MEASURING COMMUNITY-LEVEL RISK OF DECLINING PHYSICIAN ACCESS

U.S. Census Bureau | Enhancing Health Data (Ehealth) Team

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Keywords:

administrative record linkage, physician retirements, time series analysis

Summary:

We lack critical knowledge about U.S. physicians. The Ehealth team created a comprehensive dataset of all physicians linked to their tax records, allowing us to connect physicians with the communities they serve and observe trends over time. This summer, Katie built upon this dataset with a focus on improving our understanding of which communities in the U.S. are at most risk of declining physician access in the future. To this end, she developed techniques to estimate whether a physician had retired or switched jobs, as well as to estimate how long a physician had been working since they started their first job, by using their tax records.

Enhancing Health Data Program

Research program focused on enhancing health data through the strategic re-use of administrative records and survey data

Conduct **original research** and collaborate with **external partners**

Improve understanding of patients, **providers** and population health

Produce innovative **statistical estimates** and **data products**
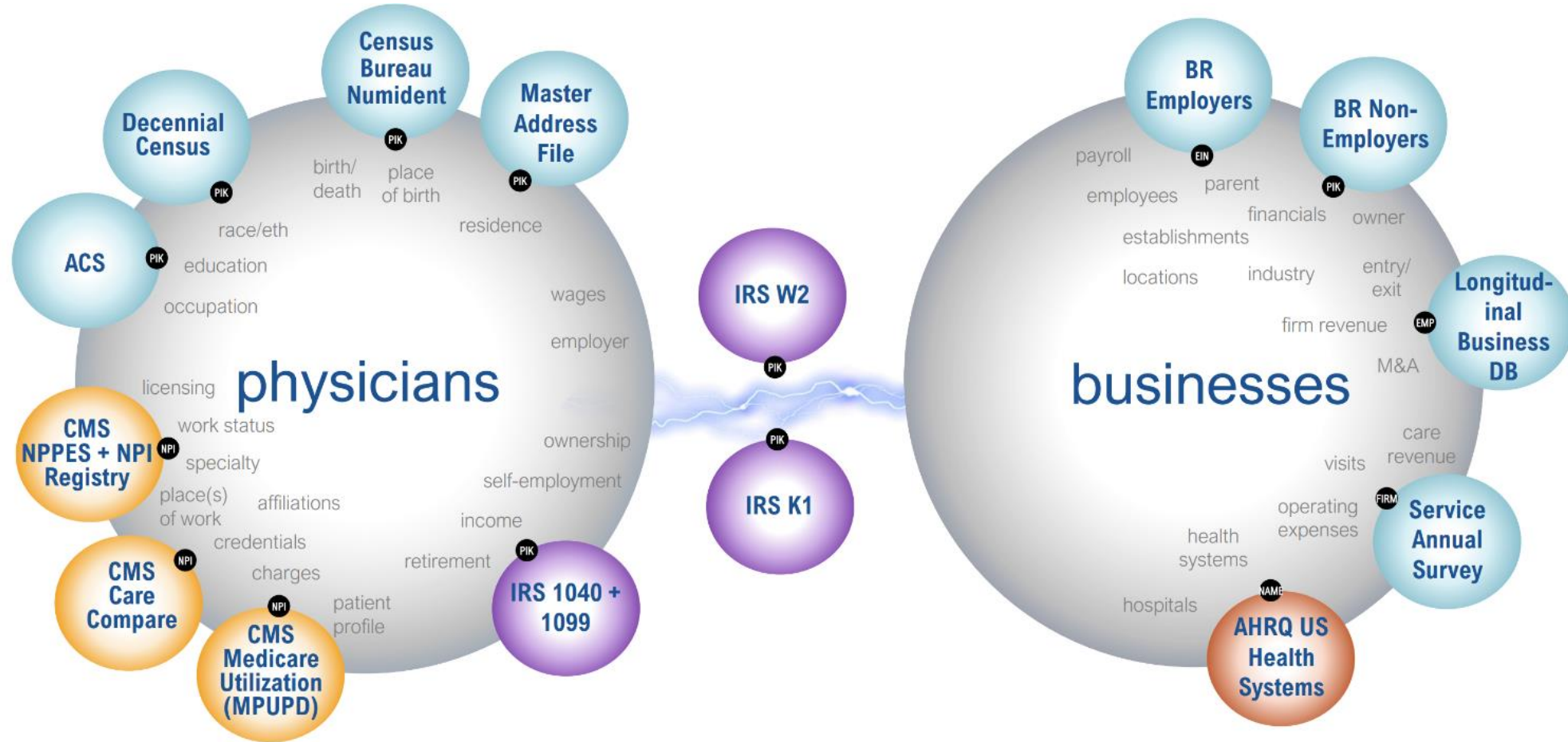
More information: census.gov/ehealth

We lack critical knowledge about U.S. physicians

Due to a decentralized healthcare system, even simple questions are difficult to answer. Existing datasets often give conflicting answers.

How many oncologists practice in the U.S.?

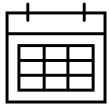|			
①	**20,049**	☑	**SK&A**
②	**18,276**	☑	**POSPUF**
③	**26,774**	☑	**NPPES**

We lack critical knowledge about U.S. physicians

Solution: A new comprehensive dataset of all physicians in the U.S.,
linked to tax records and demographic information, allows us to bridge
the gap between **physicians** and the **communities they serve**

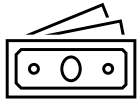# Which communities are most at risk of physicians leaving?

How does risk vary by:

Year

Physician characteristics (specialty, gender, race, parenthood, career age, place of birth)
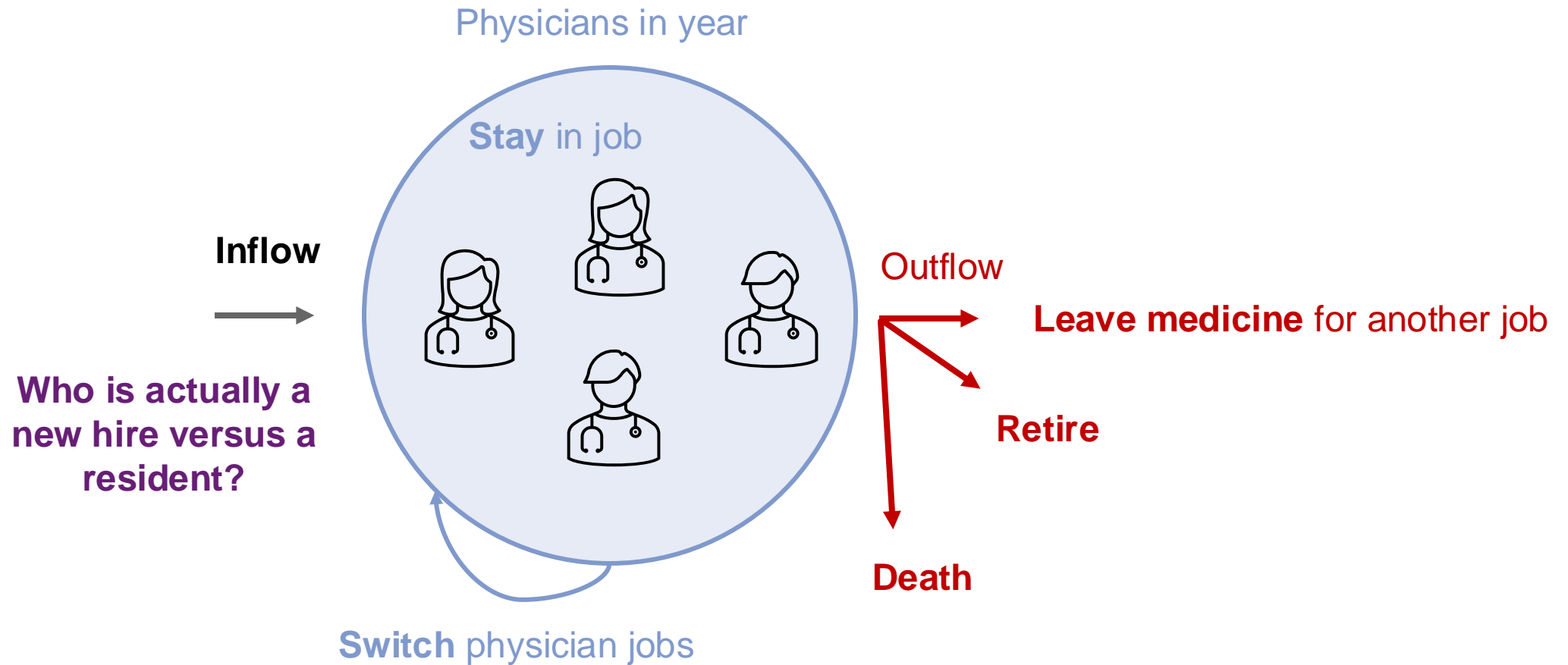
Physician income

Attrition type (switching institutions, leaving medicine, retiring, death, leaving workforce)

Community characteristics (social vulnerability indices, geography)

Distilled into a measure to be incorporated into a composite community indicator for access to physicians

Flow types

Physicians in year

Stay in job

Inflow

Who is actually a new hire versus a resident?

Outflow

Leave medicine for another job

Retire

Death

Switch physician jobs

Defining these flows requires defining **career age** and **career transitions**, which we can infer using Census data!

Defining career age and transitions using tax records
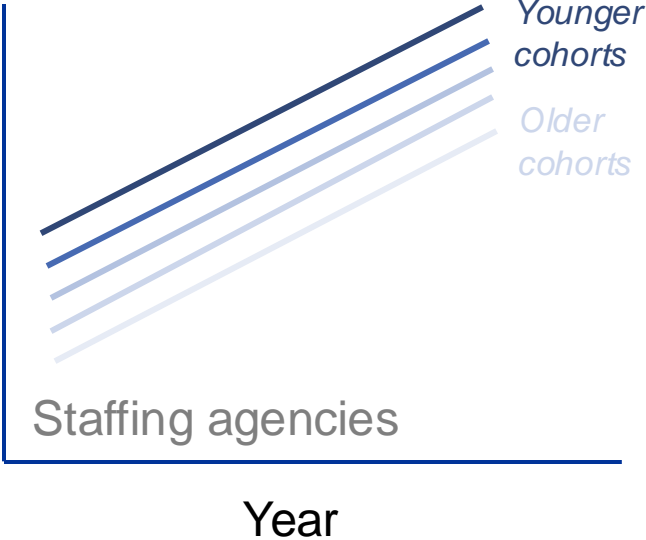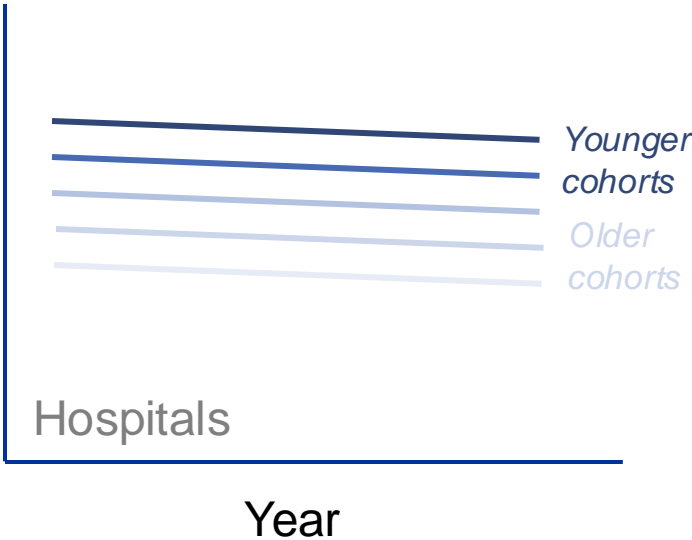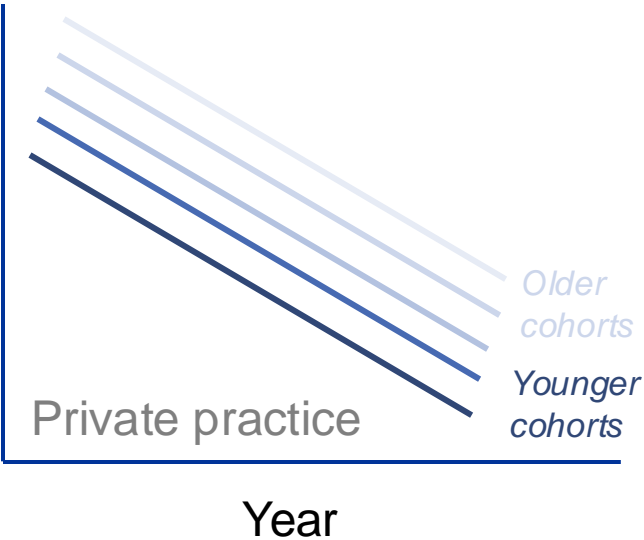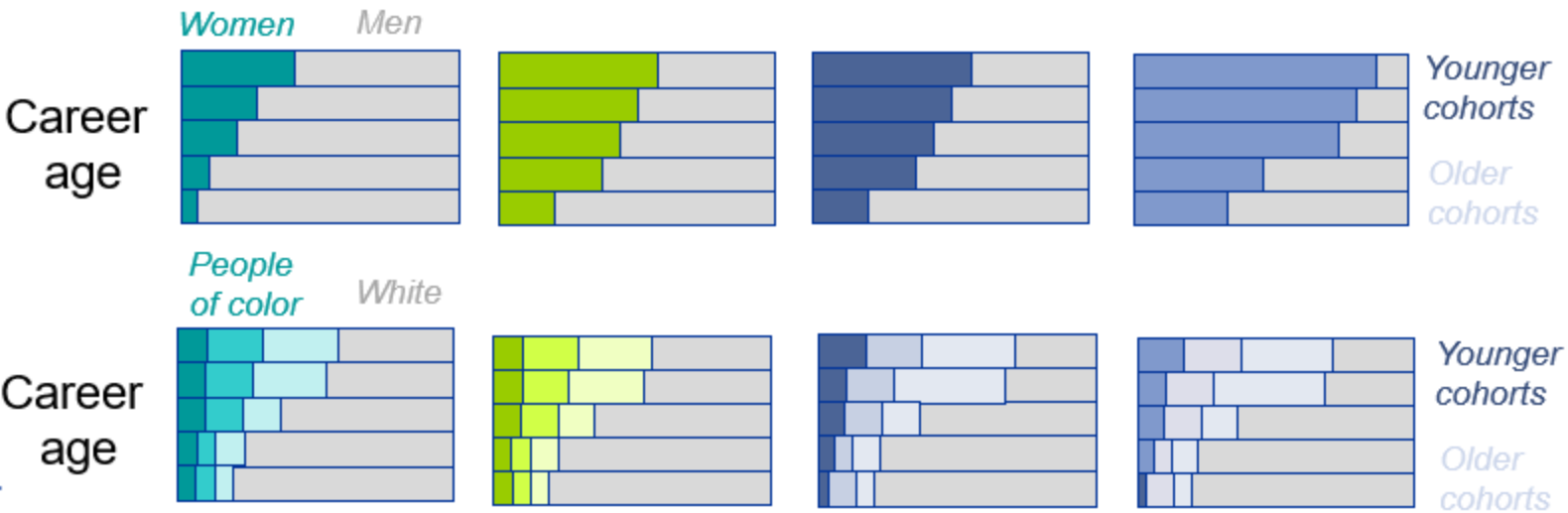
Year 1

Phys wage

Res wage

| 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | ✅ |

| 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | ❎ Start year needs to be earlier |

| 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | ❎ Start year needs to be later |

Trends across career age

Wages

Surgery

Medical

Primary care

OBGYN

Career age

Women   Men

Career age

Younger cohorts

Older cohorts

People of color   White

Career age

Younger cohorts

Older cohorts

Older cohorts

Younger cohorts

Private practice

Year

Younger cohorts

Older cohorts

Hospitals

Year

Younger cohorts

Older cohorts

Staffing agencies

Year
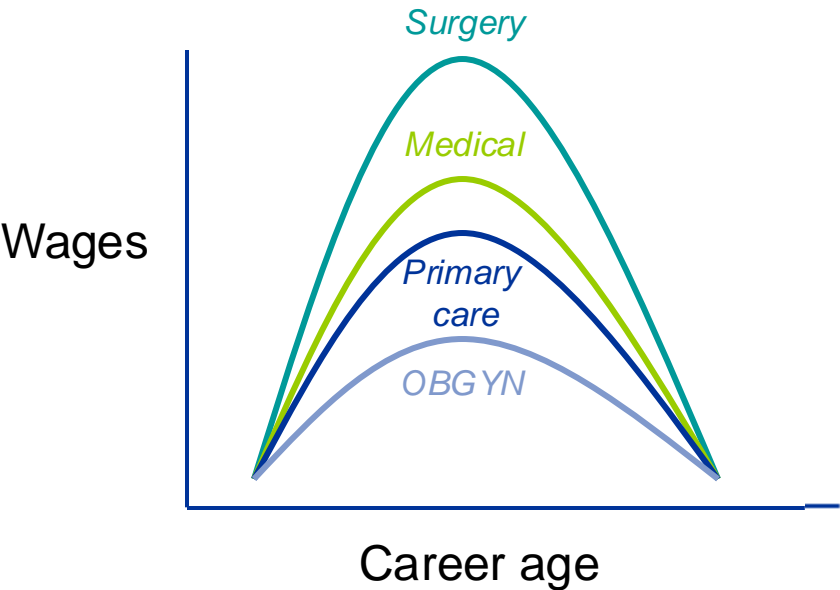
Outflows across communities

Takeaways
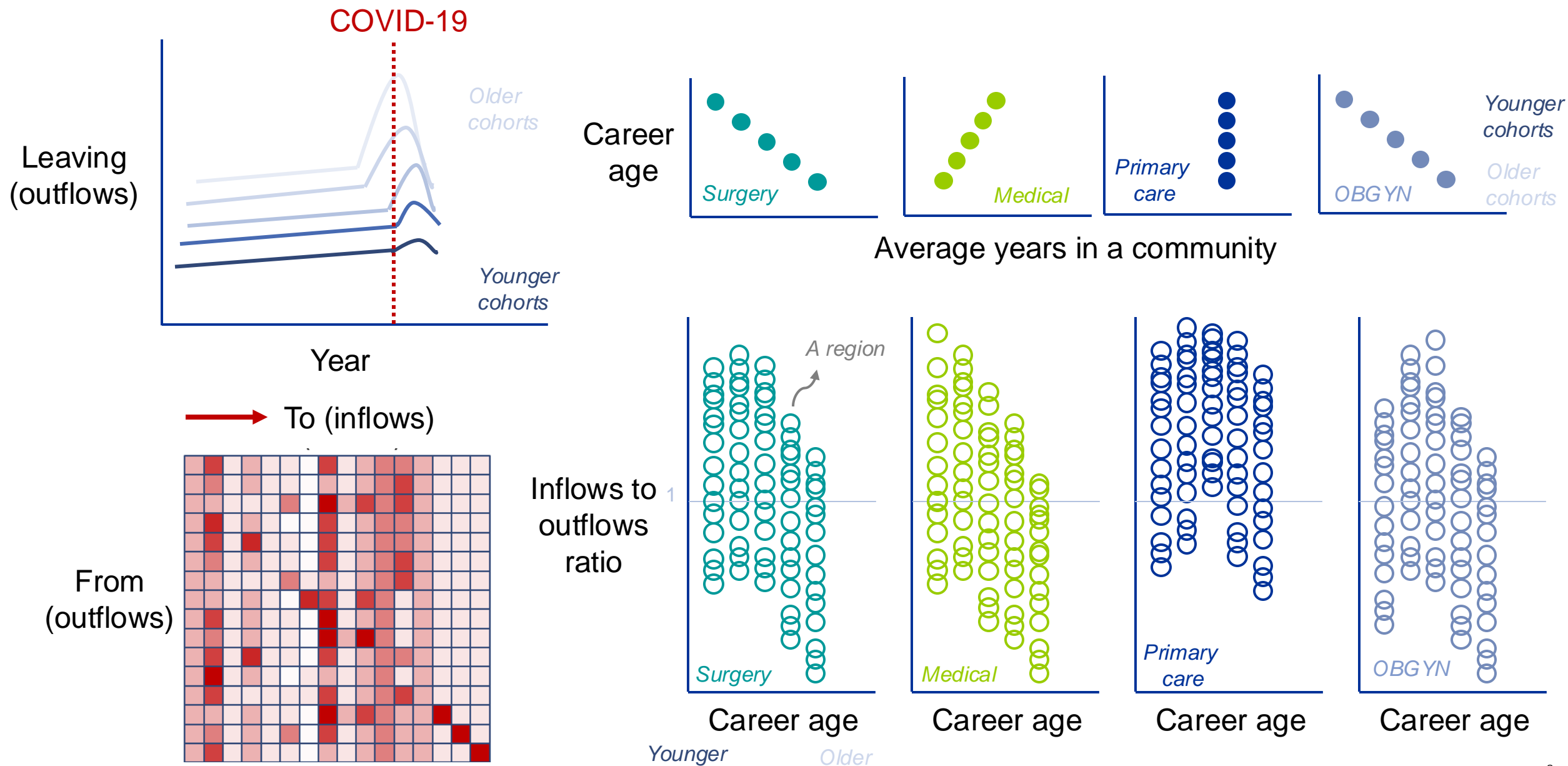
By augmenting the NPI registry of physicians with Census data, we can explore trends over time and by career age

The Business Register & Master Address File add important context about the communities physicians serve

Improving our understanding of which communities are at most risk of declining physician access in the future

Creatively combining existing datasets is a powerful way to provide insights

Thank you!

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More information: census.gov/ehealth

coding it forward >