

# Data about Access to Pain Therapies Based on Zip Code



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United Health Ventures

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AACIPM Symposium  
*Equity in Access to Pain Management  
for People With Chronic Pain*

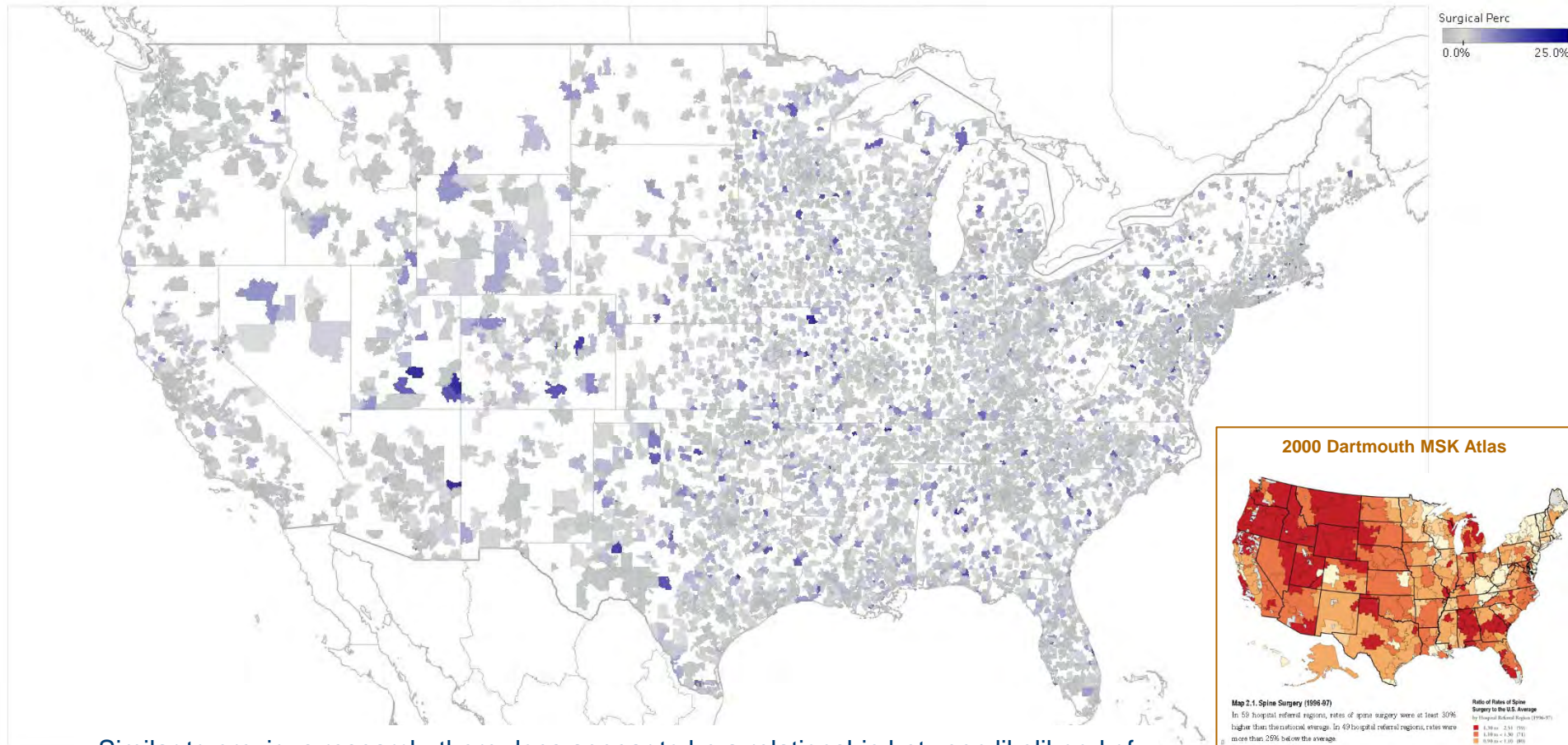
9/24/2020

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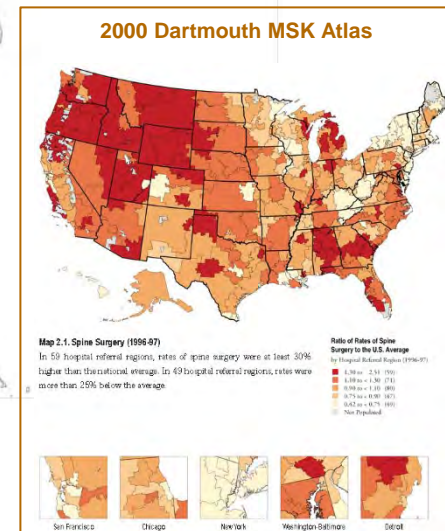
# Geographic Variation - Rate of Spine Surgery

Back Pain - Surgical %  
(n=11,654 zip codes with at least 10 complete episodes)



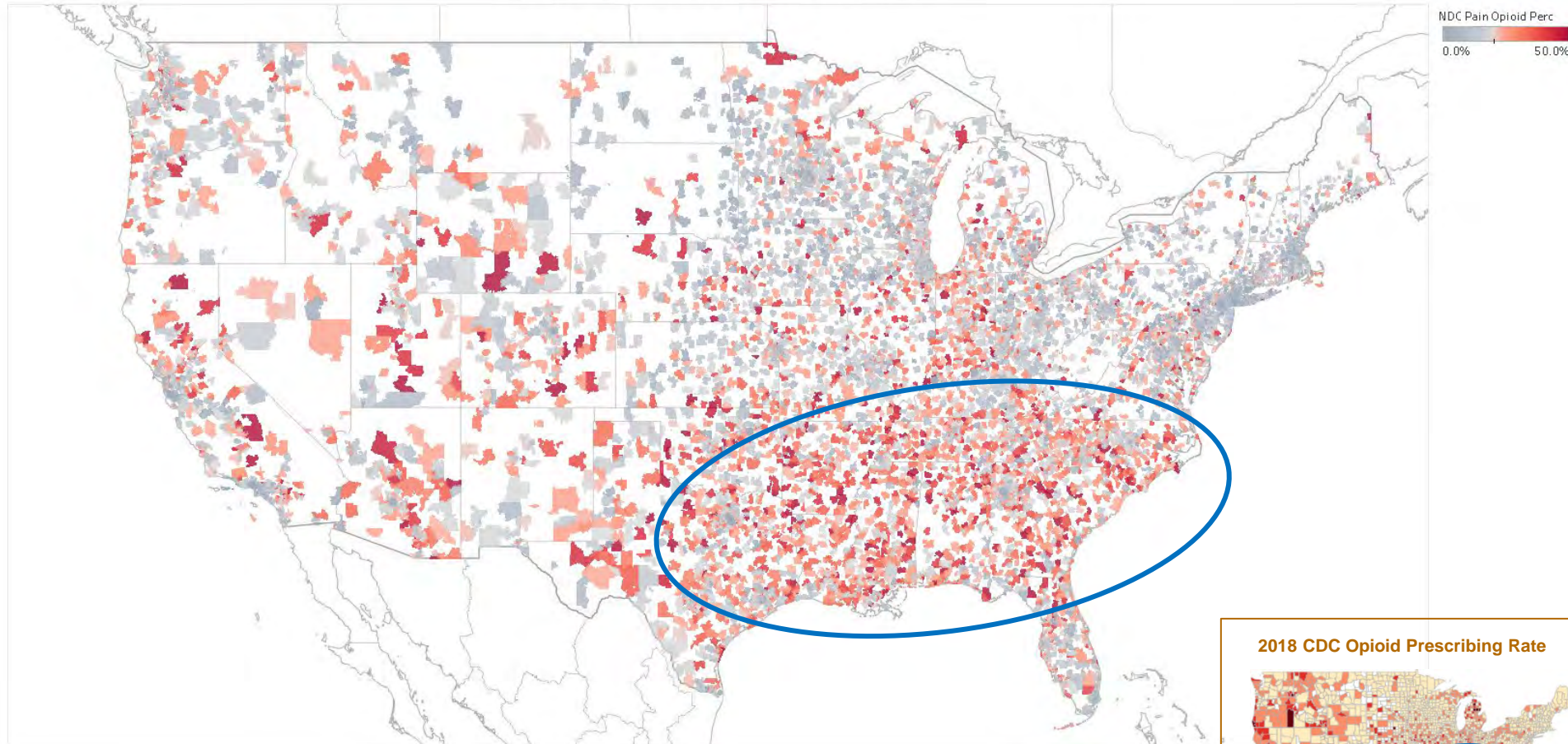
Similar to previous research, there does appear to be a relationship between likelihood of having surgery, # of surgeons per 100 population and use of MRI

***Are there similar relationships for use of Rx and non-Rx treatments for back pain?***



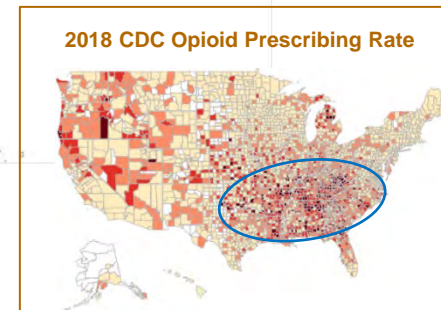
# Geographic Variation – Opioid Use For Back Pain

Back Pain - % With Opioid  
(n=11,654 zip codes with at least 10 complete episodes)

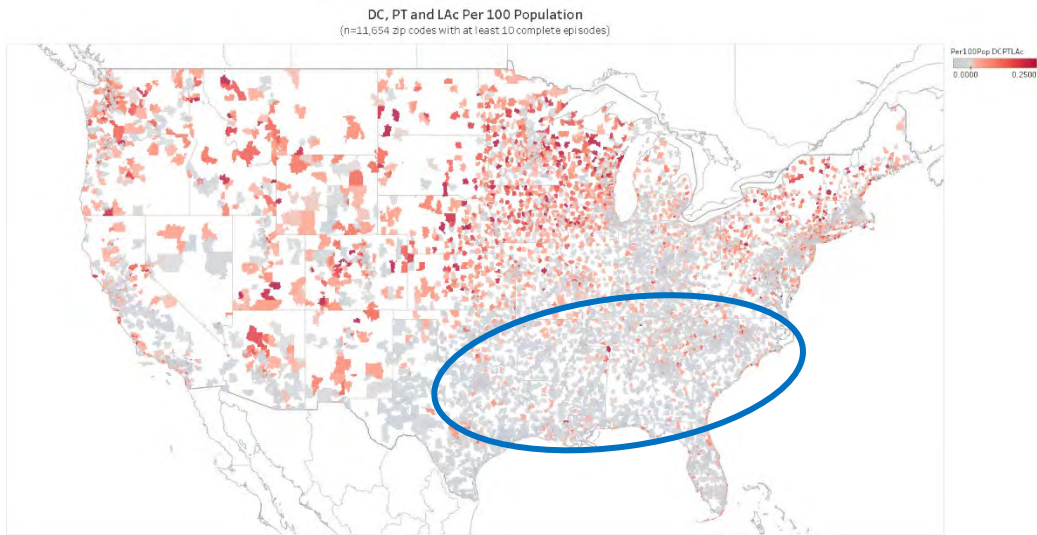


*With ~50% of MME prescribed for back pain, similarity between maps is not surprising*

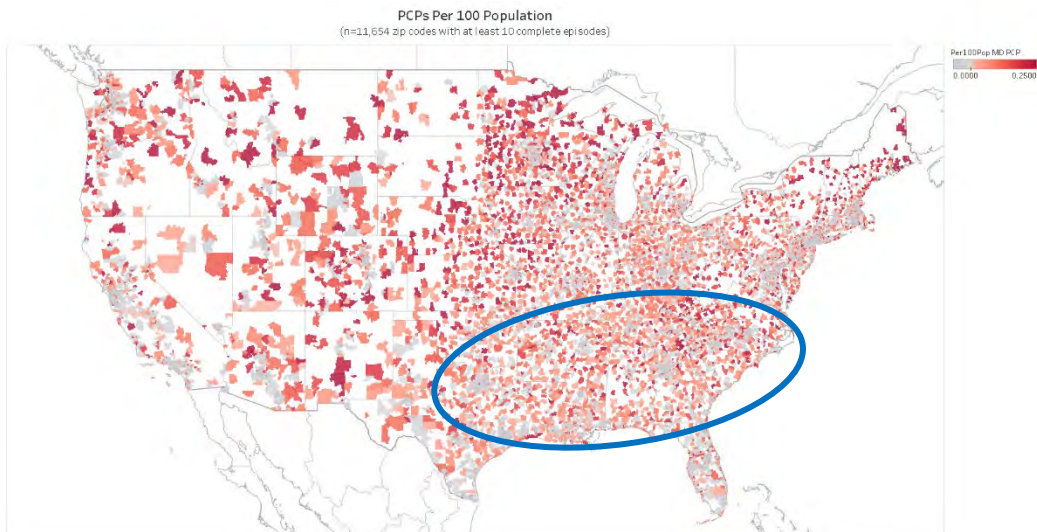
*Use of NSAIDs and skeletal muscle relaxants have similar distribution*



# Availability of Non-prescribing and Primary Care Providers



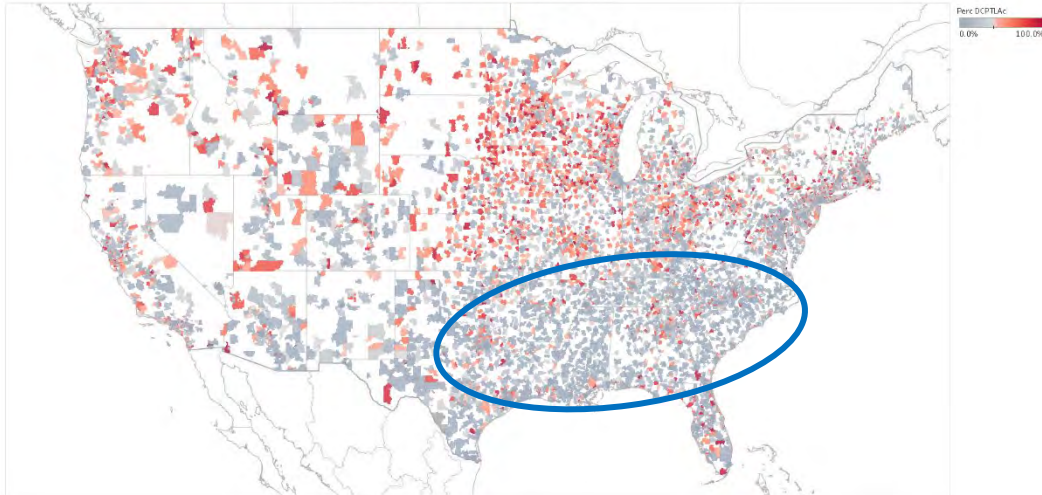
The SE region has less availability of non-prescribing “conservative” providers such as chiropractors (DC), physical therapists (PT) and licensed acupuncturists (LAc).



Primary Care Providers (PCP) are universally available throughout the U.S.

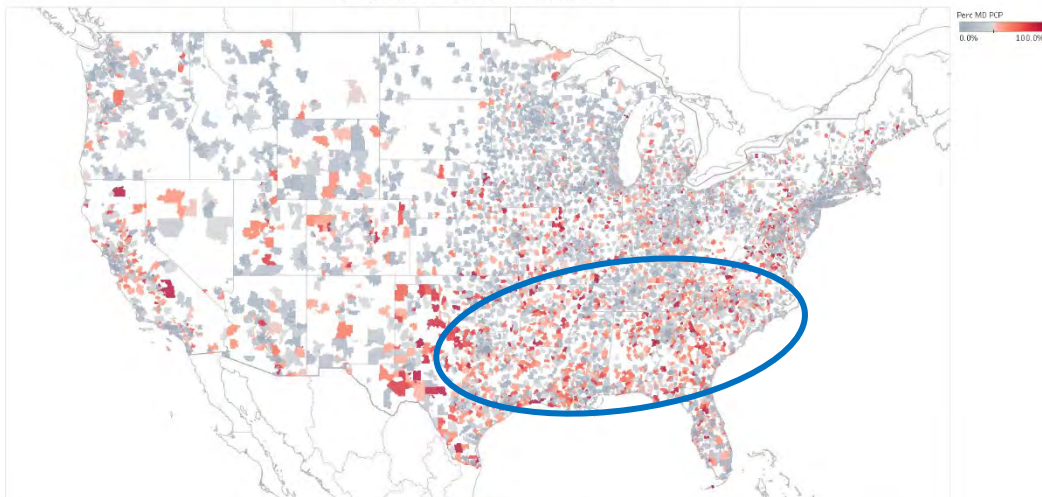
# Patients Seeking Treatment From non-Rx and Primary Care Providers

Back Pain - % Starting With DC, PT or LAc  
(n=11,654 zip codes with at least 10 complete episodes)



With non-prescribing providers less available in the SE region, patients with back pain tend to seek treatment from a PCP.

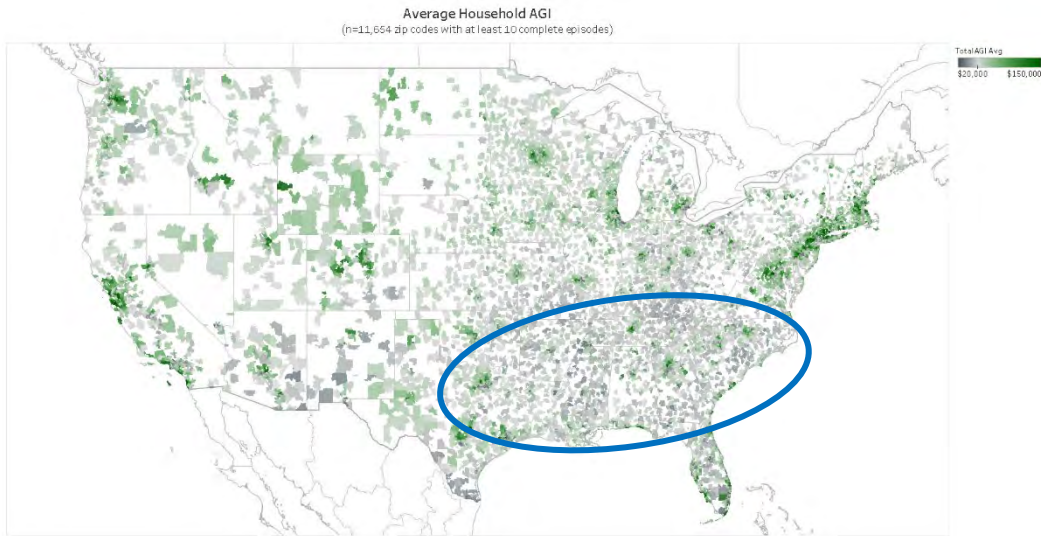
Back Pain - % Starting With PCP  
(n=11,654 zip codes with at least 10 complete episodes)



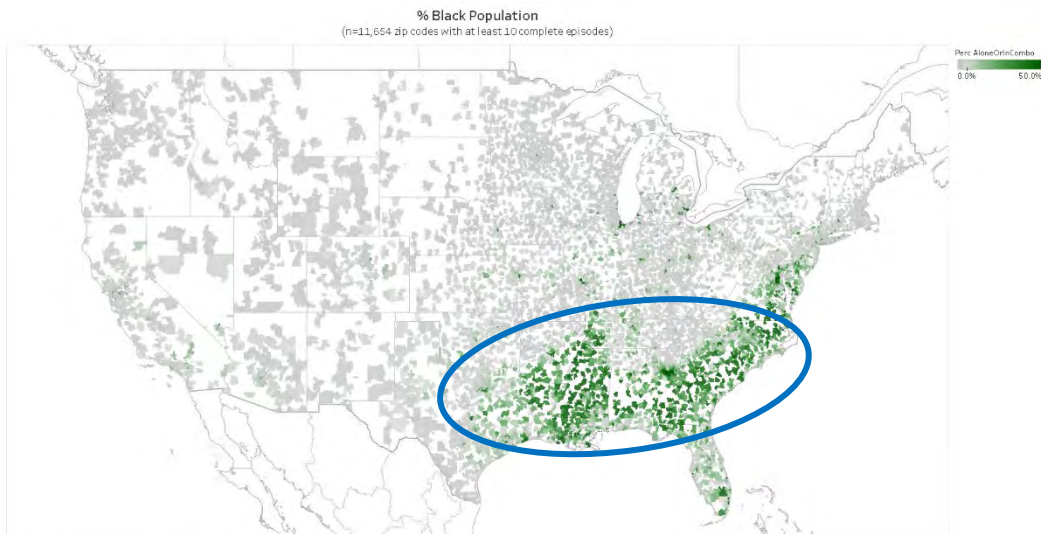
***Does the relative lack of availability of and access to non-prescribing providers in the SE contribute to the high rate of Rx therapy, including use of opioids, for back pain?***

# AGI and Race/Ethnicity

*\*See appendix for % Asian, % Native American, % Hispanic and % Farm Household maps*



Zip codes in the SE region generally have lower household AGI and higher % black population.



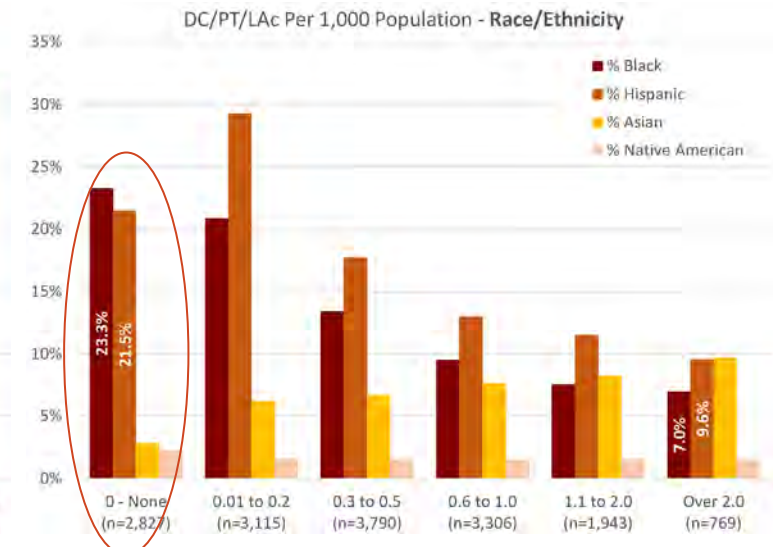
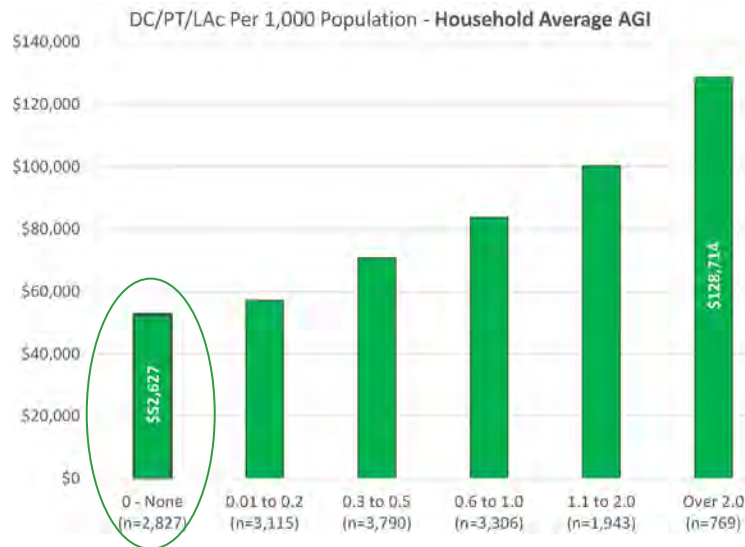
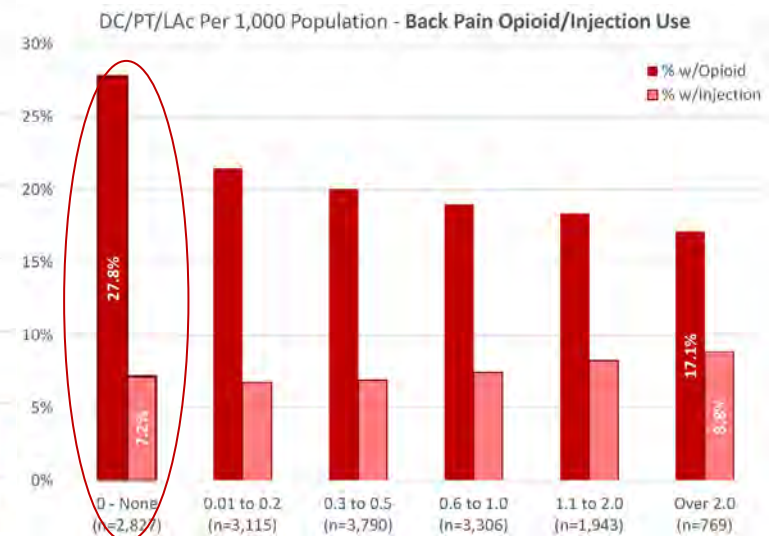
***Do these factors contribute to the lower availability of and access to non-prescribing “conservative” providers for back pain?***

# # of DC/PT/LAc per 1,000 Population in a Zip Code



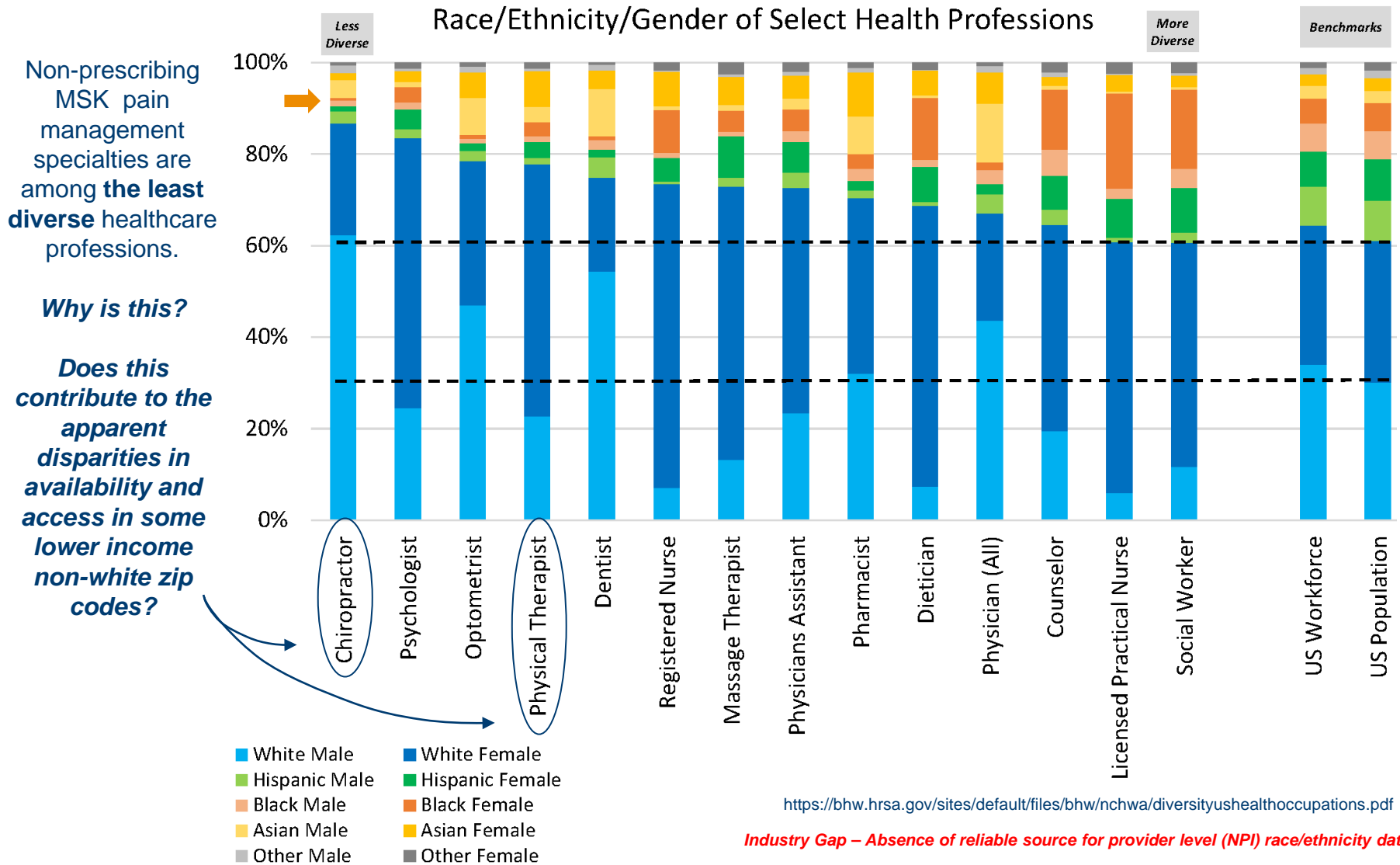
18% of zip codes with 7% of population have no non-prescribing providers.

These zip codes have the **highest rate of opioid use** for back pain, the **lowest AGI** and **high % non-white population**

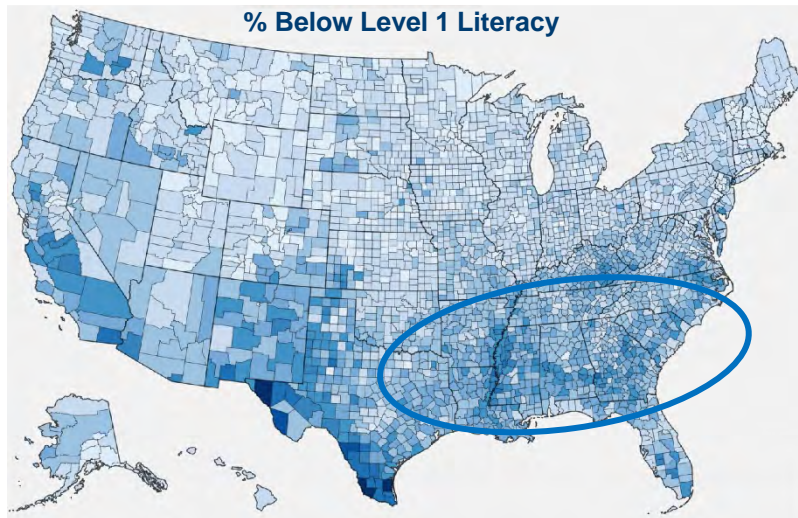




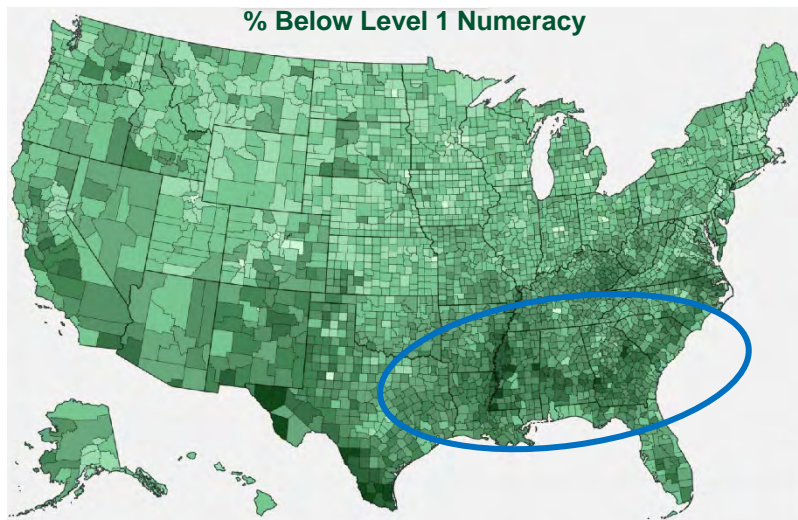
# Data Not Yet Factored In - Healthcare Workforce Diversity



# Data Not Yet Factored In - Literacy and Numeracy



**% functioning below level 1 literacy:  
have difficulty using or  
comprehending print material,  
including basic vocabulary and may  
be functionally illiterate.**



**% functioning below level 1 numeracy:  
may only be able to count, sort and  
perform basic arithmetic using  
simple whole numbers and may be  
functionally innumerate.**

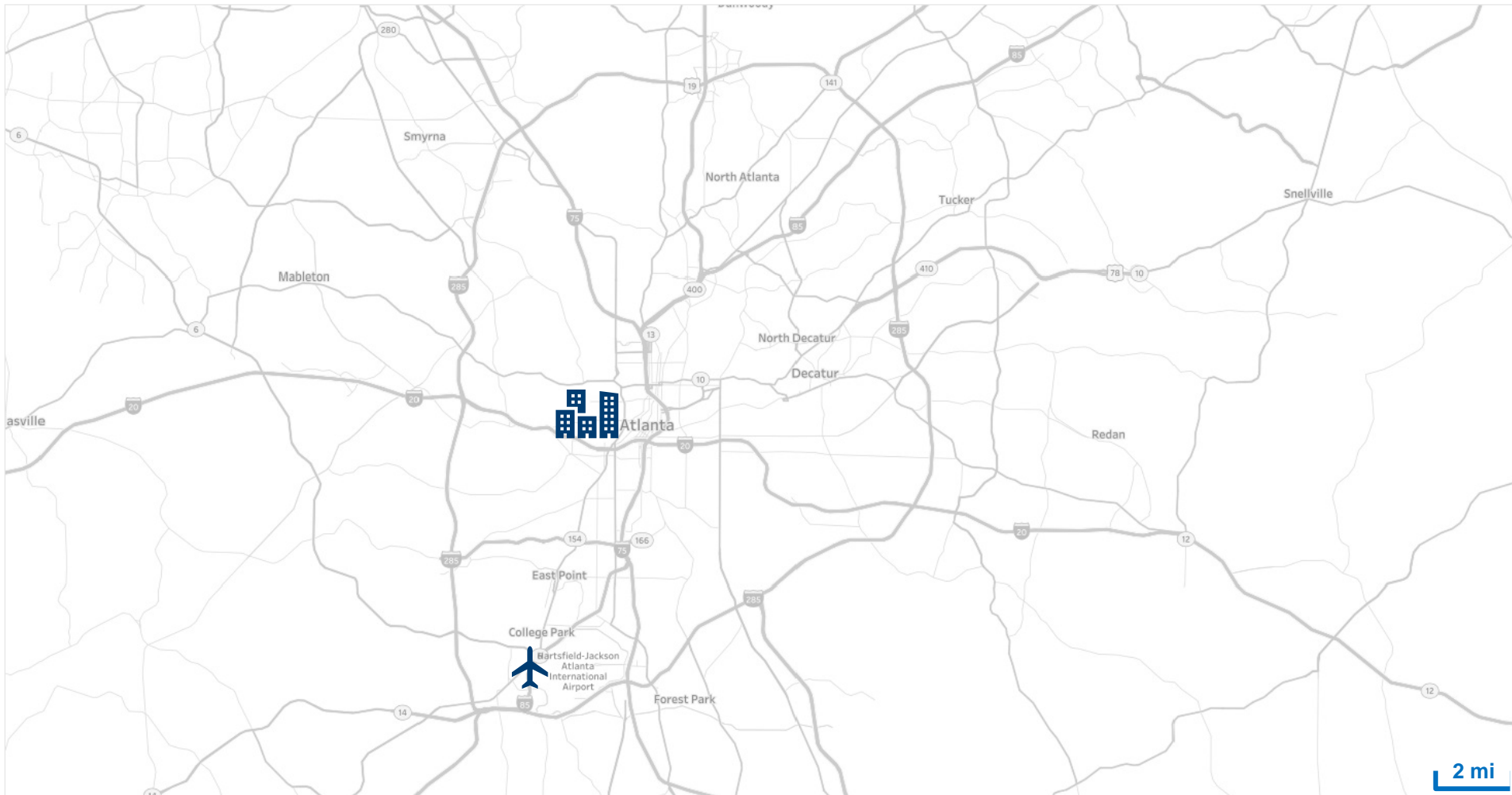
<https://nces.ed.gov/surveys/piaac/skillsmap/>

**Industry Gap – County level data too high level**

# Let's Bring the Plane into Atlanta Hartsfield Airport

## Atlanta

Zip codes with at least 10 complete episodes

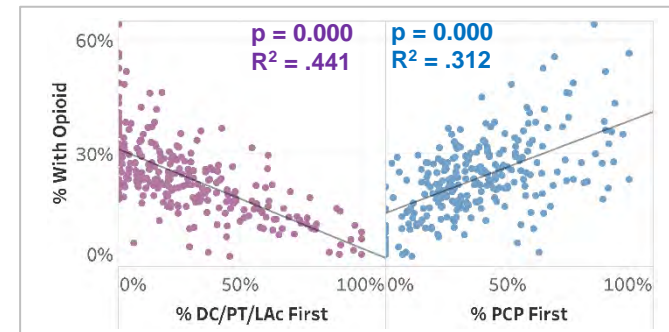


# Impact of Factors We Have Reviewed Today

## Atlanta Zip Code Variation in Opioid % For Back Pain (n=258 Zip Codes With At Least 25 Episodes)

Regression Statistics	
Multiple R	0.76
<b>R Square</b>	<b>0.58</b>
Adjusted R Square	0.56
Standard Error	0.07
Observations	259

**58%** of zip code variation in opioid prescribing can be explained by the factors we looked at today



ANOVA	df	SS	MS	F	Significance F
Regression	11	1.50	0.14	31.31	0.00
Residual	247	1.07	0.00		
Total	258	2.57			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Per 100 Pop - DC/PT/LAc	0.12	0.13	0.89	0.37	(0.14)	0.38
Per 100 Pop - MD PCP	0.01	0.02	0.43	0.67	(0.03)	0.04
Per 100 Pop - MD Pain	(0.36)	0.77	(0.47)	0.64	(1.88)	1.15
<b>% Start With - DC/PT/LAc</b>	<b>(0.21)</b>	<b>0.02</b>	<b>(9.16)</b>	<b>0.00</b>	<b>(0.25)</b>	<b>(0.16)</b>
<b>% Start With - MD PCP</b>	<b>0.11</b>	<b>0.02</b>	<b>4.34</b>	<b>0.00</b>	<b>0.06</b>	<b>0.15</b>
<b>% Start With - MD Pain</b>	<b>0.69</b>	<b>0.23</b>	<b>3.01</b>	<b>0.00</b>	<b>0.24</b>	<b>1.14</b>
% White	(0.04)	0.19	(0.20)	0.84	(0.41)	0.33
% Black	(0.13)	0.19	(0.70)	0.49	(0.51)	0.24
% Asian	(0.28)	0.20	(1.40)	0.16	(0.68)	0.11
% HispanicLatino	(0.12)	0.08	(1.39)	0.16	(0.28)	0.05
<b>Avg Household AGI</b>	<b>(0.00)</b>	<b>0.00</b>	<b>(3.08)</b>	<b>0.00</b>	<b>(0.00)</b>	<b>(0.00)</b>

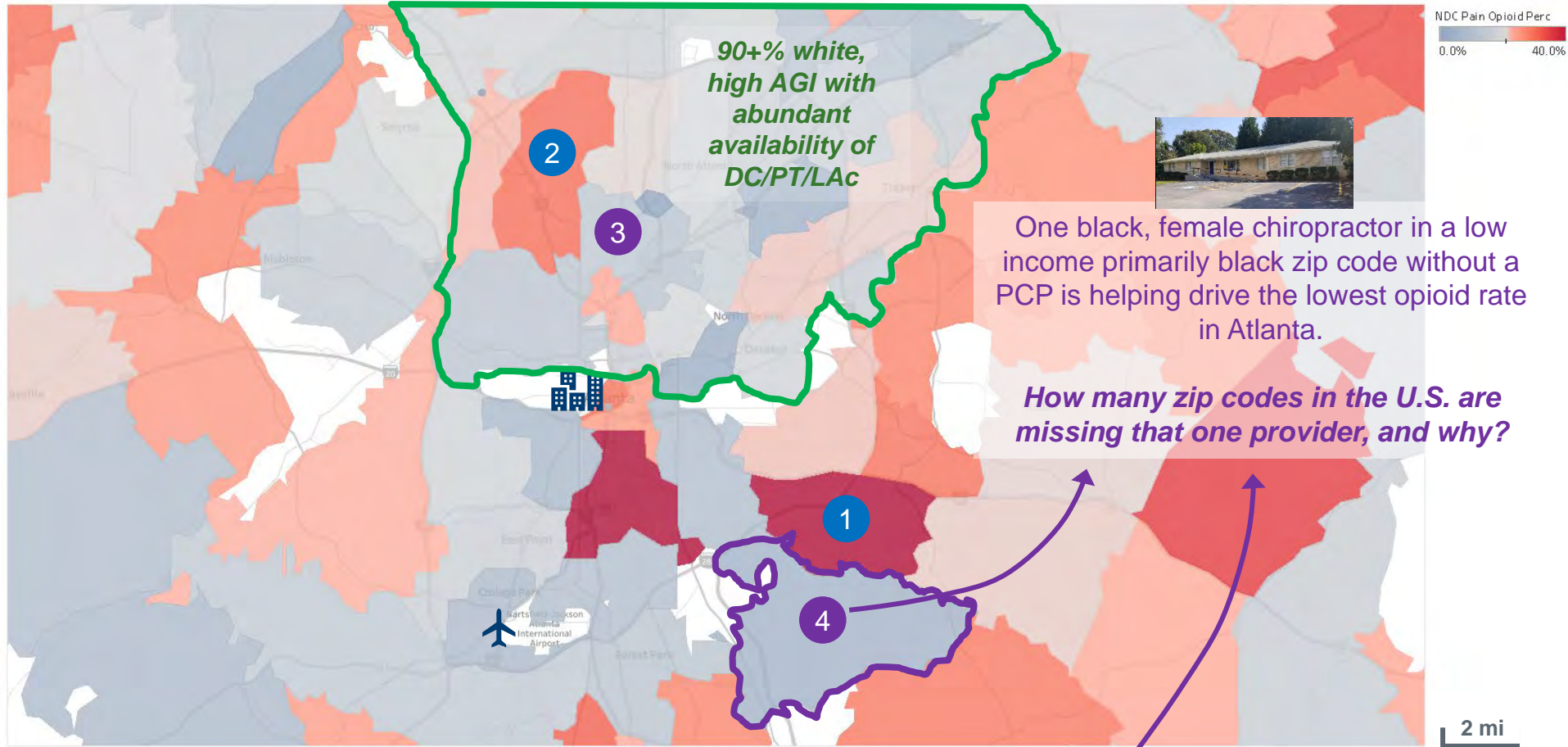
Starting with DC, PT or LAc has largest opioid avoidance ( ) benefit

Starting with PCP is largest contributor to opioid use

First provider seen and AGI are significant factors

# Math and Regressions Don't Reveal the Whole Story

Back Pain - Atlanta - % With Opioid  
Zip codes with at least 10 complete episodes



**Highest % Opioid**

**1** Zip - 30034  
89 episodes  
42% with opioid  
\$37k, 98% Black  
65% start with PCP

**2** Zip - 30327  
489 episodes  
30% with opioid  
\$540k, 6% Black  
43% start with PCP

**3** Zip - 30305  
344 episodes  
13% with opioid  
\$308k, 9% Black  
54% start with DC/PT/LAC

**4** Zip - 30294  
35 episodes  
6% with opioid  
\$42k, 88% Black  
91% start with DC/PT/LAC

**Lowest % Opioid**

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# Appendix

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# Data

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- ***U.S. socioeconomic data***

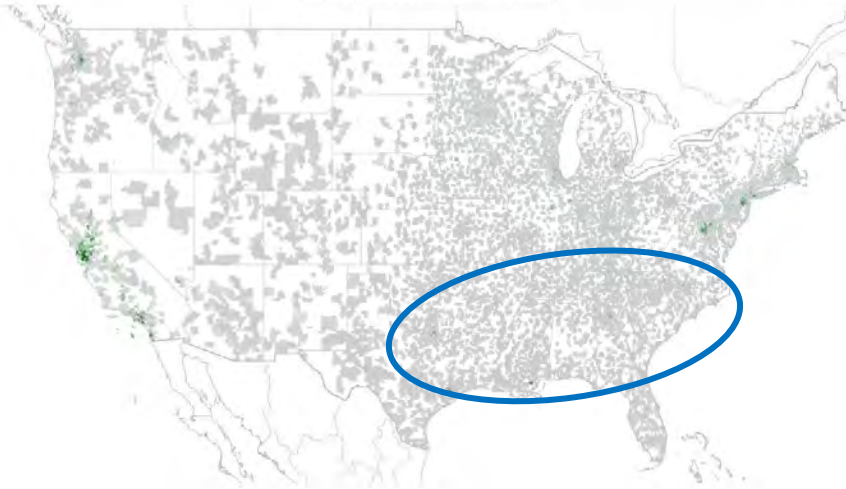
- 2018 zip code level **population size and race/ethnicity data from Census Bureau**
- 2017 zip code level **household AGI and farm/non-farm data from IRS**
- Census Bureau and IRS data for single building zip codes translated to nearest logical geographic zip code to align with treatment data

- ***Treatment data***

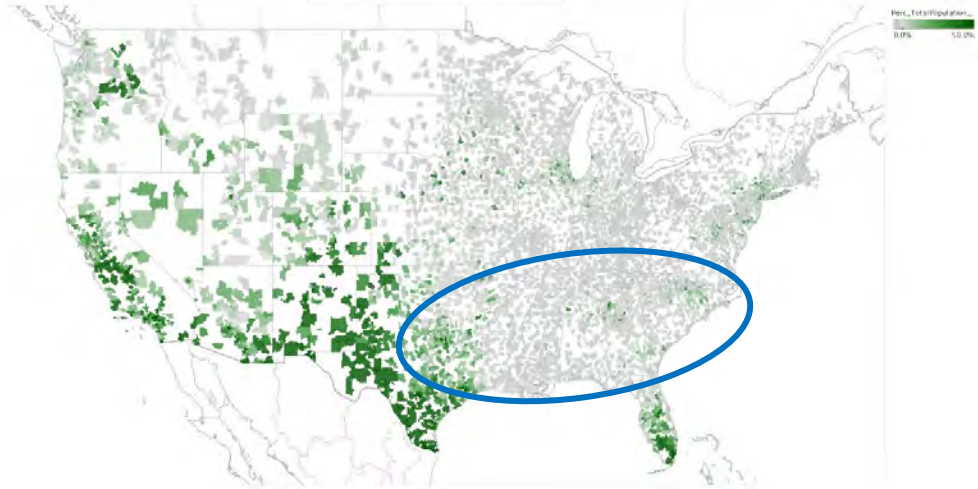
- Continuously eligible **commercial health plan members** for which access to complete Rx data is available
- **\$3.8B** and **2.1M** complete episodes of back pain ending in **2017-2019**
- Data available for **16,546 zip codes**
  - 9,759 zip codes with at least 20 complete episodes
  - ***11,654 zip codes with at least 10 complete episodes***

# Additional Race/Ethnicity and Socioeconomic Data

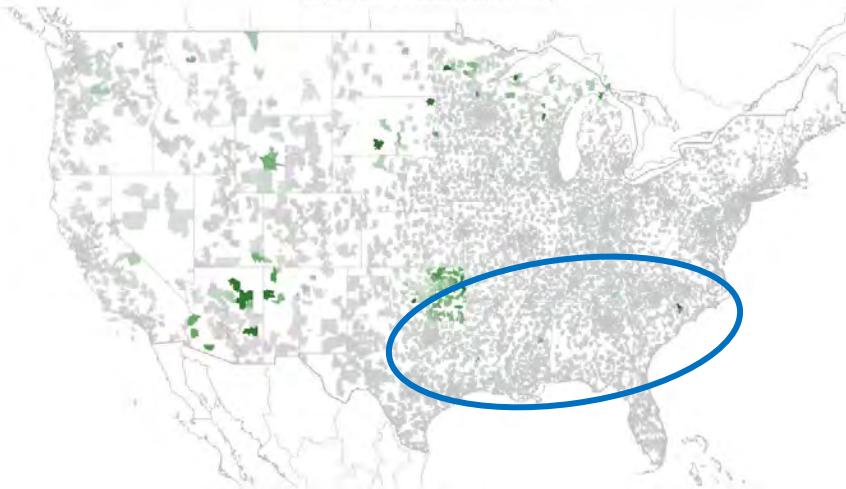
**% Asian Population**  
(n=11,654 zip codes with at least 10 complete episodes)



**% Hispanic Population**  
(n=11,654 zip codes with at least 10 complete episodes)



**% Native American Population**  
(n=11,654 zip codes with at least 10 complete episodes)



**% Farm Households**  
(n=11,654 zip codes with at least 10 complete episodes)

