



# **HEALTHCARE ACCESS IN MAINE**

# CONTENT

- 01** CONTEXT
- 02** ABOUT THE DATA
- 03** ANALYSIS QUESTIONS
- 04** ANALYSIS RESULTS
- 05** LIMITATIONS
- 06** NEXT STEPS
- 07** SOURCES

# CONTEXT



Residents of rural areas often have increased barriers to accessing health care than those in urban areas.



Barriers include insurance coverage, distance, provider shortage, poor health literacy, and social stigma.



# ABOUT THE DATA

## Source

This data is from the Health Resource and Services Administration's Area Health Resource Files.

## What's Included

This data has information for every county in the US and includes economic factors, number of health care providers, demographics, insurance coverage, and facility type.

## Data Subset

I chose to look at variables concerning economics, health care providers, facility type, and type of care.

# QUESTIONS

01

02

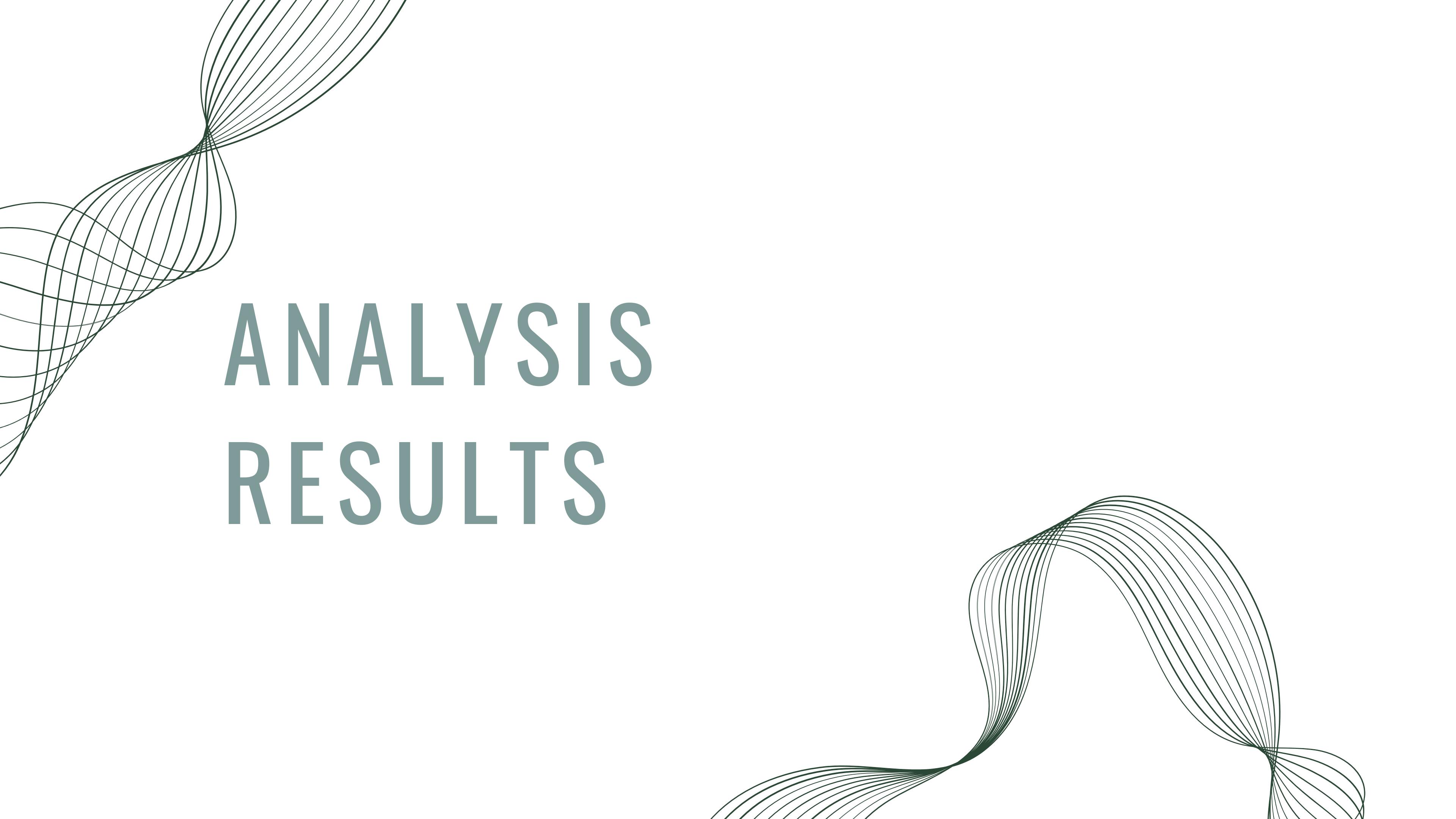
03

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Are primary care providers per capita equivalent in each county?

How has the number of providers in each county changed over time?

Is percent of a county's population below the poverty line a factor to consider when modeling change in providers over time?

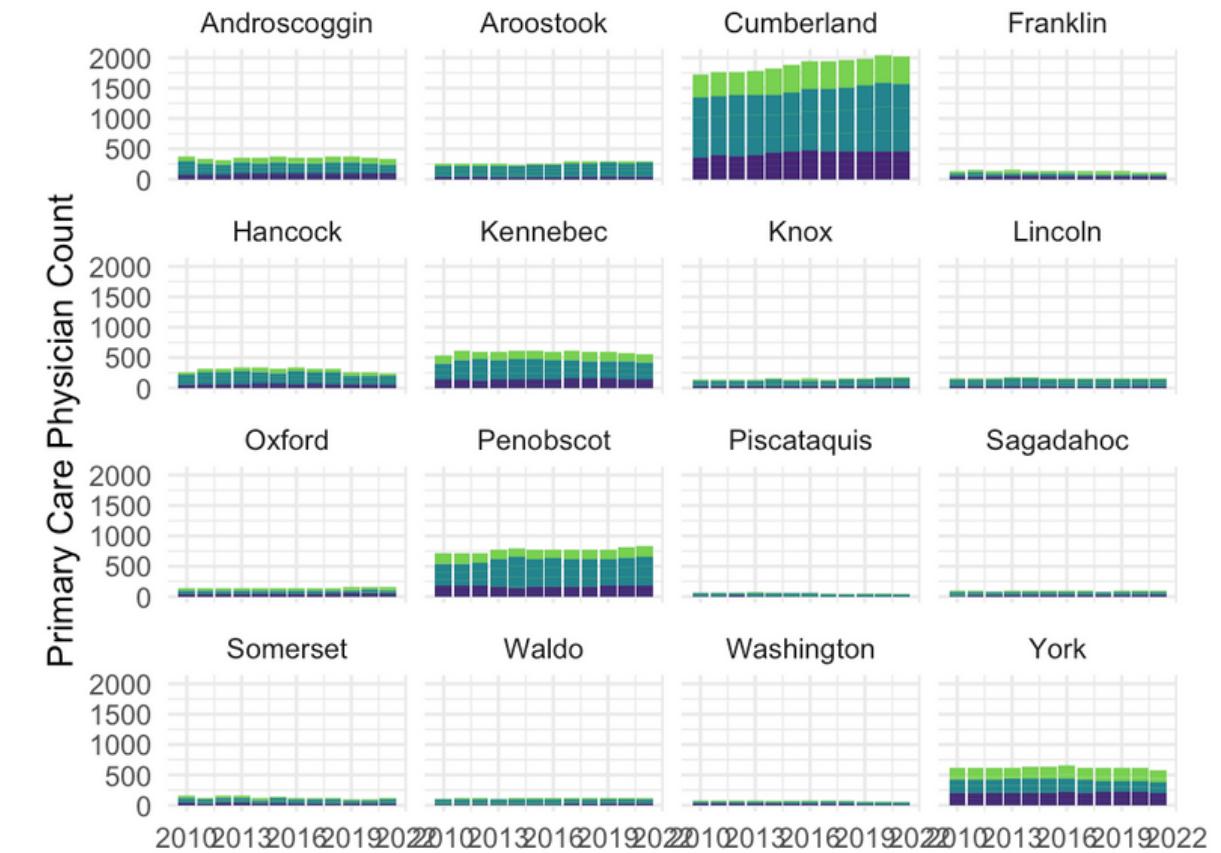


# ANALYSIS RESULTS

# PRIMARY CARE PROVIDERS BY COUNTY

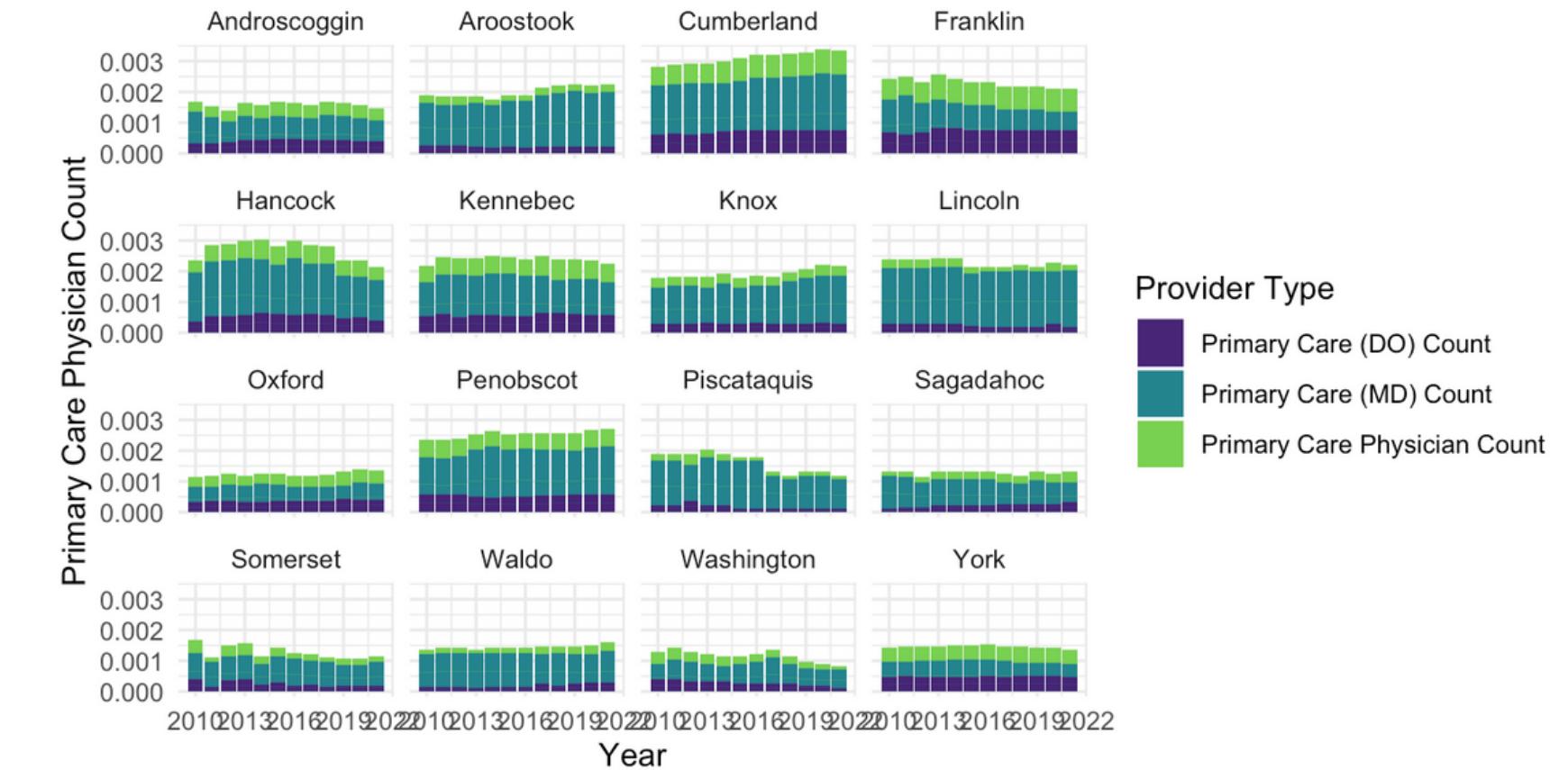
Primary Care Physician Count by Year

By Maine County



Primary Care Physician Count by Year

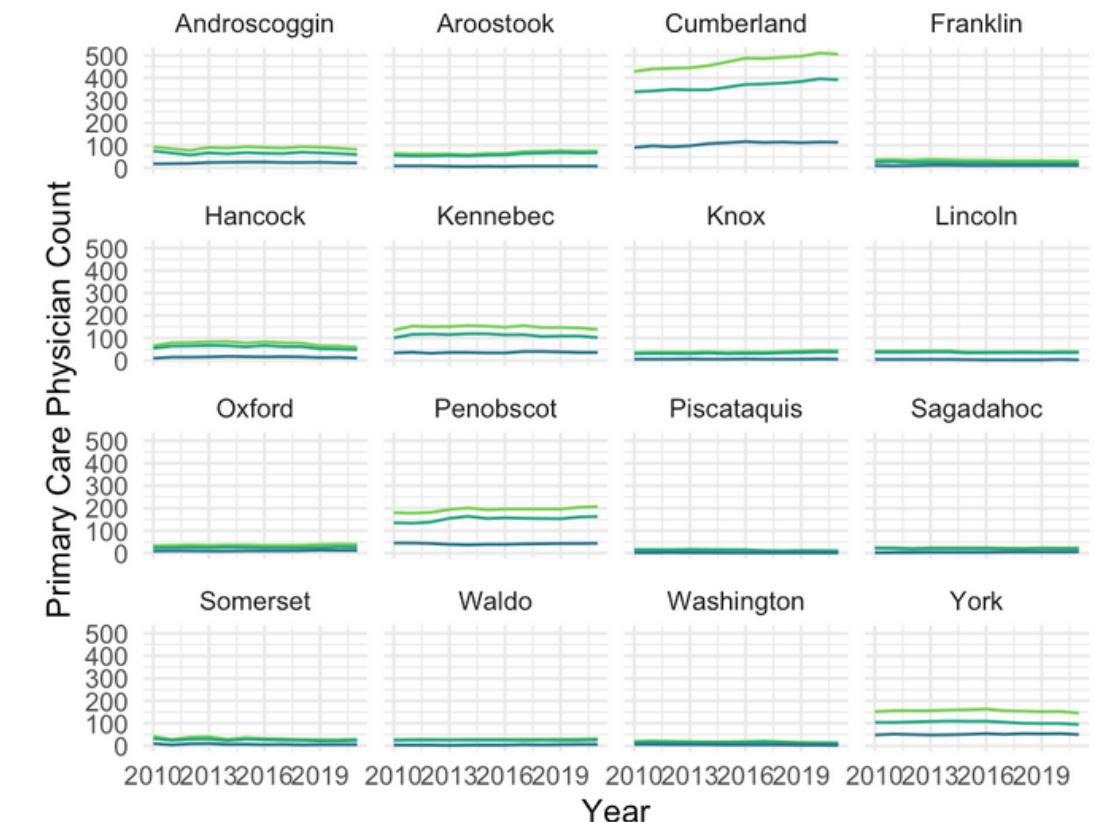
By Maine County per capita



# PRIMARY CARE PROVIDERS BY COUNTY

Primary Care Physician Count by Year

By Maine County

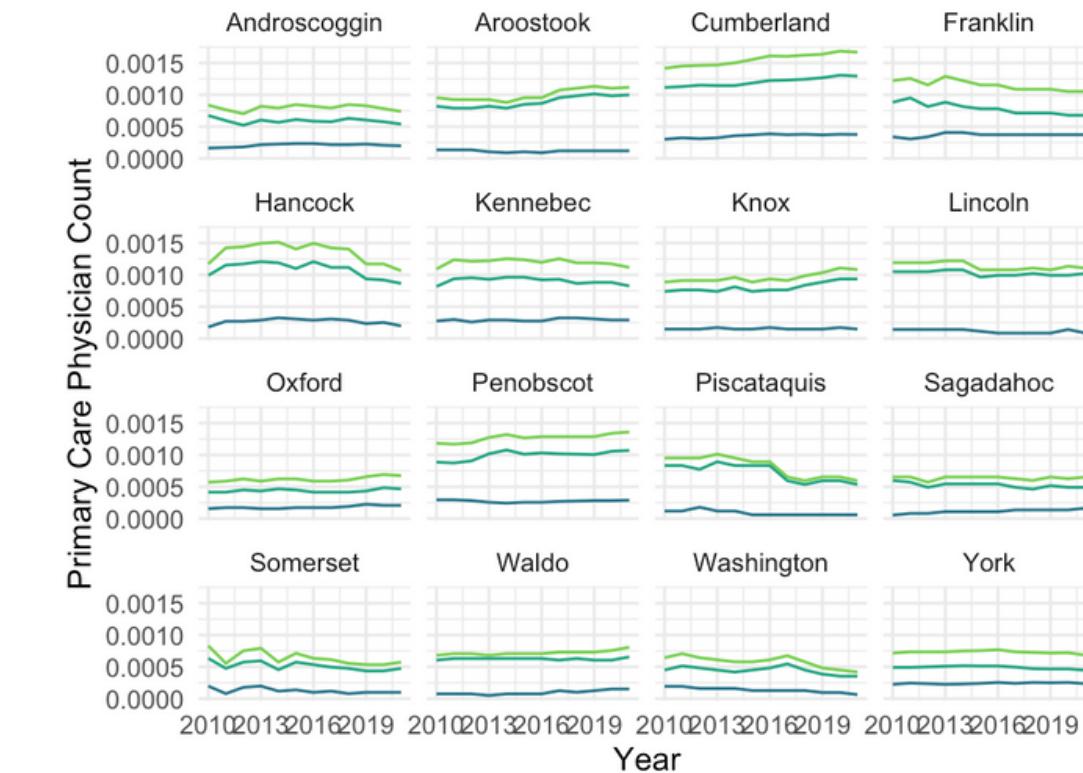


colour

- Primary Care (DO) Count
- Primary Care (MD) Count
- Primary Care Physician Count

Primary Care Physician Count by Year

By Maine County



colour

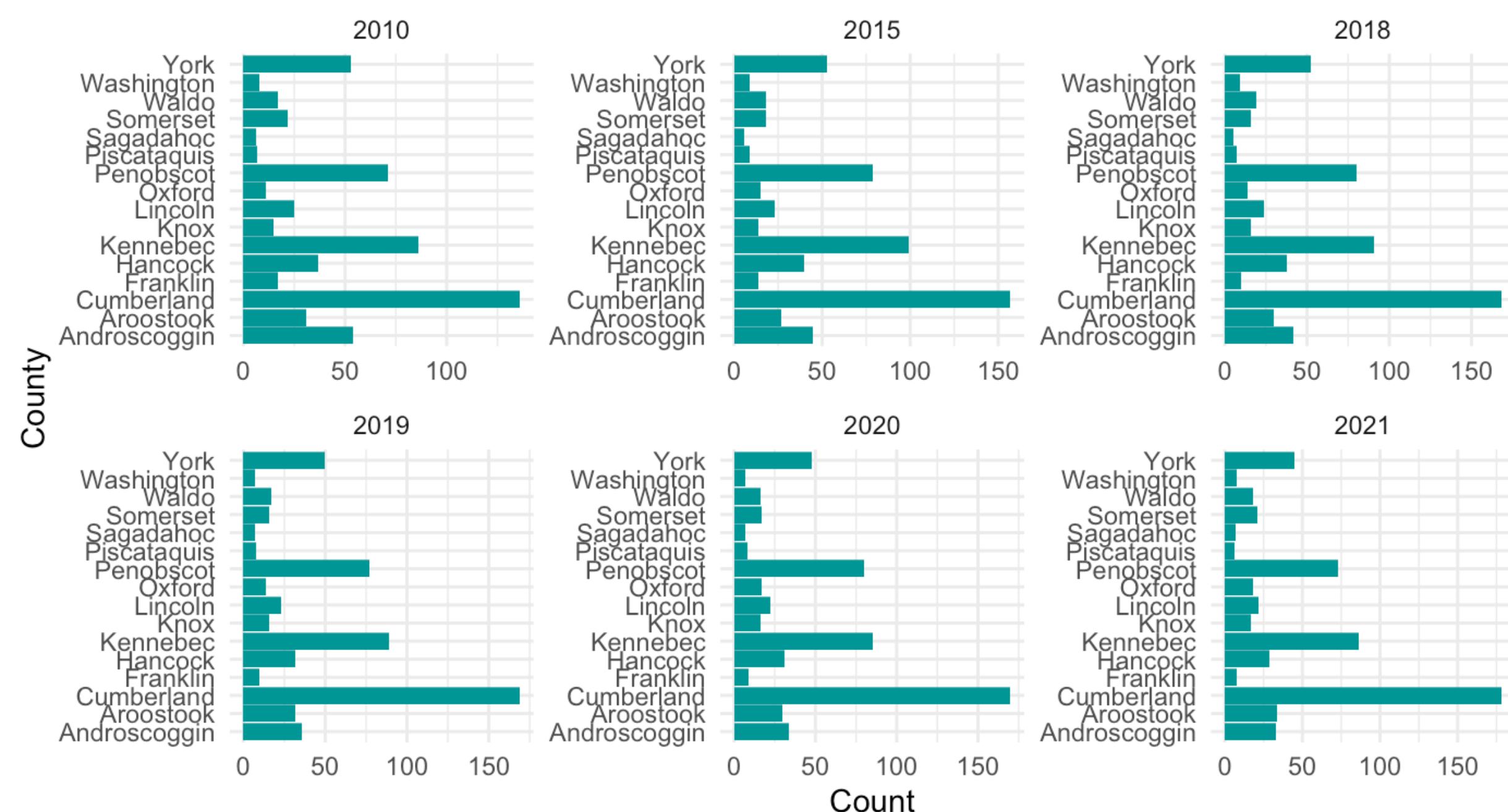
- Primary Care (DO) Count
- Primary Care (MD) Count
- Primary Care Physician Count

Provider count is divided by county population as of the 2020 Census.

# PROVIDERS BY COUNTY

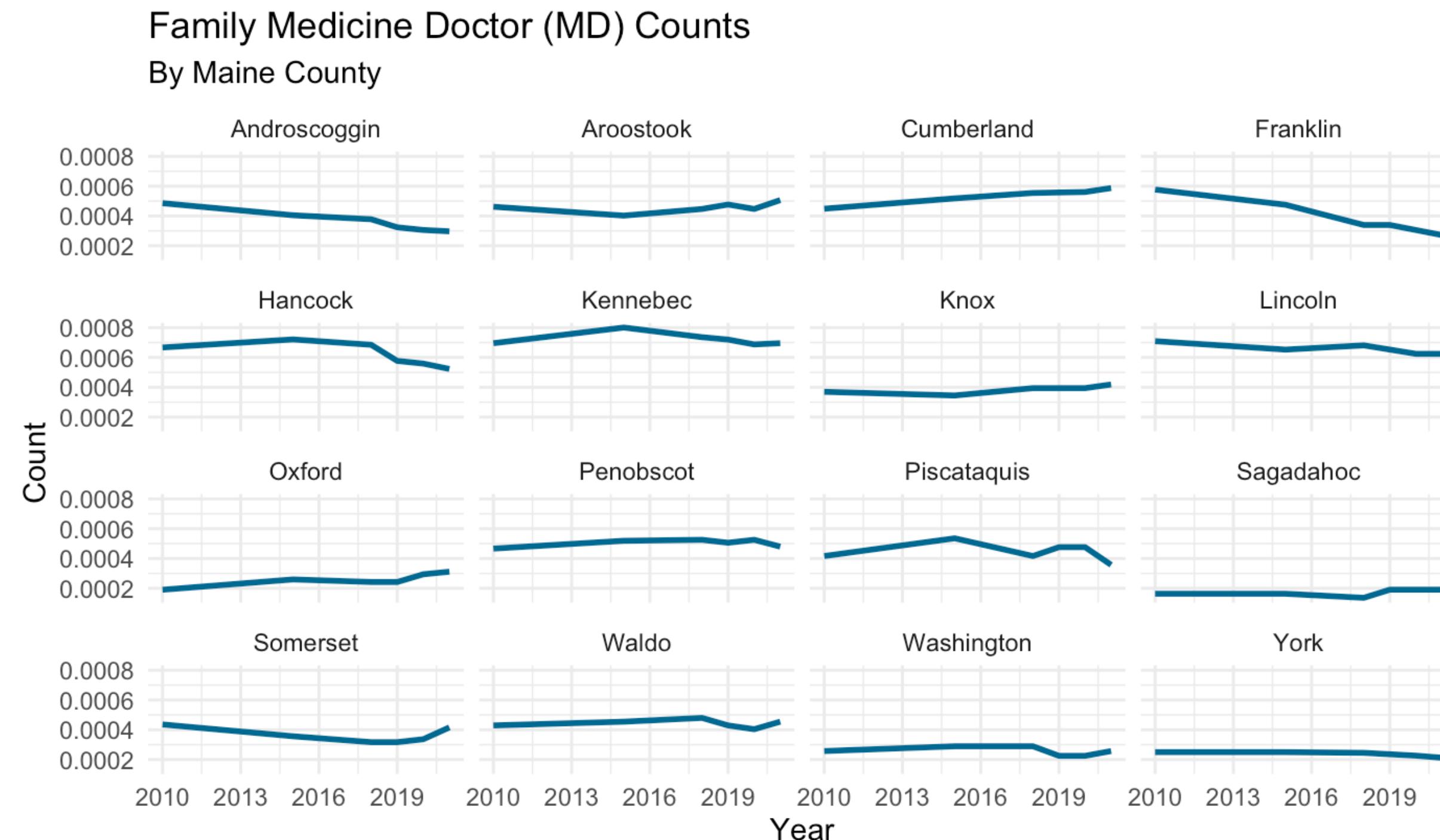
## Family Medicine Doctors

Family Medicine Doctor (MD) Counts  
By Maine County



# PROVIDERS BY COUNTY

## Family Medicine Doctors



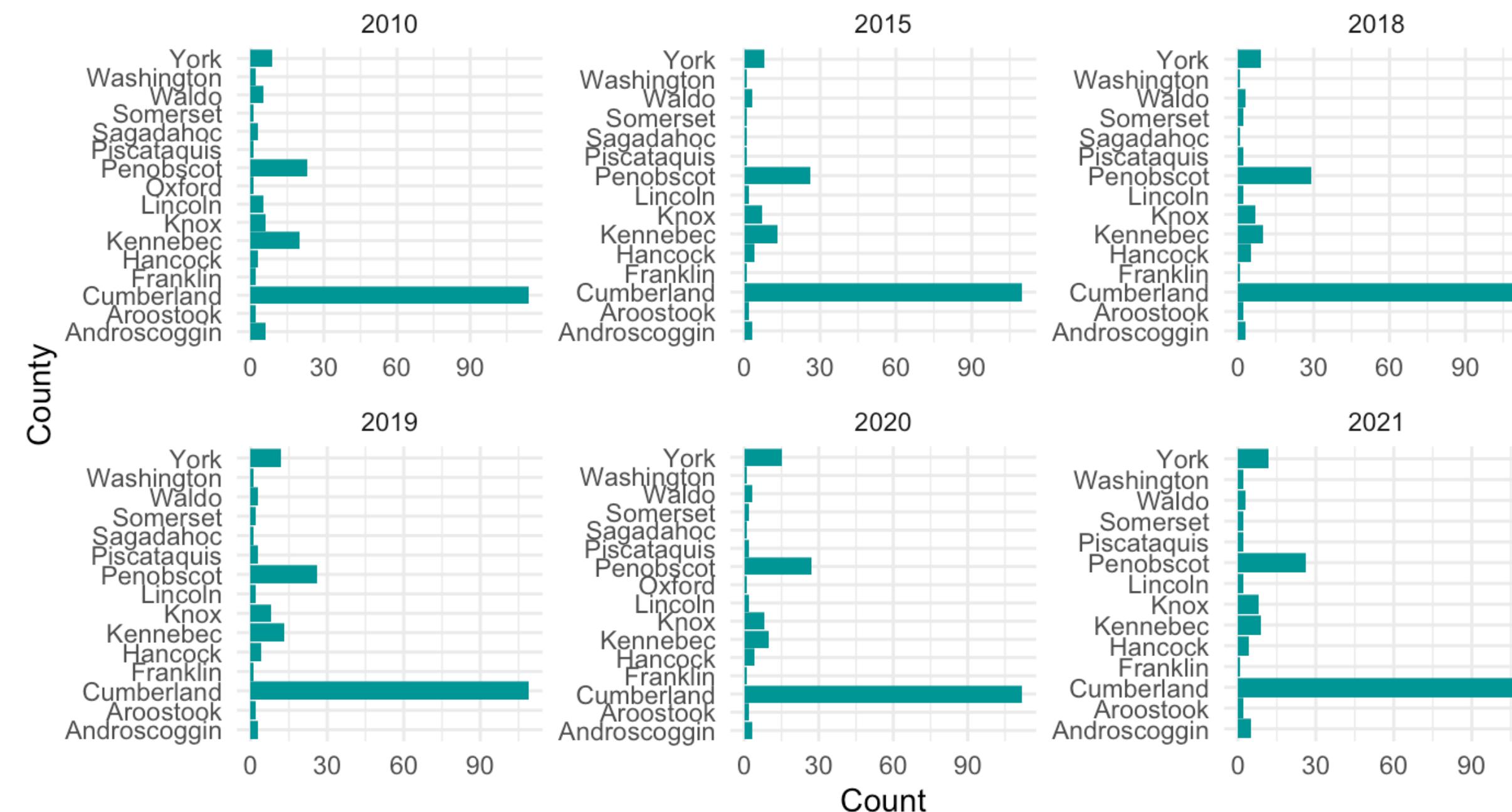
Family Medicine Doctor count was divided by county population as of the 2020 Census

# PROVIDERS BY COUNTY

## Psychiatrists

### Psychiatrist (MD) Counts

By Maine County

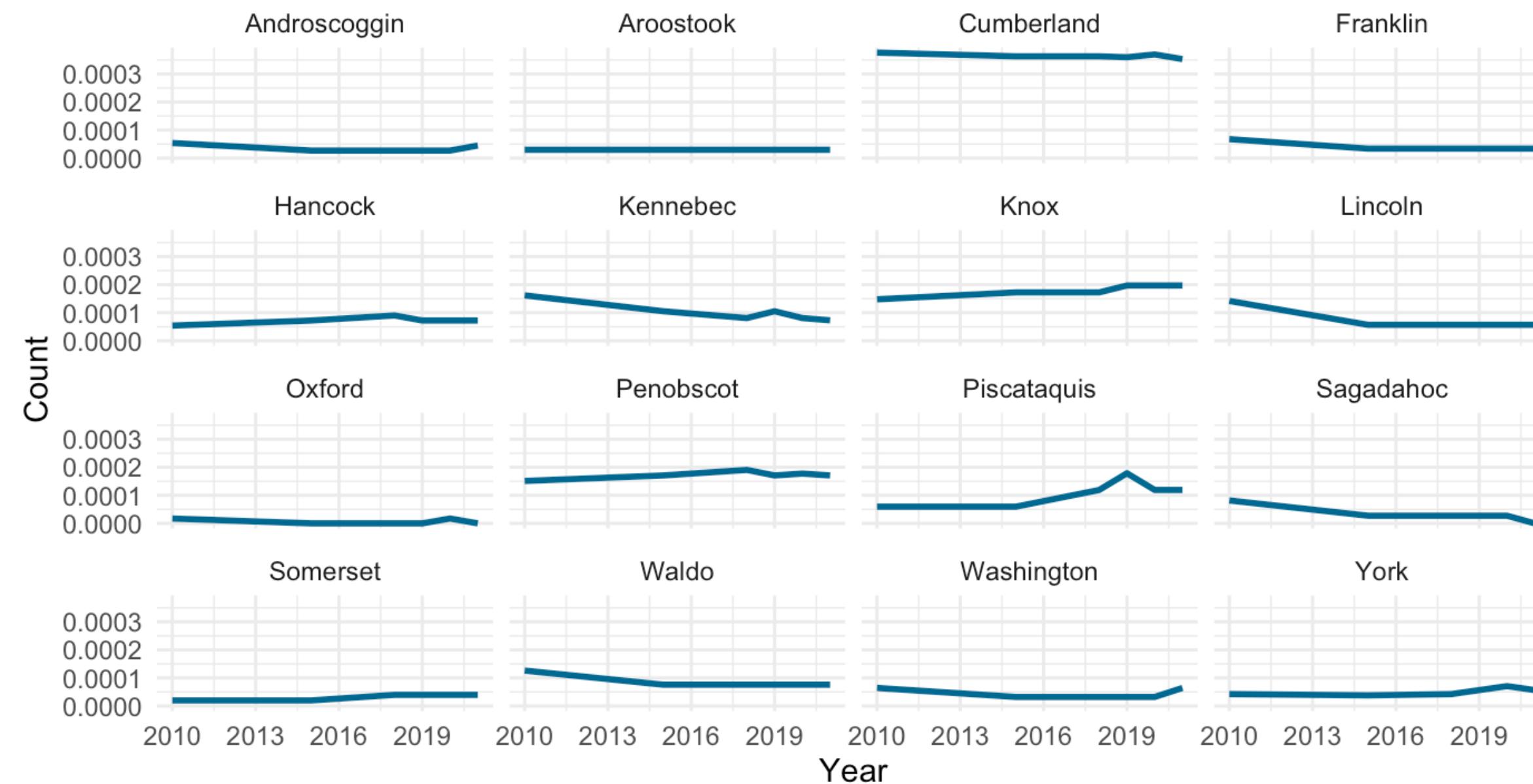


# PROVIDERS BY COUNTY

## Psychiatrists

### Psychiatrist (MD) Counts

By Maine County

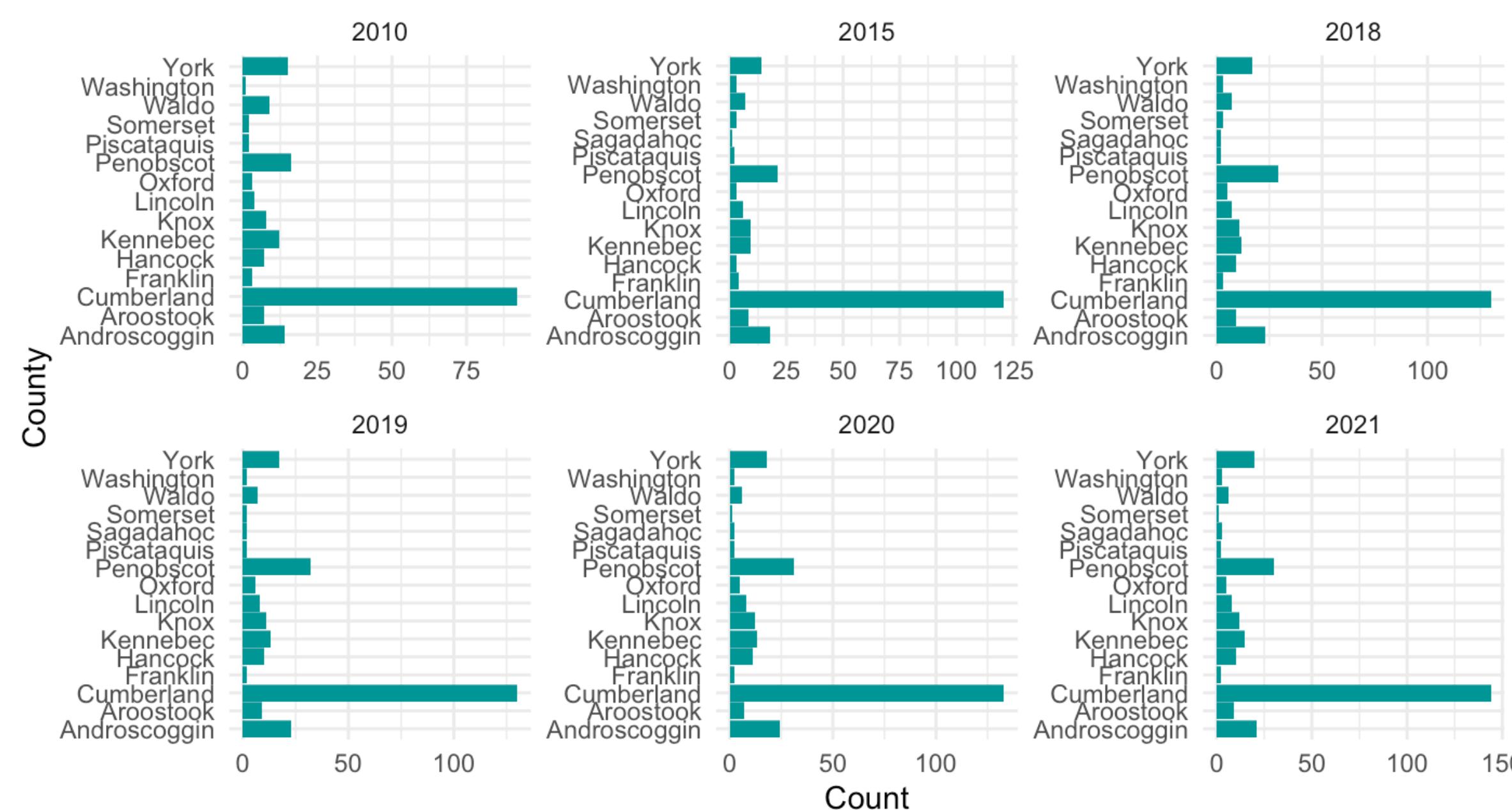


Psychiatrist count was divided by county population as of the 2020 Census

# PROVIDERS BY COUNTY

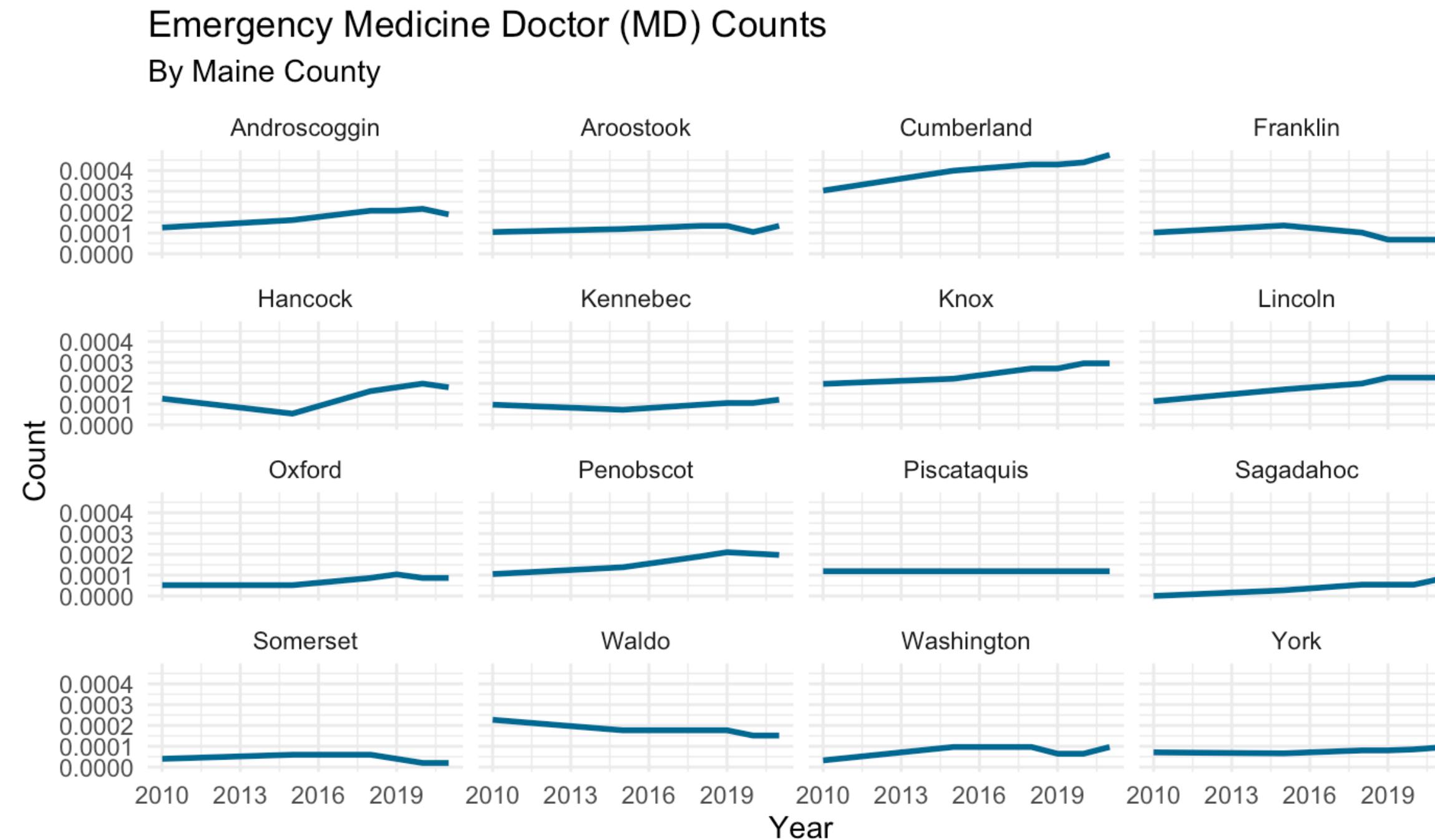
## Emergency Medicine Doctors

Emergency Medicine Doctor (MD) Counts  
By Maine County



# PROVIDERS BY COUNTY

## Emergency Medicine Doctors

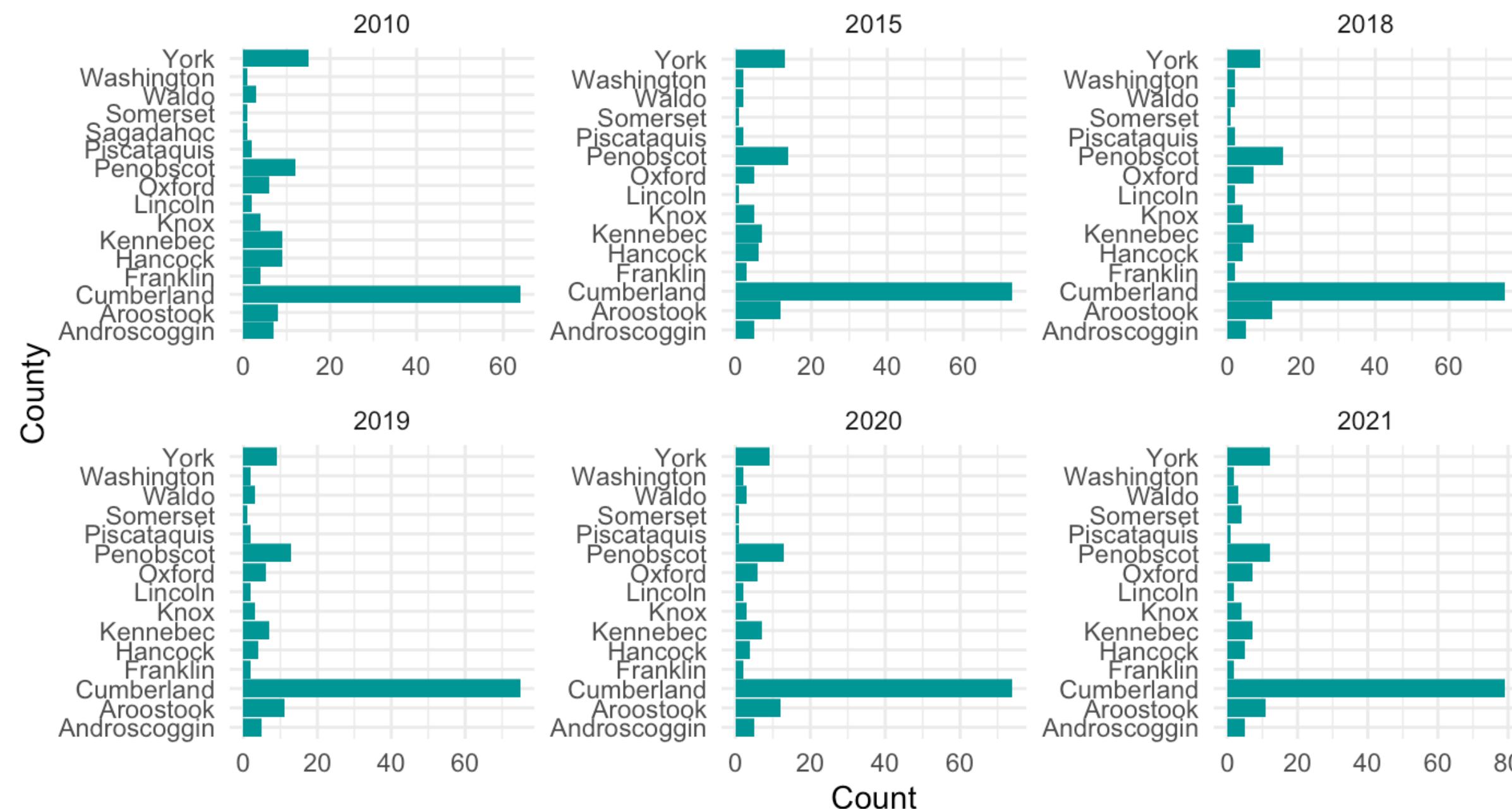


Emergency Medicine Doctor count was divided by county population as of the 2020 Census

# PROVIDERS BY COUNTY

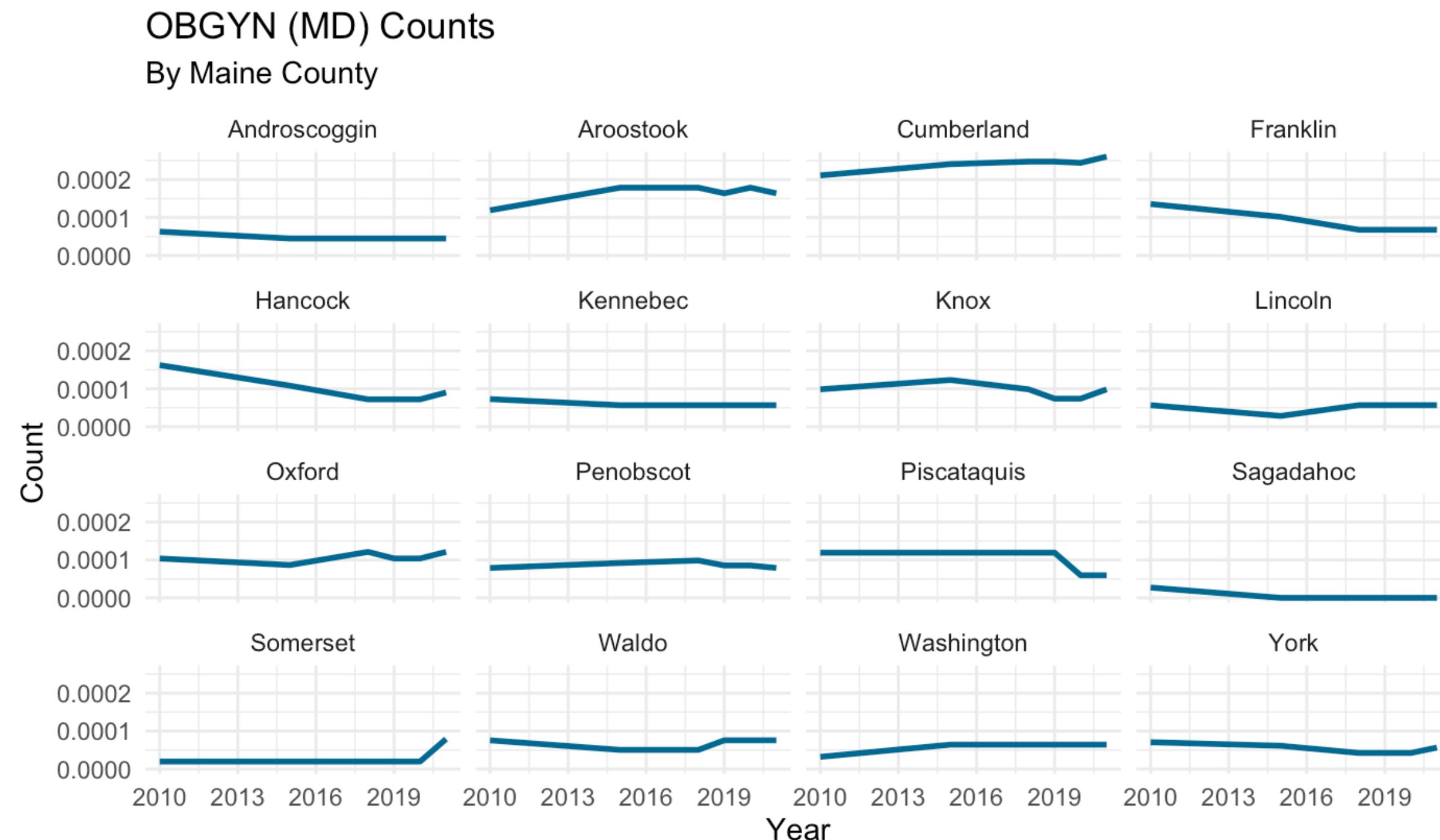
## OBGYNs

OBGYN (MD) Counts  
By Maine County



# PROVIDERS BY COUNTY

## OBGYNs

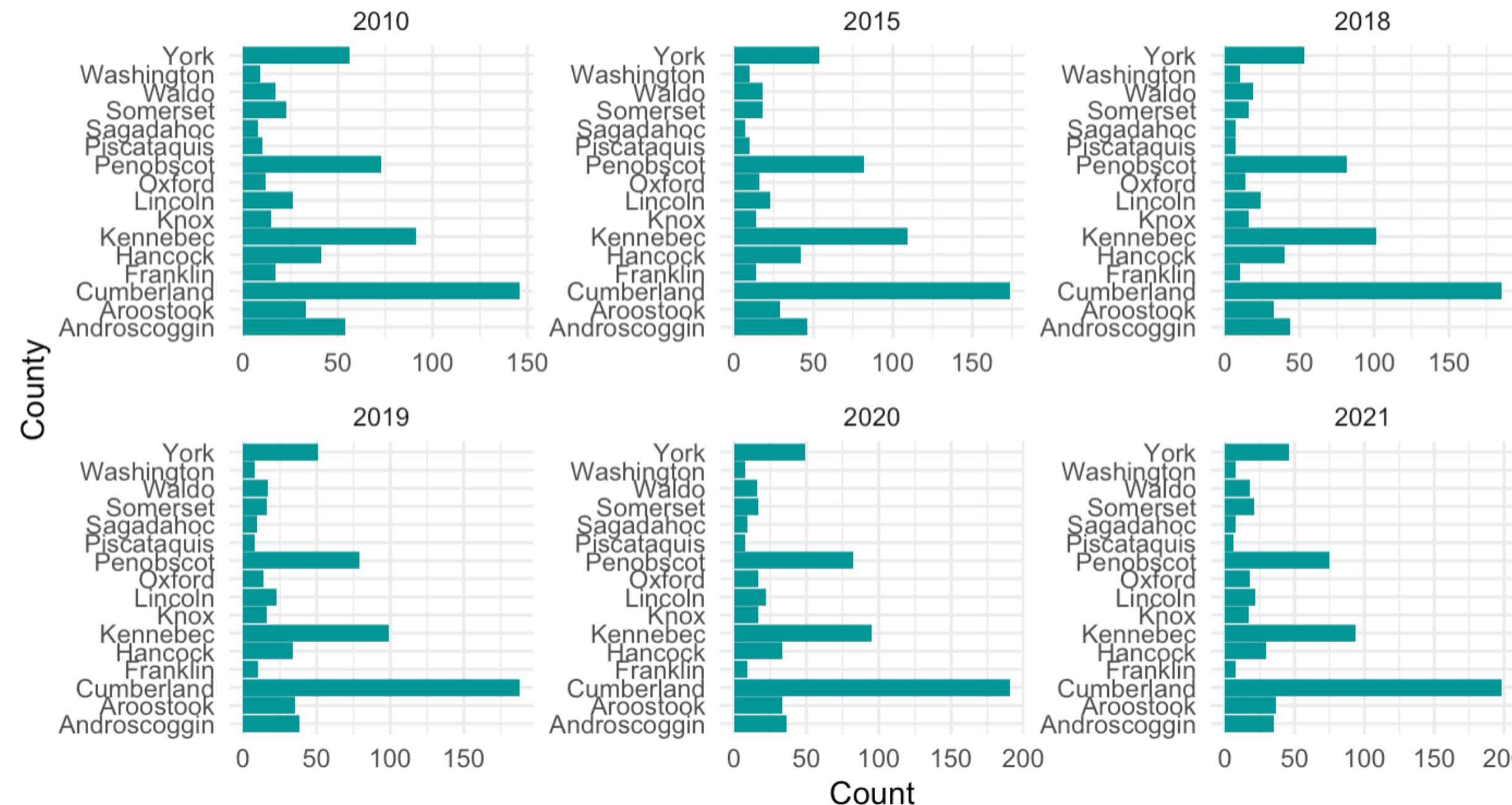


OBGYN count was divided by county population as of the 2020 Census

# PROVIDERS BY COUNTY

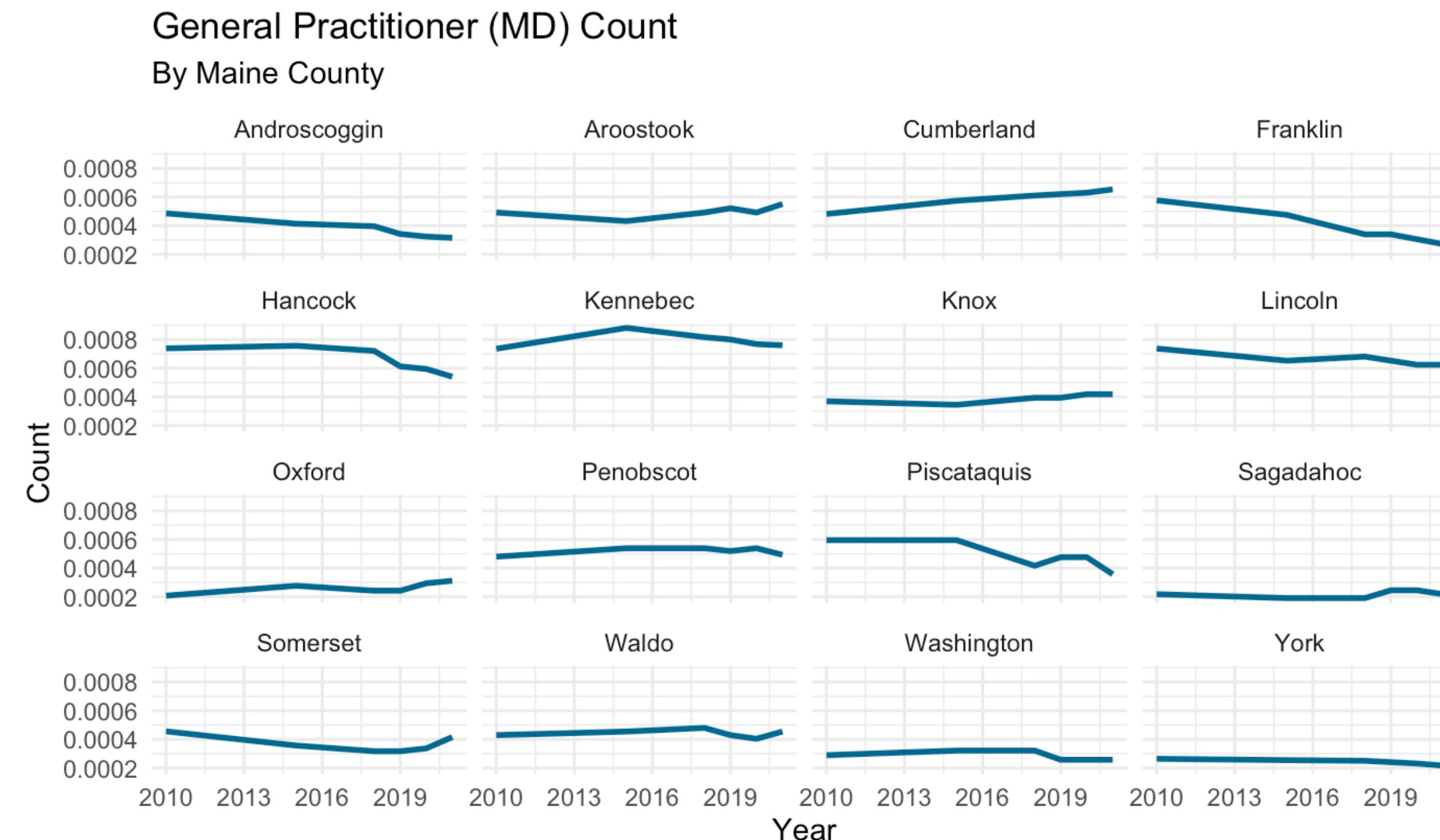
## General Practitioners

General Practitioner (MD) Count  
By Maine County



# PROVIDERS BY COUNTY

## General Practitioners

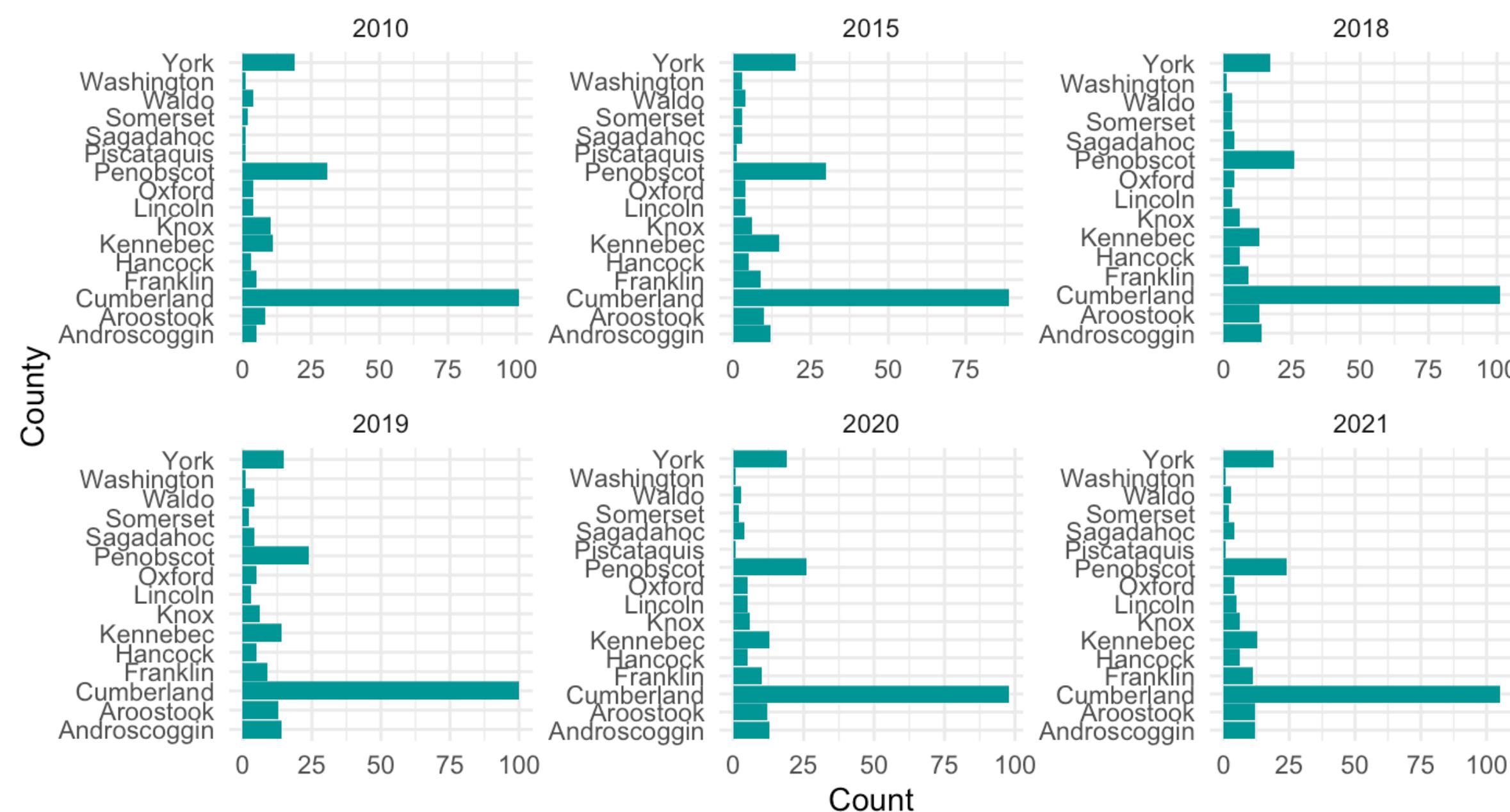


General Practitioner count was divided by county population as of the 2020 Census

# PROVIDERS BY COUNTY

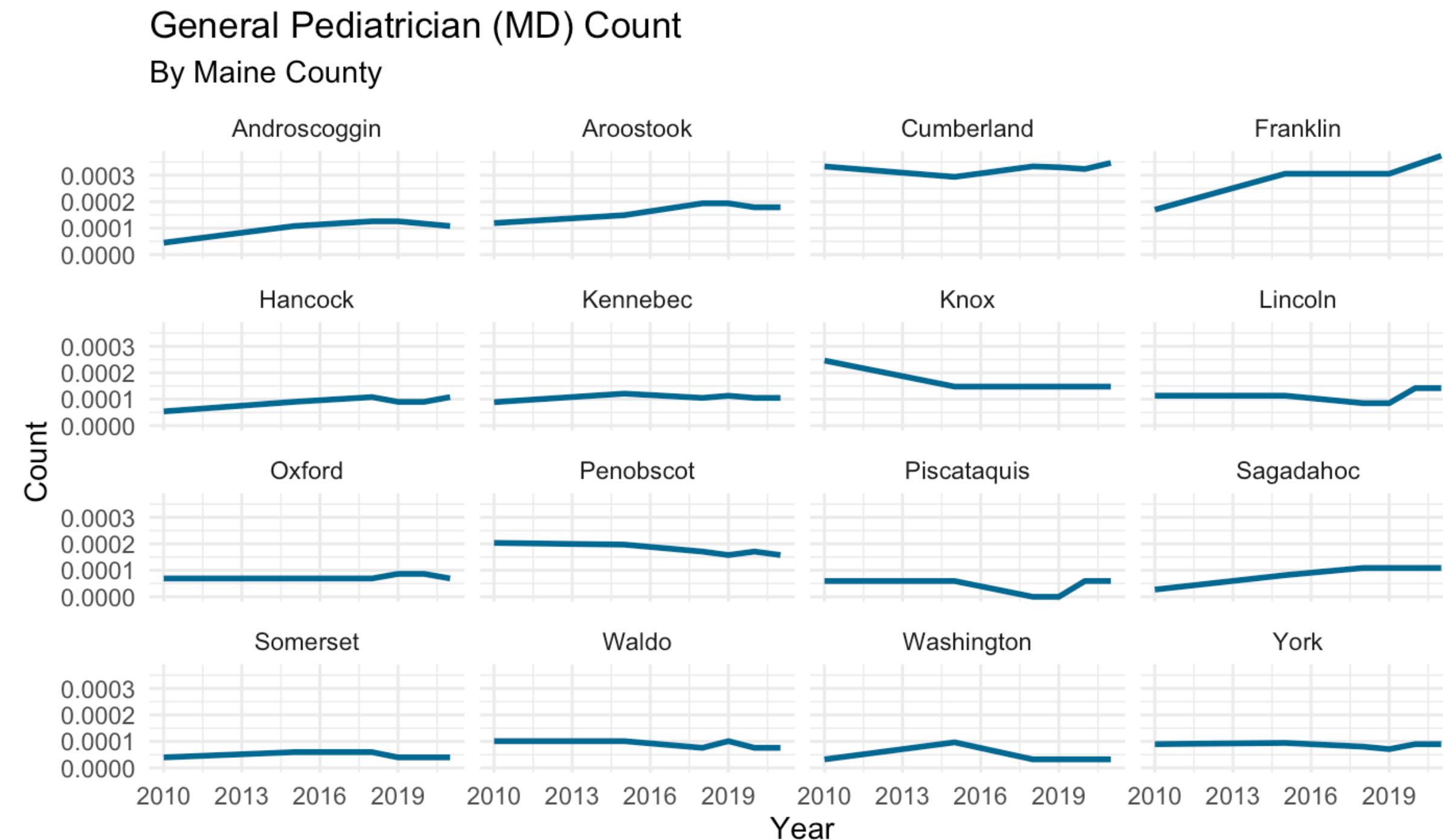
## General Pediatricians

General Pediatrician (MD) Count  
By Maine County



# PROVIDERS BY COUNTY

## General Pediatricians

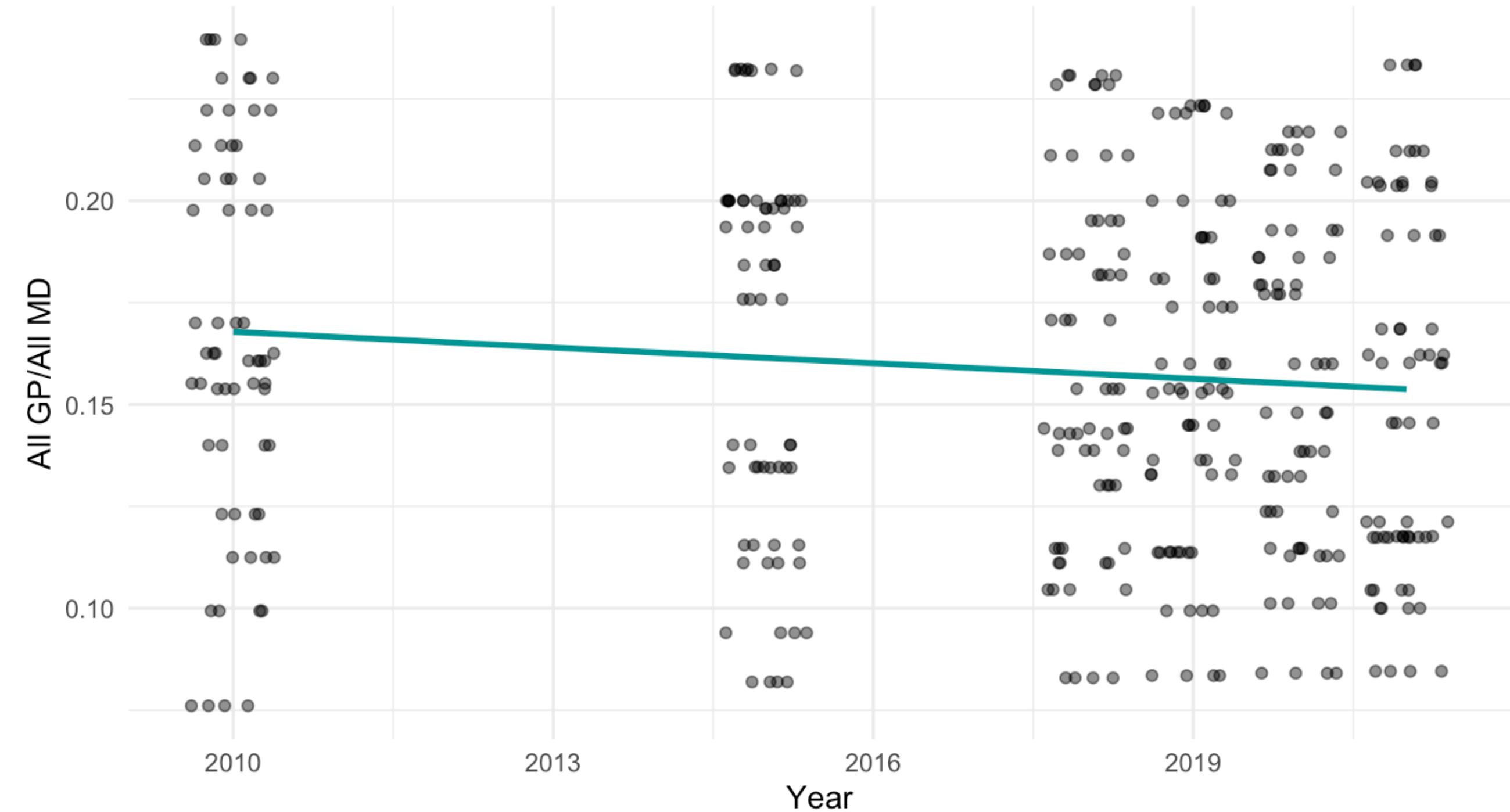


General pediatrician count was divided by county population as of the 2020 Census

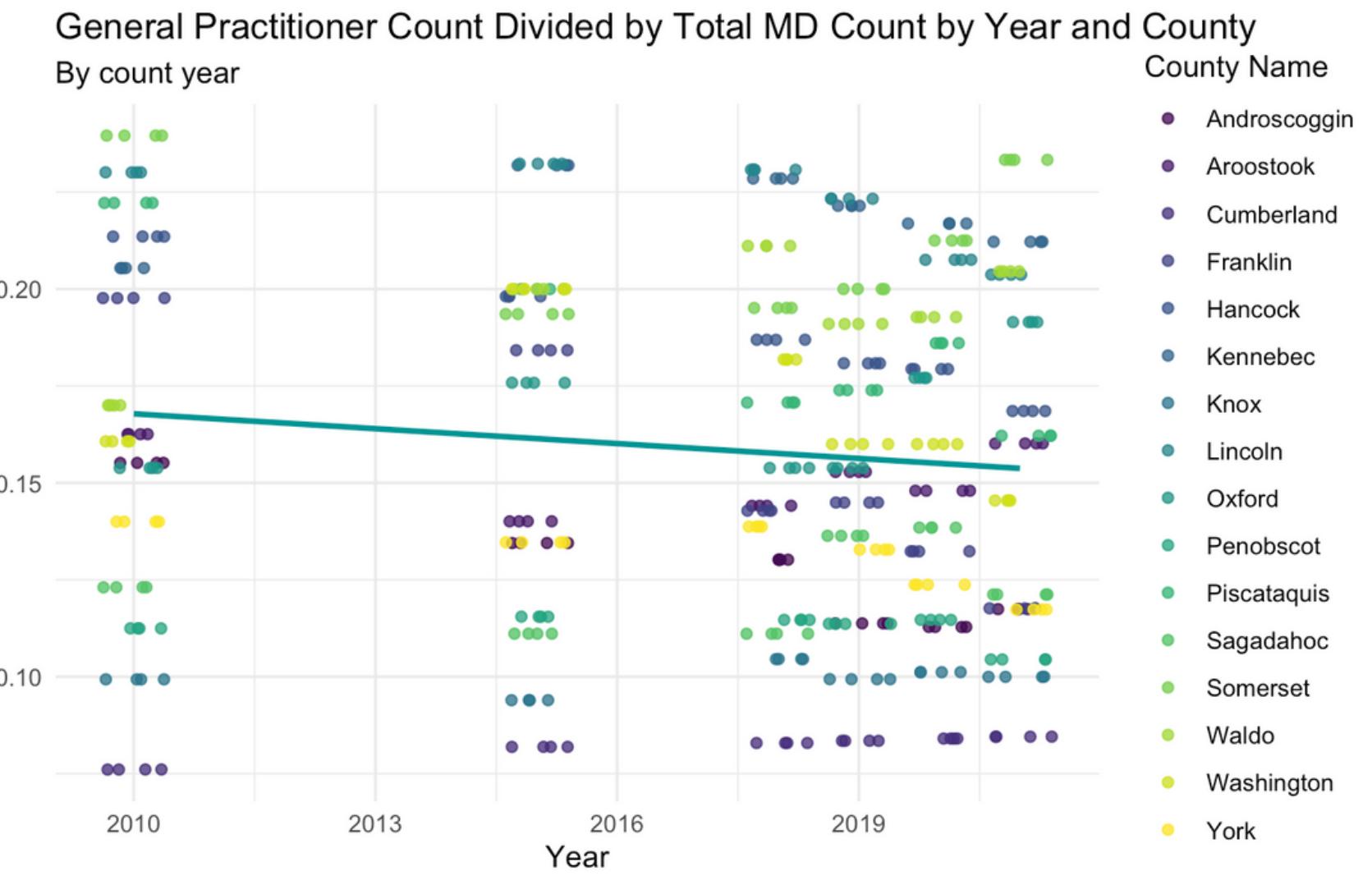
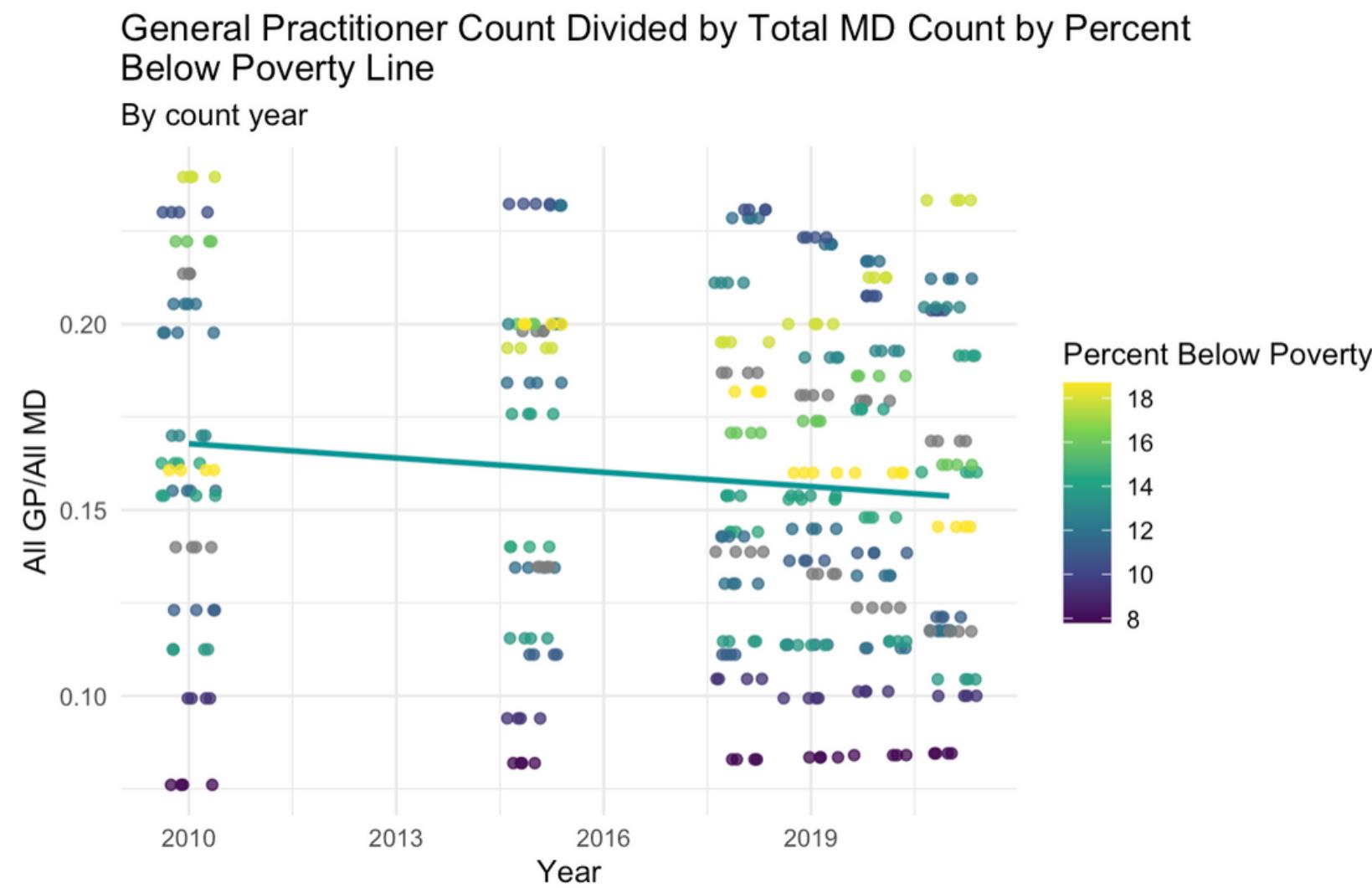
# MODELS

- $R^2: 0.22$
- Adjusted  $R^2: 0.21$
- PValue: 0.025

General Practitioner Count Divided by Total MD Count  
By count year

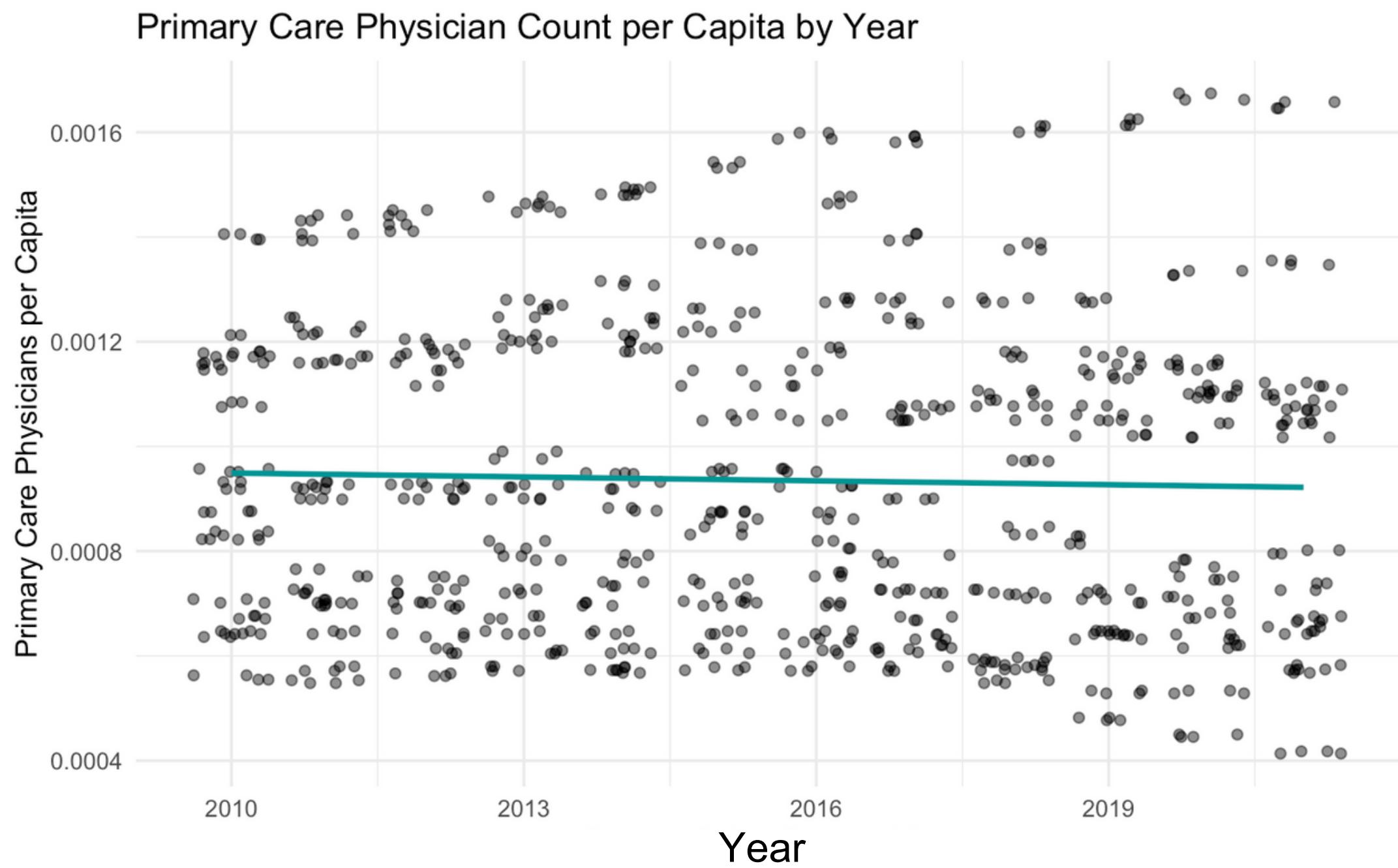


# MODELS



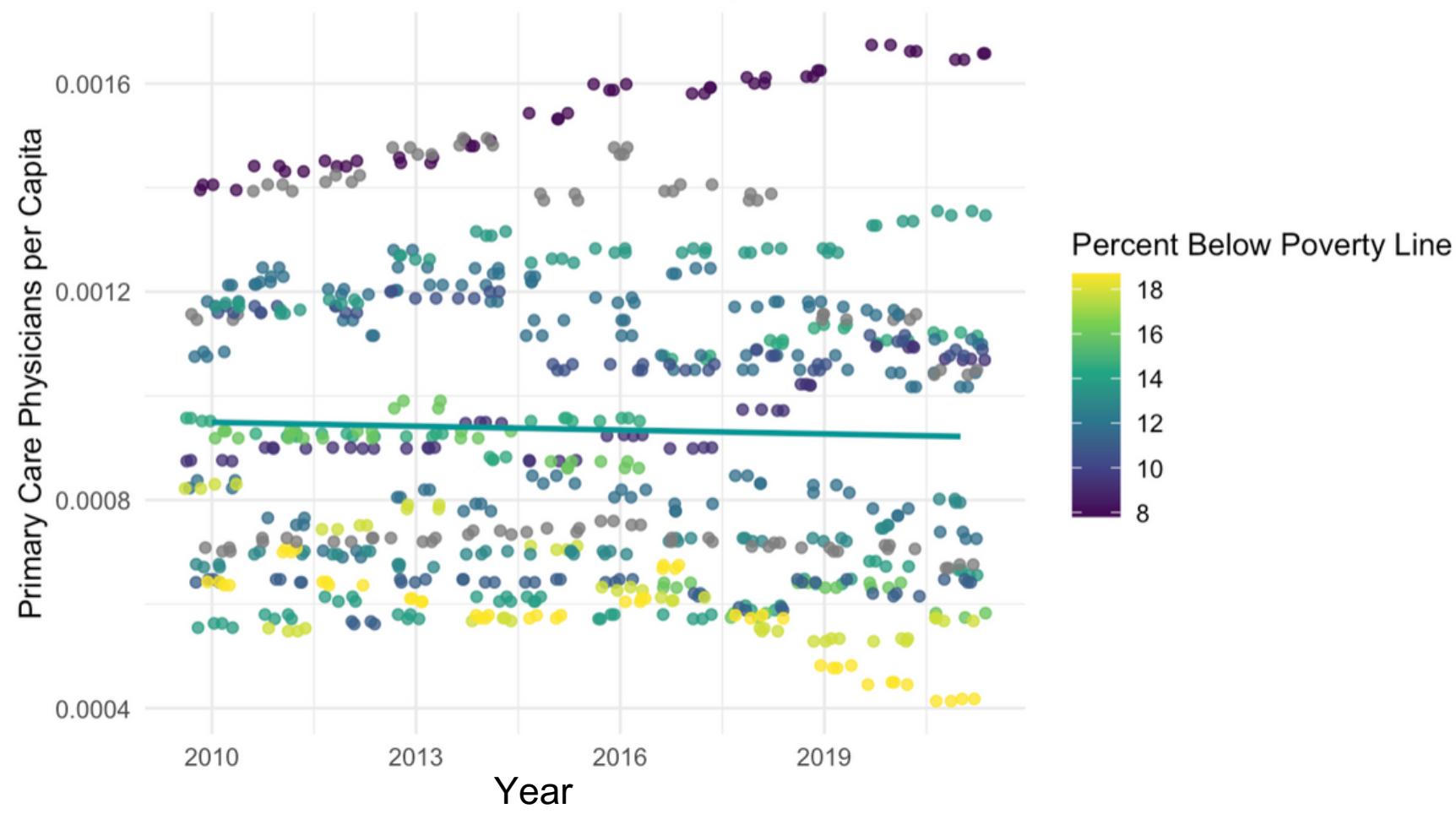
# MODELS

- $R^2: 0.0008$
- Adjusted  $R^2: -0.0004$
- PValue: 0.4276274

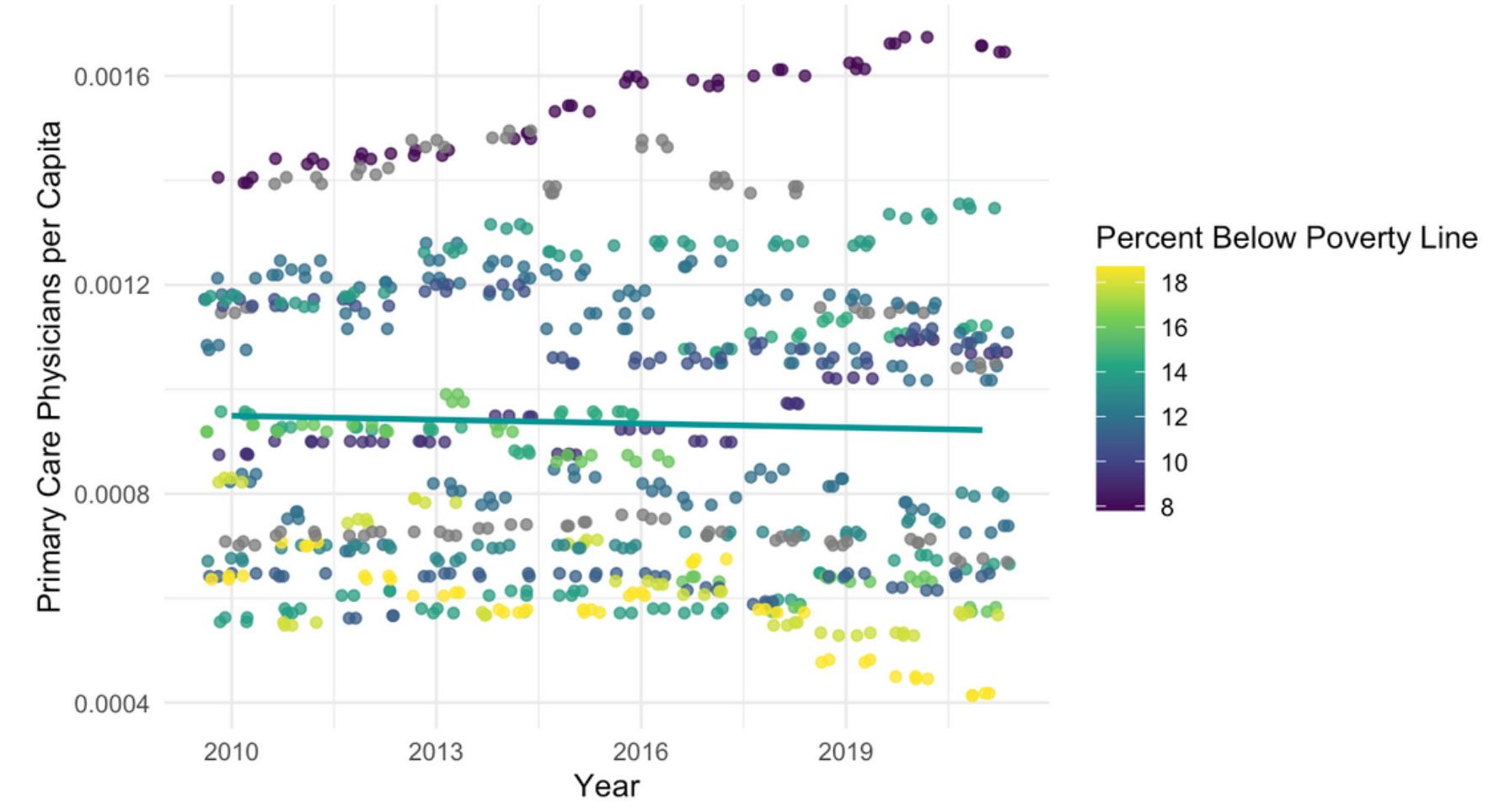


# MODELS

Primary Care Physician Count per Capita by Year and Percent of Population Below Poverty Line

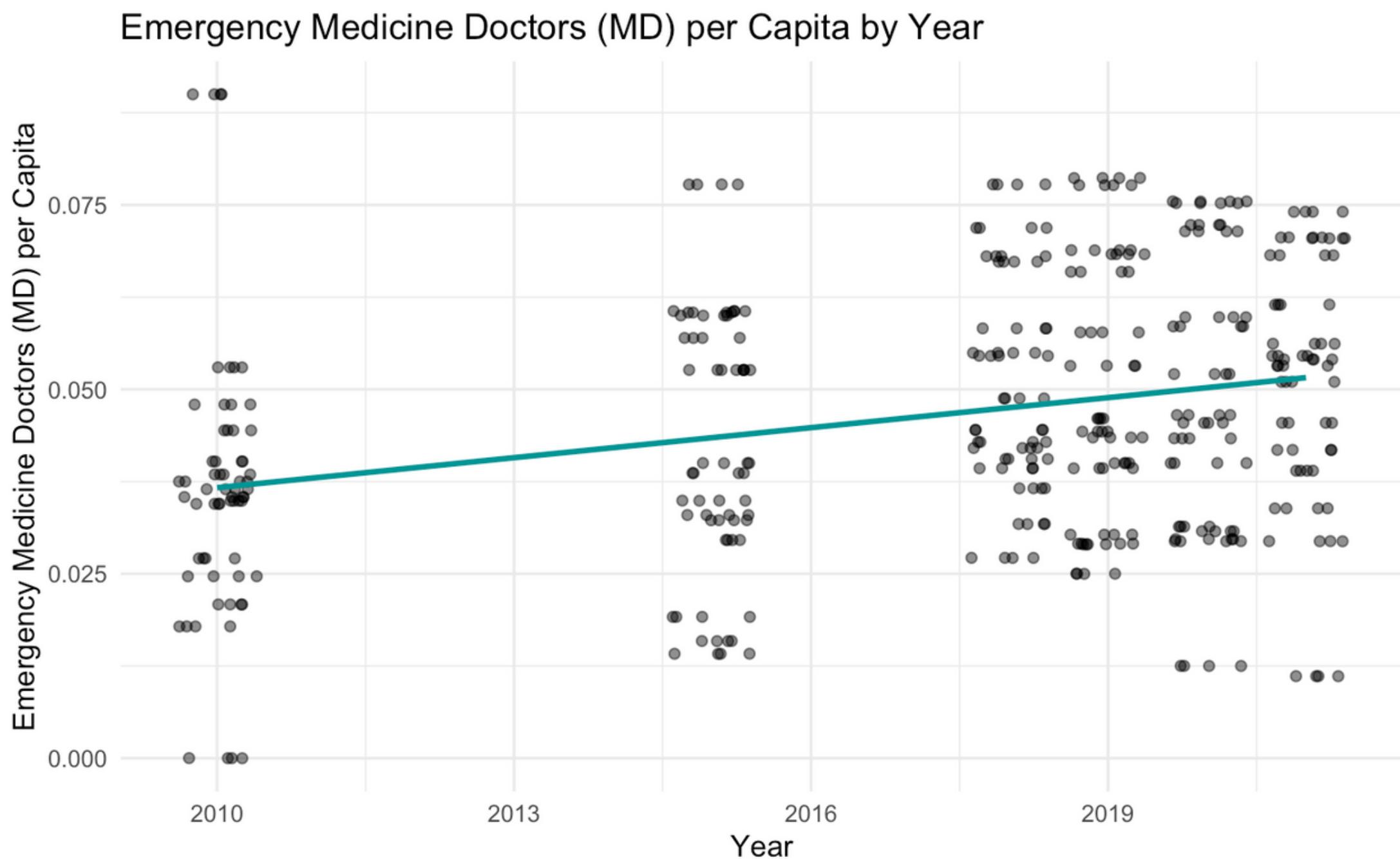


Primary Care Physician Count per Capita by Year and Percent of Population Below Poverty Line

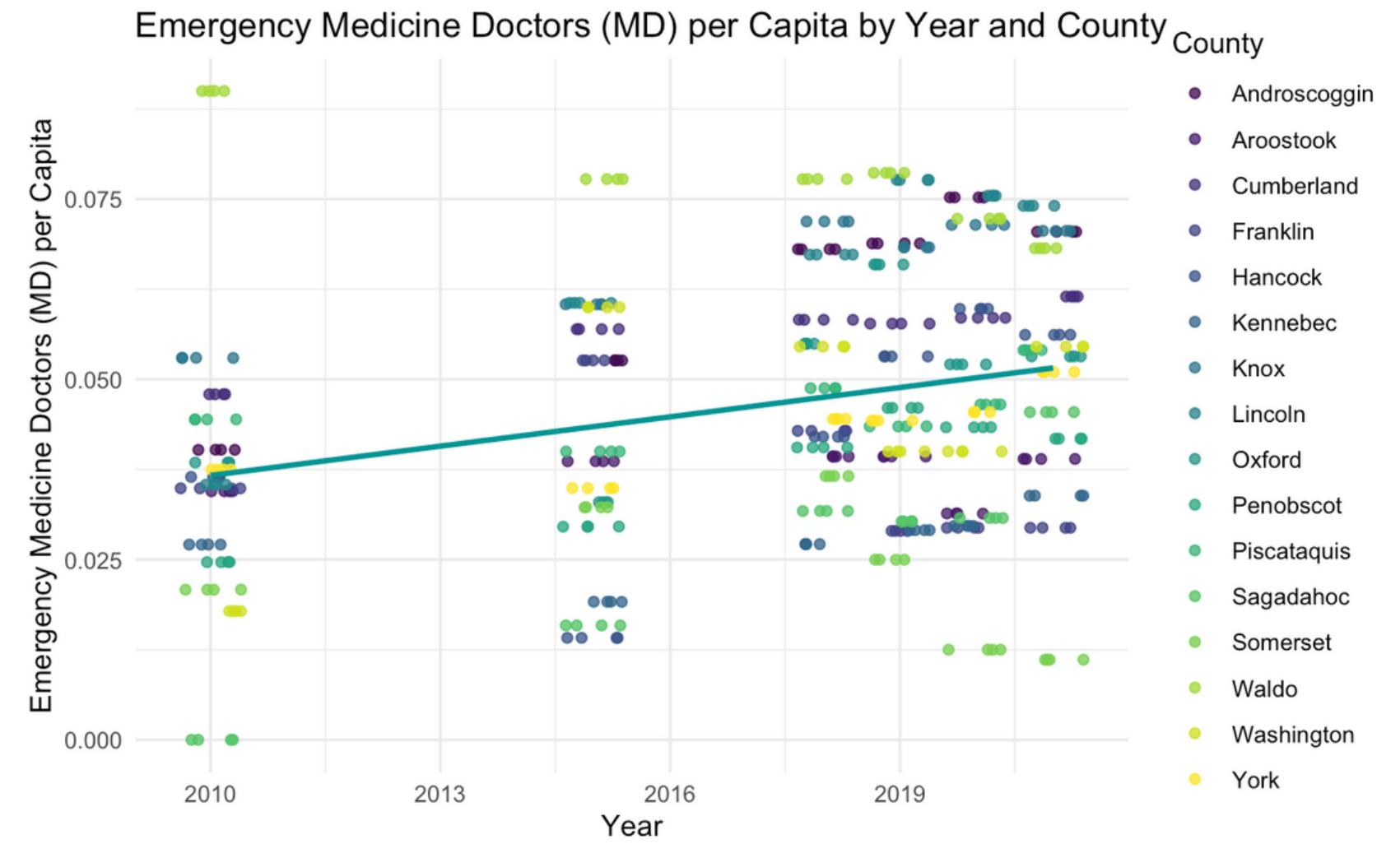
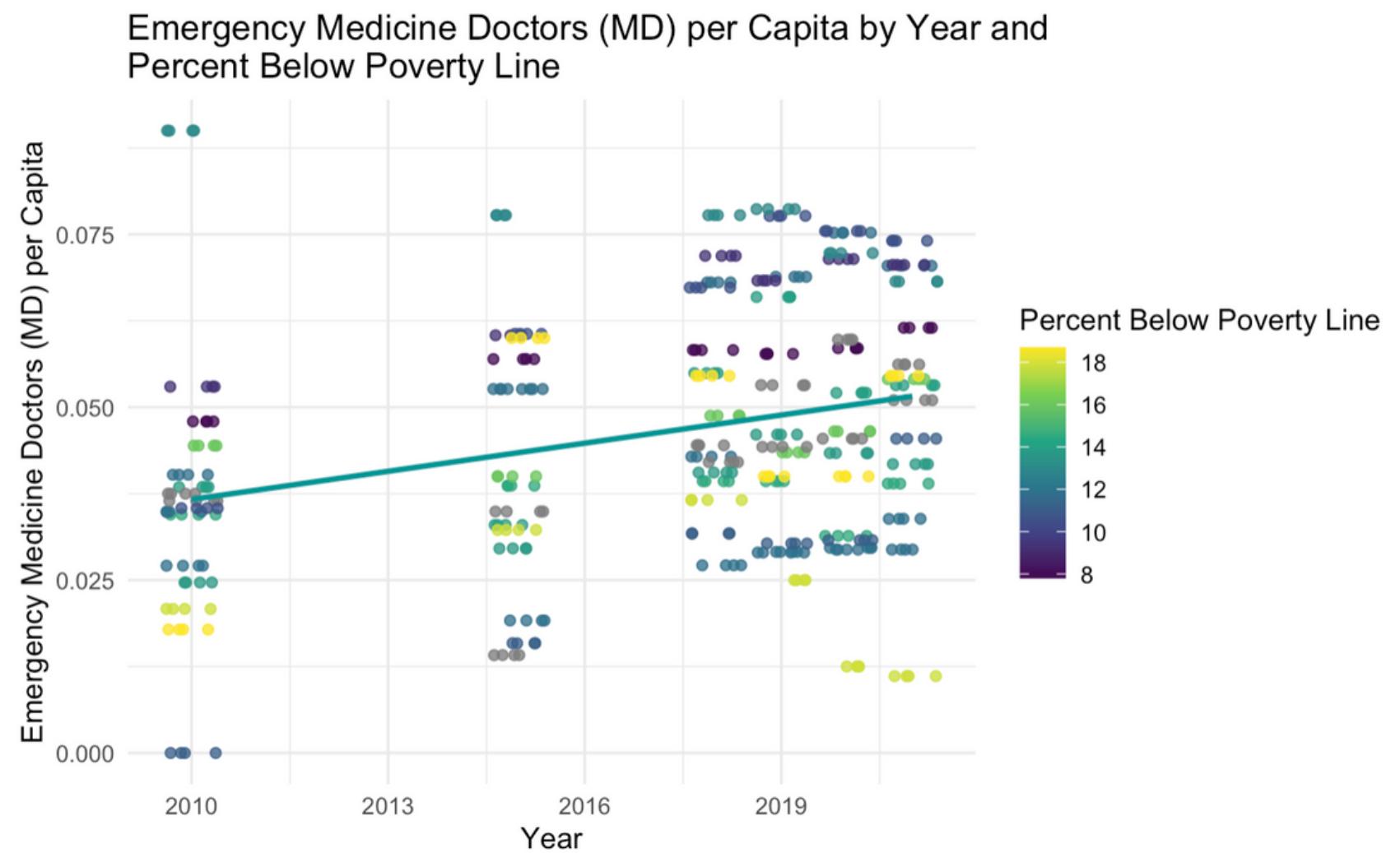


# MODELS

- R<sup>2</sup>: 0.077
  - Adjusted R<sup>2</sup>: 0.075
  - PValue: 2.717344e-08



# MODELS



# LIMITATIONS



The original dataset was huge, and if I had included every variable I thought could be useful, I would still have hundreds of variables.

DATA

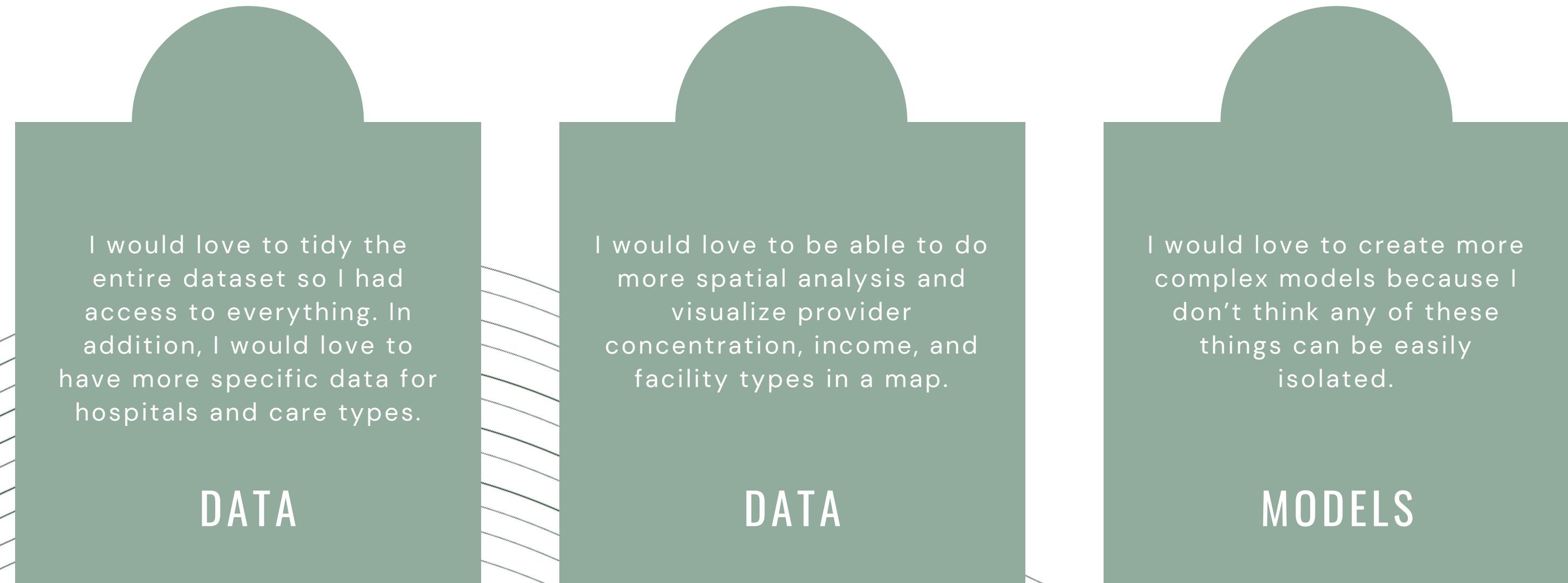
This was not a long time to complete the type of project I would have liked to complete, and as such this is not a complete analysis.

TIME

I suspect there are other types of models that would be more suited to this type of analysis, however, I don't know what they are or how to create them.

KNOWLEDGE

# NEXT STEPS



I would love to tidy the entire dataset so I had access to everything. In addition, I would love to have more specific data for hospitals and care types.

DATA

I would love to be able to do more spatial analysis and visualize provider concentration, income, and facility types in a map.

DATA

I would love to create more complex models because I don't think any of these things can be easily isolated.

MODELS

## Sources

*Area Health Resources Files. (n.d.). Data.hrsa.gov. <https://data.hrsa.gov/topics/health-workforce/ahrf>*

*Rural Health Information Hub. (2021). Healthcare access in rural communities introduction. Rural Health Information Hub. <https://www.ruralhealthinfo.org/topics/healthcare-access>*

*(2024). Nih.gov. [https://hdpulse.nimhd.nih.gov/data-portal/social/table?socialtopic=080&socialtopic\\_options=social\\_6&demo=00008&demo\\_options=poverty\\_3&race=00&race\\_options=race\\_7&sex=0&sex\\_options=sex\\_3&age=001&age\\_options=ageall\\_1&statefips=23&statefips\\_options=area\\_states](https://hdpulse.nimhd.nih.gov/data-portal/social/table?socialtopic=080&socialtopic_options=social_6&demo=00008&demo_options=poverty_3&race=00&race_options=race_7&sex=0&sex_options=sex_3&age=001&age_options=ageall_1&statefips=23&statefips_options=area_states)*

*Data from: <https://data.hrsa.gov/data/download>*