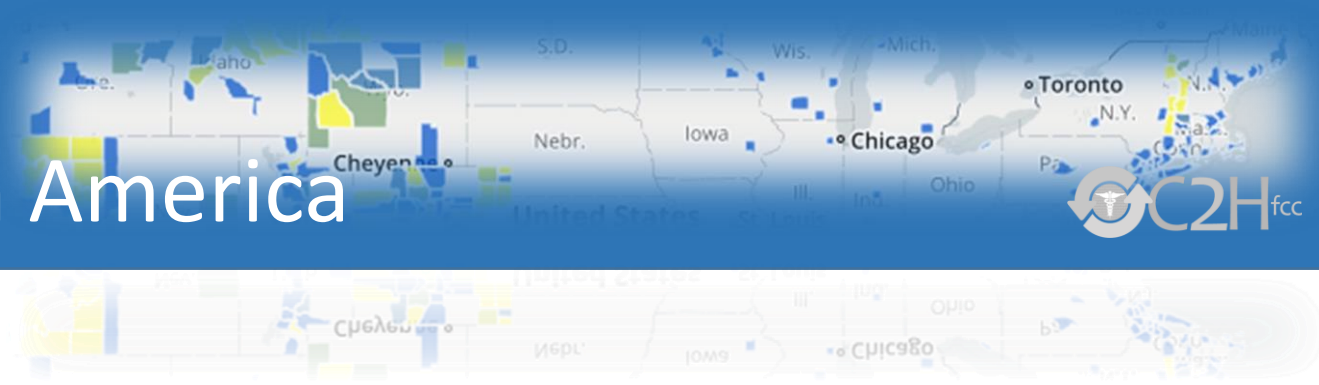


Mapping Broadband Health in America



Stakeholder Tutorial

August 2016

Mapping Broadband Health in America



Module 5 – User Scenarios

- Now that you've learned more about how to use the map and its key audiences, this Stakeholder Tutorial will walk you through three user scenarios to show how different user groups can leverage the mapping tool to inform their efforts.
- These user scenarios address a potential question from three core audience types:
 - Local Communities – County Health Department
 - FCC and Other Agencies – Policymaker
 - Private Sector – Entrepreneur

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User Scenario #1 – Health Dept.

?

We are with the Letcher County Health Department in Eastern Kentucky. Working with neighboring counties, we'd like to leverage the Internet and telehealth to help our target population who have high rates of chronic disease. The success of the effort depends on residential connectivity. We need to know how connectivity overlaps with chronic disease in our and surrounding counties.

How do we find that information using the mapping tool?

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User Scenario #1 – Health Dept.

Step 1: The best place to start is the Health Tab. You can use the Search box to locate Letcher County, KY. Or, you can locate the county by selecting the state of Kentucky and then using the zoom tool.

County ▾ Letcher County, KY

+ Letcher County, KY

Step 2: Next, gather context by selecting a health measure (e.g., obesity or diabetes) and the map will update dynamically.

Overview Broadband **Health** Demographics

Health Measures: Obesity Rate

Physician Access

Preventable Hospital

Sick Days

Broadband Filter: Obesity Rate

Diabetes

Demographic Filter: Poor/Fair Health

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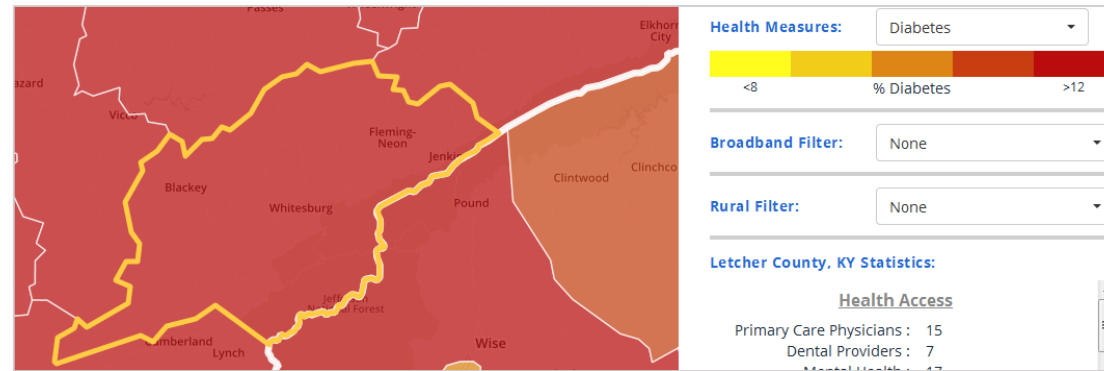


User Scenario #1 – Health Dept.

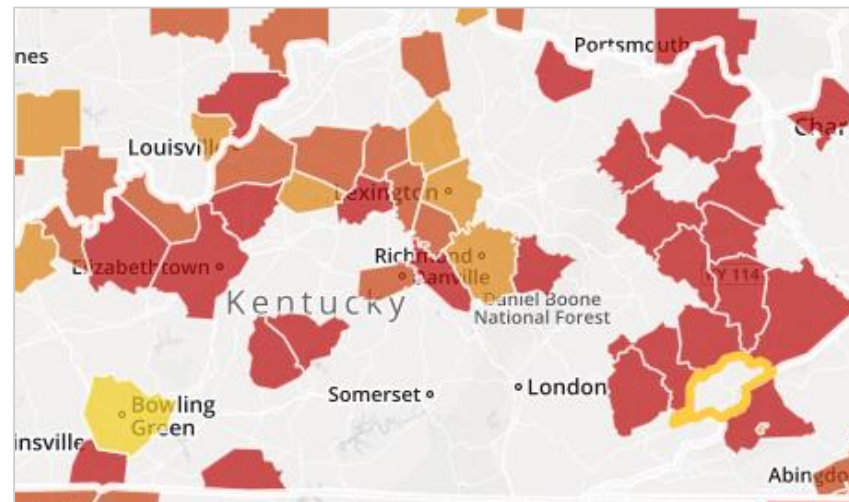
Step 3: As you can see on the right, Letcher County is now highlighted and the diabetes measure has been applied. Note the color variances among surrounding counties – indicating differing diabetes rates.

Next, you can use the Broadband Filter to examine how varying levels of connectivity relate to the picture of health. For example, to examine the picture of health for counties with Internet adoption in the 60-80% range, select “Internet Adoption 60-80%” from the dropdown. When you zoom back out, you can see that much of Eastern Kentucky is displayed in red, indicating counties with Internet adoption of 60-80% and diabetes prevalence exceeding the national average.

Also note the range of health statistics specific to Letcher County, which you can access using the scroll bar on the right. If you want to see the statistics for a nearby county, you can do so by clicking on that county and the information will automatically populate on the right.



Scroll to find more statistics for your county.



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User Scenario #2 – Policymakers



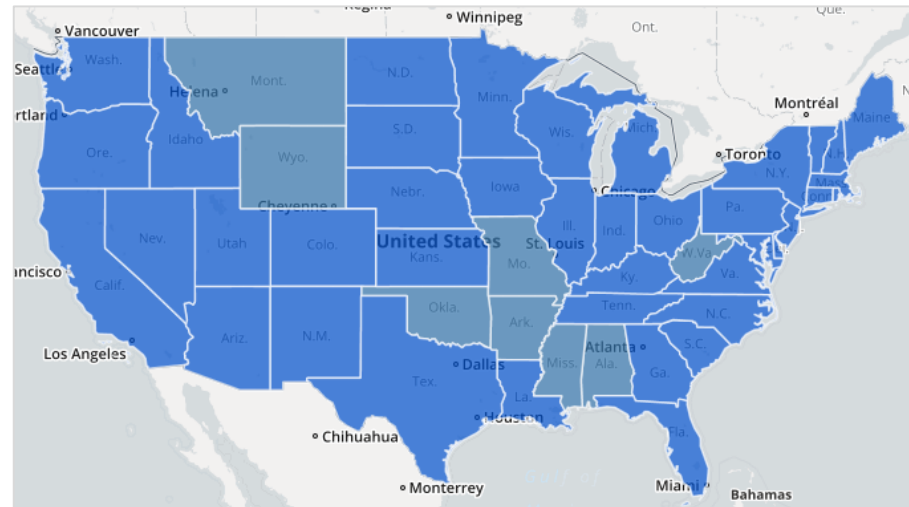
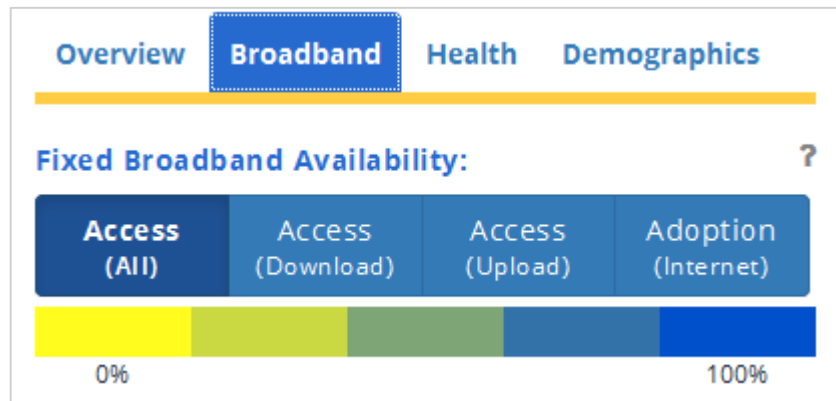
I'm a special advisor in a federal/state agency and I want to explore the potential impact and implications of a proposed connected health policy. Successful implementation of the proposed approach is very dependent on connectivity. How do I use this tool to identify broadband access gaps and any patterns between broadband access, rural areas and health outcomes?

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User Scenario #2 – Policymakers

Step 1: Start by going to the Broadband Tab. There you can see the larger picture of connectivity throughout the country. At the state level, many areas of the country appear in varying shades of blue, which indicates higher levels of broadband access.

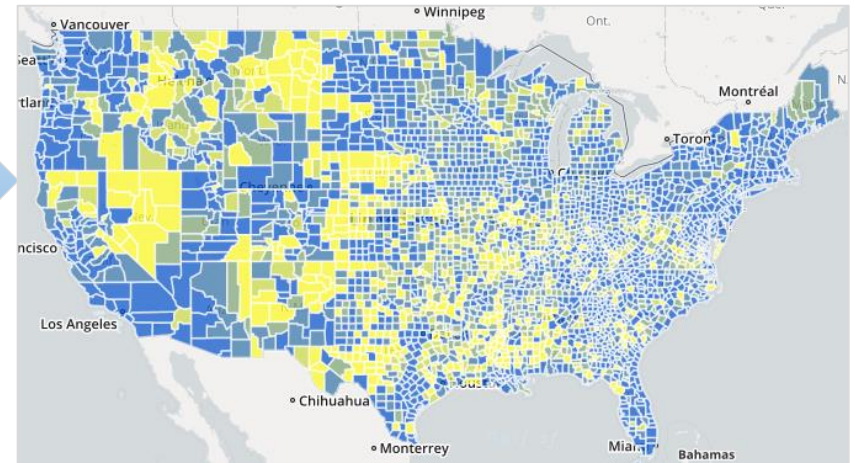


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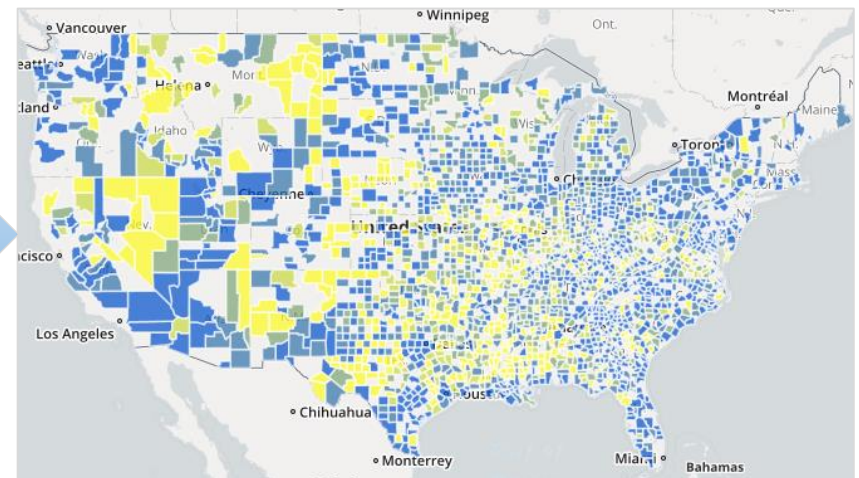
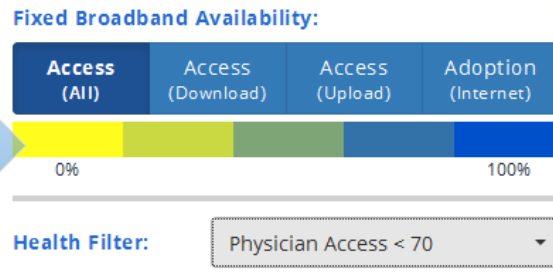


User Scenario #2 - Policymakers

Step 2: However, when you switch to the county view, using the stacking tool, the county-by-county view tells a very different story, as shown on the right. You'll notice a sash of yellow in the middle of the country indicating that some of the connectivity challenges vary greatly within states. This information can help inform how policy approaches may differ from region to region.



Step 3: To determine the health status of counties with lower connectivity metrics, use the Health Filter on this tab. For example, by selecting "physician access less than 70" (per 100,000 people) you can visualize the counties with lower levels of connectivity and significant primary care physician shortages. Again, this could inform focus areas for telehealth solutions.



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User Scenario #2 - Policymakers

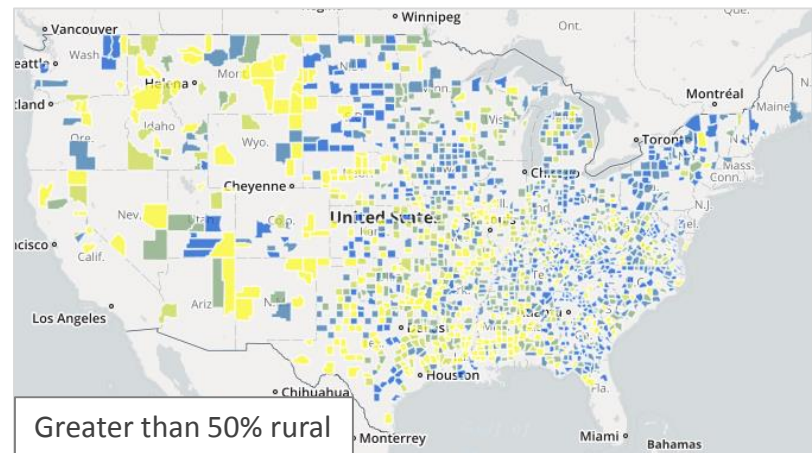
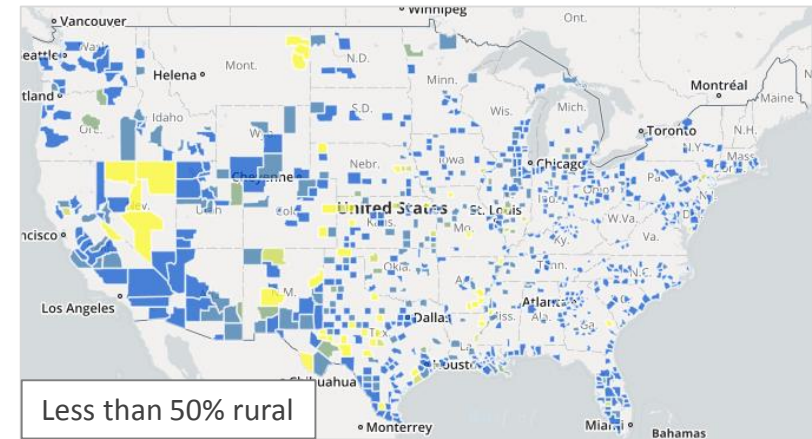
Step 4: For those states with significant rural population, the mapping tool also allows you to filter by rurality. You can do this in two ways:

- Use the “Rural Filter” -- you can select among various thresholds of rurality (e.g., “greater than 50% rural” or by quintiles).
- Choose “Rural Access” -- You can also look at the relative percentage of rural broadband access by choosing “Rural Access” under the Overview Tab.

The maps on the right show the broadband picture for the health measure (physician access < 70) in both rural and urban areas.



The screenshot shows the 'Health' tab of the mapping tool. It includes a 'Fixed Broadband Availability' section with a color-coded bar from 0% to 100%. Below that are 'Health Filter' and 'Rural Filter' dropdown menus, both currently set to 'None'. A 'Rural Filter' dropdown menu is open, showing options: 'None', 'Majority/Minority rural pop', 'Less than 50% rural pop.', 'Greater than 50% rural pop.', and 'Rural pop quintiles'. The 'Rural pop quintiles' section is expanded, showing five categories: '0 ≤ rural pop. < 20%', '20% ≤ rural pop. < 40%', '40% ≤ rural pop. < 60%', '60% ≤ rural pop. < 80%', and '80% ≤ rural pop. ≤ 100%'. There are also 'Nationwide Statistics' and 'Internet Adoption' sections partially visible.



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User Scenario #3 – Entrepreneurs



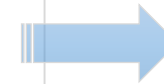
We are a startup developing remote patient monitoring technologies for improving chronic disease management and improving quality of care. We want to enter markets with high demand and relatively few direct competitors. We need to identify contiguous areas of high chronic disease (or high preventable hospitalizations) and low broadband access or Internet adoption. How do we find that information using the mapping tool?

Mapping Broadband Health in America



User Scenario #3 – Entrepreneurs

Step 1: The best place to start is on the Overview Tab. Using the slider tool, you can select various ranges for a given connectivity metric – e.g., broadband access, rural access, Internet adoption. You might choose the metric and range depending on the criteria relevant to your go-to-market strategy: the likelihood of competition, ease of expansion through collaborations (e.g. with internet service providers), increasing value proposition of your technology, limiting barriers to entry, increasing penetration, etc. For example, you can move the slider to show 50-75% broadband access. You can then select a health measure to be displayed on the map. This measure can correspond to a market need or pain point that your technology addresses – for example preventable hospitalizations above 60 per 1000 hospital stays.



Overview | Broadband | Health | Demographics

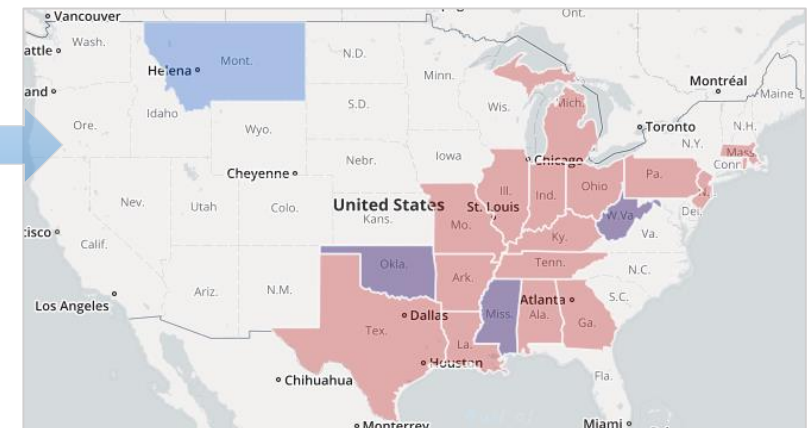
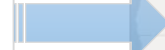
Broadband Availability:

Broadband Access | 50 - 75% Coverage ?

Health Measures:

Preventable Hospitalizat | 60 - 270 Hospital Stays ?

Step 2: This generates a map that shows three distinct colors. The areas in blue show where broadband access is in the selected range (e.g. 50-75%). The areas in pink show where preventable hospitalizations are above the national average. The areas in purple – the three states of Oklahoma, Mississippi and West Virginia – are where both criteria are met.



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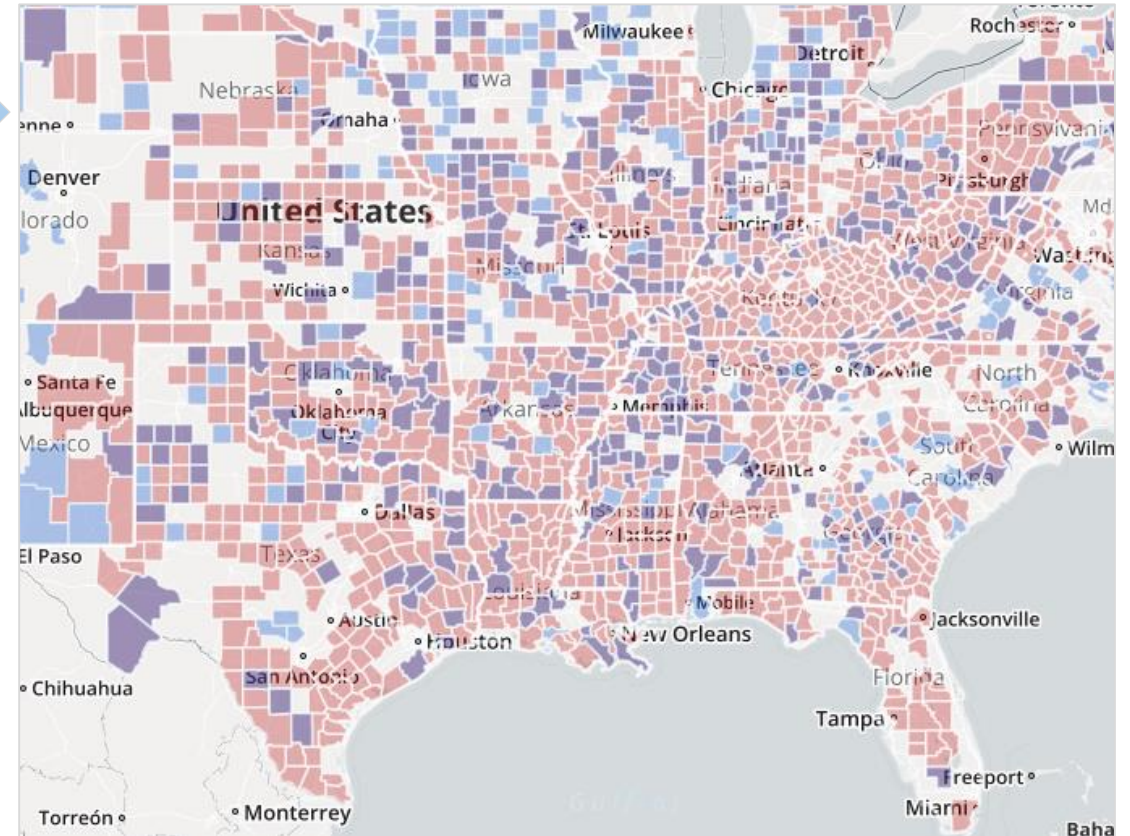


User Scenario #3 - Entrepreneurs

Step 3: If your company may be interested in identifying discrete markets, it would be useful to use the stacking tool to show a county level view. You can also zoom in on the region to focus on the county or counties of interest.



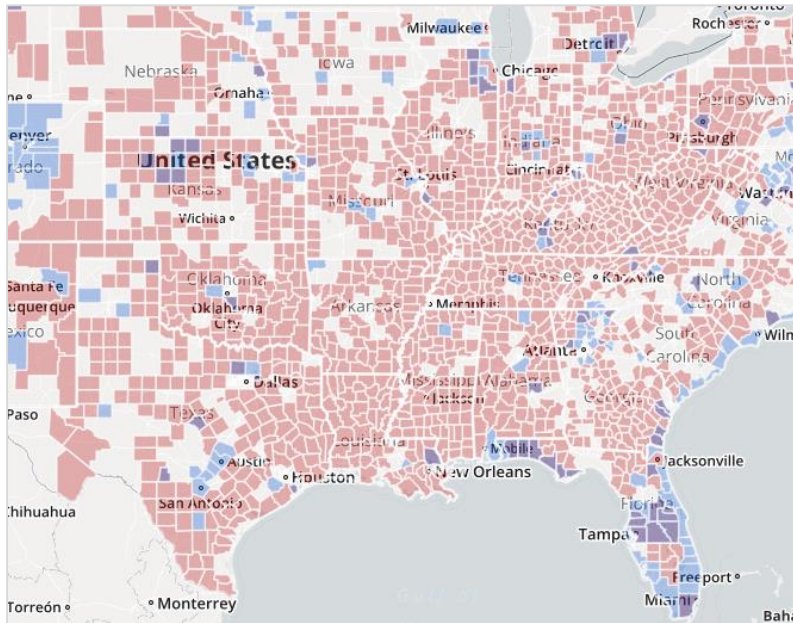
Step 4: Once you have selected the connectivity and health measures that you want to visualize at the county level, you can see patterns across the country. For example, there may be some areas where multiple counties (i.e. low broadband, high health need) cluster together and in aggregate give a very high population. These geographic regions may serve as areas of interest and, with other strategic considerations such as ISP partnerships, can be highly appealing market opportunities.



Mapping Broadband Health in America

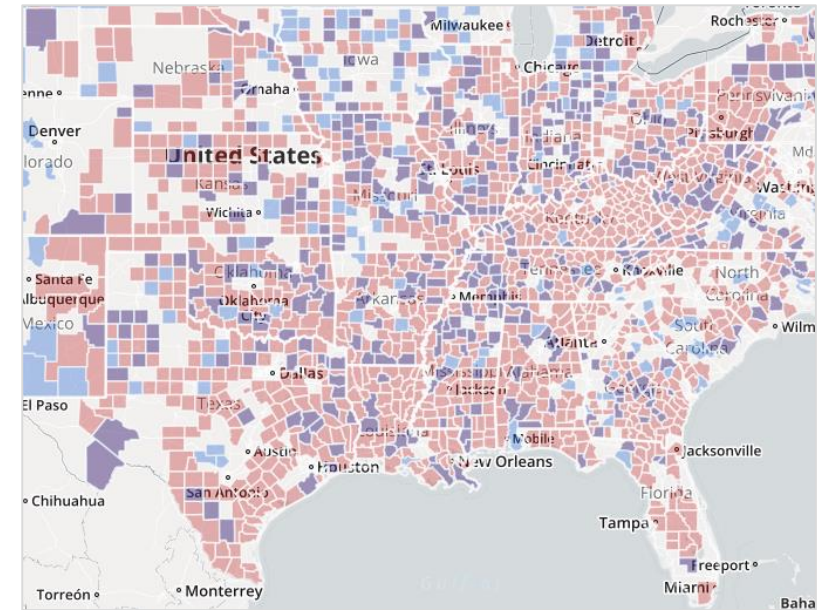


User Scenario #3 - Entrepreneurs



Internet Adoption > 80%
Preventable Hospitalizations >60 per 1,000 hospital stays.

Step 5: However, access to fixed broadband is only one piece of the puzzle. The mapping tool can also show Internet adoption. By selecting “Internet Adoption” from the broadband dropdown menu, you can see the counties with varying levels of Internet adoption. By identifying areas of high broadband access and adoption, as well as high health need, the tool has provided you with a roadmap to characterize your market, identify potential collaborators, and focus your efforts.



Fixed Broadband Access > 50-75%
Preventable Hospitalizations >60 per 1,000 hospital stays.