you hear me?

Per Ostmo: Sounds good.

Katherine Ahren...: Okay. Well, thank you for attending this webinar today. I'm pleased to present our work on these chart books on the Northern Border Regional Commission, a health focused landscape analysis. Oops, here. So the Northern Border Regional Commission was formed in 2008 by Congress in order to help fund economic and community development projects in Maine, New Hampshire, Vermont, and New York, and focuses mainly on rural counties in these four states. Since 2010, the Northern Border Regional Commission, the NBRC, has provided more than $90 million in funding for economic and infrastructure development projects in Maine, New Hampshire, New York, and Vermont. Often the commission leverages match funding from federal government and state governments. And for more detail, I have the URL below. And this map is showing you here the Northern Border Regional Commission. And the counties in dark blue are classified as distressed economically counties. The lighter blue is transitional. And then the very light blue is attainment county. And the counties in gray are considered not to be in the NBRC region.

Katherine Ahren...: This was according to the 2021 classification of counties. I think it might have changed in the recent definition. So to inform the distribution of the NBRC commission funds, the Maine Rural Health Research Center conducted a landscape analysis of population health and healthcare access for each state and for the region overall. We here present measures that may assist in the planning, that is developing applications and the selection that is choosing the applications to fund of high impact health related projects for rural counties in greatest need. We put together one regional chart book and four state chart books. And I worked with my project team members, which were Amanda Burgess, Carly Milkowski, Louisa Munk, Yvonne Jonk, and Erika Ziller, all with the Maine Rural Health Research Center.

Katherine Ahren...: Here is picture of the first page of each of these chart books. The one in the upper left is the regional chart book, which focuses on the whole region. And then we have a chart book for Maine, New York, New Hampshire and Vermont. And those are all on the rural health research Gateway. They were posted in, I think, late April or early May. So I'm going to focus most of my presentation on the regional chart book. And if there's enough time, I think I could... I just have a few slides on the state chart books. So let me just keep track of time. I think I should have enough time.

Katherine Ahren...: Okay. So in terms of methods, for the regional chart book, we used state level health related measures published in 2021, which were aggregated by the County Health Rankings, which is a program of the University of Wisconsin Population Health Institute and funded by the Robert Wood Johnson

Foundation, and in addition to some other data sources. All the data sources we use are publicly available and free of charge. And we focused the state level measures in the regional chart book on those that are available at the county level. And we included it in the state level chart books. We examined measures within the following 12 health related domains for the regional chart book; demographics, socioeconomic characteristics, access to care, health outcomes, health behaviors, community safety and physical environment, mortality, access to the internet, health insurance, telehealth policies, telehealth grants, and scope of practice policies.

Katherine Ahren...: We also created maps of county level health professional shortage areas, substance use disorder related measures and healthcare facilities using ArcGIS. I'll show results for each health related domain, and then a set of maps and I'll highlight some findings. Please feel free to ask questions as I go along. You can submit them in the chat box and my presentation can be interrupted and I can respond to the questions.

Katherine Ahren...: Here are some demographic characteristics for the United States and for Maine, New Hampshire, New York and Vermont. So we have rurality; the percentage of the population living in a rural area. The age; the percent who are below 18 and 65 and older. By sex and by race ethnicity, and by language proficiency. So I just want to highlight two findings from this table. Rurality. So Maine and Vermont have about 61% of the population living in a rural area, which is much higher than the United States overall at 19%. New Hampshire's around 40%, which is also higher, but New York is just 12%, which is lower. And in terms of the race of non-Hispanic white race ethnicity, Maine and Vermont have above 90% of its population. non-Hispanic white. New Hampshire is about 90% and New York is much lower at 55%.

Katherine Ahren...: We also compiled the socioeconomic characteristics. So the employment status, income, social support, and education, and wanted to highlight one measure here, which is children living in poverty. So overall the United States 16.8%, and it's higher in New York at 18.2%, but lower in Maine and New Hampshire and Vermont with the lowest percentage in New Hampshire at 8.1%.

Katherine Ahren...: In terms of access to care, we compiled information on uninsured overall among adults and among children, the ratio of the population to primary care physicians, other primary care providers and dentists and mental health providers, and preventable hospital stays per 100,000 Medicare enrollees, mammography screening and flu vaccination rates. Highlight the ratio of the population to primary care physicians. So you generally want a low ratio. So the United States overall is about 1,319 population per primary care physician, and is lower than that in all of these states; in Maine, New Hampshire, New York, and Vermont. And lowest in Vermont and Maine.

Katherine Ahren...: In terms of health outcome, we looked at length of life and quality of life. So for length of life, it's life expectancy, premature age adjusted mortality, child mortality. And for quality of life, we looked at reporting a frequent physical

distress, mental distress, and diabetes prevalence. I'll just highlight these findings here, a frequent mental distress among adults. So overall the United States is 12.7% and it's higher than this in Maine and in New Hampshire at 15 or 16%, similar in Vermont at 12.6%, and in New York, slightly lower at 11.1%.

Katherine Ahren...: In terms of health behaviors, we looked at tobacco use, food access, physical activity and obesity, alcohol use and sexual health. And I wanted to highlight a few things here. So in terms of tobacco use, the percent of adults who smoke in the United States is 16.6%. And it's higher than that in Maine at 19.4%, and similar to the overall US and New Hampshire at 16.6% and lower in New York and in Vermont. In terms of the population who reports excessive drinking, it's higher than the national average in Maine and in New Hampshire and in Vermont and similar in New York. And in terms of teen births, so the number of teen births per 1000 female population, 15 to 19, it's lower than the national average in all four of these states.

Katherine Ahren...: Environment. So in community safety, this was measured with violent crimes, the number of offenses per a hundred thousand population, housing problems like severe housing problems and home ownership, the percent of occupied units owned and air pollution, particulate matter. So I'll just highlight that in terms of violent crime in these four states, they're generally lower than the United States overall. Much lower in Maine and Vermont than the US overall, similar in New York and lower in New Hampshire. And in terms of air pollution, the measures of air pollution are much lower in these four states than the United States overall.

Katherine Ahren...: We also looked at death rates per 100,000 population. So length of life like premature death, the years of potential life loss before age 75. Injury related deaths overall and broken out into subcategories like suicide deaths, firearm deaths, drug overdose deaths, and motor vehicle crash deaths. So I want to just point out two findings here, suicide deaths overall in the United States, the rate is 13.8 per 100,000. And it's higher than that in Maine, New Hampshire and Vermont, and lower than that in New York. In terms of drug overdose deaths, it's higher than the national average in Maine, New Hampshire and Vermont and lower in New York.

Katherine Ahren...: When you group deaths into two, the typical top five causes of death, you can see there are some patterns that are different than the overall United States. So cancer deaths in the United States, it's the second leading cause of death. But in Maine and Vermont and in New Hampshire, it's the first leading cause of death that's more common. And in terms of accidents, the rates of death for these outcomes are more common in Maine and New Hampshire and in Vermont than overall in the United States. And they're lower in New York.

Katherine Ahren...: In terms of access to the internet, we looked at household access to the internet with a subscription and without an internet subscription, and the percentage of the household that had no internet access and also the access with broadband

of any type. So no internet access was higher than the US overall in Maine, New York and in Vermont. And it was lower than the US overall in New Hampshire.

Katherine Ahren...: In terms of health insurance coverage, we examined health insurance coverage of the total population all ages, and by type of health insurance, like employer, Medicaid, Medicare and Military, and uninsured. And we used data from 2019, which is important because Maine underwent Medicaid expansion in January 2019, which affected its percentage of the population that was uninsured. So overall on this 2019, 9.2% of the population was uninsured. And it was lower than this in Maine, New Hampshire, New York and Vermont with the lowest rates seen in Vermont.

Katherine Ahren...: We compiled information on telehealth policies. So these are policies that have to do with reimbursement in Medicaid for telehealth services and laws and regulations around consent for telehealth services. I think this is changing all the time. This was research that was conducted between February 2021 and July 2021. So it may have changed since then. But I wanted to highlight at the time of the analysis, telehealth delivered via a telephone was reimbursed in Medicaid only for Maine at the time. We looked into the largest telehealth grants awarded by HRSA in the most recent report available to see what topics were being funded related to telehealth. And we put them together, the top five for each state. Here in Maine, I'll just point out that most are related to opioid response implementation and to large hospital systems in Maine.

Katherine Ahren...: We looked into the scope of practice, what nurse practitioners and physicians assistant are able to do independently in these states. So in terms of nurse practitioners, do they have the authority to write prescriptions, practice independently? What kind of primary care provider role is recognized and the requirements? And for physician's assistants, we looked at the requirements for supervision, the ratio requirements, scope of practice determination, authority to write prescriptions and authority to prescribe controlled substances. Here I'll just point out one difference among the states. In Maine, New Hampshire and Vermont, nurse practitioners have full independent prescription authority. Whereas in New York, you need a physician relationship required before prescribing. Privileges are granted.

Katherine Ahren...: We also looked into scope of practice for other providers like oral health providers, behavioral health providers, and pharmacists. And I'm just going to point out here that the ability of pharmacist to prescribe hormonal contraception varies by state. In New Hampshire, pharmacists may prescribe hormonal contraception, but in the other three states, they may not. We looked into health professional shortage areas in each state at the county level.

Per Ostmo: Katherine.

Katherine Ahren...: Yeah.

Per Ostmo: Before we get into these maps here, there's a good question in the chat I'd like to address. So could you further define what distressed, transitional and attainment counties mean? And are there any plans to replicate similar classification throughout the US, not just in the Northern Border Region?

Katherine Ahren...: Yeah. So this is a very good question. I'm not really the best person to answer it. The Northern Border Regional Commission does have a great website and it has a whole document on how they define the distressed, transitional and attainment counties. I believe they use a lot of information about the economic development and income levels and unemployment and investments in each county to determine this. We did not make that determination, someone else makes that determination each year. And I do know that sometimes counties shift in classification. And I do know that it depends on how distressed your county is, what kind of grant you can apply for, for the NBRC. So you definitely want to pay attention to where you want the project to be done and what kind of county that's classified as that year.

Per Ostmo: So to clarify, the Northern Border Regional Commission website should have those definitions?

Katherine Ahren...: [inaudible 00:16:46] actually on how they came up with the definitions for each year.

Per Ostmo: Perfect. Thank you.

Katherine Ahren...: Anything else?

Per Ostmo: That's it for now.

Katherine Ahren...: Okay. So these are the health professional shortage areas. So this is looking at primary care. So of the 60 counties that are officially within the Northern Border Regional Commission, I think there's 102 counties in these four states altogether. But these counties in blue are in the NBRC, and there's 60 of them. 55 of these 60 counties are designated as partial primary care health professional shortage areas. And here's the breakdown by state. Five counties have no primary care professional shortage areas. And there are no counties that are considered whole county primary care health professional shortage areas.

Katherine Ahren...: In terms of mental health, there are six whole county Mental Health Professional Shortage Areas in the NBRC region. And they're all located in New York. 46 counties in this region are designated partial county Mental Health Professional Shortage Areas. And eight counties in the region have no Mental Health Professional Shortage Areas. In terms of dental health, there are 46 counties in this area designated as partial dental health professional shortage areas. And 14 of the counties have no dental health professional shortage areas, and there's no whole county dental health professional shortage areas. In terms

of the location of rural health clinics, we mapped out the rural health clinics in each of these states in the NBRC counties, and there's 34 rural health clinics in Maine, in the NBRC counties; 12 in New Hampshire, 25 in New York and 10 in Vermont. 81 rural health clinics altogether in this region.

Katherine Ahren...: And in terms of Federally Qualified Health Centers, as of June 2021, there were 367 FQHC lookalikes in the Northern Border Region. And of these, this is the breakdown with the most occurring in Maine. There were another [inaudible 00:19:11] 12 centers located outside this region, but within these four states. Of 91 general acute hospitals in the Northern Border Region, are in urban areas and 73 are in rural areas. Of the rural hospitals in this region, 41 are Critical Access Hospitals, a designation given to eligible rural hospitals by the Centers for Medicare and Medicaid Services. And just to define these, these are hospitals that have 25 or fewer acute care inpatient beds, provide 24/7 emergency care, and generally must be located more than 35 miles from another hospital. Here's the map of the hospital. The rural hospitals are the ones in the dark plus signs. The urban hospitals are the light blue plus signs. And the Critical Access Hospital has a yellow circle around it. And here we use a shading scheme. Oh, I should have explained this earlier, where the gray areas are the NBRC counties. Eight gray areas are not in the region.

Katherine Ahren...: In terms of drug poisoning mortality in 2018, I already pointed out that these states, except for New York, have higher rates of drug overdose deaths. And this is another estimate of drug overdose deaths based on models to get down to the county level. And it shows that Maine, New Hampshire and Vermont had state rates above the US average of 20.6 per 100,000 and New York's rate was 18.9 per 100,000. And there are some counties that have the highest model based drug poisoning mortality among these four states, Belknap County in New Hampshire at 35.3, Sullivan County in New York at 33.4. Windham County in Vermont at 32.2. Cheshire County in New Hampshire at 30.7. And Washington County in Maine at 30.0 are shown here. So the darkest blue indicates the highest drug poisoning mortality rates in 2018.

Katherine Ahren...: And substance use treatment facilities. There are 305 substance use treatment facilities in the Northern Border Region. Four counties in the region have no treatment facilities. And the remaining counties have between one and 23 treatment facilities. So here is just a map showing with darker blue, the number of treatment facilities in each county. And the counties without any treatment facilities are in their dark gray here.

Katherine Ahren...: In terms of buprenorphine practitioners. Just as background to administer or dispense or prescribe buprenorphine to treat opioid use disorder, a practitioner must receive a waiver. And as of August 2021, there were 1034 waiver practitioners practicing in the Northern Border Region. Two counties in the region have no buprenorphine practitioners; in Hamilton County, New York and Grand Isle County in Vermont. And the number of practitioners in each county ranges from two to 84 among the other counties in this region. And here you

can see the dark blue is the counties with a lot of buprenorphine waiver practitioners. And these counties are the ones with none.

Per Ostmo: Katherine, can you specify what qualifies as a treatment facility?

Katherine Ahren...: We use SAMHSA, the Behavioral Health Treatment Services Locator. It has a list of their definition, I believe of substance use treatment facilities. I'm not sure what goes into their definition. I'd have to look it up exactly, but it's what someone would use if they wanted to seek services for their substance use disorder.

Per Ostmo: Okay, thank you.

Katherine Ahren...: And in the chart books, all the things we present have the citation of where we got the information. So if you ever want to go back and get more detailed information about the definition or data source or specifications for the measure, you can go back to that, a publicly available data source.

Katherine Ahren...: Okay. So key takeaways overall at the regional level. Oh, I'm doing well on time. Most counties in the Northern Border Region face shortages of primary care, mental health care and dental health care professionals. So 92% of the counties are designated as partial primary care health professional shortage areas. 87% of the counties are designated whole or partial mental health professional shortage areas. And 76% of the counties are designated partial dental health professional shortage areas. So the majority of these counties have some kind of shortage going on for these providers.

Katherine Ahren...: The highest cause specific rates of death are for cancer in Maine, New Hampshire and Vermont. The highest cause specific rates of death are for heart disease in New York and in the US overall. Compared with the US overall, Maine, New Hampshire and Vermont have higher rates of death from chronic lower respiratory disease and unintentional injuries, including higher rates of suicide and drug overdose deaths. And all northern region states have higher rates of excessive drinking than the national average. And Maine and New Hampshire have a greater percentage of adults reporting frequent mental distress than the other NBRC states and the US as a whole.

Katherine Ahren...: Finally, NBRC states generally perform well on measures of community safety and physical environment. All these states have lower rates of violent crime and less air pollution compared with the US overall. Maine, New Hampshire and Vermont have relatively low rates of severe housing problems and high rates of home ownership. New York performs worse than the national average on these measures. And NBRC have relatively high rates of health insurance coverage. As of at least 2019, all of the NBRC states have lower rates of uninsured individuals among the total population as compared with the US overall. And now I'll just spend five to 10 minutes going through the state level chart books so you can get a preview of what's in those chart books.

Katherine Ahren...: Okay. So for the state level chart books, we generally do the same approach. We use the 2021 published county and state level health related measures as aggregated by the County Health Rankings, as well as some other data sources. All the data sources are publicly available and free of charge. We labeled the counties according to the current Northern Border Regional Commission categories in 2021. As I said, distressed, transitional and attainment counties with an isolated area of distressed, and attainment counties without an isolated area of distress. That distinction is important in what funds you can apply for. We identified counties that ranked near the top and near the bottom for each of the health related characteristics examined. So among all the 102 counties in Maine, we ranked them and we counted the number of times the county fell into the worst performing 10th percentile ranking for each health related domain. So the number of times they were worst performing for a given measure.

Katherine Ahren...: I'll show you how this works. Sorry, let me just move the Zoom. Here are a summary of the health related domains for Maine. We have, let's see, seven of the domains here. These are familiar to you, the access to healthcare, health outcomes, health behaviors and access, community safety and physical environment, death rates per a hundred thousand population, top five causes of death and internet access. And remember how for each of these domains, there were several measures within them. So for example, Aroostook County performed poorly on four or more measures of access to healthcare. They also performed poorly on four or more measures on health outcomes, but they performed fine on community safety and physical environment and death rates per 100,000 population. When you see the red circle with the line through, it's telling you that this county perform well on this particular health related domain.

Katherine Ahren...: So when you look at this, you can see that Washington County is not doing well on four measures of health or four domains of health; access to health care, health outcomes, health behaviors and access, and death rates per a hundred thousand population. Somerset County is not doing well on three of these domains, and then neither is Piscataquis County. But for the other counties, they're only doing poorly on two of these domains. So the takeaways remain when you read the state level chart book are most counties in Maine face shortages of primary care, mental health and or dental health professionals. Some rural Maine counties have limited access to healthcare and poor population health status. Rates of injury related deaths are highest in Piscataquis, Somerset and Washington Counties and Maine performs well on measures of community safety and physical environment.

Katherine Ahren...: And in New Hampshire, this is how it looks. So you see that really with this one county, Coos County tends to perform poorly on several health related domains; health outcomes, death rates per 100,000 population and top five causes of death. While most counties in New Hampshire face shortages of primary care, mental health and, or dental health professionals, most counties in New Hampshire perform well on measures of population health status, and

healthcare access. Some New Hampshire counties perform poorly on cause specific death rates, and New Hampshire performs well on measures of community safety and physical environment.

Katherine Ahren...: Here's New York, which has 60 counties so it's spread across two slides. So you can see a lot of green here. A lot of counties in New York tend to do well for these health related measures. But there are some counties like the Bronx County that performs poorly on two of these domains. And then a couple other counties perform poorly on one of these domains. I don't know how to pronounce that. But this one, Kings County. Here, Orleans County performs poorly on three of these domains and New York County on one. And so the takeaway from New York is most counties in New York face shortages of primary care, mental health and, or dental health professionals. New York Counties perform well on measures of access to health insurance. Some of New York's northern border counties perform poorly on health outcome measures. And injury related death rates were lower in New York than in other northern border states and the US overall.

Katherine Ahren...: And finally for Vermont. Here is Vermont. See a lot of green here. You see Windham County is the one that performs poorly for the death rates per 100,000 population. But other than that, you just have some counties that perform poorly for two to three measures, but not for four or more. This county like Essex County is performing poorly for many of the domains. Take away for Vermont are most counties in Vermont face shortages of primary care mental health and, or dental health professionals. Most Vermont counties perform well on access to healthcare and population health measures. Rates of injury related deaths are highest in Caledonia, Essex, Grand Isle and Windham Counties. And Vermont performs well on measures of community safety and physical environment. Thank you very much for attending this webinar. I'm happy to answer any questions and thank you so much for listening to this talk.

Per Ostmo: So I'll jump in here, Katherine. Thank you so much for that overview. In the chat box, I'm going to drop in a link to... Oops. I'm going to drop in a link to the webinar page on the Rural Health and Research Gateway website. So probably by Friday, the recording, slide deck and transcript will all be available on Gateway. Most of our audience here today is actually from this Northern Border Region. So if anyone would like to raise their hand with a question, comment or concern about data, I can go ahead and unmute people if we'd like to have a short conversation here. And then Katherine, if you can advance one more slide.

Per Ostmo: So I'd like to remind everyone that you can stay up to date on the latest rural health research by subscribing to Gateways research alerts and by following Gateway on social media. Over the next two weeks, we're going to be releasing several new publications related to LGBTQ+ populations. So that's just in time for Pride Month. Now these publications are going to highlight self-rated health, social and emotional support, prevalence of chronic conditions, anxiety, and depression. And there's also going to be a series of case studies that showcase various communities that are supportive of LGBTQ+ residents. So if those topics

are of interest to you, then now would be the perfect time to subscribe. And we do have a couple questions, so I'm going to go ahead and unmute. Go ahead, Deborah.

Deborah: Thank you. And thank you, Kate. It was an excellent presentation. Two quick questions. One, is there an earlier edition of this chart book that would provide some comparison to the data that you presented today? And are there plans to issue or produce these chart books periodically and, or will the data be updated at some point in time?

Katherine Ahren...: No, this is the first version of these chart books. It was done specifically for the Northern Border Regional Commission, because I believe they added basic healthcare as a application. Sorry, what's the word? As something you can apply for funding for recently to the NBRC Commission. And in the future, we don't have any plans to update these, but that may be requested if there's a lot of interest by applicants and by the NBRC to have these updated. The data are continually updated, because we use publicly available data that are always being updated. So it's more just compiling it and putting together these chart books that would be needed to be done.

Deborah: Thank you.

Katherine Ahren...: Thanks.

Per Ostmo: All right. Thank you, Deborah. We'll wait another moment here in case anyone else wants to chime in with questions, concerns, other items that you would like to possibly see in future chart books. So Kim, I'm going to unmute you here. Go ahead, Kim.

Kim: Hi there. Thank you very much. And thank you for the presentation. I had a couple of questions about how you may be able to slice the data in regards to the primary care providers. And specifically, I'm curious as to whether you can identify what percent of primary care is being provided by physicians, NPs and PAs in separate categories. And you may be wondering why I'm asking that. Really I'm coming from a perspective of working for the [inaudible 00:35:59] times, primary care is presented as a service provided by physicians. And in doing that, we often make the work [inaudible 00:36:07]. And I don't even know if you guys can get that data, but I'd very curious to know what percentage of the primary care is being provided from non-physicians.

Katherine Ahren...: I think I missed some of that because the connection was bad, but I don't know that. I don't know of a data source that looks at primary care and who is providing the service. I could look into that and see if that's publicly available. What comes to mind is you could use claims data to do that kind of analysis, but that wouldn't be publicly available and easily accessible measures. But I can look into that. Maybe an academic publication also has that level of information. But I don't have it in the chart book right now. But if someone knows of a data

source that that's available at the county or state level, I would love to add that in the future if we get requested to do this chart book again.

Per Ostmo: Kim, did that answer your question? You did cut out briefly there for a moment so I'm not sure we heard your entire question. All right. And we'll pause one last moment in case anyone else wants to raise their hand and chime in. So I don't see any other questions. So I would just like to take a moment to thank Dr. Katherine Ahrens for being here today and a big thank you to all of our attendees today. And I really hope to see everyone else at future Gateway webinars. So thank you all for being here.

Katherine Ahren…: Thank you.