

ABOUT PROVIDERS

Primary Care Providers(PCPs) are the first line of defense for patients seeking medical care.

A PCP's time may be used on:

- Preventative Care (Annual/Scheduled Appointments)
- Acute Care (Emergencies)
- Administrative Work
- Academic Research

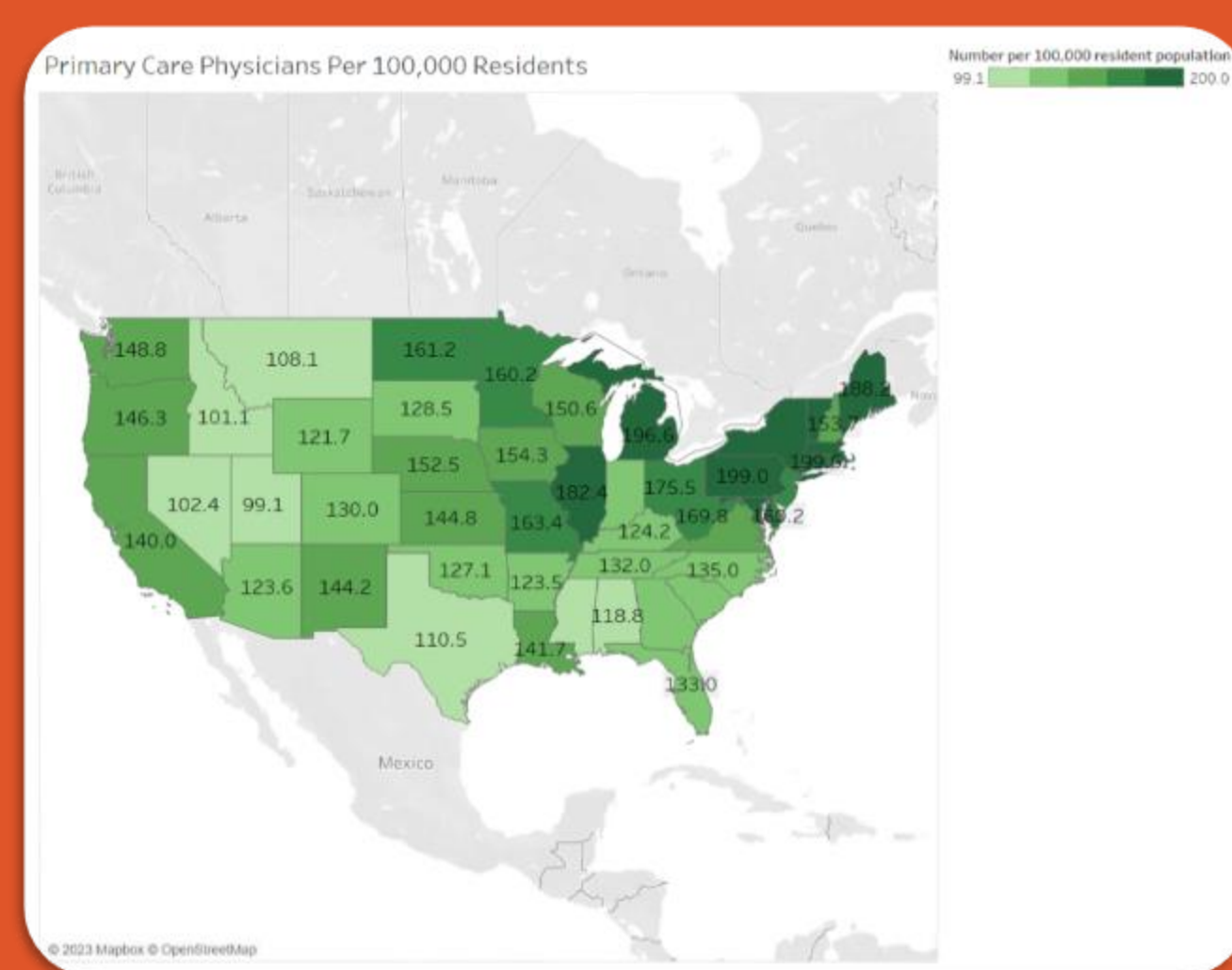
EMPANELMENT

A patient may be empaneled to a specific provider if they are open to accepting new patients. Providers can become **over-empaneled** which can cause burnout, higher attrition, and lower levels of quality care.



PROJECT

Hypothesis: High provider workloads are caused in part by **over-empanelment**.



Map showing providers per 100,000 people. **Scope:** Health Integrated Delivery System (IDS): Internal Medicine and Family Practice Providers serving ~52,000 Medicare/Medicaid patients.



HOW MANY PATIENTS SHOULD A PRIMARY CARE PROVIDER HAVE?

METHODS

After doing research into how panel size has been evaluated in the past and comparing it to the Industrial Engineering skills we have, our team decided to use three different methods within our final panel size estimate calculator. These three methods that we chose are explained below:

Visit based method:

This method uses the equation below that utilizes the number of available appointments to gauge a panel size estimate. The team chose this method because the inputs are easy to obtain but it fails to account work done outside of appointments and complexity of the patients.

$$\text{PANEL SIZE ESTIMATE} = \frac{(\text{AVAILABLE VISITS/DAY}) \times (\text{WORKDAYS/YEAR})}{(\text{AVG VISIT/PATIENT/YEAR})}$$

Survey and choice-based conjoint analysis:

The team used this statistical method to create a workload score for individual primary care providers that accounts for the factors not considered in the visit-based method. This workload score is based off panel size, the complexity of patients within the panel, and the amount of correspondence with patients outside of appointment time. This method was done by surveying primary care providers (an example question form this survey is shown below) and completing a choice based conjoint analysis through the Excel add-in XLSTAT to obtain weights for each factor.

Which is worse?	Panel Size	Patient Complexity	Correspondence Outside of Appointments
Scenario 1:	High	Low	Medium
Scenario 2:	Medium	Medium	High

The screenshot above shows an example comparison question from our survey

Existing data:

For this method we worked alongside OHSU Data Analysts to understand how patient complexity was measured at OHSU and to acquire other data about primary care providers like panel sizes and even amount of time spent outside of appointments on MyChart.

SOLUTION

To inform changes to panel sizes, a calculator was developed to assign a score that represents the workload associated with providing care to a panel.

The calculator utilizes the weights generated by conjoint analysis to accurately assess the effects that various panel considerations have on workload.

The calculator was developed on EXCEL with an understandable interface and VBA-coded navigation buttons.

The screenshot shows a software interface for calculating provider workload. It features a table for 'PCP Profile' with fields for Specialty, Status, CFTE, Current Active Panel, Weekly Time on MyChart, and Patient Complexity. Below this is a 'PCP Workload' section showing calculated scores for Normalized and CFTE-Adjusted Workload. Navigation buttons include 'Record on Physician List', 'Change Panel Inputs', and 'Return to Intro Sheet'.

PCP Profile	
Specialty	Internal Medicine
Status	Employee
CFTE	0.6
Current Active Panel	700
Weekly Time on MyChart (minutes)	250
Low Patient Complexity (0-100 %)	40
Medium Patient Complexity (0-100 %)	30
High Patient Complexity (0-100 %)	30

PCP Workload	
Normalized Workload Score	0.3705
CFTE-Adjusted Workload Score	0.6175

Screen capture of the results window with calculated provider workload scores.

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NEXT STEPS

There remains some validation and future work to still be completed:

- Work with OHSU Biostatisticians to test hypotheses using protected patient information
- Validate over-empanelment assumptions against appointment lead times and other similar patient experience metrics
- Apply framework to defining actionable over-empanelment threshold
- Widen the scope to make this work more generalizable so other primary care providers from other hospitals may also benefit

To obtain these next steps, our research and completed calculator will be handed off to Harshal, our graduate student colleague, to continue work alongside OHSU Health to continue this project in the long term.