

FutureDocs Forecasting Tool

Estimating the supply of physicians, use of healthcare services, and capacity of physician supply to meet the healthcare services use for the United States population, 2011-2030

<https://www2.shepscenter.unc.edu/workforce>

Documentation: Help

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Need a little help understanding how to use the model? This document is meant to be a primer on navigating the FutureDocs Forecasting tool. A [separate document](#) is available to help understand how you can use the physician projection model as a tool and how the model was developed, including an explanation of data sources, definitions, methods and assumptions.

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Getting Started

Accessing the FutureDocs Forecasting Tool

The tool can be accessed by clicking once on “The Model” tab link in the dark blue bar on the top of the screen.



Using the FutureDocs Forecasting Tool on different devices

The model works on desktop computers, laptops and mobile devices. The website’s design is [responsive](#) and allows the site to be scaled for easier viewing and navigation on small devices, such as a smart phone. If, at any time, you have trouble viewing the model on one of these devices, please [report the problem](#) so we can fix as needed.

Using the FutureDocs Forecasting Tool in different Web browsers

The website works in all up-to-date Web browsers, including Chrome, Firefox, Internet Explorer, and Safari. If, at any time, you have trouble viewing the model in a particular browser, please [report the problem](#) so we can fix as needed.

Learning about how the FutureDocs Forecasting Tool works

This “Help” page provides an introduction on how to use the tool. If you are interested in how we developed the projection, please see the [About the Project](#) page of the website.

Understanding model projections

The estimates from this model are not intended to represent one “right answer” as to what will happen to the U.S. physician workforce. Instead, the model provides estimates of physician supply, use of healthcare services, and physician capacity to provide services (shortages or surpluses) under several different “scenarios” in the model. This model’s estimates can be used to engage and educate policymakers, clinicians and others about how changes to the U.S. healthcare system affect the U.S. physician workforce. Ideally, this model will advance the “science” of healthcare workforce planning while promoting transparent, collaborative interactions among regional, state, and national stakeholders in healthcare workforce policy.

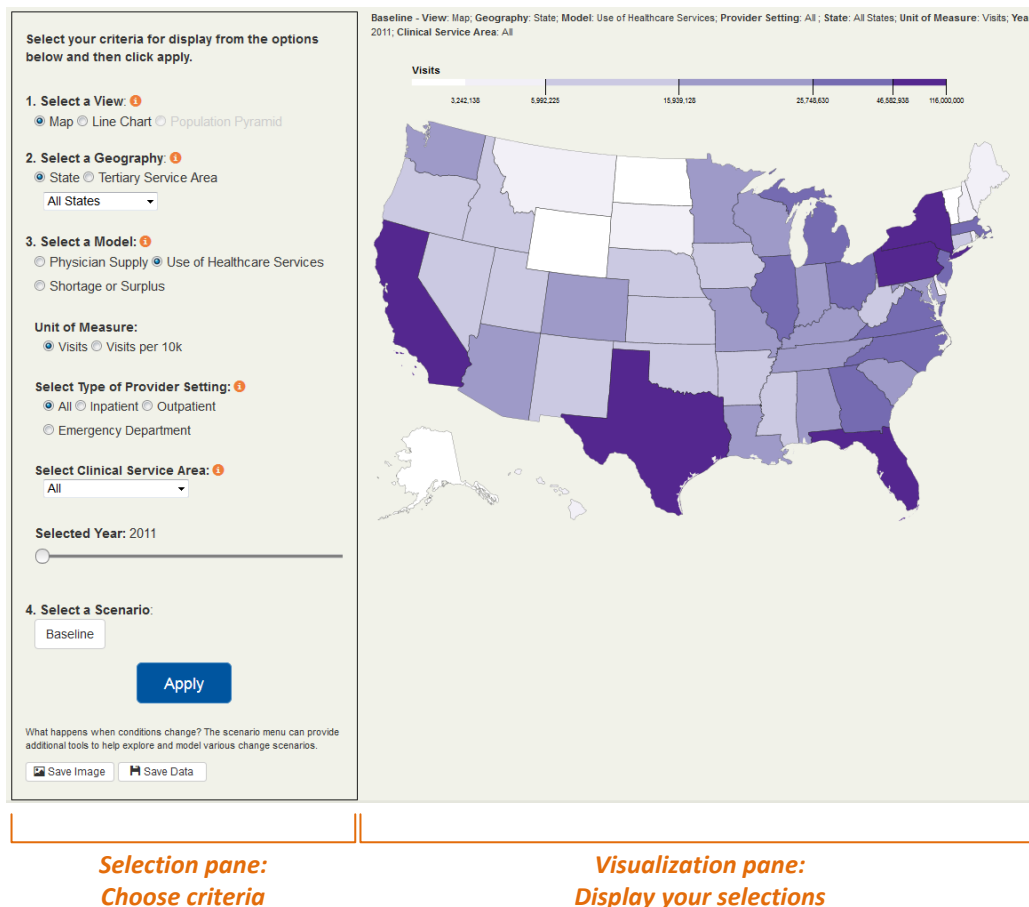
Using the Model’s Interface

Two parts of the model’s interface

The interface is split into two parts (Figure 1). The left part of the screen shows the navigation options for selecting the model estimates and visualizations you want to see. The right part of the screen displays the visualizations.

The default visualization is a state-level map showing use of healthcare services in units of visits across all settings (outpatient, hospital inpatient, emergency department) in all clinical services areas in 2011 under the model’s baseline scenario. The settings on the left-hand side of the Web page can be changed to produce different visualizations on the right-hand side of the page.

Figure 1: Overview of the model's interface

**Selecting and applying visualization options: view, geography, model, year, scenario**

There are five sets of options that can be selected to produce customized visualizations (Figure 2).

View: This is the type of graphic that you want to display. You can choose from maps, line charts and population pyramids. Note: Population pyramids are only available for physician supply projections.

Geography: You can choose to view visualizations at the state or Tertiary Service Area (TSA) level. For more information on Tertiary Service Areas and how they were defined, please see the [About the Project](#) page of this website. If you select a specific state or TSA, the map will zoom in to your selected area.

Model: We have created three different types of models: physician supply, use of healthcare services, and shortage/surplus. Options in the panel change dynamically depending on which model is selected (Figure 3).

- *Physician Supply* allows you to choose between head count, head count per 10,000 population, Patient Care Full-Time Equivalents (FTE) or Patient Care FTE per 10,000 Population. You can display data on one of 36 physician specialties—including primary care

with or without obstetrics and gynecology—and display data on the entire physician workforce by choosing “All Specialties.”

- *Use of Healthcare Services* allows you to choose between number of visits and visits per 10,000 population, select a setting (outpatient, inpatient, emergency room), and select one of 19 Clinical Service Areas (CSAs).
- *Shortage or Surplus* shows how physician supply and use of healthcare services meet and lets you identify areas that have more or less capacity to handle visits by CSA. You can select a setting and a CSA.

For more information on how these models were created, please see the "[About the Project](#)" page of the website.

Year: Select the year you want to display for the maps and population pyramids by adjusting the slider bar. Note: There is no option to select a specific year for line charts, as they show the full range of years modeled from 2011-2030.

Scenario: It is also possible to see estimates under different scenarios, which include policy changes, such as the ACA’s health insurance coverage expansion, or other changes to the U.S. healthcare system, such as adjustments to physician retirement rates. See the [Choosing different scenarios](#) section for additional information on selecting scenarios. For more information on how these scenarios were created, please see the [About the Project](#) page of the website.

After you select the relevant options in the left-hand selection pane, click “Apply” to view the results in the right-hand visualization pane.

Figure 2: Visualization options

1. **Select a view:** This tool is designed to harness the power of visualizing data in maps, line charts, and population pyramids.
2. **Select a geography:** view data at the national, state or tertiary service area (TSA) level. Enter a zip code to find a TSA.
3. **Select a model:** View three different models: physician supply, use of healthcare services, or shortage or surplus.

Unit of measure: The unit of measurement differs between supply, use of healthcare services, and shortage or surplus estimates.

Select type of provider setting: View estimates relevant to inpatient settings, outpatient settings, the emergency department, or across all of these settings.

Selected Year: Adjust the year by using the slider bar.

4. **Select a scenario:** View physician supply, use of healthcare services, or shortage or surplus estimates under different conditions.

Apply: After selecting options, hit “Apply” to view changes.

Save image or save data: Export data to a .csv file or save an image of the visualization for future use.

Select your criteria for display from the options below and then click apply.

1. **Select a View:** ☒ Map ☐ Line Chart ☐ Population Pyramid

2. **Select a Geography:** ☒ State ☐ Tertiary Service Area
All States

3. **Select a Model:** ☐ Physician Supply ☒ Use of Healthcare Services ☐ Shortage or Surplus

Unit of Measure: ☒ Visits ☐ Visits per 10k

Select Type of Provider Setting: ☒ All ☐ Inpatient ☐ Outpatient ☐ Emergency Department

Select Clinical Service Area: All

Selected Year: 2011

4. **Select a Scenario:** Baseline

Apply

What happens when conditions change? The scenario menu can provide additional tools to help explore and model various change scenarios.

Figure 3: Changing options for estimates of physician supply, healthcare services use, and shortage or surplus

Supply

View 36 different specialties
by 4 different measures

Use

View 19 diff. CSAs
by # visits or visits/10K pop

Shortage or Surplus

View supply/visits
for 19 diff. CSAs by setting

Select your criteria for display from the options below and then click apply.

1. Select a View: i

☒ Map ☐ Line Chart ☐ Population Pyramid

2. Select a Geography: i

☒ State ☐ Tertiary Service Area

All States ▼

3. Select a Model: i

☒ Physician Supply ☐ Use of Healthcare Services

☐ Shortage or Surplus

Unit of Measure: i

☒ Patient Care FTE ☐ Patient Care FTE per 10k

☐ Head Count ☐ Head Count per 10k

Select Physician Specialties: i

All Specialties ▼

Selected Year: 2011

4. Select a Scenario:

Baseline

Apply

What happens when conditions change? The scenario menu can provide additional tools to help explore and model various change scenarios.

Save Image Save Data

Select your criteria for display from the options below and then click apply.

1. Select a View: i

☒ Map ☐ Line Chart ☐ Population Pyramid

2. Select a Geography: i

☒ State ☐ Tertiary Service Area

All States ▼

3. Select a Model: i

☐ Physician Supply ☒ Use of Healthcare Services

☐ Shortage or Surplus

Unit of Measure: i

☒ Visits ☐ Visits per 10k

Select Type of Provider Setting: i

☒ All ☐ Inpatient ☐ Outpatient

☐ Emergency Department

Select Clinical Service Area: i

All ▼

Selected Year: 2011

4. Select a Scenario:

Baseline

Apply

What happens when conditions change? The scenario menu can provide additional tools to help explore and model various change scenarios.

Save Image Save Data

Select your criteria for display from the options below and then click apply.

1. Select a View: i

☒ Map ☐ Line Chart ☐ Population Pyramid

2. Select a Geography: i

☒ State ☐ Tertiary Service Area

All States ▼

3. Select a Model: i

☐ Physician Supply ☐ Use of Healthcare Services

☒ Shortage or Surplus

Select Type of Provider Setting: i

☒ All ☐ Inpatient ☐ Outpatient

☐ Emergency Department

Select Clinical Service Area: i

All ▼

Unit of Measure: i

☒ Supply Per Visits

Selected Year: 2011

4. Select a Scenario:

Baseline

Apply

What happens when conditions change? The scenario menu can provide additional tools to help explore and model various change scenarios.

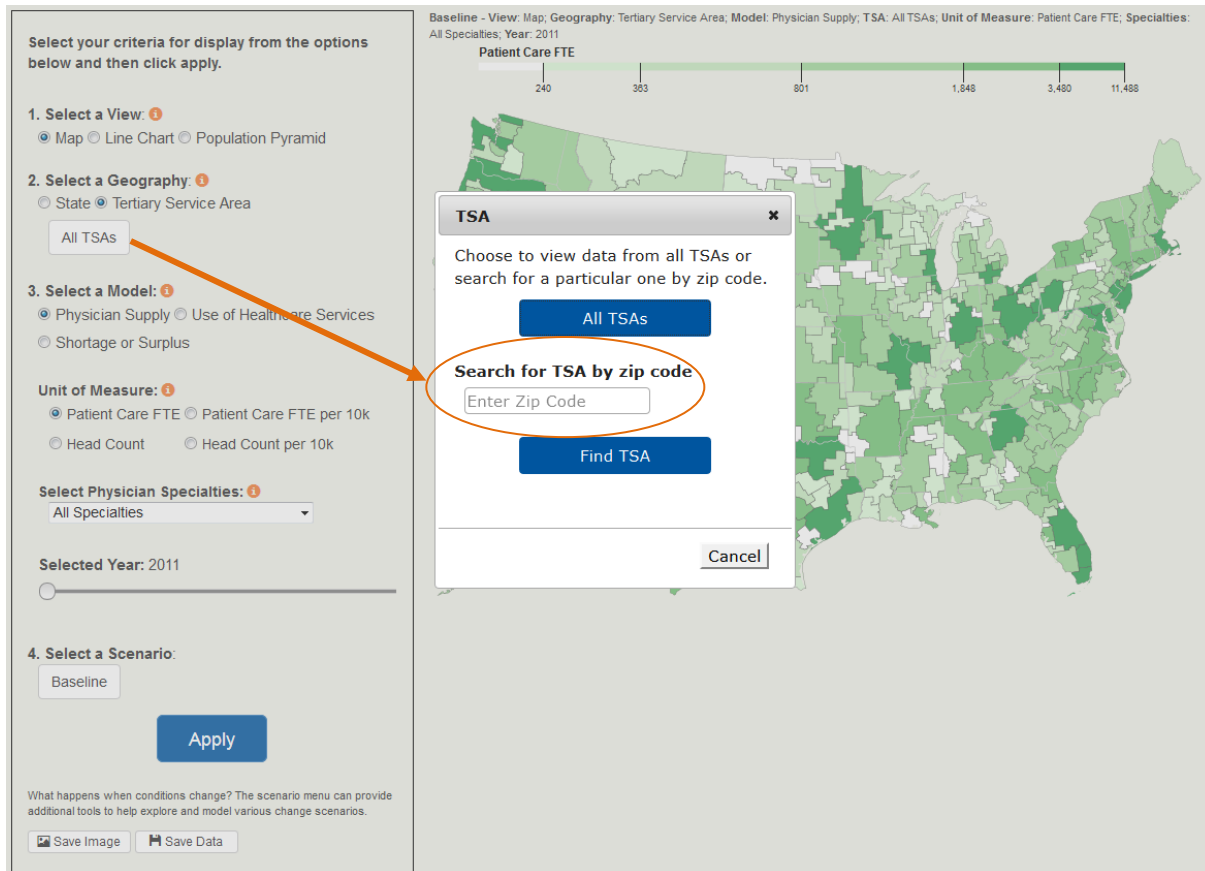
Save Image Save Data

Selecting a Tertiary Service Area

It is possible to view model estimates at the Tertiary Service Area (TSA) level. Tertiary Service Areas are sub-state geographic units that are similar to hospital referral regions. To find and view estimate for a specific TSA, click on the Tertiary Service Area option under "2. Select a Geography." A pop-up box will appear. Enter a valid zip code of interest in the space under "Search for TSA by zip code." Click on the "Find TSA" box to find the Tertiary Service Area that contains the zip code. Or, click "Cancel" in the lower right hand corner of the pop up box. (Figure 4)

For more information on Tertiary Service Areas, please see "What is a tertiary service area?" on the [About the Project](https://www2.shepscenter.unc.edu/workforce/help.php) page of the website.

Figure 4: Selecting a TSA



Choosing different scenarios

How possible changes will affect physician supply, healthcare services use, and shortages or surpluses can be estimated using the model's scenarios. The default setting for the model is the baseline scenario. The baseline scenario assumes that the status quo from 2011 persists until 2030.

Therefore, the baseline scenario does not take into account the Affordable Care Act's health insurance coverage expansion in January 2014. The alternative scenarios in the model relate to physician retirement rates; changes to physician work effort, measured in patient care FTEs; nurse practitioners' or physician assistants' ability to increase capacity to provide care; changes to Graduate Medical Education (GME) for physicians; and health insurance coverage expansion through the Affordable Care Act.

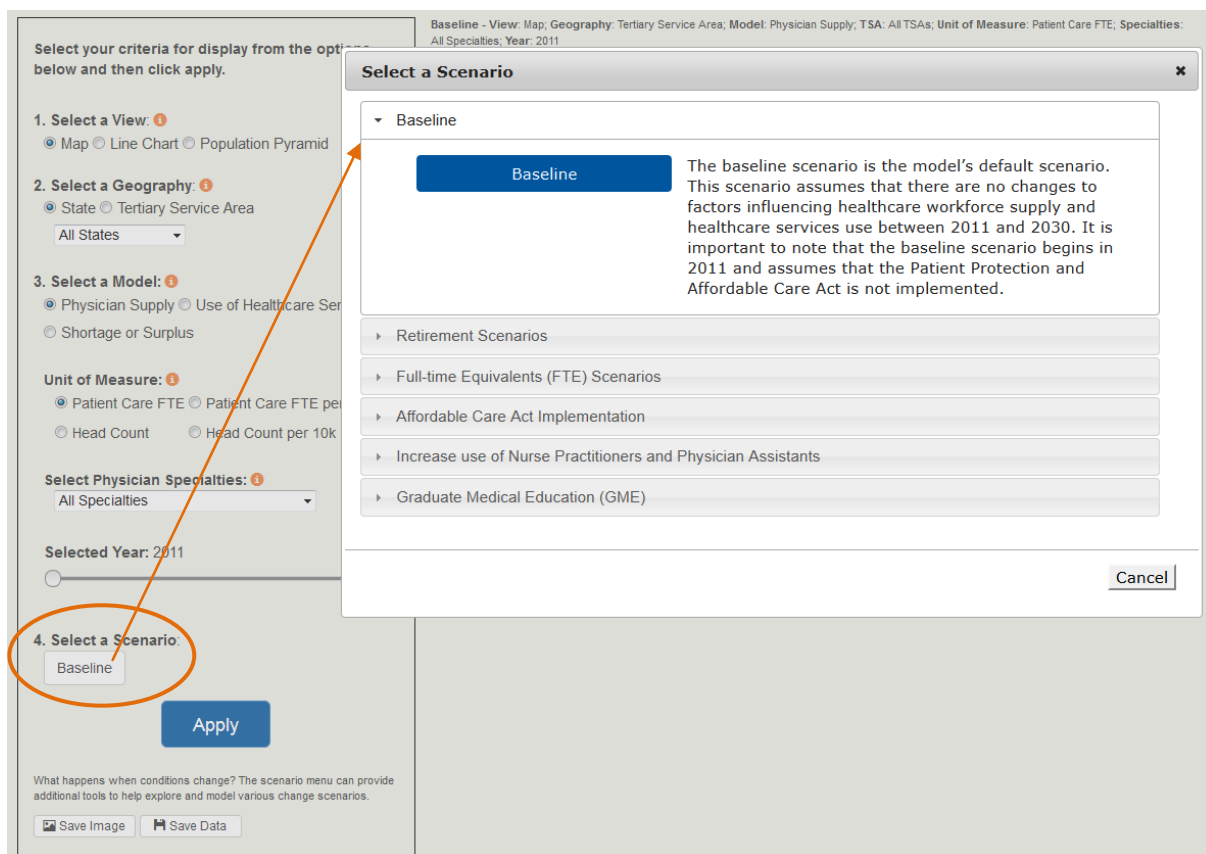
Some scenarios change only physician supply estimates while others change only use of healthcare services estimates. For example, the physician retirement scenario assumes changes to physician supply, which affects future physician supply estimates. However, this scenario assumes that changes to the physician retirement rate do not change estimates of healthcare services use. In other words, estimates of healthcare services use under the physician retirement scenario are the same as estimates of healthcare services use under the model's default baseline scenario. In addition to retirement rates, users can change physician FTEs, the use of NPs and PAs, and GME. On the healthcare services use side, the user can implement the ACA scenario with some different options

related to Medicaid expansion. Since every scenario either changes supply or healthcare services use from baseline, all scenarios affect shortage or surplus estimates.

For more information on how these scenarios were created, please see the [About the Project](#) page of the website.

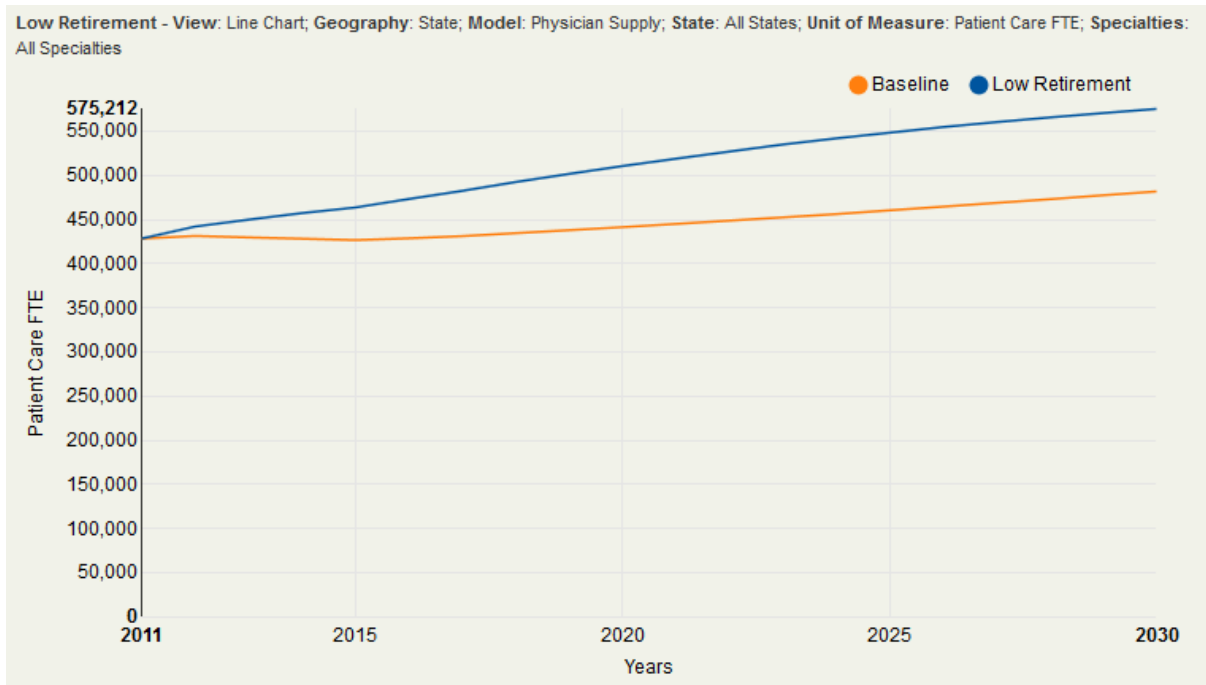
To select a scenario, select the button under "4. Select a Scenario". A pop-up box will appear. Select a scenario category (e.g., "Retirement Scenarios") and select one of the options below it (e.g., "Low Retirement"). If you wish to cancel your scenario selection, click "Cancel" at the bottom of the pop-up window, or click on the X at the top right of the window. Once you make your selection, click "Apply" to view the results. See Figure 5.

Figure 5: Selecting a scenario



Note: You can view scenario estimates as a map, line chart or population pyramid. In the line chart view, scenario estimates can be directly compared to baseline estimates. The orange line represents estimates under the baseline scenario while the blue line represents estimates under the selected scenario (Figure 6).

Figure 6: The line chart view with alternative scenarios



Saving an image

You can save an image of your selected visualization by clicking on the “Save Image” button at the bottom of the left hand selection pane. The image will include all appropriate titles and labeling, and may be saved as a png (Portable Network Graphic) file that can easily be inserted into documents and presentations. The image will be given a generic filename by default. Please rename the file according to your own naming standards.

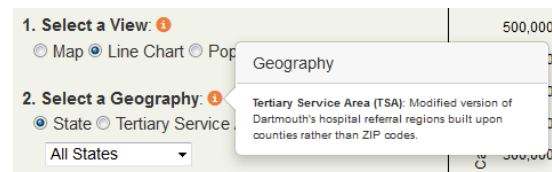
Saving the data

You can download the data for your selected visualization by clicking on the “Save Data” button at the bottom of the left hand criteria pane. The data will be saved as a .csv (Comma Separated Values) file that may be opened with standard spreadsheet or data management software, such as Microsoft Excel or Stata. Descriptive titles and labels will be embedded in the first row of the csv file. The csv will be given a generic filename by default. Please rename the file according to your own naming standards.

Helpful Tips

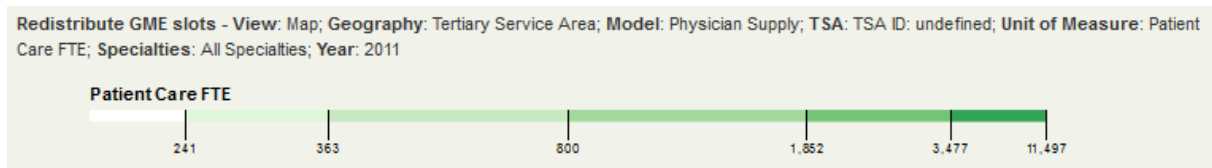
Brief definitions of model options

Clicking once on an orange dot to the right of a model option provides more information about that option. For example, as the screenshot at the right shows, clicking on the orange dot to the right of “2. Select a geography” reveals a comment bubble that defines the term “tertiary service area.” Clicking again on the orange dot closes an open comment bubble.



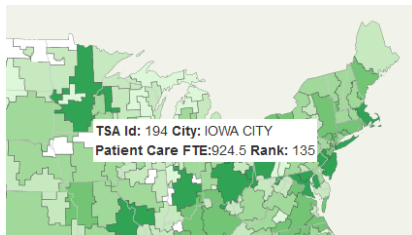
Titles and labeling of different visualizations

The text above a map, line chart, or population pyramid explains which options have been selected and displayed.

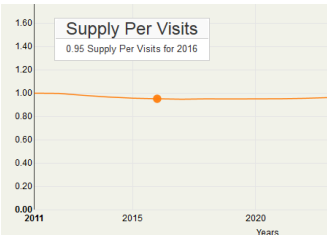


Hover over visualizations

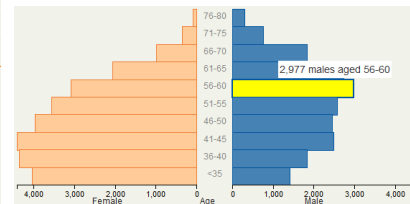
Hovering your mouse over areas on a map, lines on a line chart, or bars on a population pyramid provides information on model estimates.



Hovering over a map



Hovering over a line chart



Hovering over a population pyramid

Zoom in to map

You can click once on a state or tertiary service area to zoom in on that area. A selected state or tertiary service area will have a dark blue border around it.

Zoom out from map

When you are zoomed in on a state or tertiary service area, you can zoom out by clicking once on the selected state or tertiary service area. You can also zoom out by pressing the ESC key once.

Select a different area on the map

The map does not have a panning tool (a.k.a. hand tool) at this time. Instead, users can click on a different state or TSA to re-center the map, zoom out and then zoom in by clicking once on a different area, or select a specific state or TSA in the drop down menu and hit “Apply” to move to that area.

Providing Feedback, Reporting a Problem, or Requesting Information

Using the contact form

We are very interested in your feedback so we can refine the model’s assumptions, code and Web interface. If you would like to make a comment, report a problem, ask a question or request further information, please fill out the form on the “[Contact](#)” page of this website. We look forward to hearing from you!

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