ACCESS AND MOBILITY: A VISUAL INTRODUCTION TO ABMS PHYSICIAN BOARD CERTIFICATION DATA

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Background

Everyone deserves the best health care possible. Understanding the demographic characteristics of American Board of Medical Specialties® (ABMS) board certified physicians, also known as diplomates, has implications for policymakers, physicians, researchers, and patients. We introduce a tool which visualizes the distribution of diplomates, across location, gender, age, and medical school.

Objective

To study and understand the demographic characteristics of the specialist physician population and inform discussion on the themes of access to the specialist physician, gender/age within the specialty workforce, and geographic mobility of specialists post medical education. This tool can help us determine the current situation and help set data driven policy goals of where we want to go to meet the population need for better health and well-being.

Method

This project uses data from the ABMS Board Certification Database, along with United States Census Bureau American Community Survey (2019) data and Google Maps API data. The data from the ABMS database, drawn June 30, 2021, represents more than 940,000 board certified diplomates from the 24 ABMS Member Boards.

The Way Forward

- The tool can assist policymakers to identify high priority areas to boost access to specialist physicians. It can also be used to highlight a specific specialty and assist residents and physicians to decide where to locate or expand their practices to reach patients with the least access to care.

- The specialist physician is a mobile workforce, especially post completion of medical education. The tool may help identify regions which are net importers of physicians and may be at risk of physician shortages in the future.

- Though the tool is currently used to assess issues of gender and ageing physician population, it can also be used to measure issues such as racial and ethnic inequities in the physician workforce and communities of practice in the future.

Discussion

FIGURE 1:
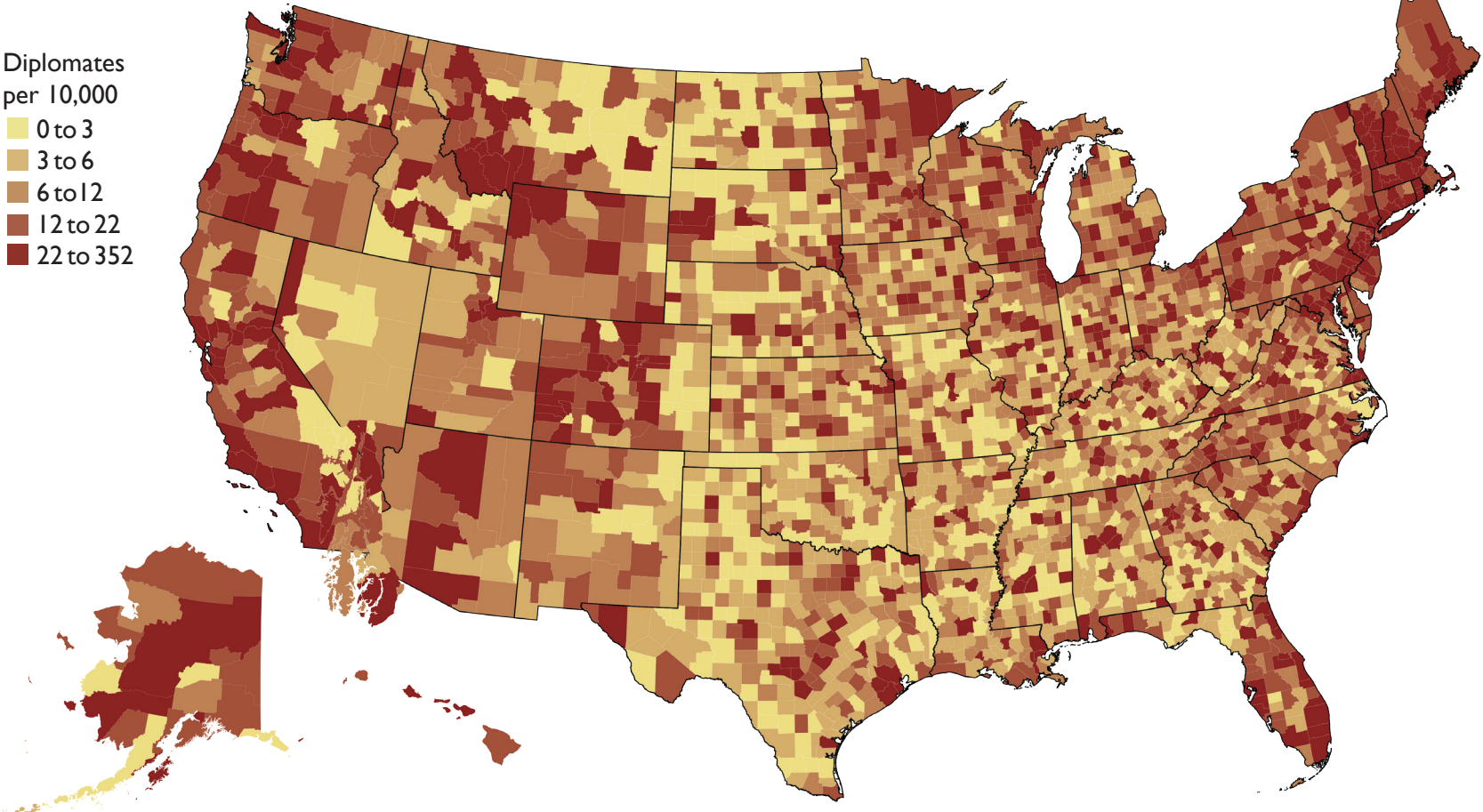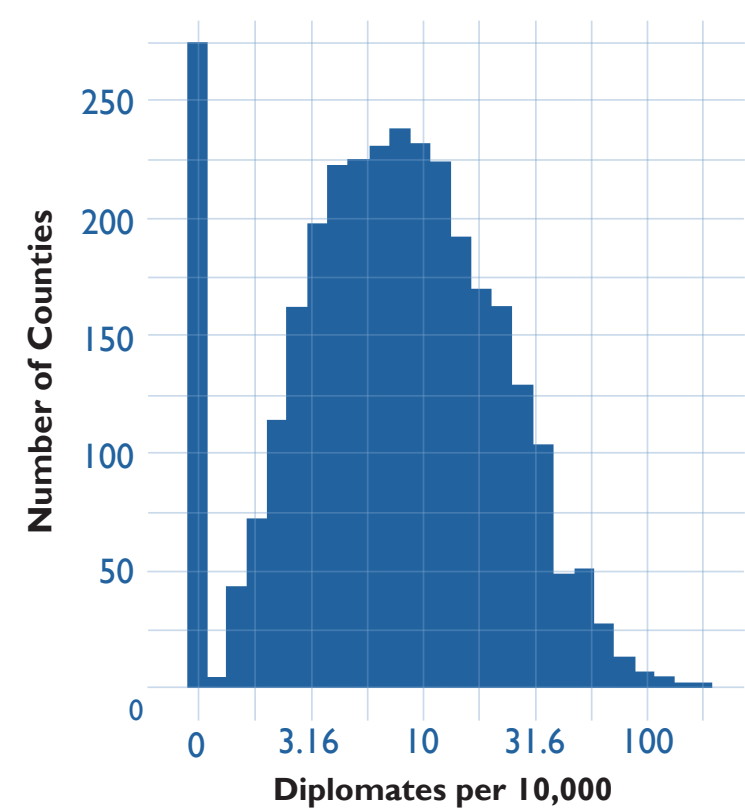Geospatial Distribution of ABMS Board Certified Diplomates by County

Diplomates per 10,000
- 0 to 3
- 3 to 6
- 6 to 12
- 12 to 22
- 22 to 352

FIGURE 2:
Distribution of ABMS Board Certified Diplomates per County (Logarithmic Scale)

FIGURE 3:
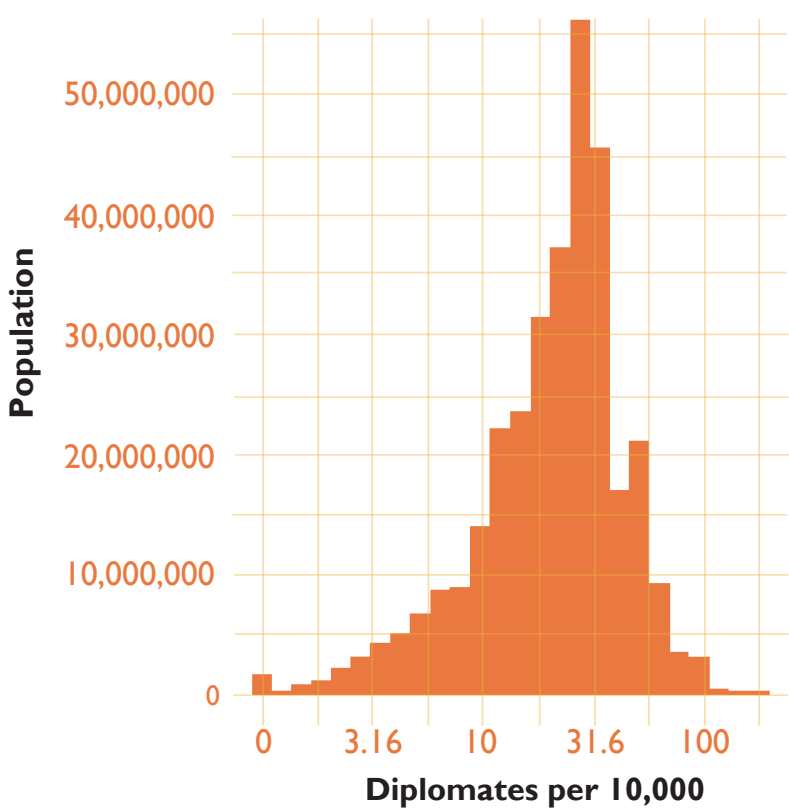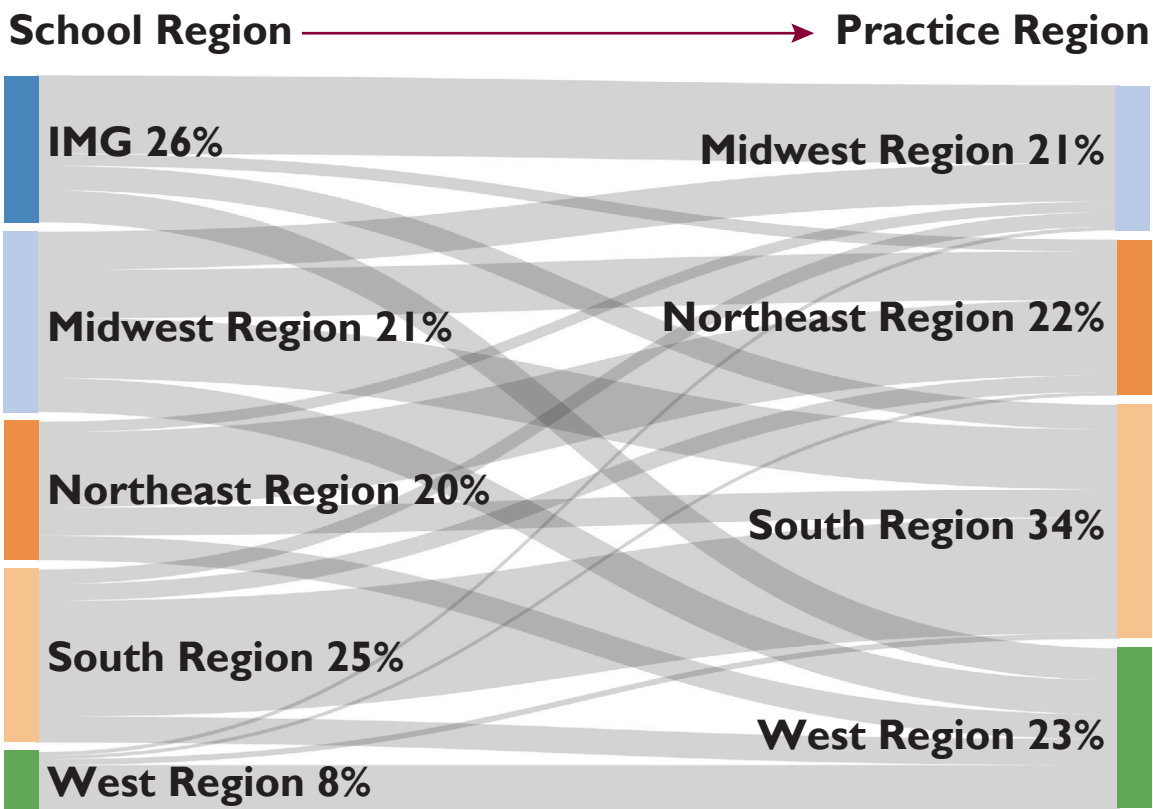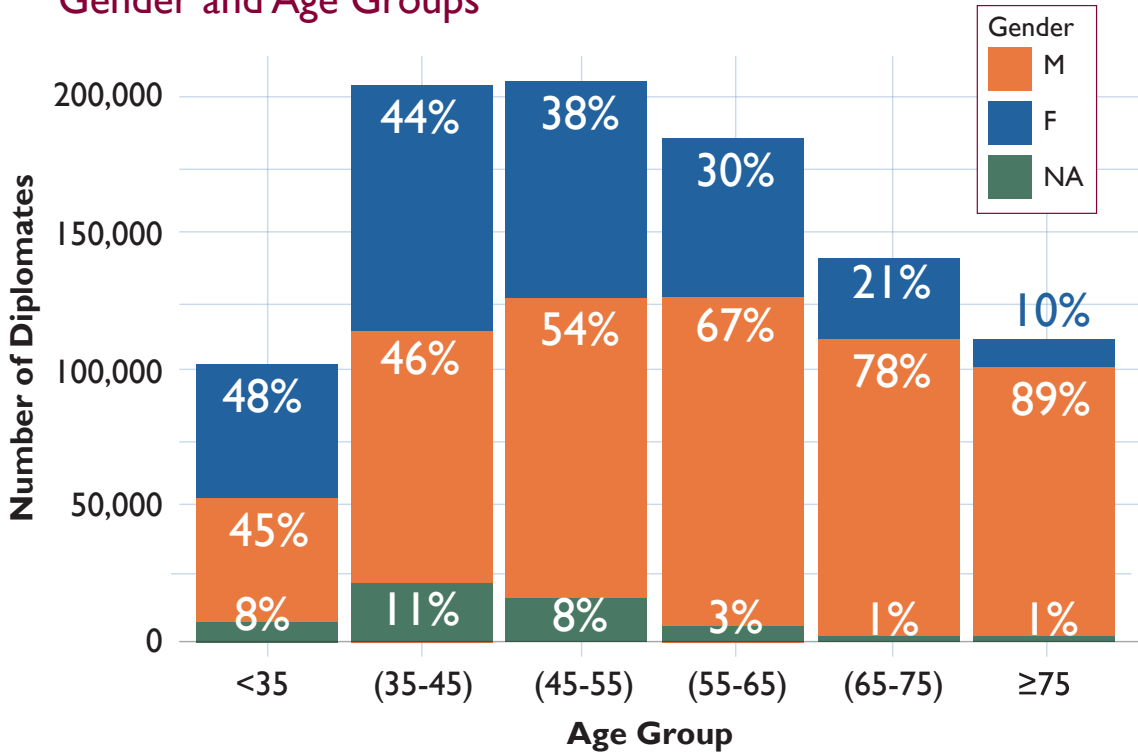Distribution of ABMS Board Certified Diplomates across total population of 330 Million (Logarithmic Scale)

- Counties with a larger population base are more likely to have a higher than proportionate number of diplomates per 10,000 population.

- Across the 3,142 US counties, the median county has 8.1 diplomates per 10,000 population.

- Across the whole population, the median person lives in a county which has 22.4 diplomates per 10,000 population. This means, more than half the population live in counties which have at least 22.4 diplomates per 10,000 population.

- About 8.7% of all counties have nearly zero diplomates per 10,000 population. Approximately 0.46% of the total US population live in these counties.

FIGURE 4:
Spatial Movement of ABMS Board Certified Diplomates from School Region to Practice Region

School Region ⟶ Practice Region

School Region	Practice Region
IMG 26%	Midwest Region 21%
Midwest Region 21%	Northeast Region 22%
Northeast Region 20%	South Region 34%
South Region 25%	West Region 23%
West Region 8%	

- For diplomates trained within the US, school region dictates practice region. If a diplomate went to school in the Midwest, the diplomate is more likely to practice in the Midwest.

- The west region trains a relatively small number of diplomates compared to other regions. However, the number of diplomates practicing in the west region is comparable to other regions.

- International Medical Graduates (IMGs) distribute equitably across all US regions with India as the largest source of IMGs.

FIGURE 5:
Distribution of ABMS Board Certified Diplomates Across Gender and Age Groups

- Older age groups show a higher concentration of males within the specialist community. Younger age groups are more gender equitable.

- Diplomates below the age of 35 show a higher percentage of female enrollment. The distribution may change as this age group reaches full participation.