

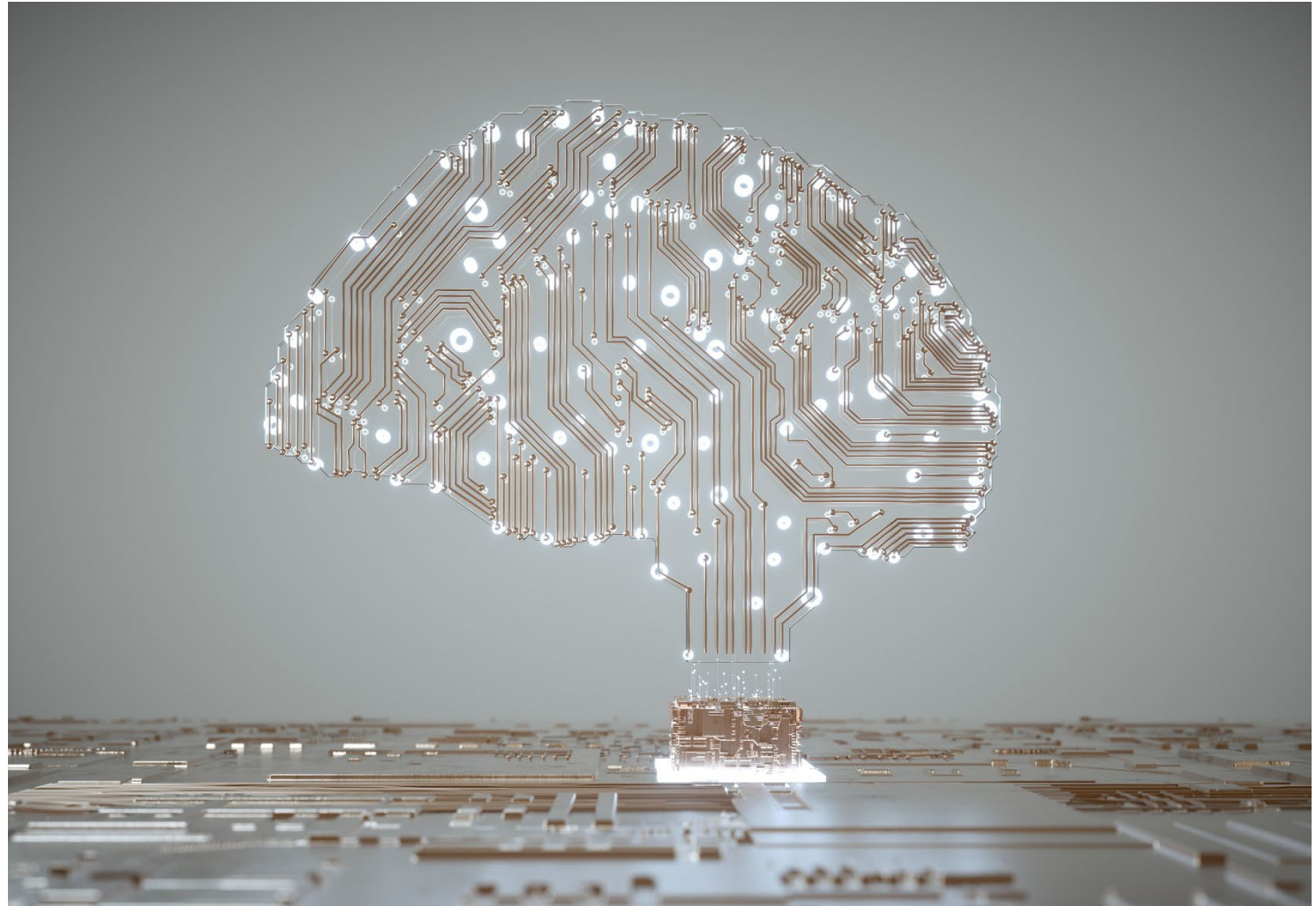
Stroke Encounter Quality Improvement Project Annual Meeting

Samantha Albuquerque
Oct 18, 2023

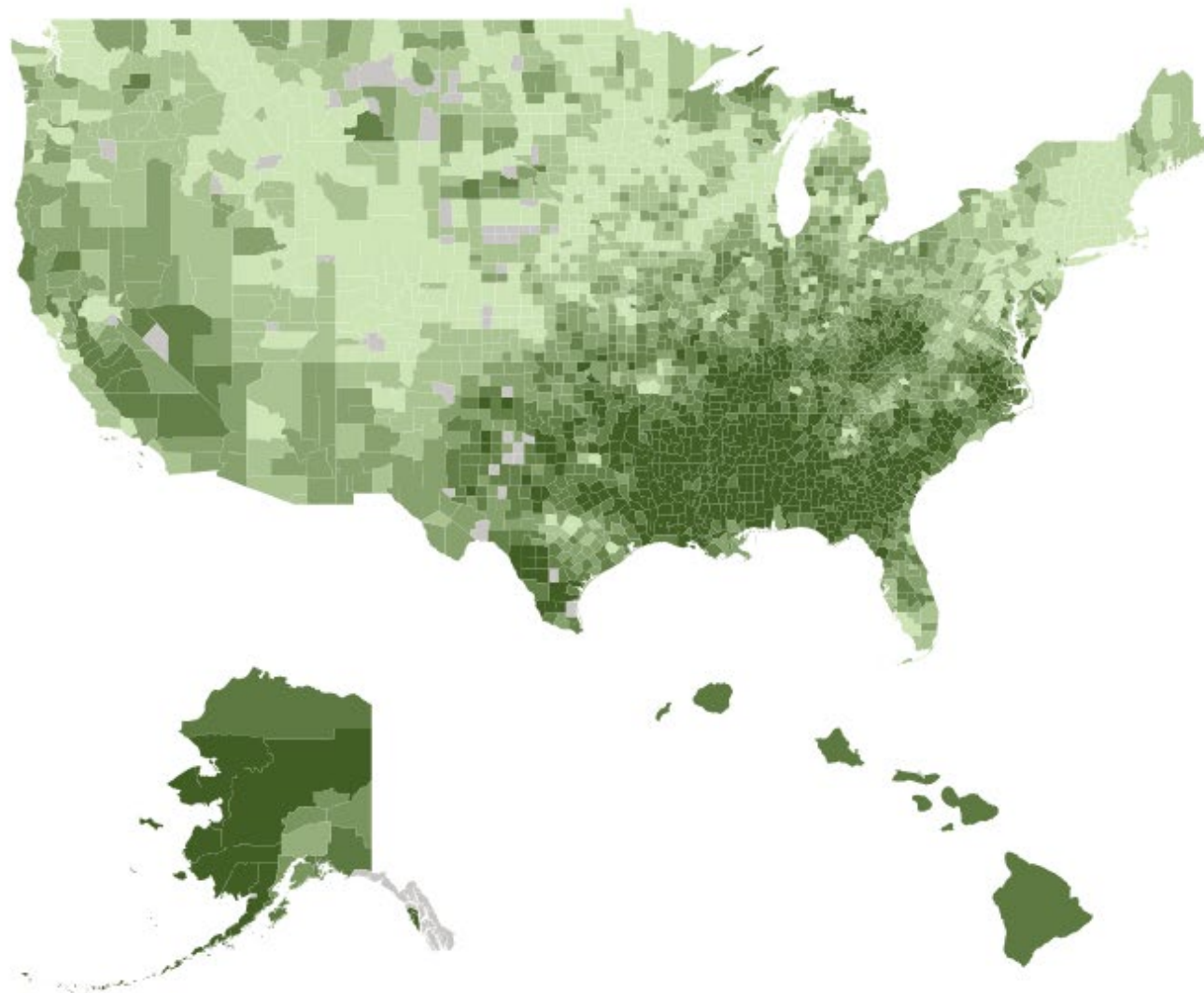
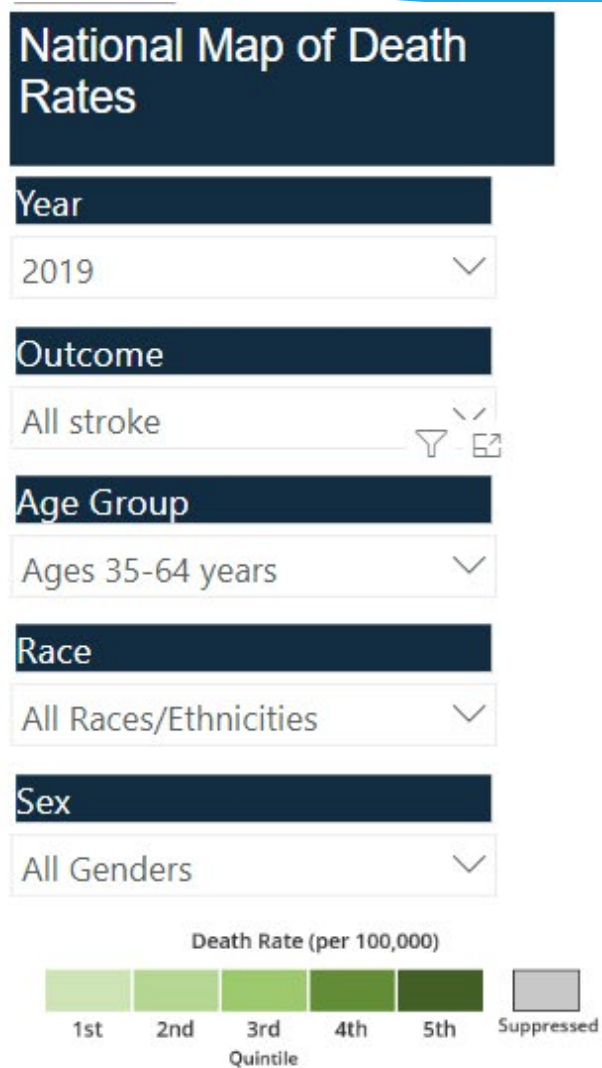


Update

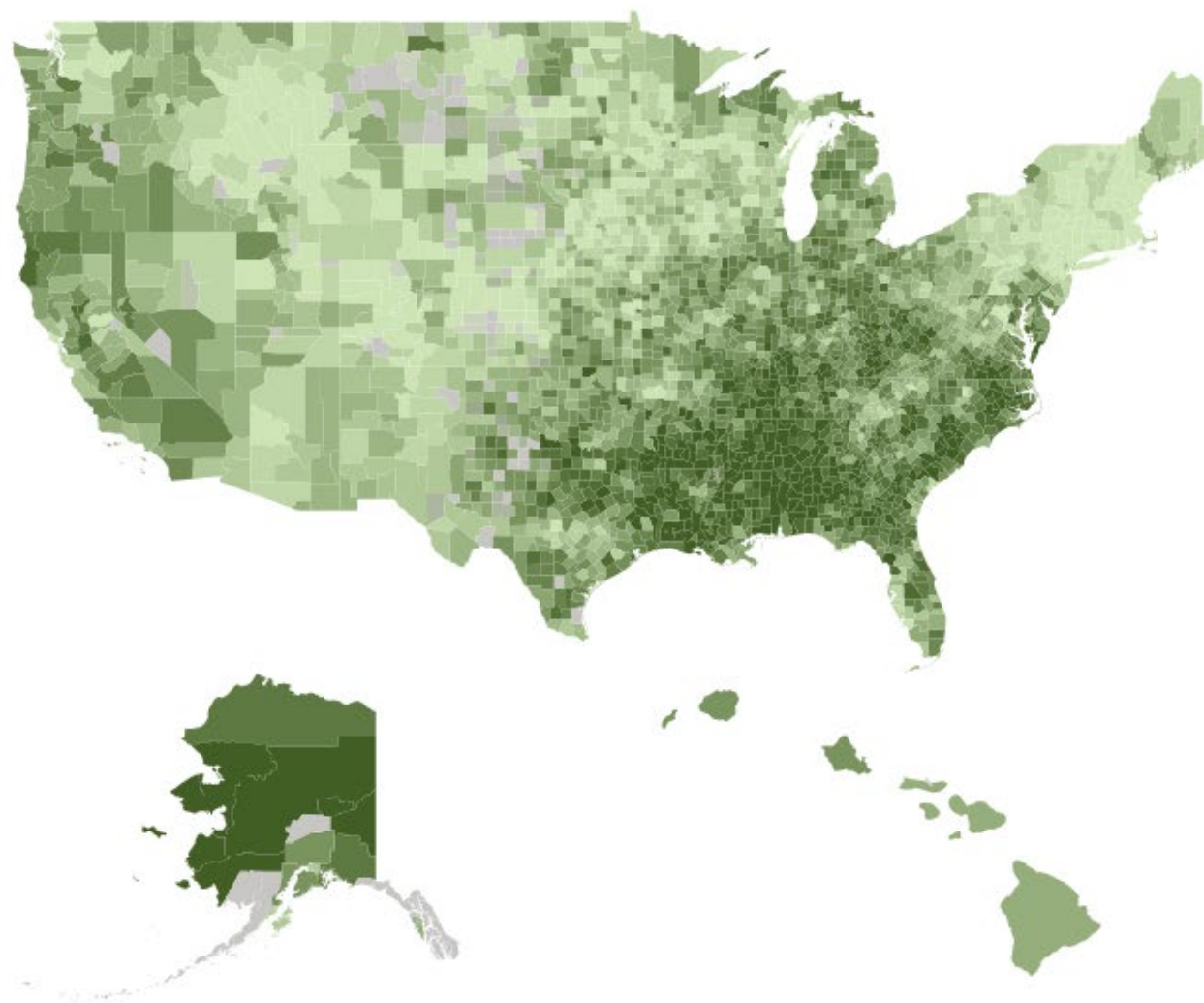
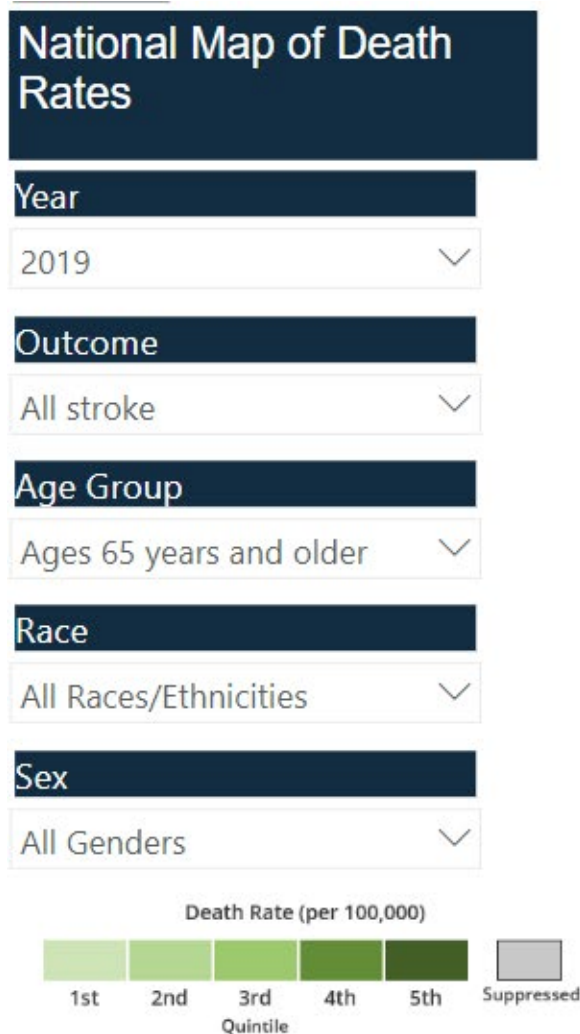
- National data
- State data
- Prevalence data
- Registry data – 2021
- EMS



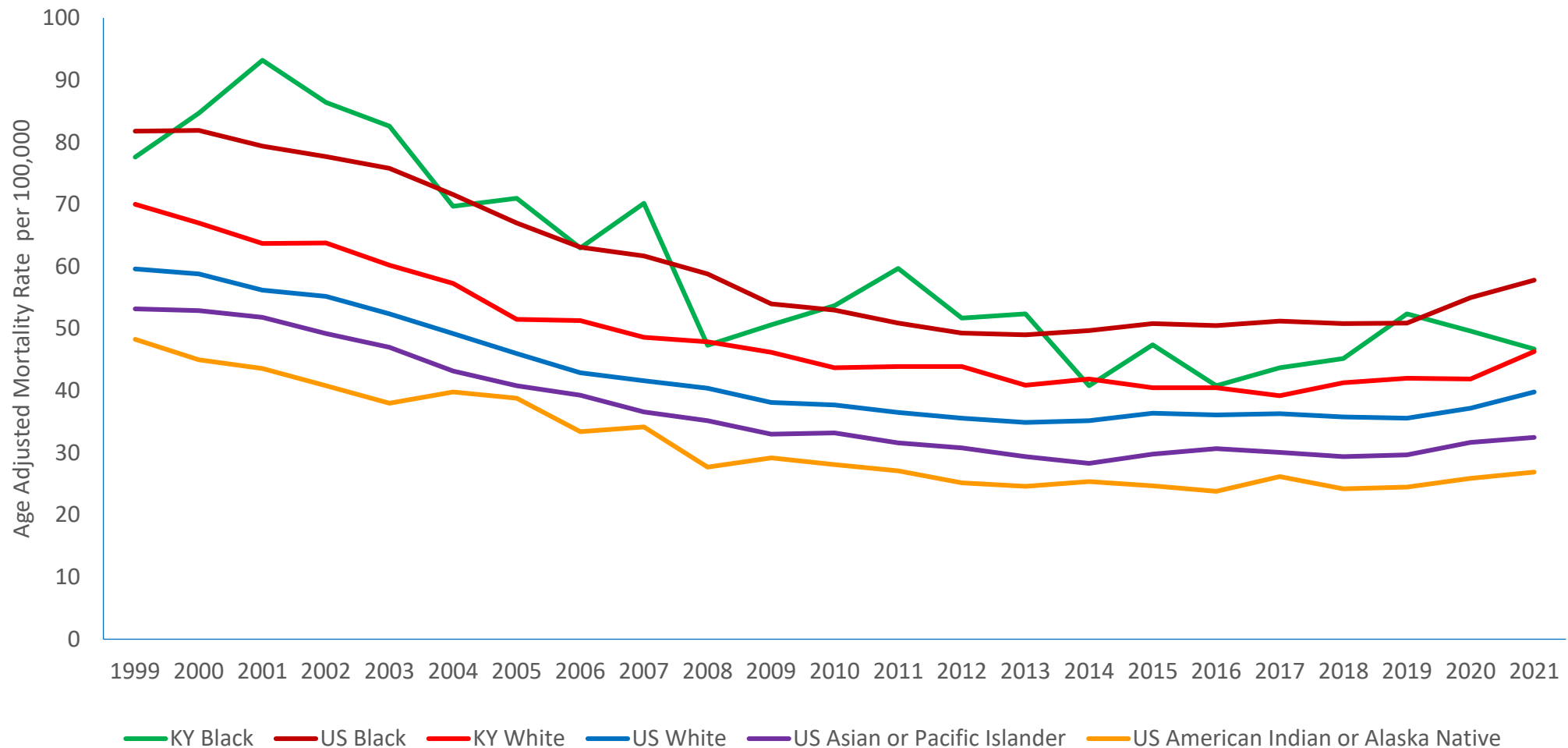
US Stroke Death Rates, Ages 35-64 years



US Stroke Death Rates, Ages 65+



Stroke Death Rate in Kentucky and US 1999-2021



KY Asian and KY American Indian was either not reported due to small numbers for confidentiality reasons or rates were statistically unreliable when the numerator was <20.

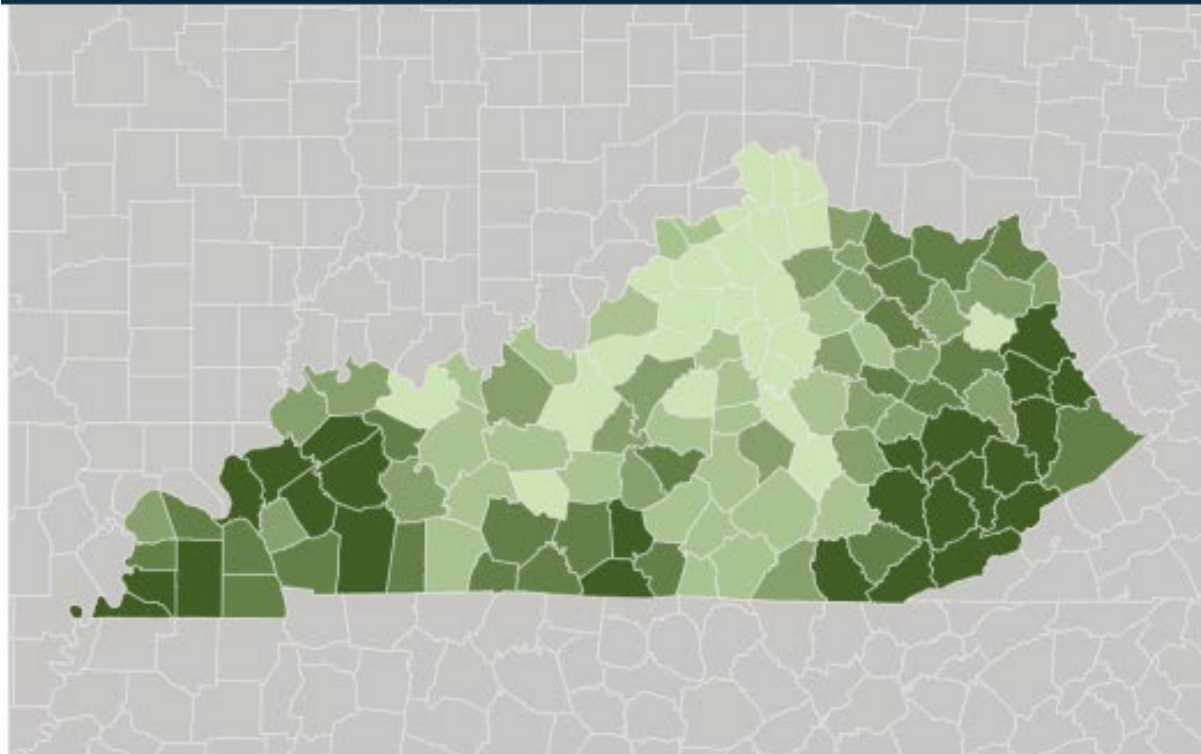
Source: Centers for Disease Control and Prevention. CDC Wonder. <http://wonder.cdc.gov/>. 2023.

Leading Causes of Death in Kentucky, 2021

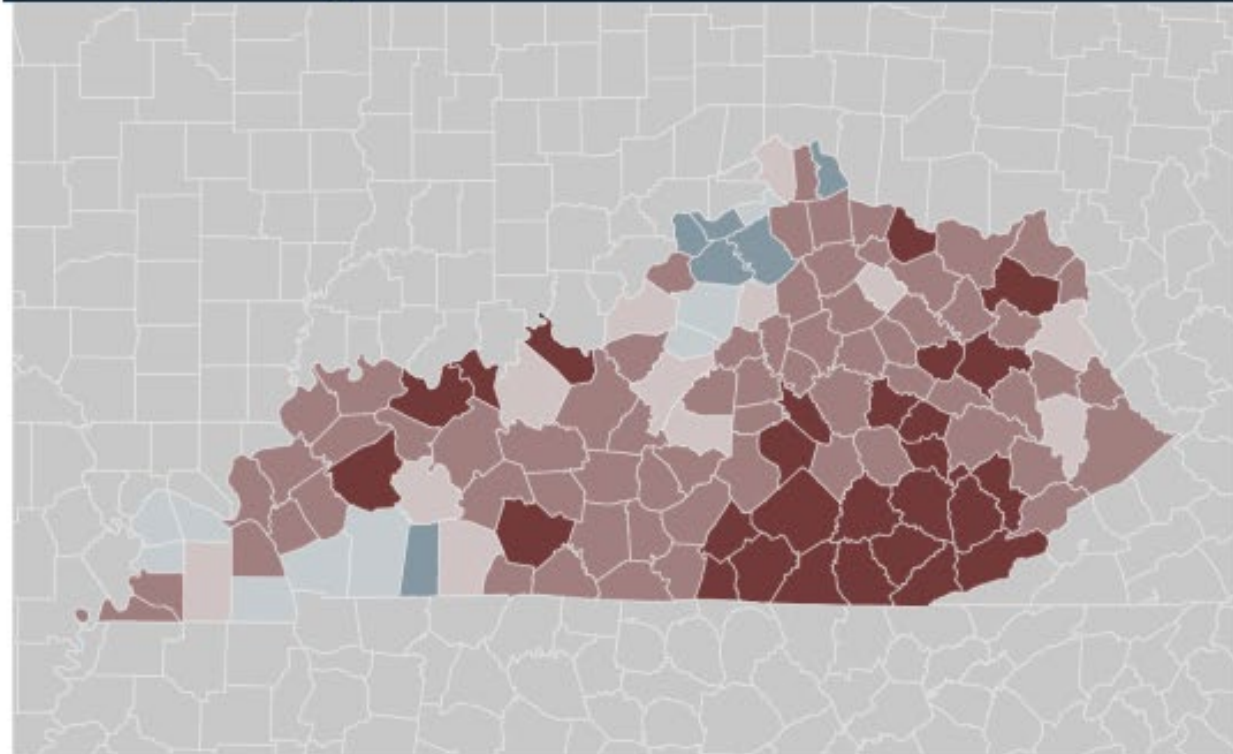
15 Leading causes of death in Kentucky 2021	Deaths	Percent of total deaths in KY
Heart disease	11,697	19.40
Cancer	10,250	17.00
COVID-19	7,459	12.37
Accidents (unintentional injuries)	4373	7.25
Chronic lower respiratory diseases	3,243	5.38
Cerebrovascular diseases (stroke)	2,428	4.03
Diabetes mellitus	1,765	2.93
Alzheimer disease	1,632	2.71
Nephritis, nephrotic syndrome, and nephrosis (kidney disease)	1130	1.87
Chronic liver disease and cirrhosis	939	1.56
Septicemia	923	1.53
Suicide	816	1.35
Influenza and pneumonia	739	1.23
Parkinson disease	523	0.87
Essential hypertension and hypertensive renal disease	516	0.86

Stroke Death Rate Ages 35- 64 years, All Races, All Genders, 2010-2019

State Map of Death Rates (2019)

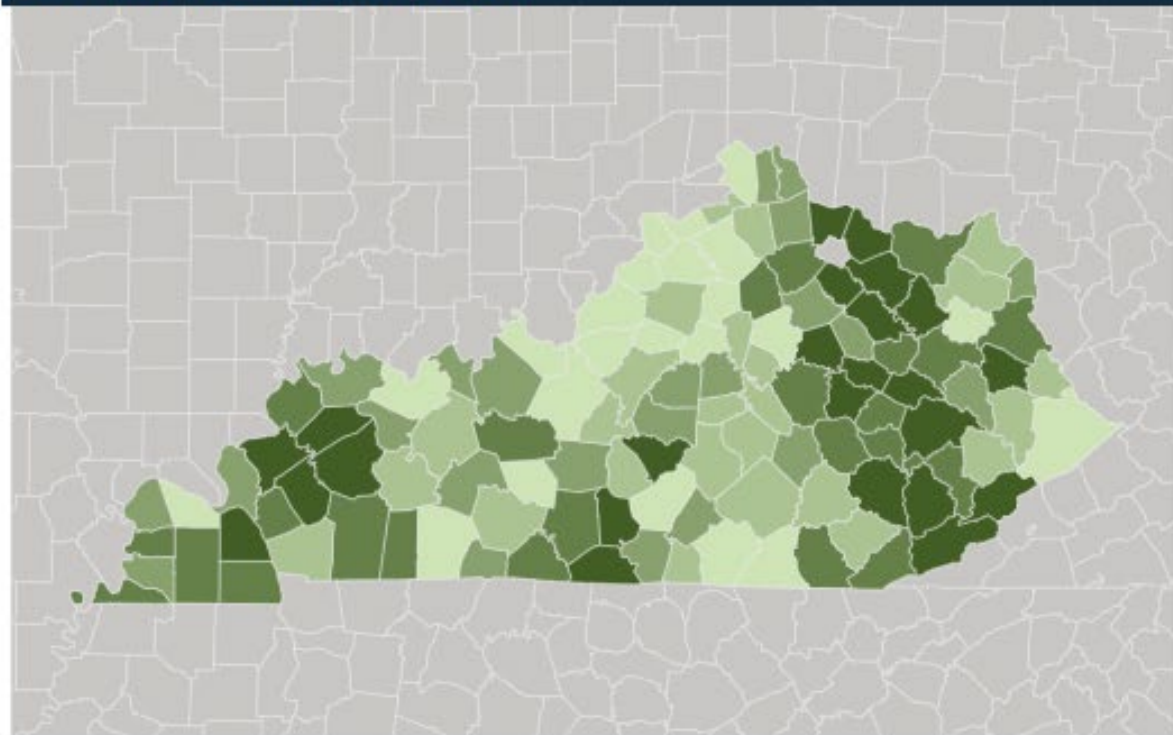


State Map of County Trends in Death Rates (2010 - 2019)

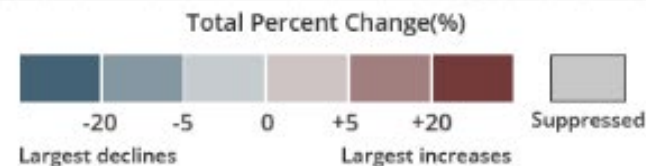
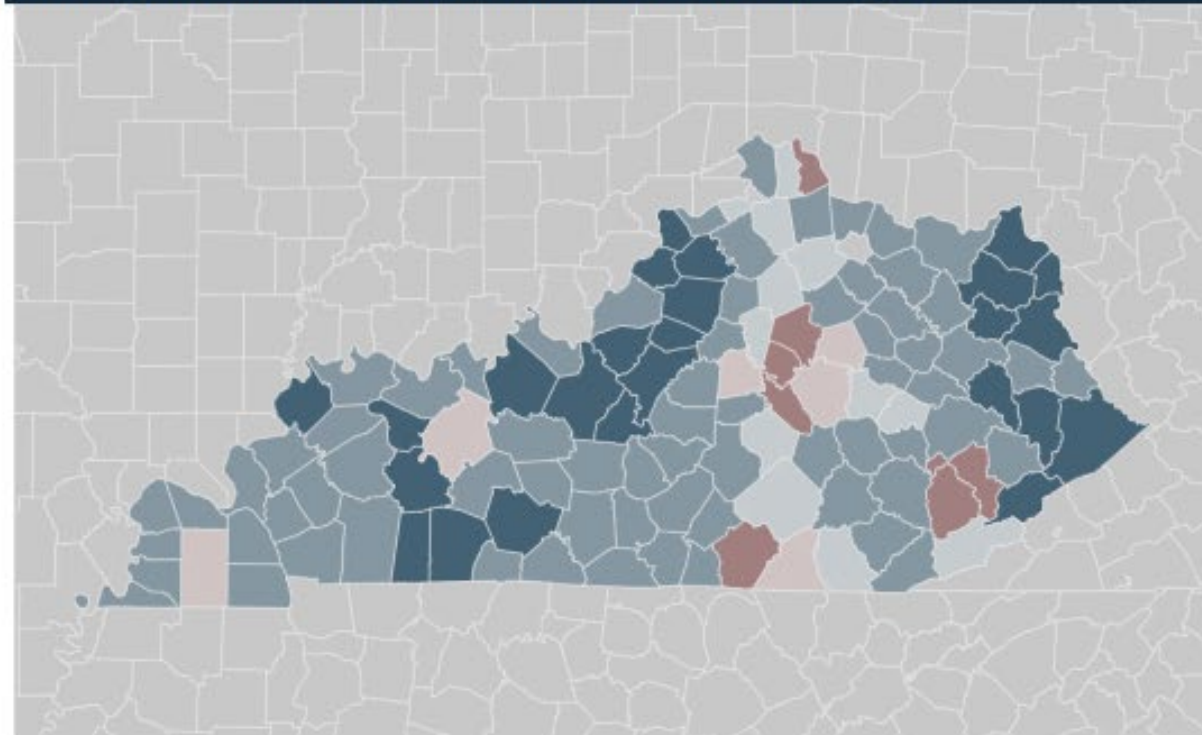


Stroke Death Rate, Ages 65+, All Races, All Genders, 2010-2019

State Map of Death Rates (2019)

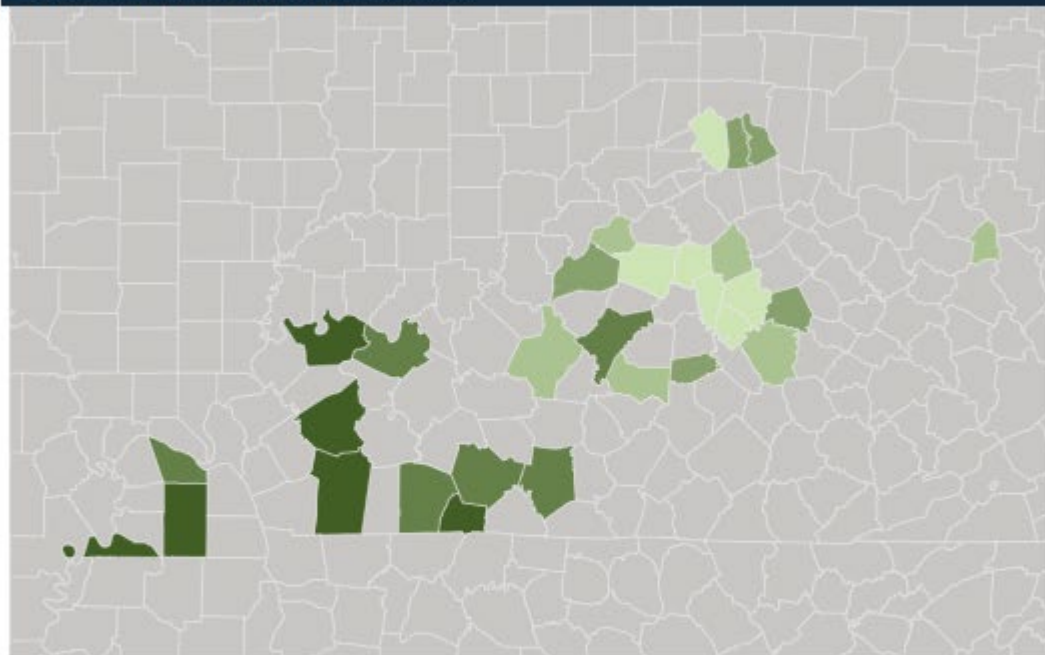


State Map of County Trends in Death Rates (2010 - 2019)

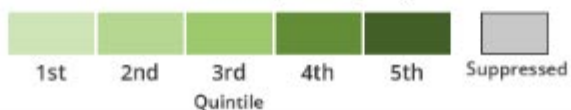


Stroke Death Rate & Trends, Ages 35-64, Blacks, All Genders, 2010-2019

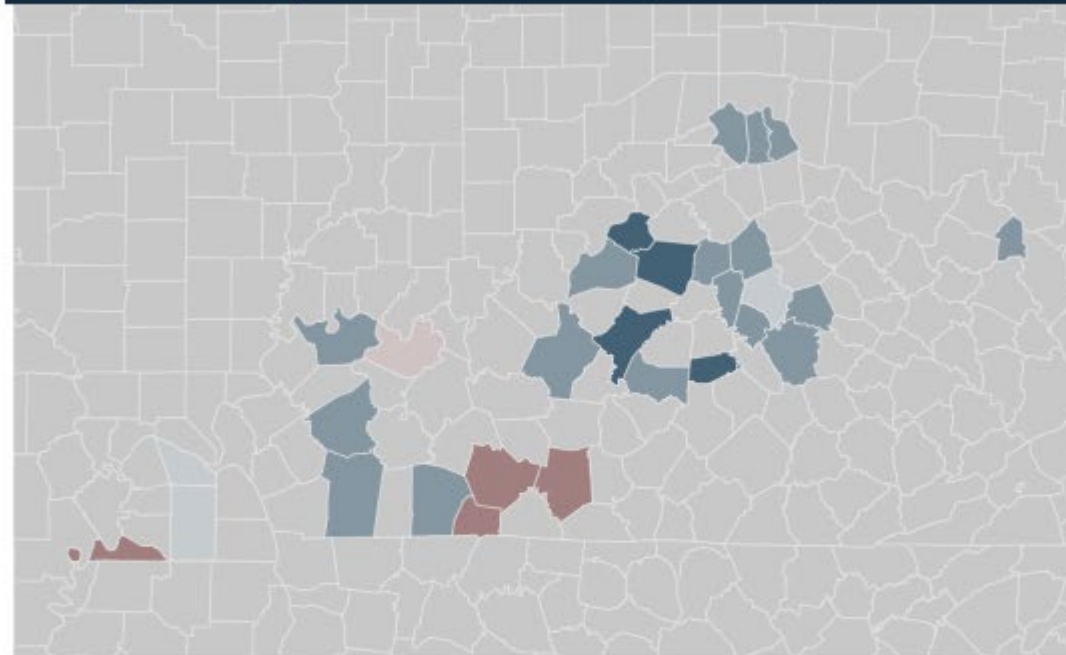
State Map of Death Rates (2019)



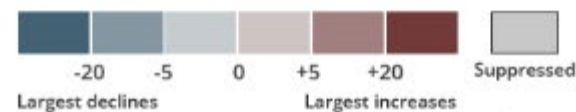
Death Rate (per 100,000)



State Map of County Trends in Death Rates (2010 - 2019)

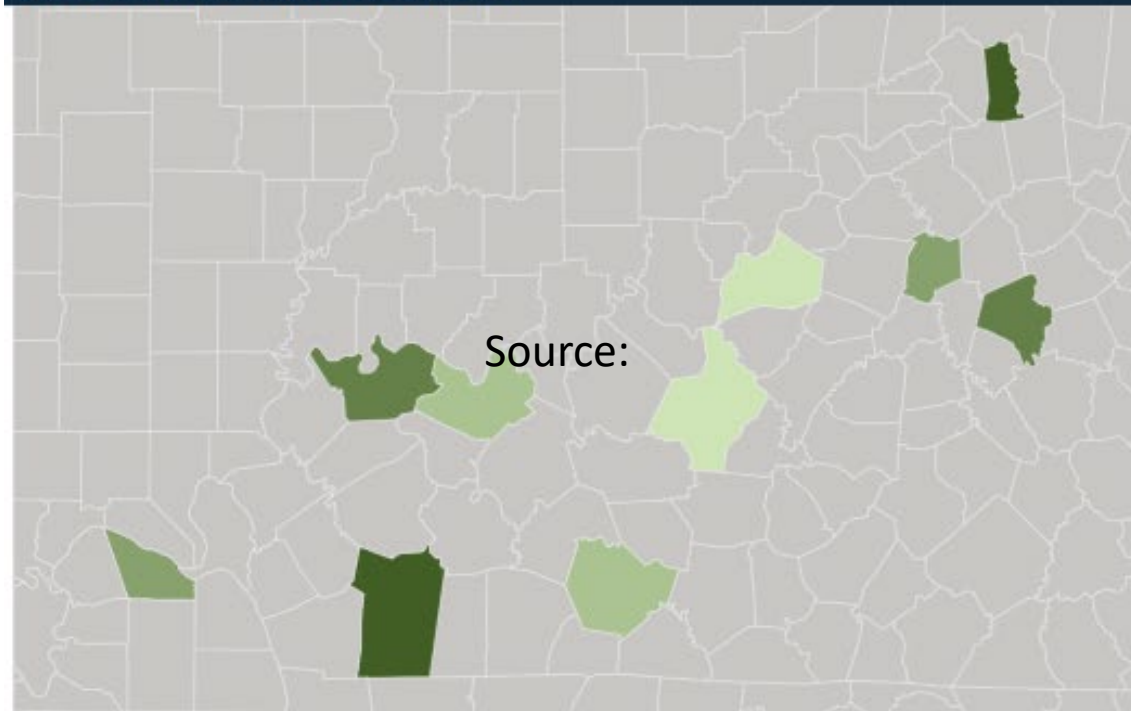


Total Percent Change(%)

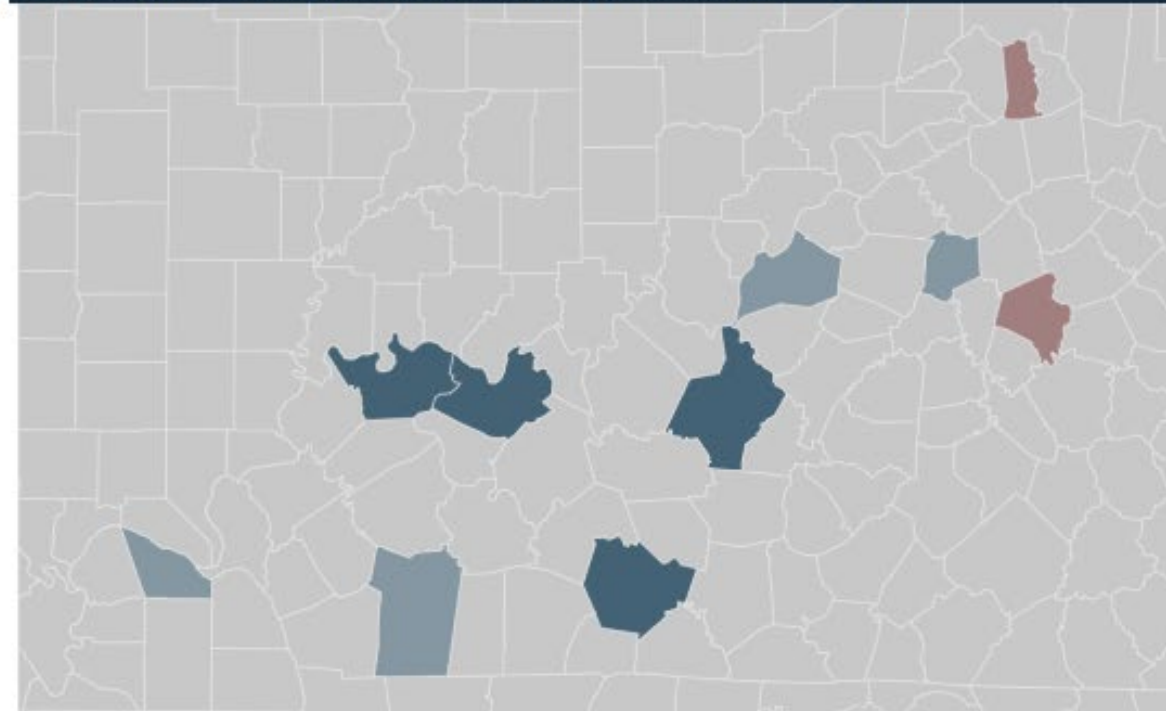


Stroke Death Rate & Trends, Ages 65+, Blacks, All Genders, 2010-2019

State Map of Death Rates (2019)

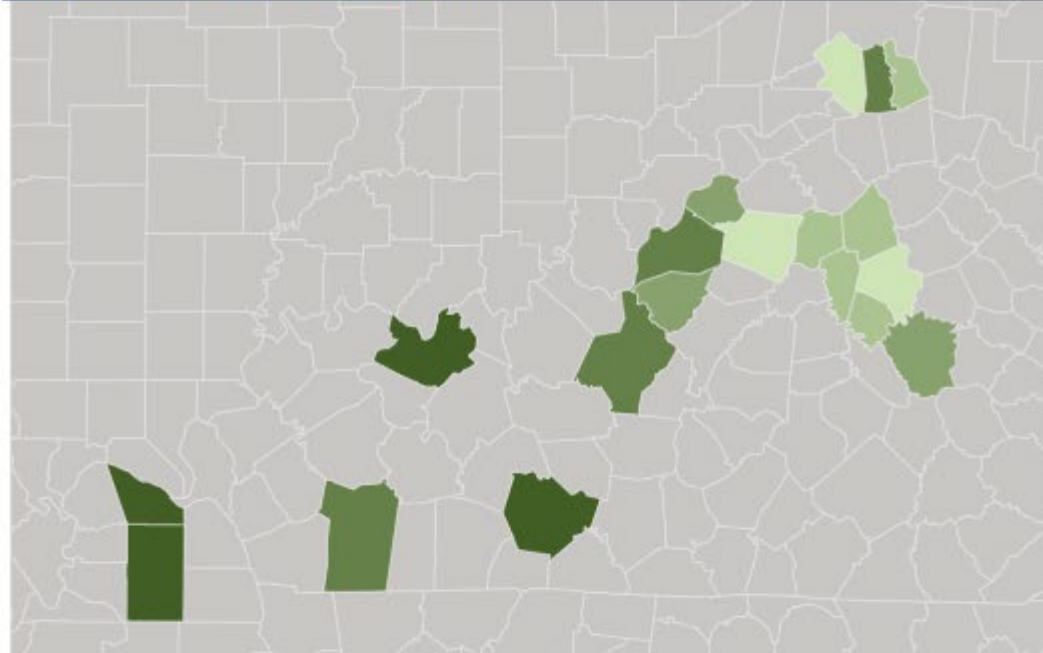


State Map of County Trends in Death Rates (2010 - 2019)

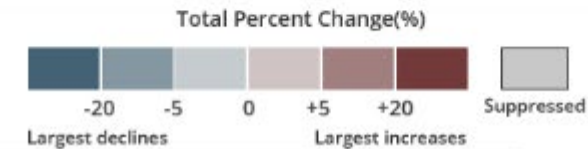
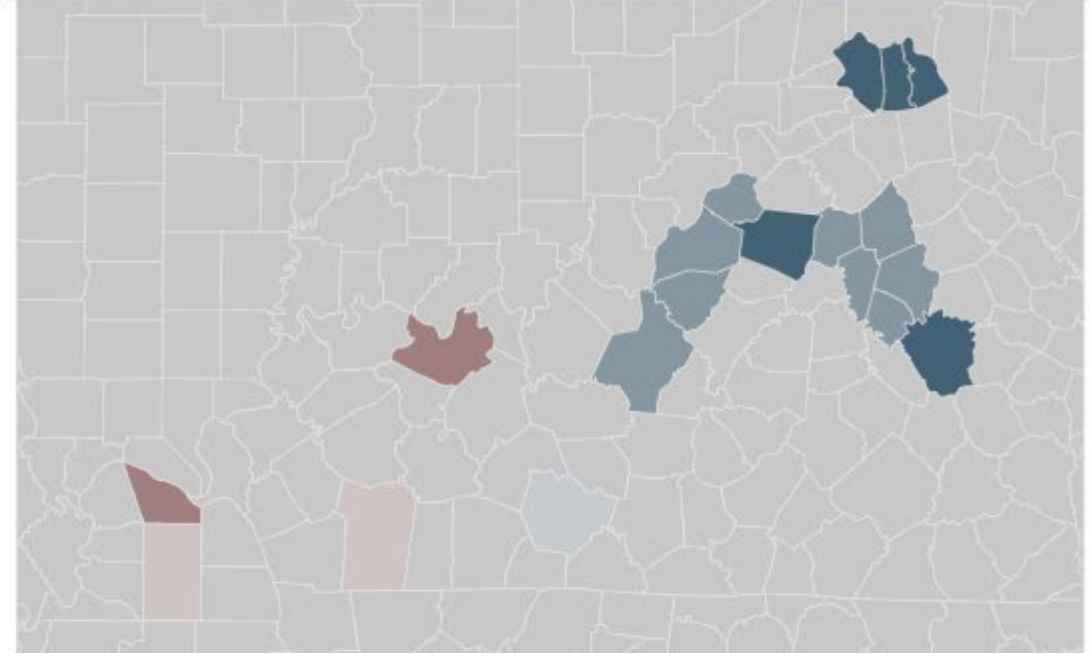


Stroke Death Rate & Trends, Ages 35-64, Hispanics, All Genders, 2010-2019

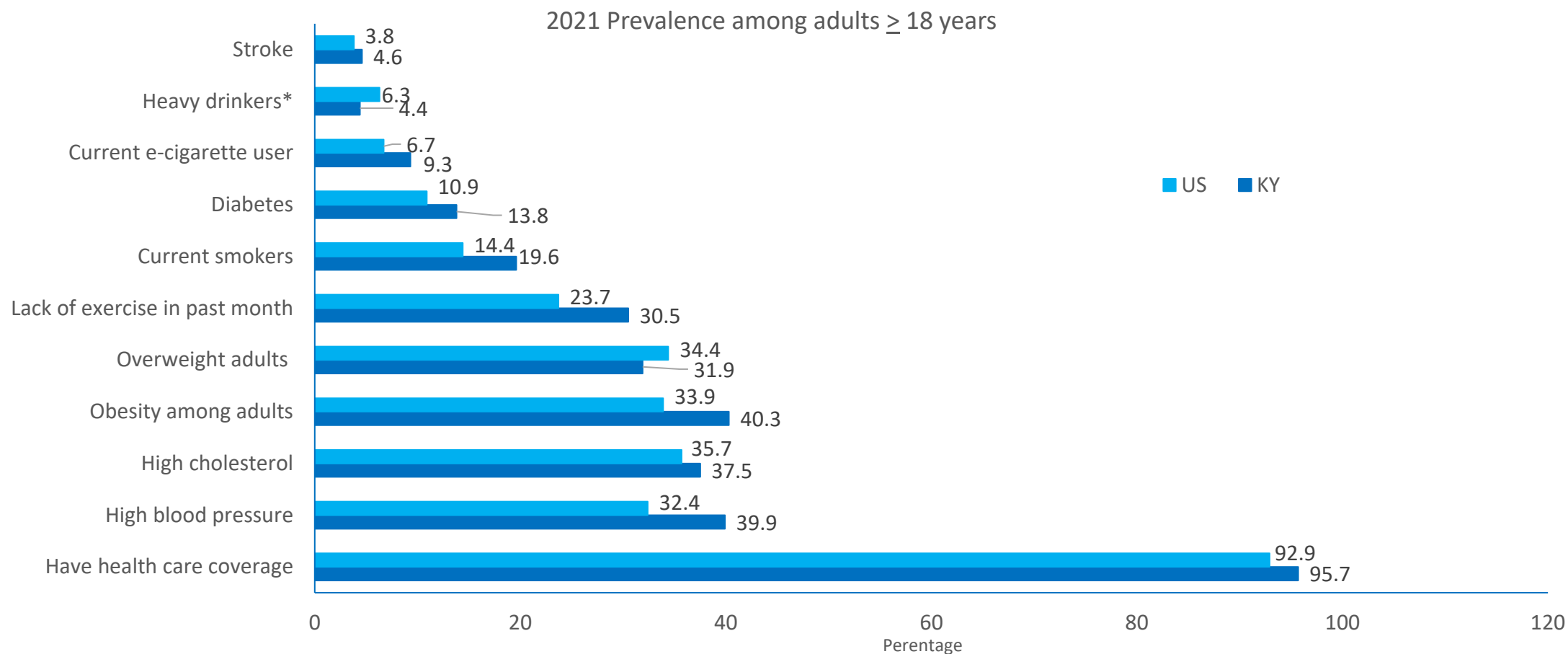
State Map of Death Rates (2019)



State Map of County Trends in Death Rates (2010 - 2019)



Stroke Risk Factors Prevalence in Adults in Kentucky & US, 2021

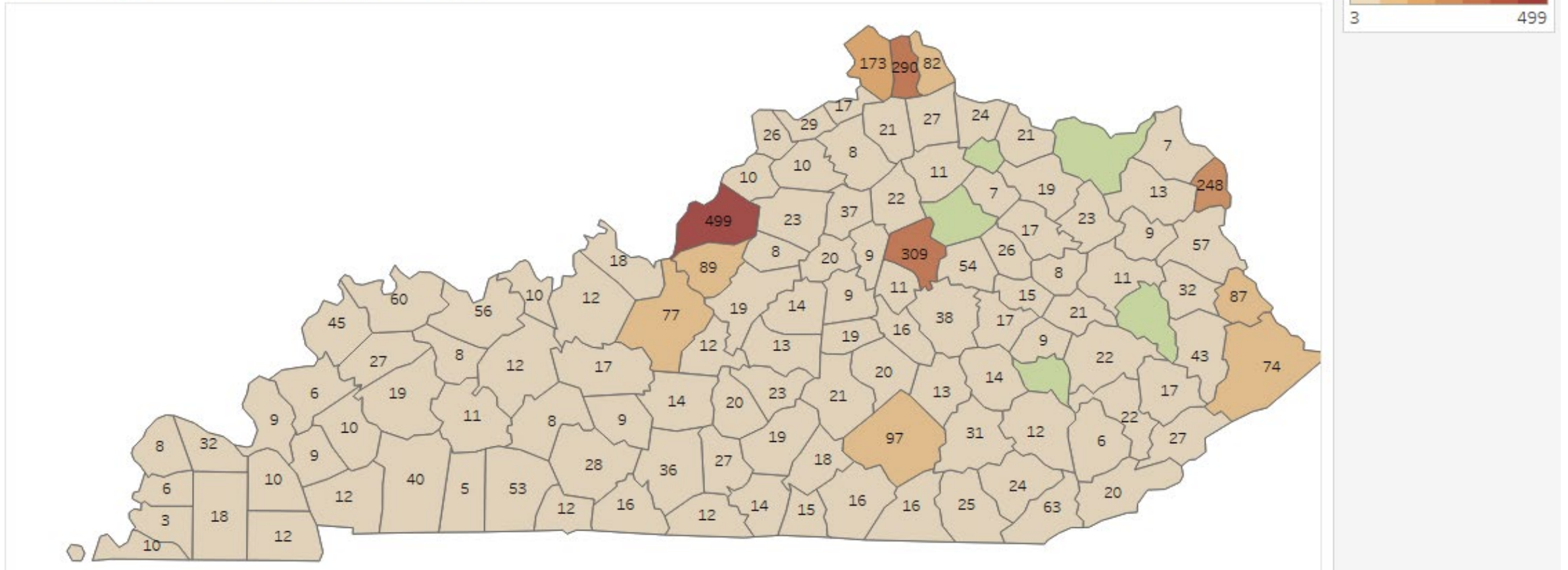


*Heavy drinking, adult men > 14 drinks/week, adult women > 7 drinks/week.

Source: CDC, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. BRFSS Prevalence & Trends Data. Accessed at <https://www.cdc.gov/brfss/brfssprevalence/> on Feb 4, 2022.

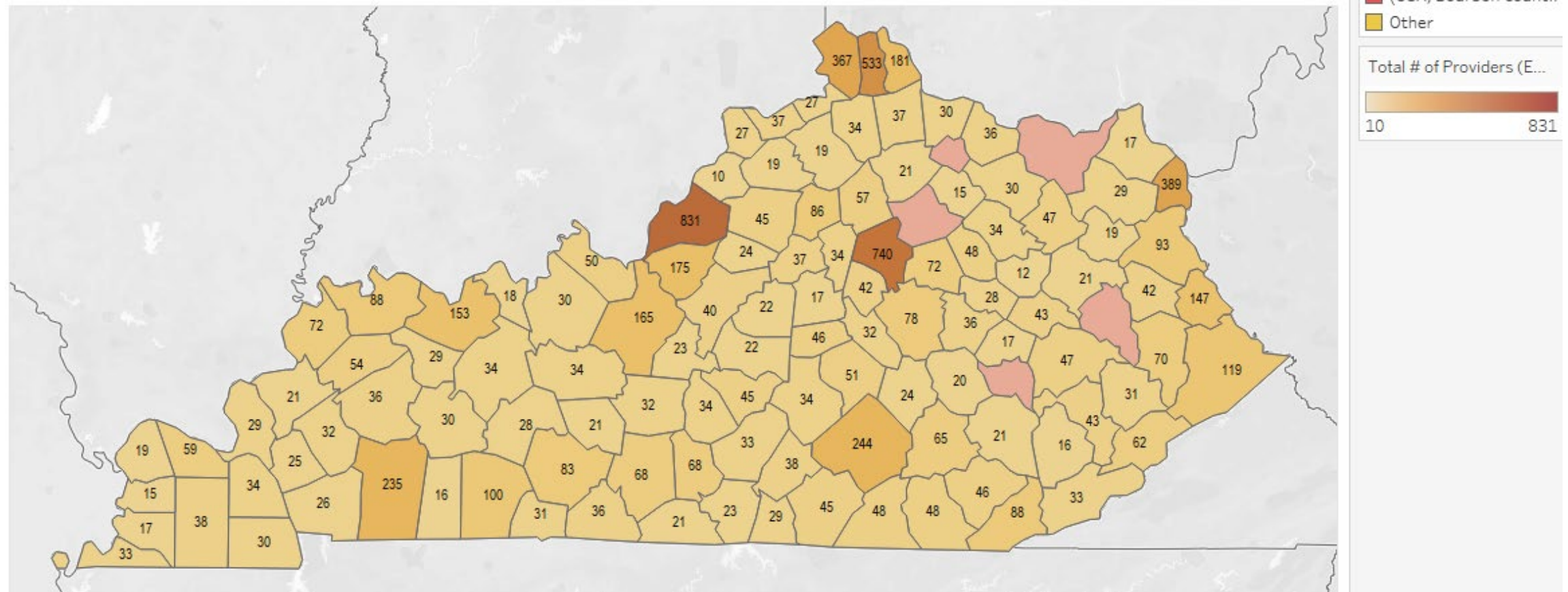
Number of Providers by County of Employment, 2023

Number of EMTs Employed in County



Total number of Providers (EMT + Paramedic + Advanced EMT) Employed in a County, 2023

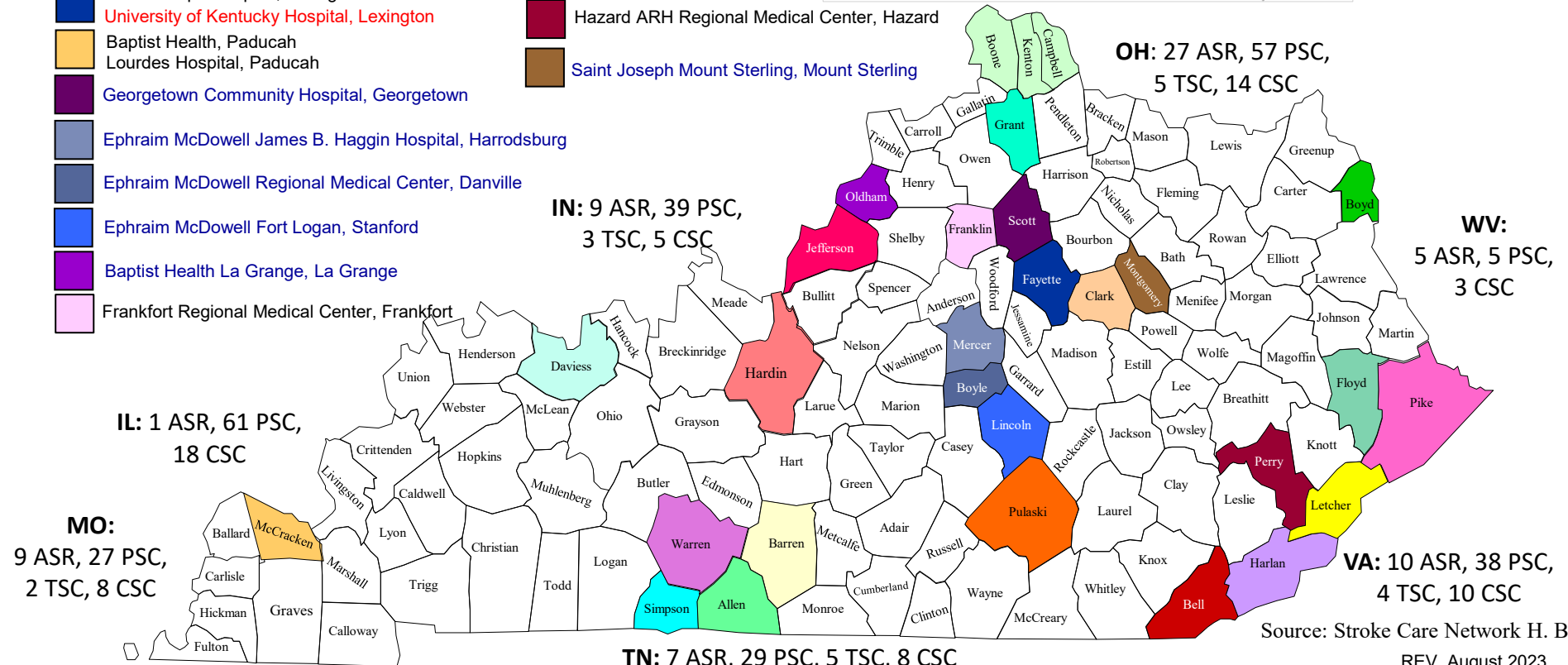
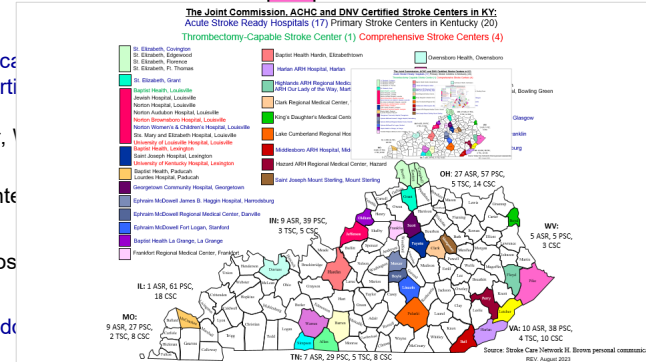
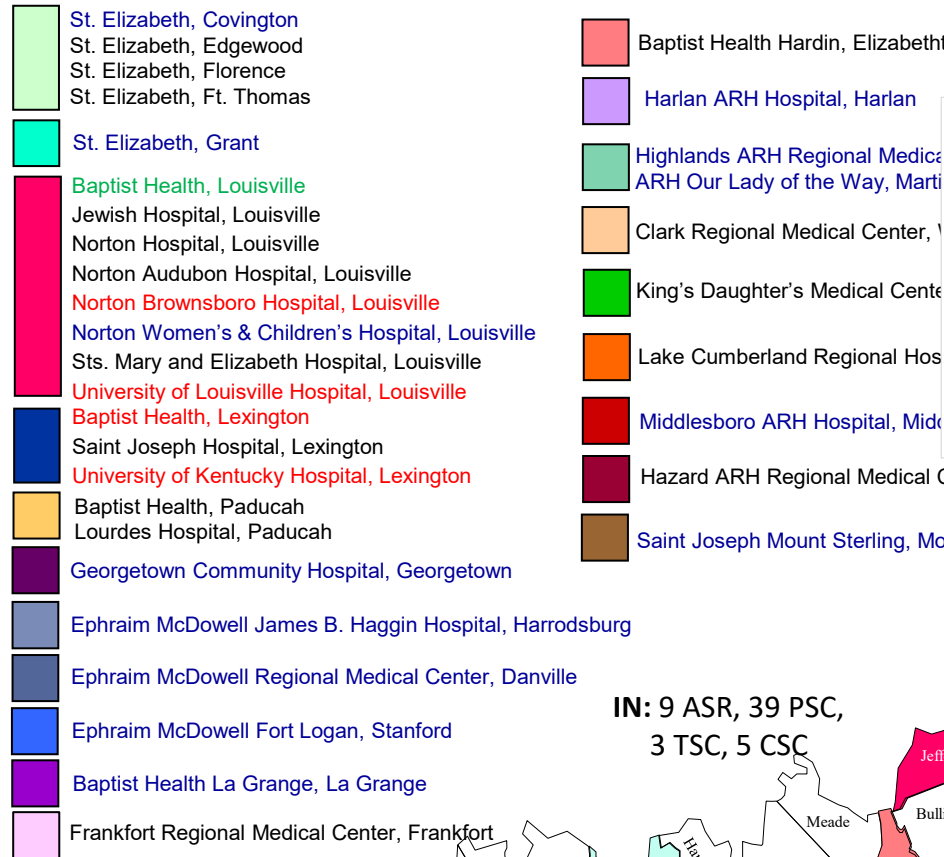
Total # of Providers (EMT + Paramedic + Advanced EMT)



The Joint Commission, ACHC and DNV Certified Stroke Centers in KY:

Acute Stroke Ready Hospitals (17) Primary Stroke Centers in Kentucky (20)

Thrombectomy-Capable Stroke Center (1) Comprehensive Stroke Centers (4)

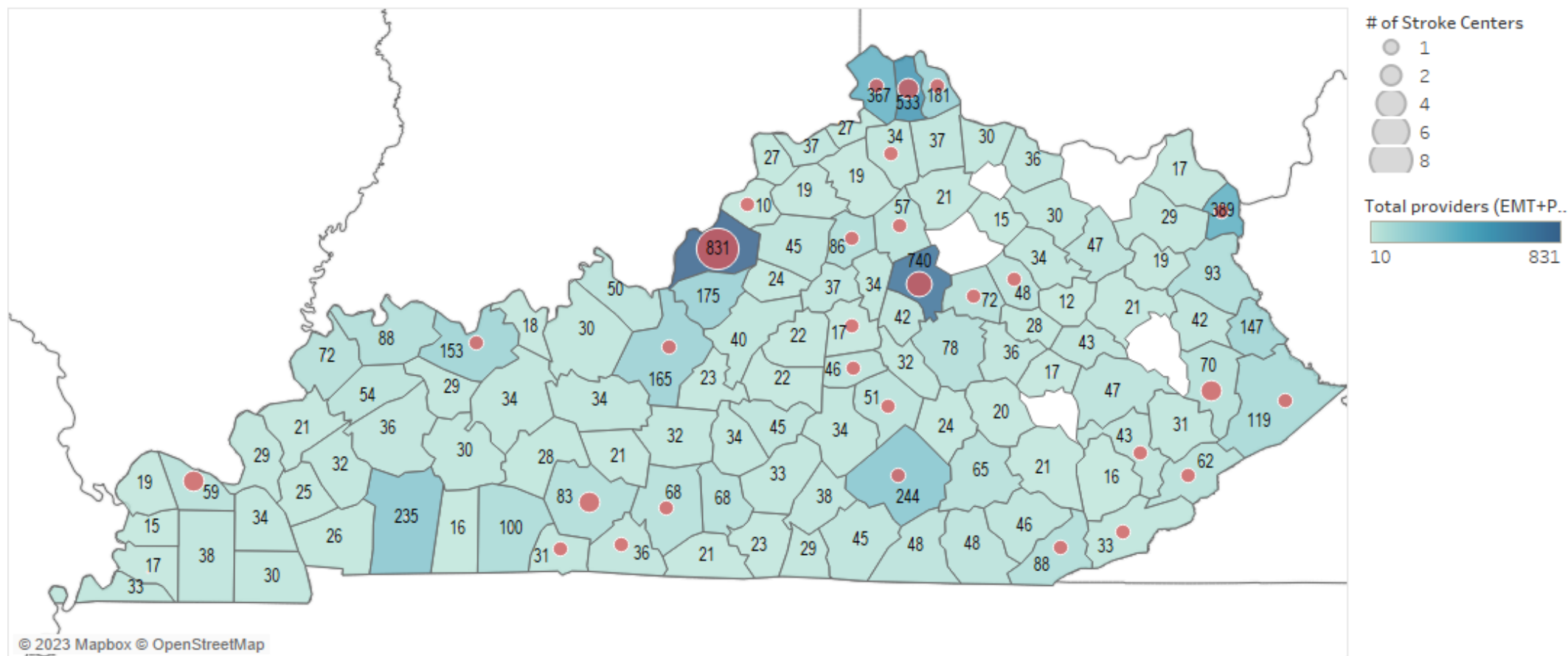


Source: Stroke Care Network H. Brown personal communication

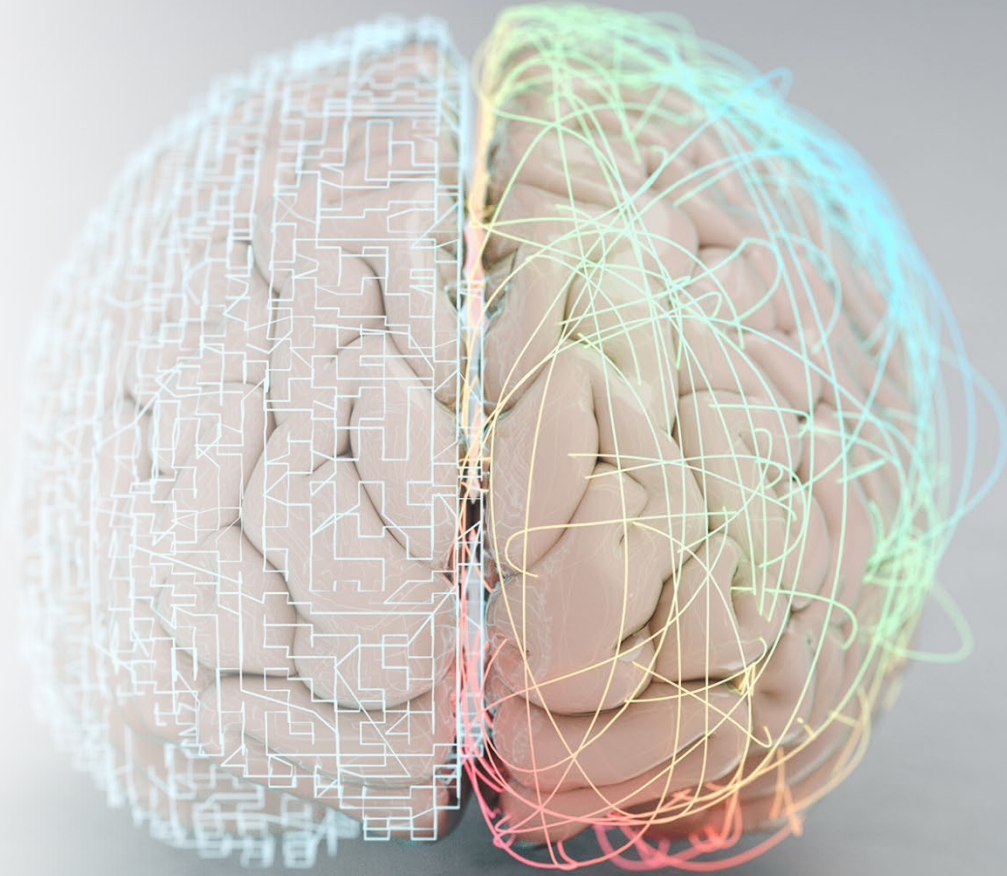
REV. August 2023

Stroke Centers and EMS Providers per County, 2023

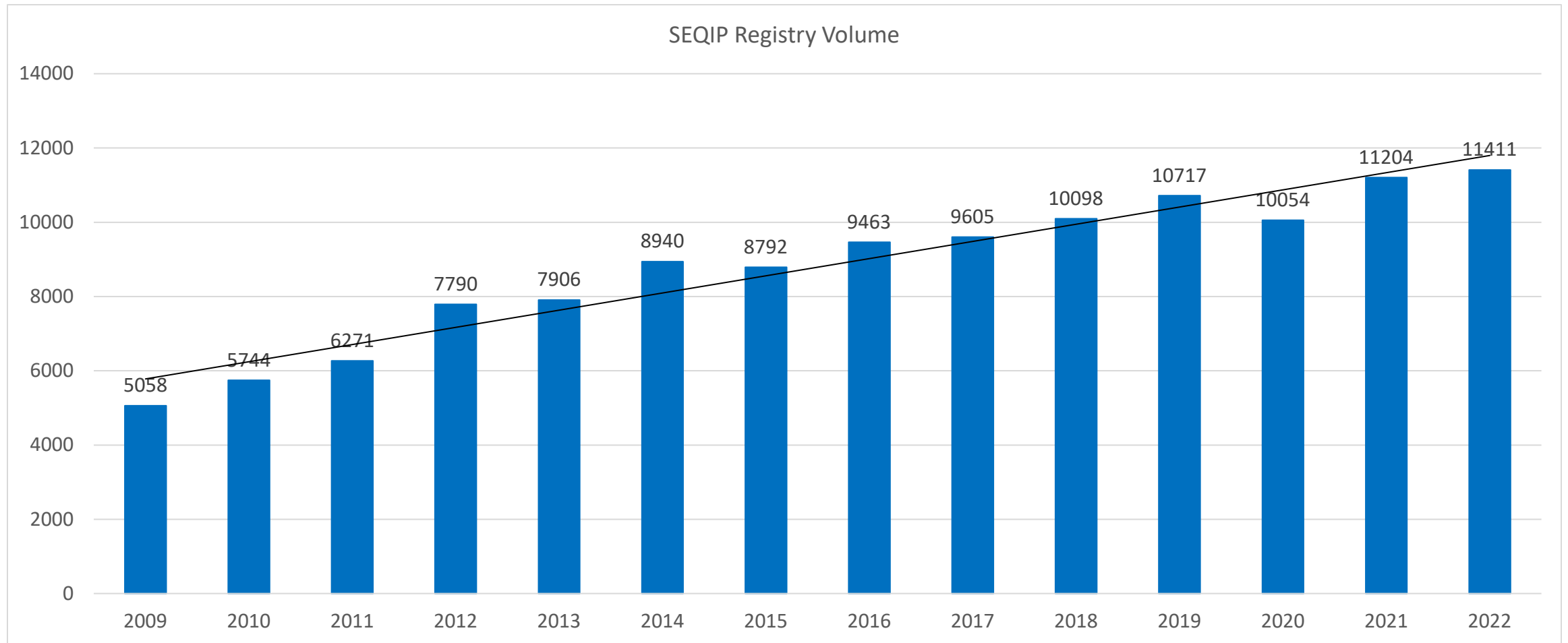
EMS Providers and Stroke Centers



SEQIP Registry Data 2022

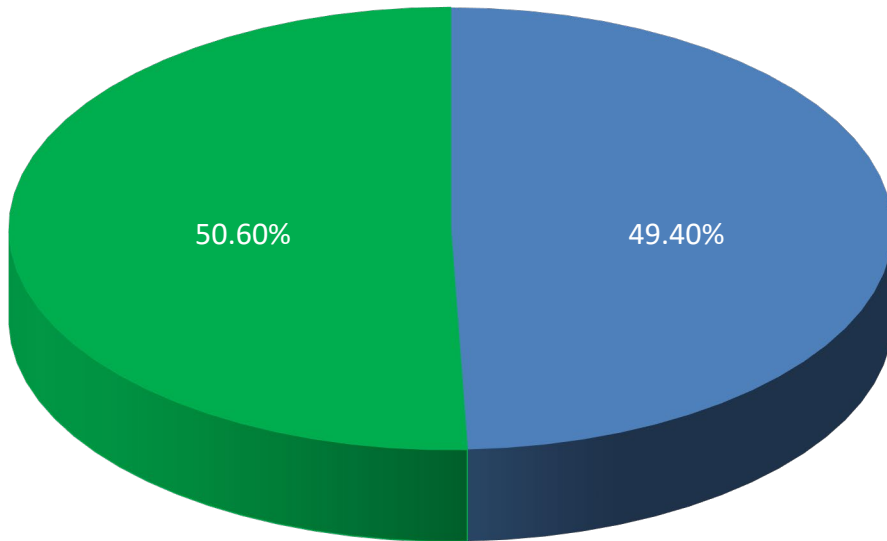


SEQIP Registry Volume



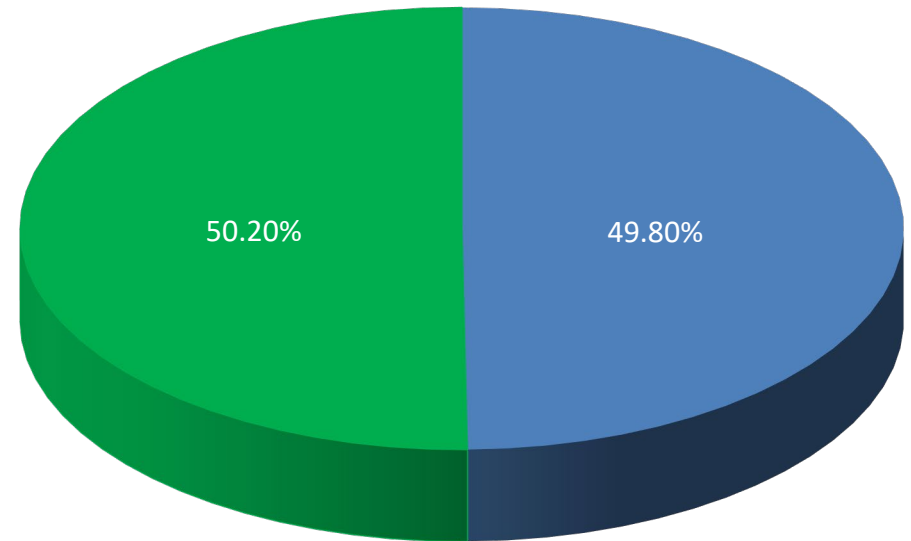
SEQIP Patient Gender, 2022 and 2023 (YTD)

SEQIP Patient Gender 2022



■ Male ■ Female

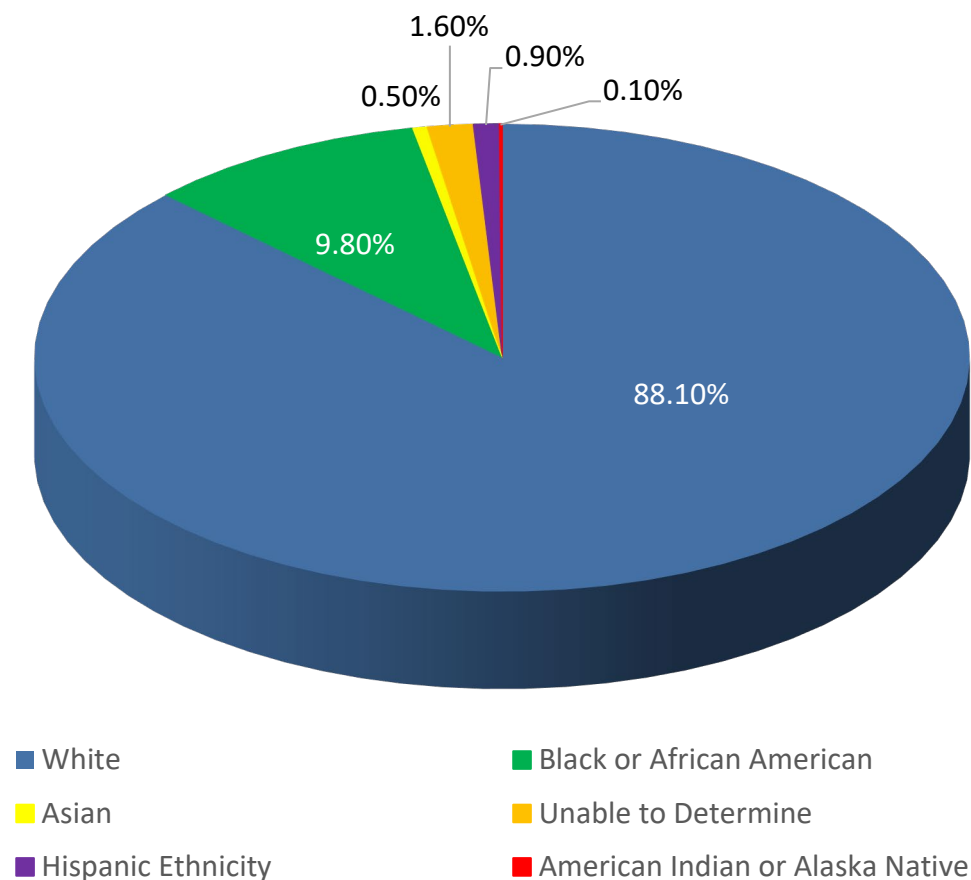
SEQIP Patient Gender YTD 2023



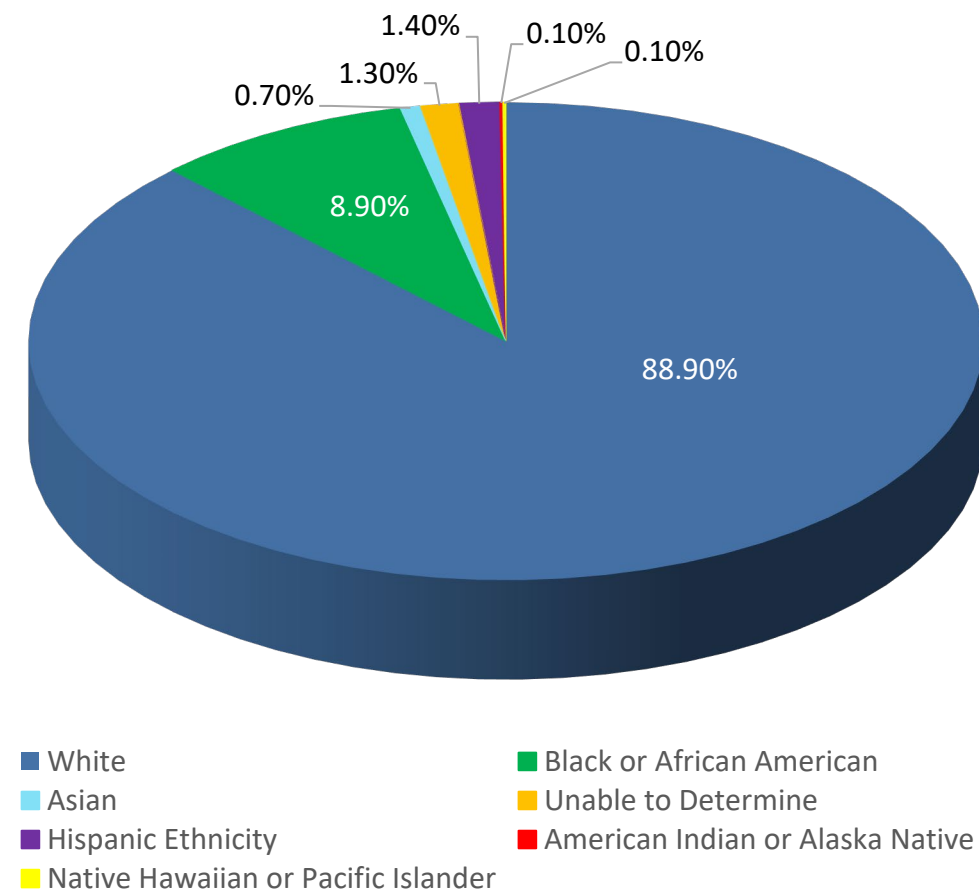
■ Male ■ Female

SEQIP Patient Race, 2022 and 2023 (YTD)

SEQIP Patient Race 2022

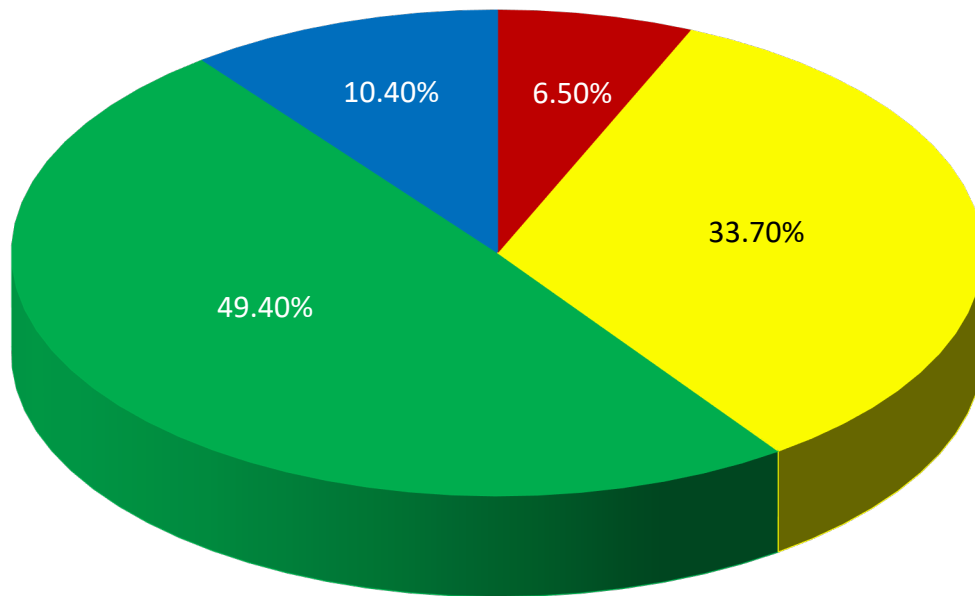


SEQIP Patient Race 2023 (YTD)



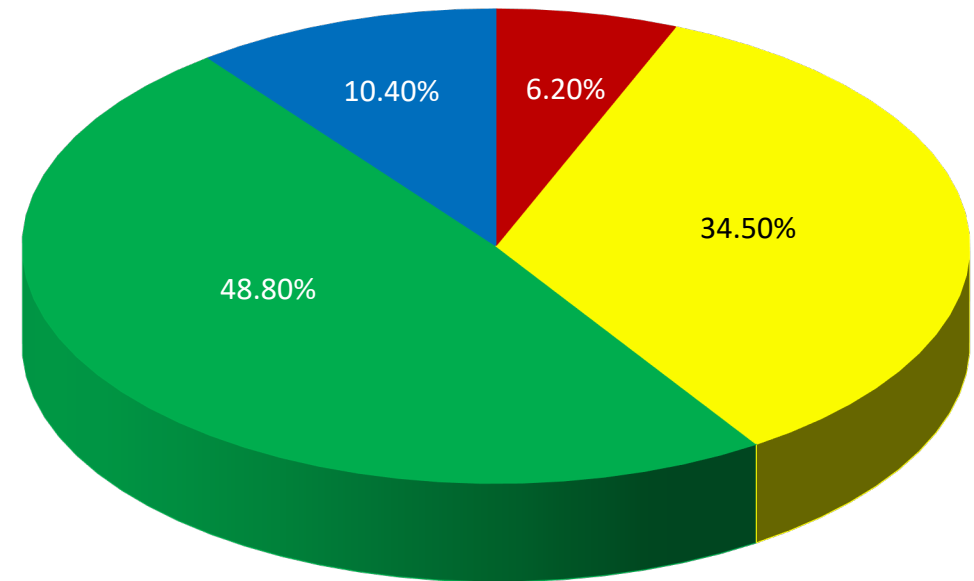
SEQIP Patient Age Distribution, 2022 and 2023 (YTD)

Age distribution of SEQIP Patients 2022



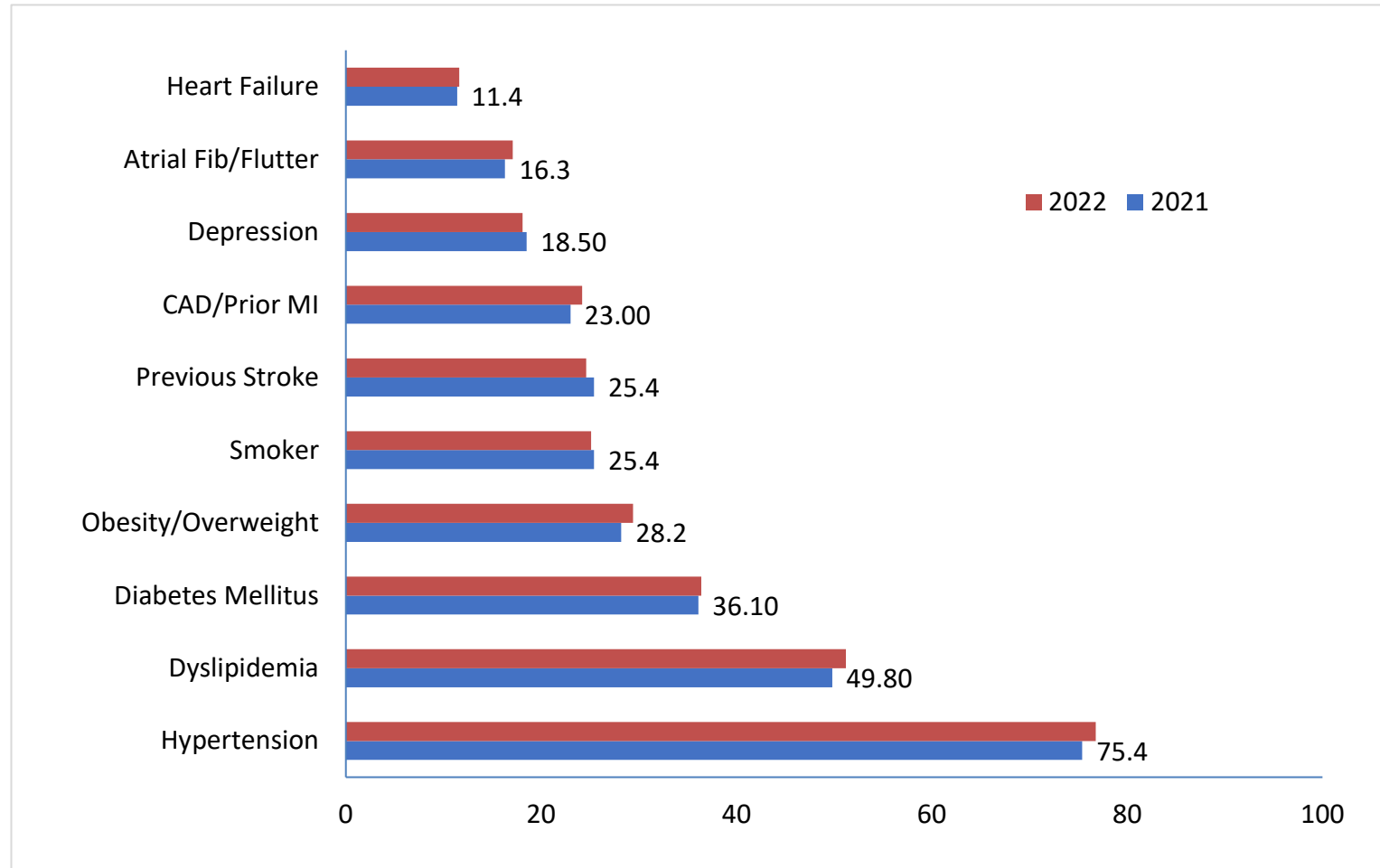
■ 18 - 45 years ■ 46 - 65 years ■ 66 - 85 years ■ >85 years

Age distribution of SEQIP Patients YTD 2023



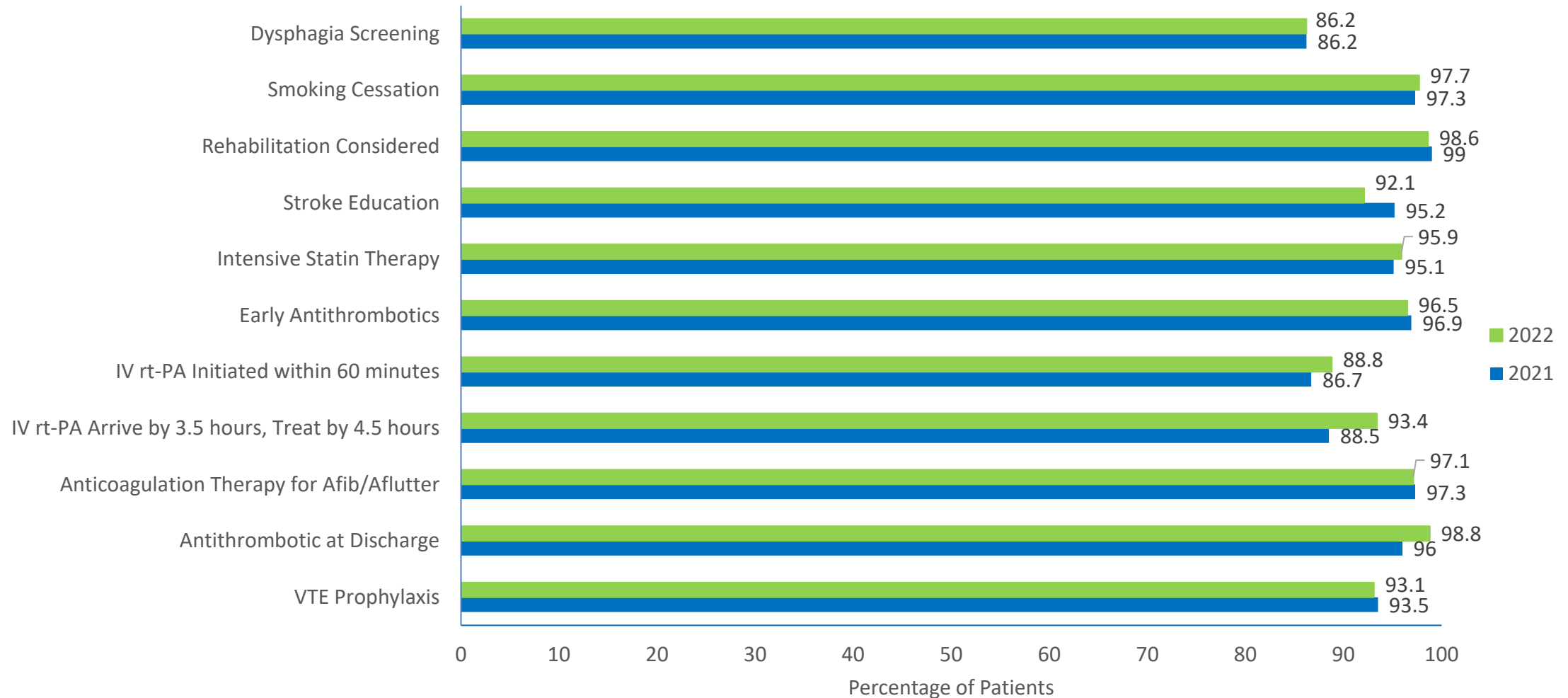
■ 18 - 45 years ■ 46 - 65 years ■ 66 - 85 years ■ >85 years

Most Common Stroke Risk Factors of SEQIP Patients 2021 - 2022

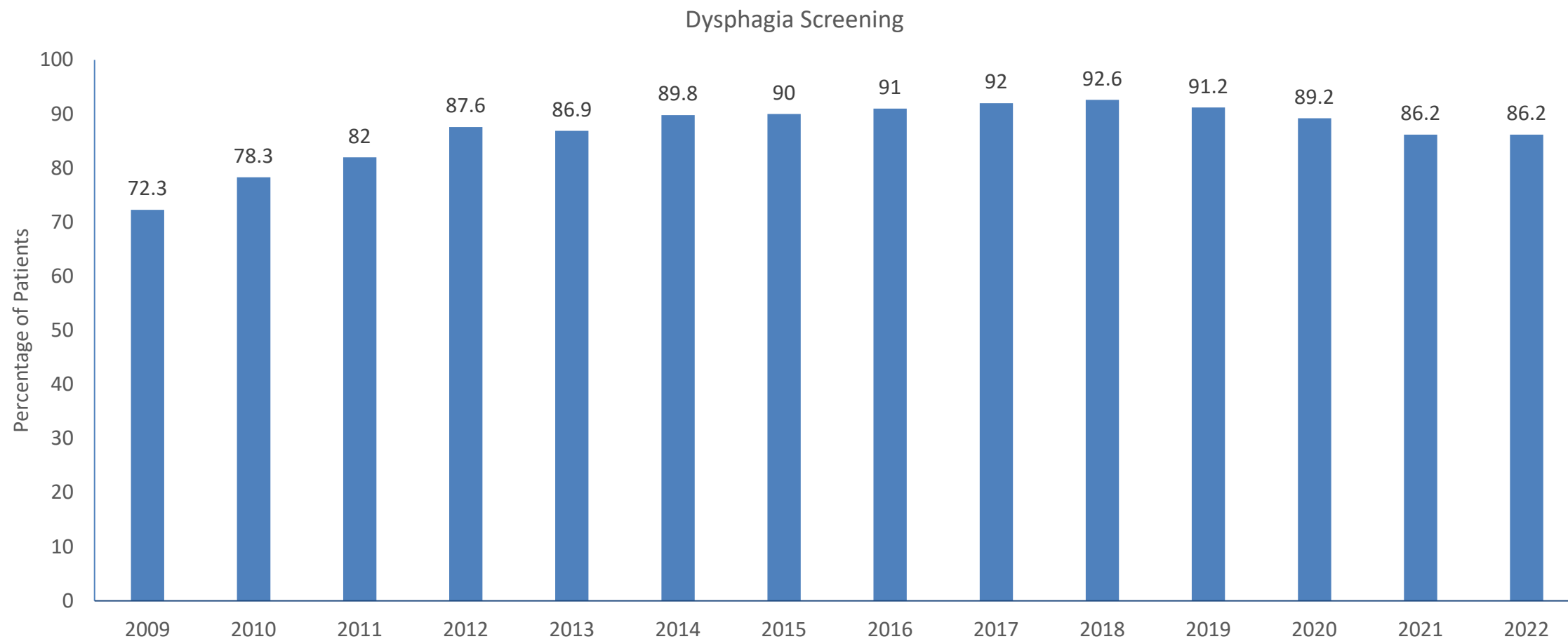


Performance Measures, 2021-2022

GWTG Performance Measures 2021 - 2022

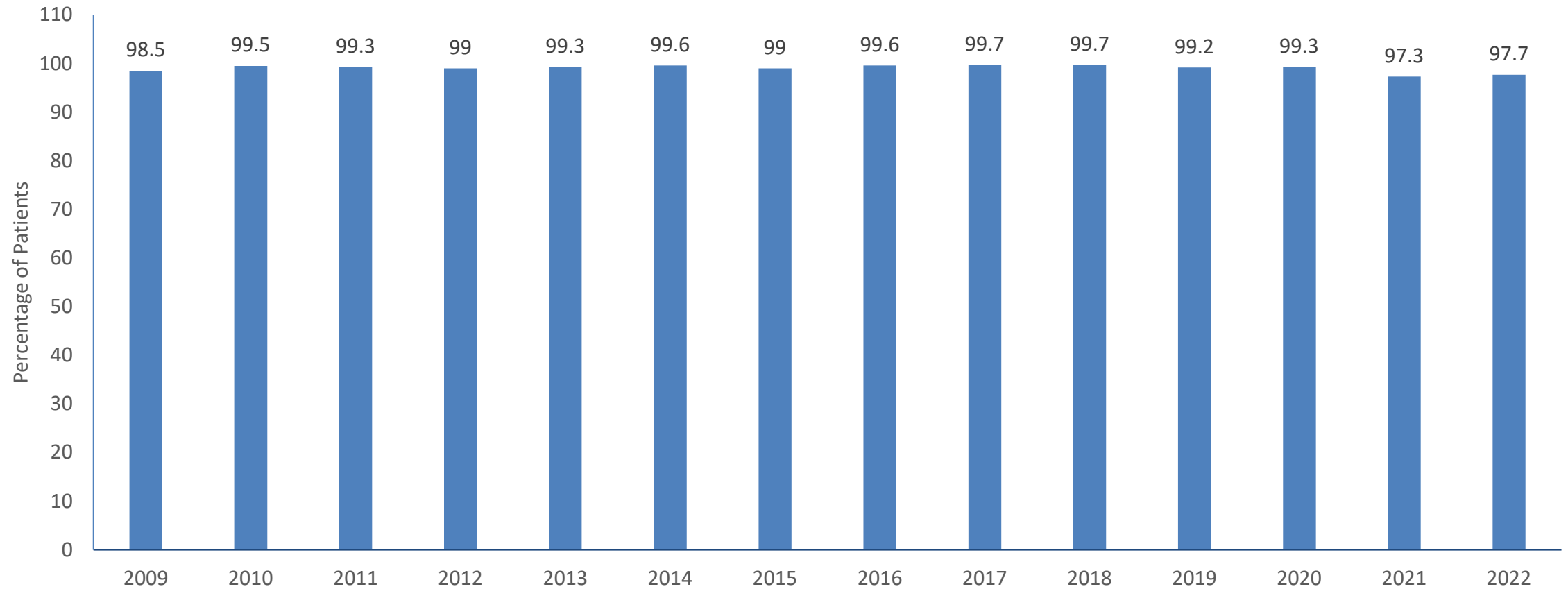


Dysphagia Screening

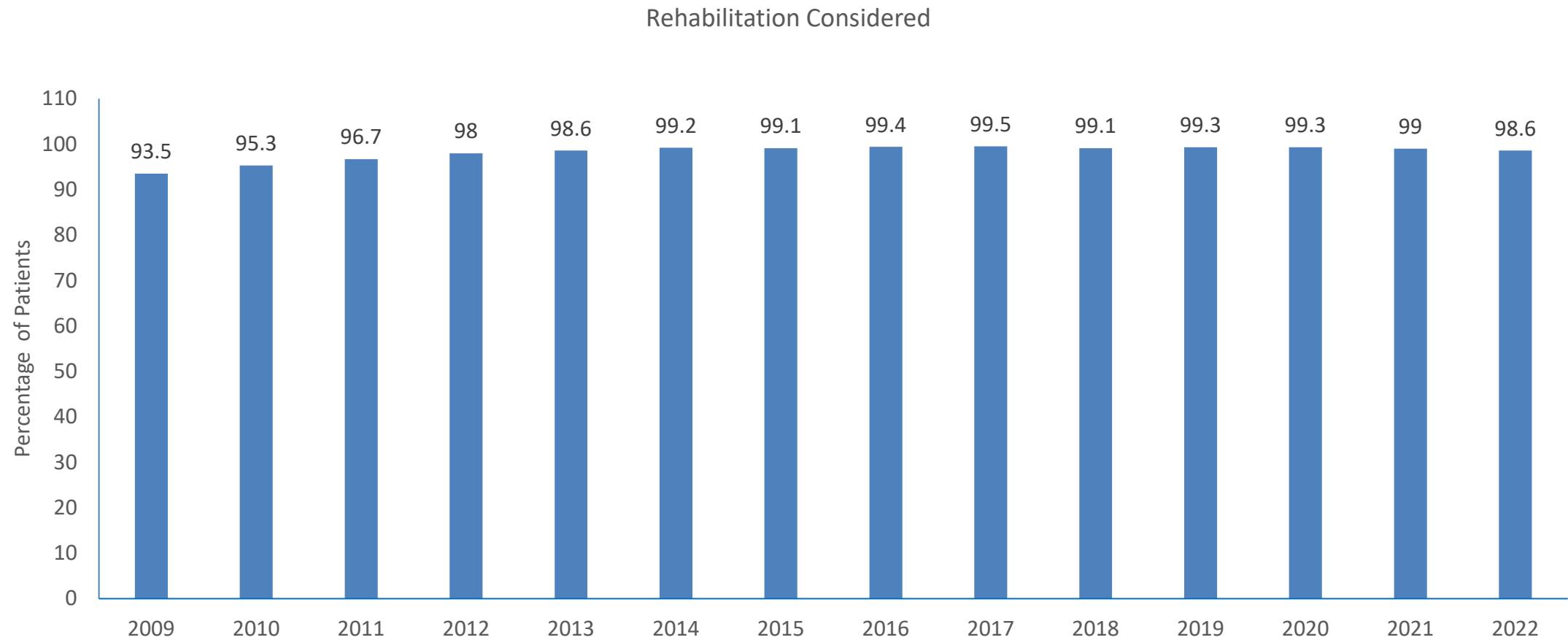


Smoking Cessation

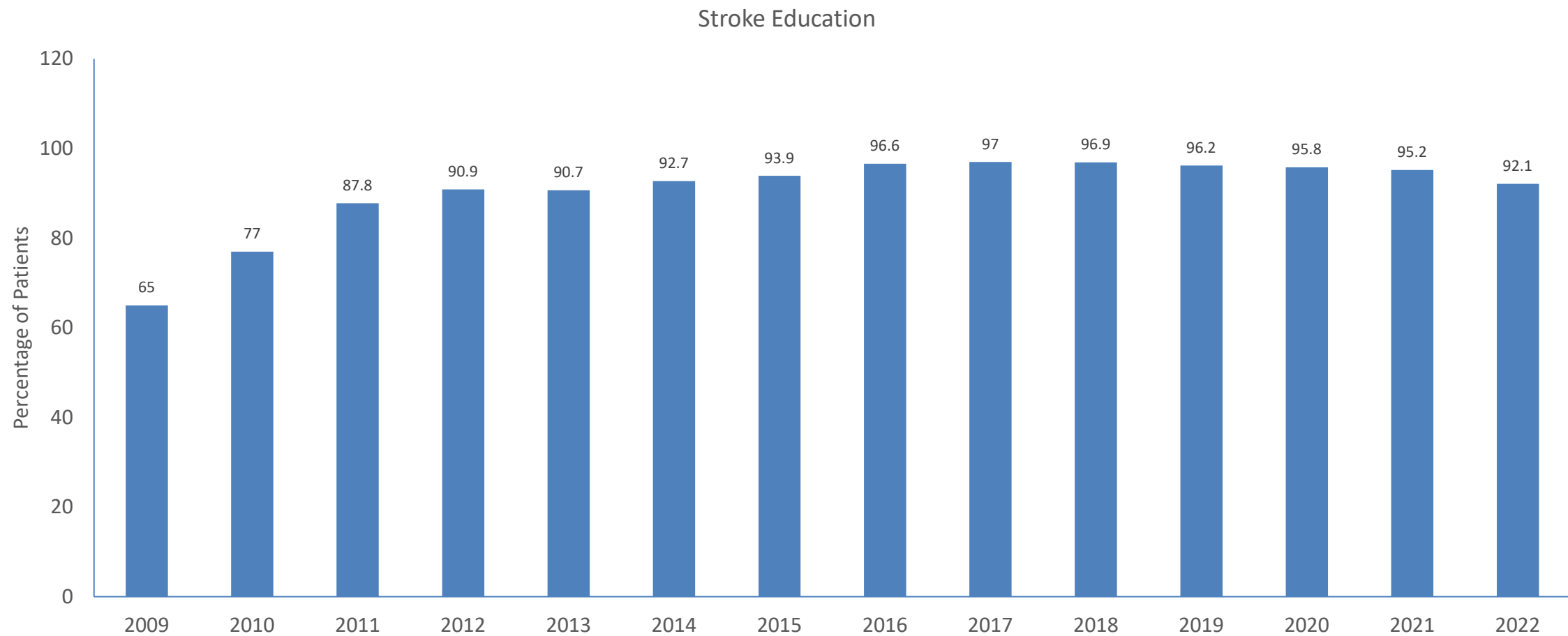
Counseled for Smoking Cessation



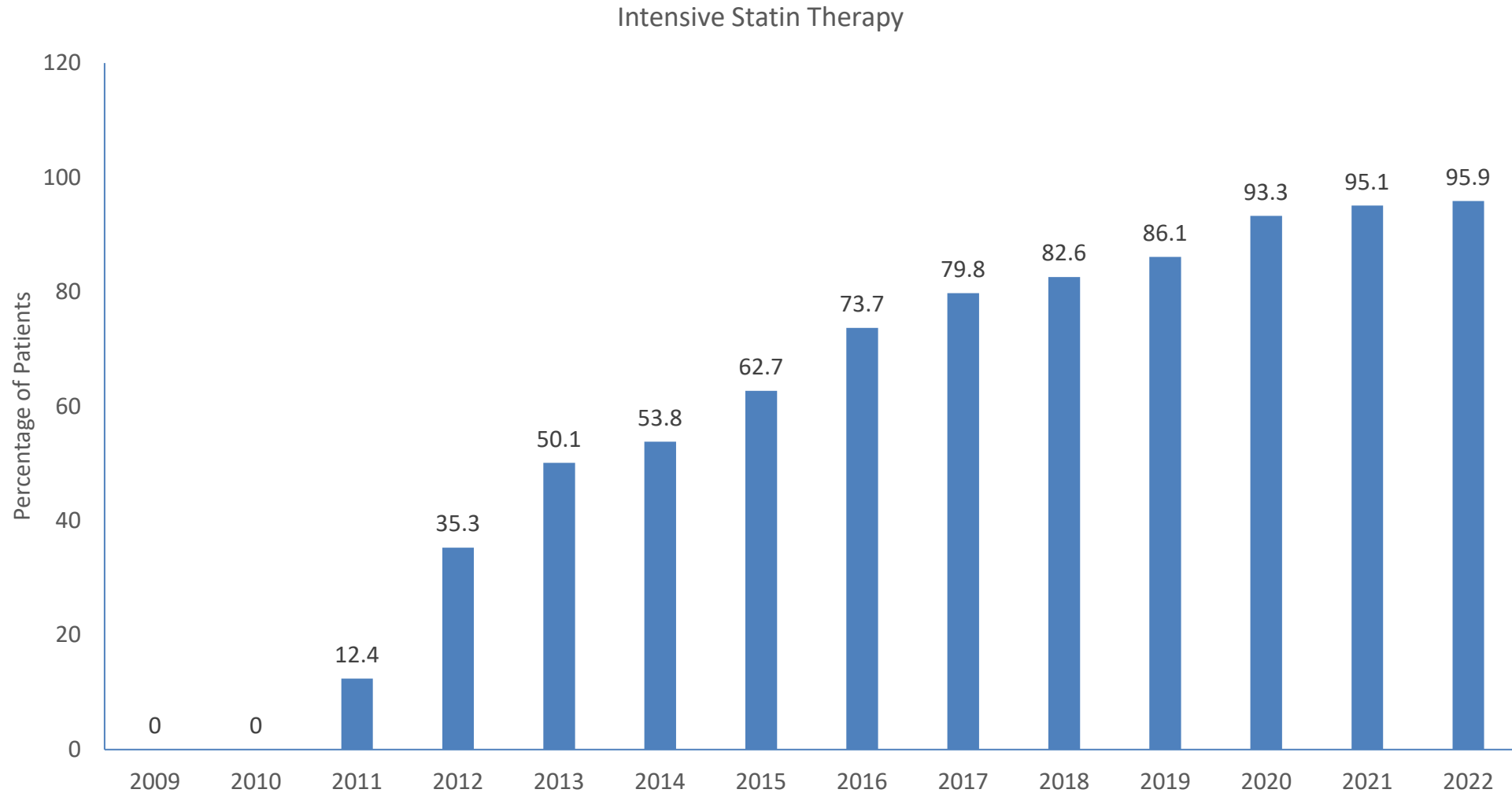
Patients Assessed for Rehabilitation Services



Stroke Education

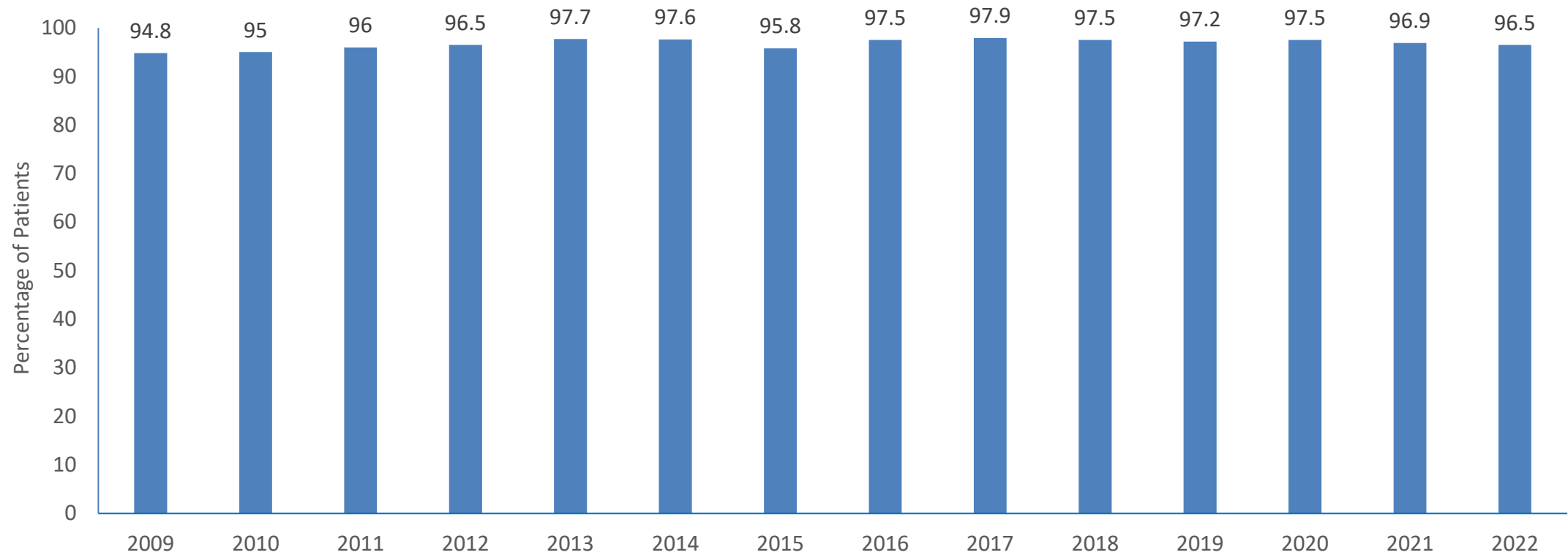


Intensive Statin Therapy

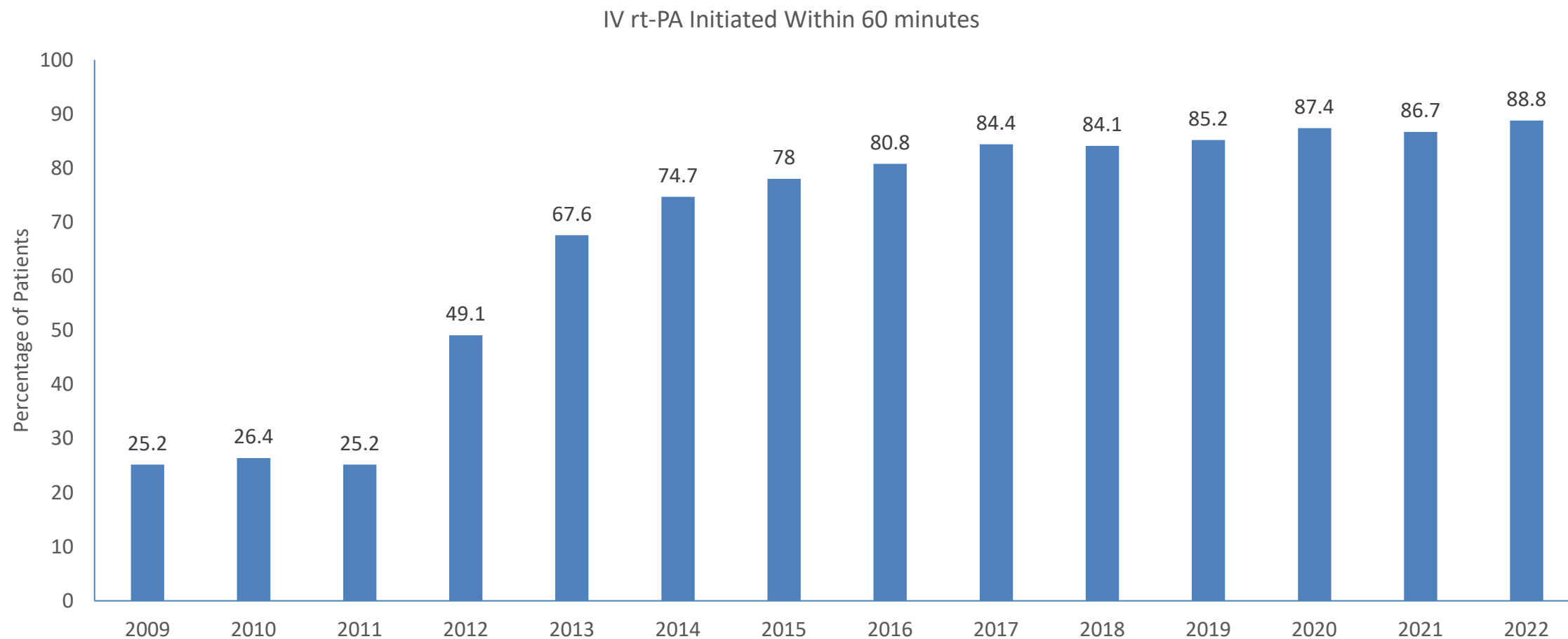


Antithrombotic Therapy By the End of Day Two in Hospital

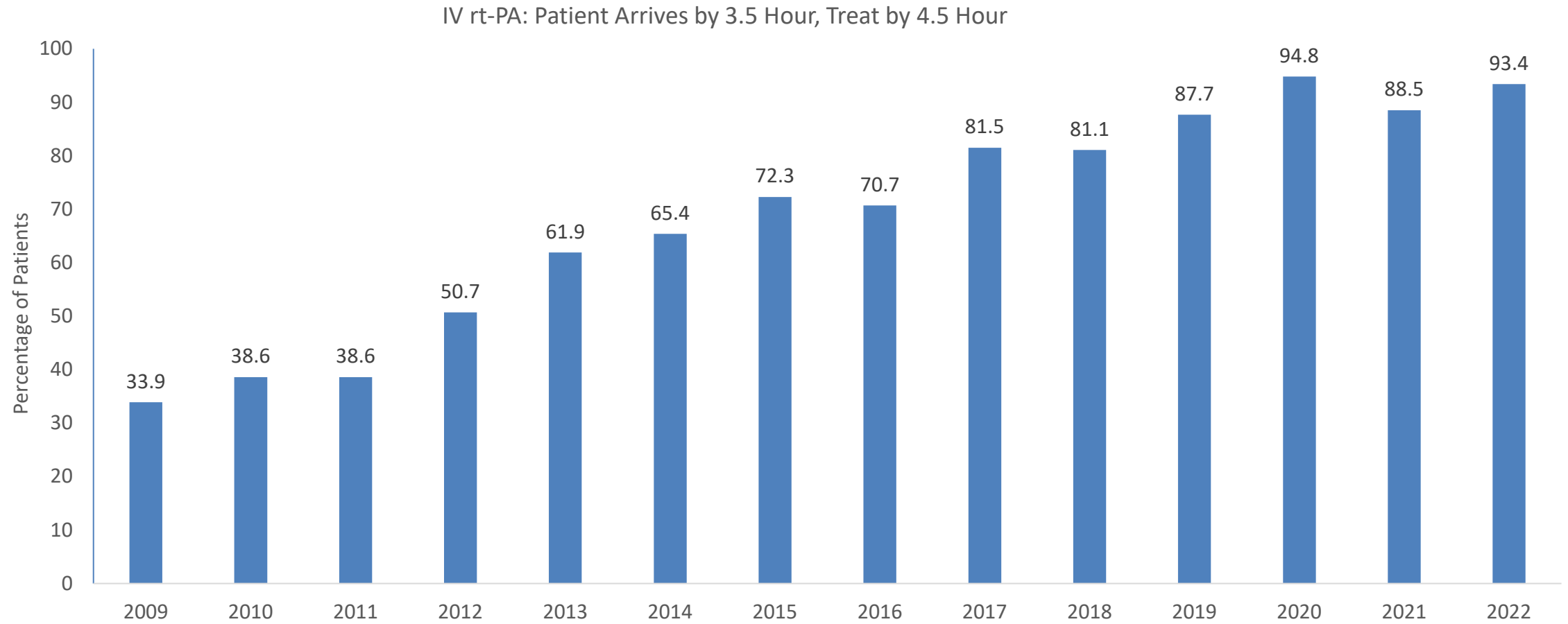
Antithrombotic Therapy By the End of Day Two in Hospital



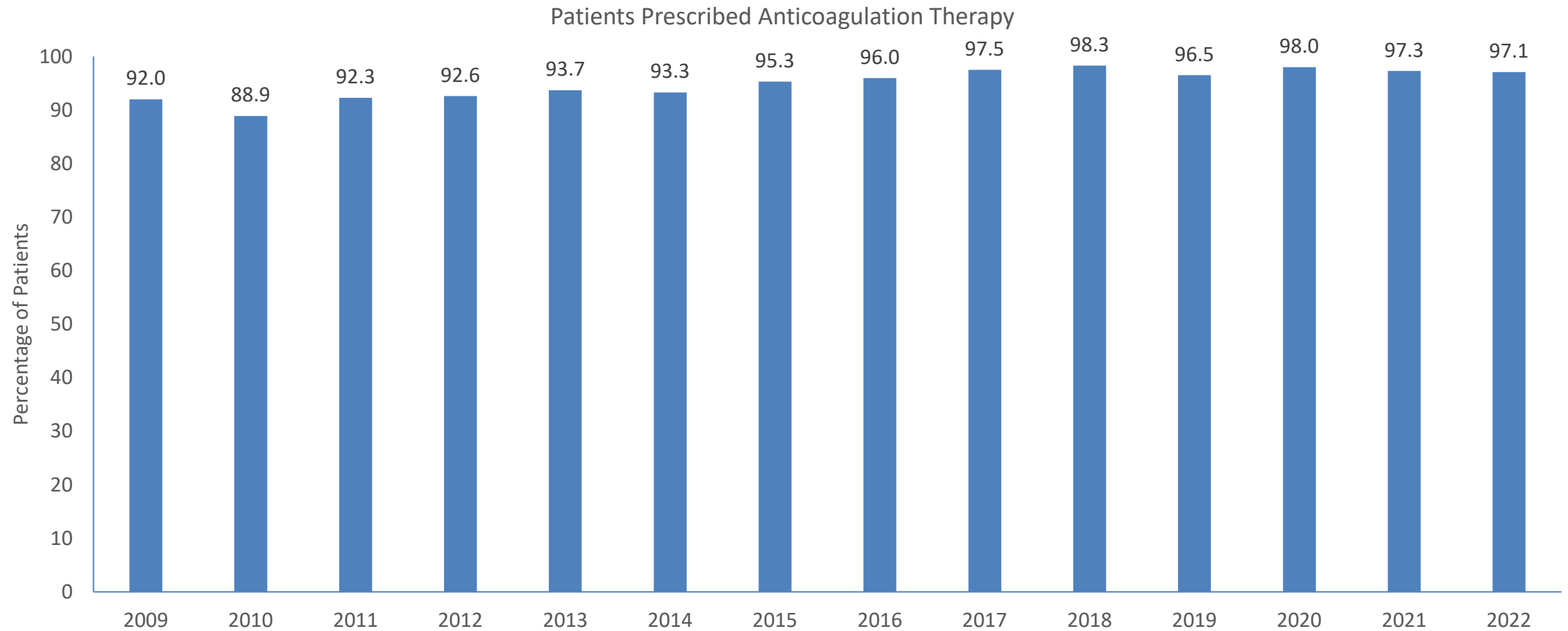
IV rt-PA Initiated within 60 Minutes



IV rt-PA: Patient Arrives by 3.5 Hour, Treat by 4.5 Hour

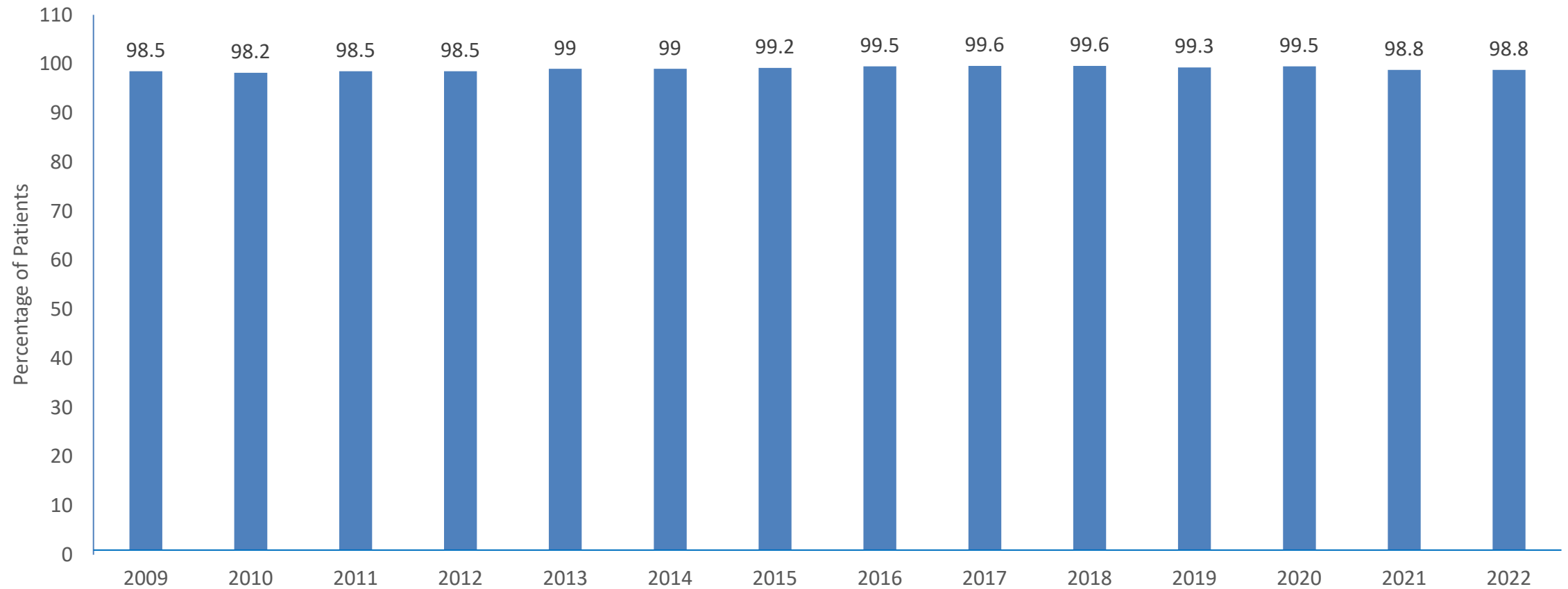


Patients Prescribed Anticoagulation Therapy

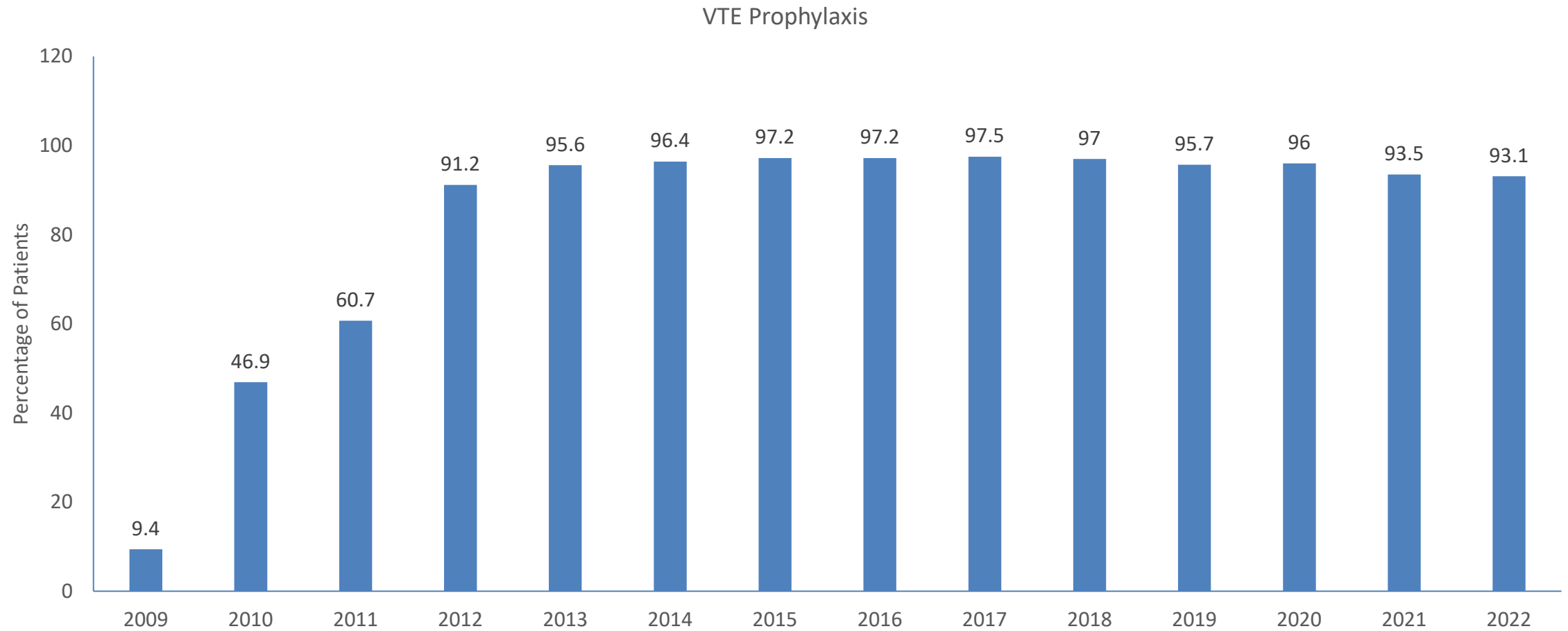


Antithrombotics at Discharge

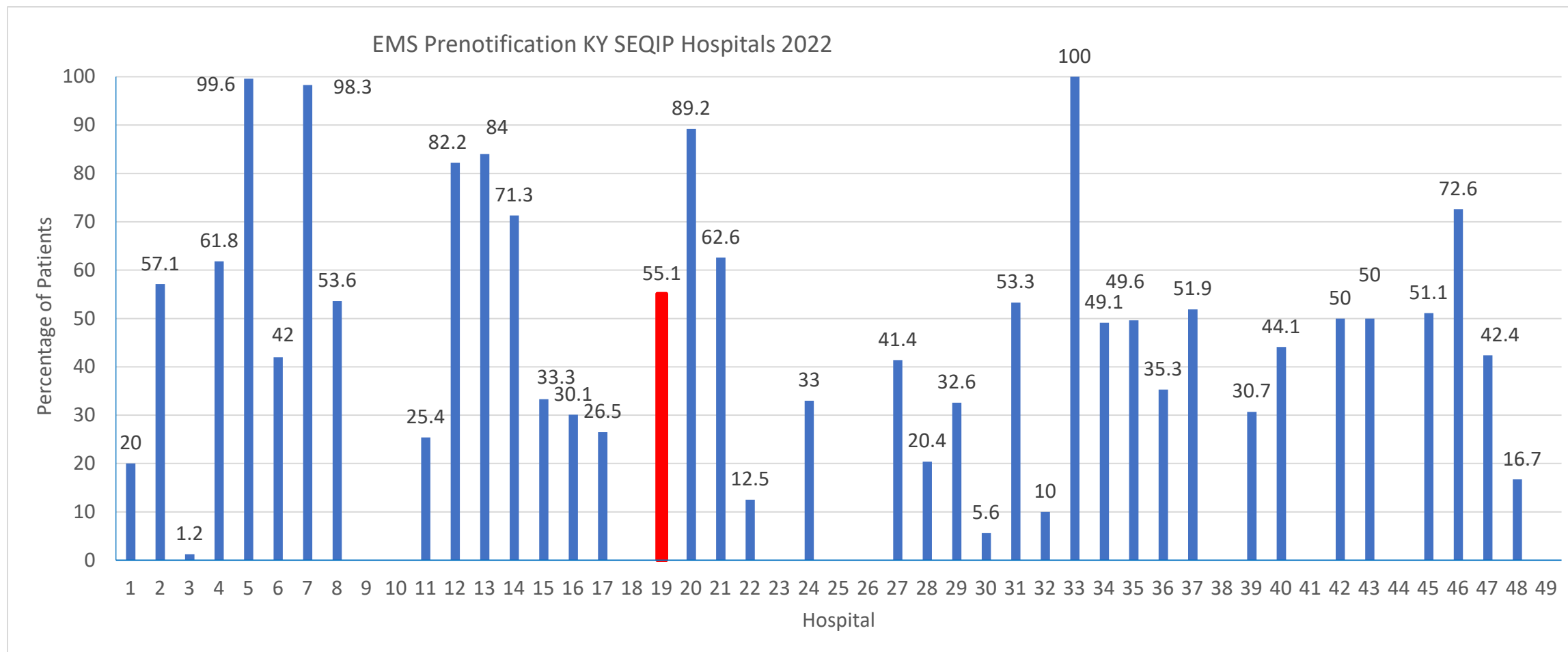
Patients Prescribed Antithrombotics at Discharge



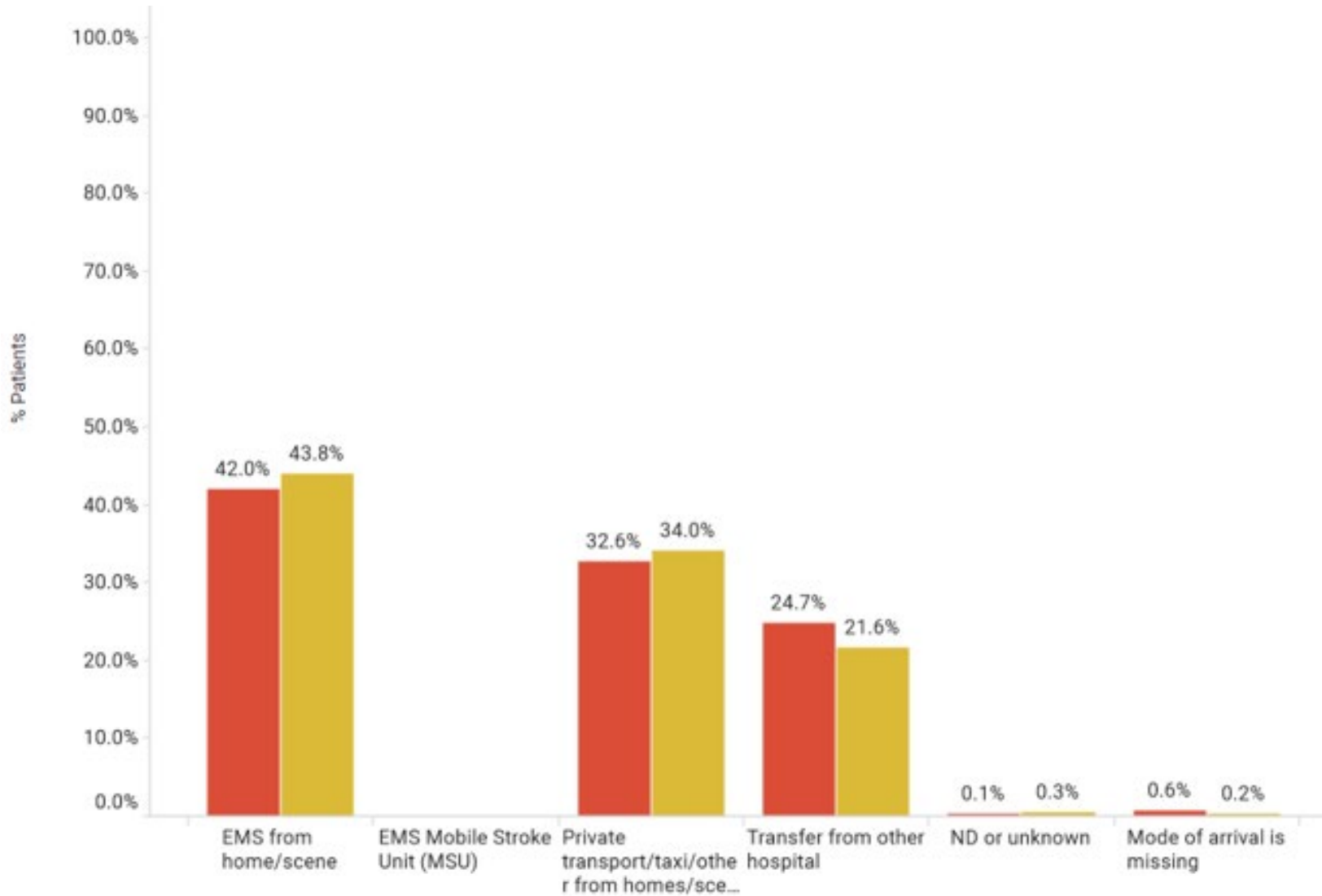
VTE Prophylaxis



EMS Pre-notification by Hospital, 2022

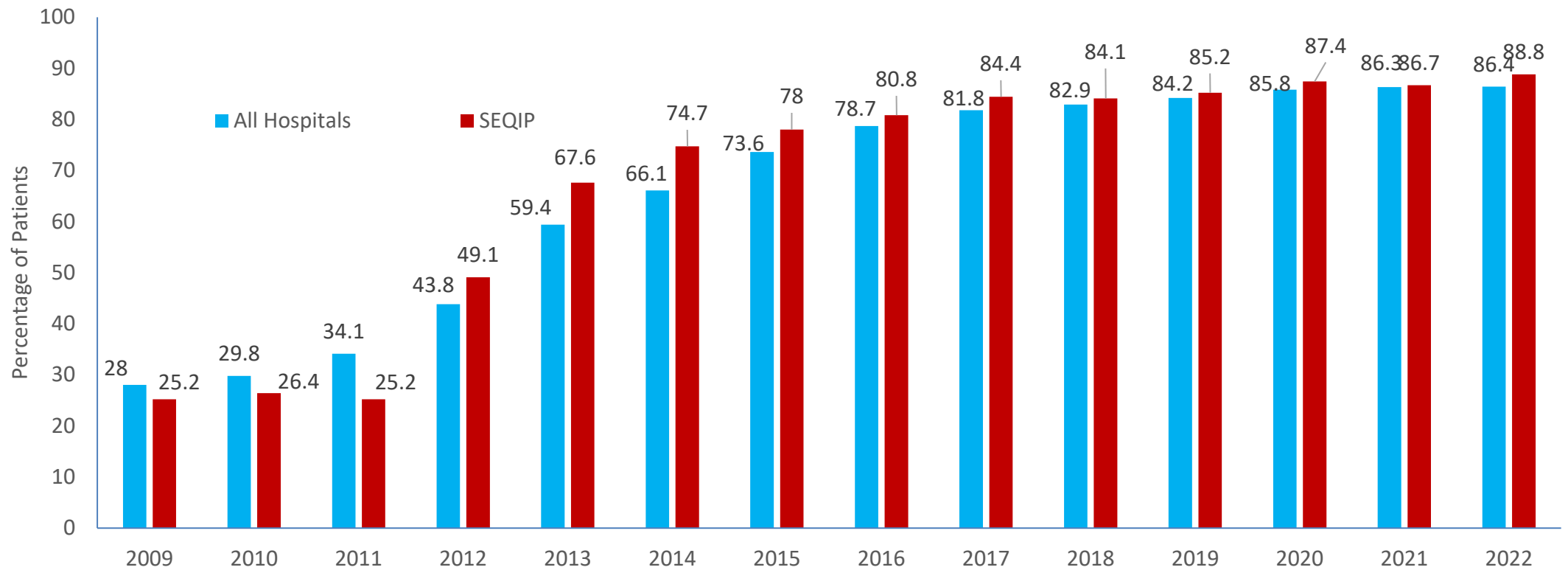


Arrival Mode, 2021-2022

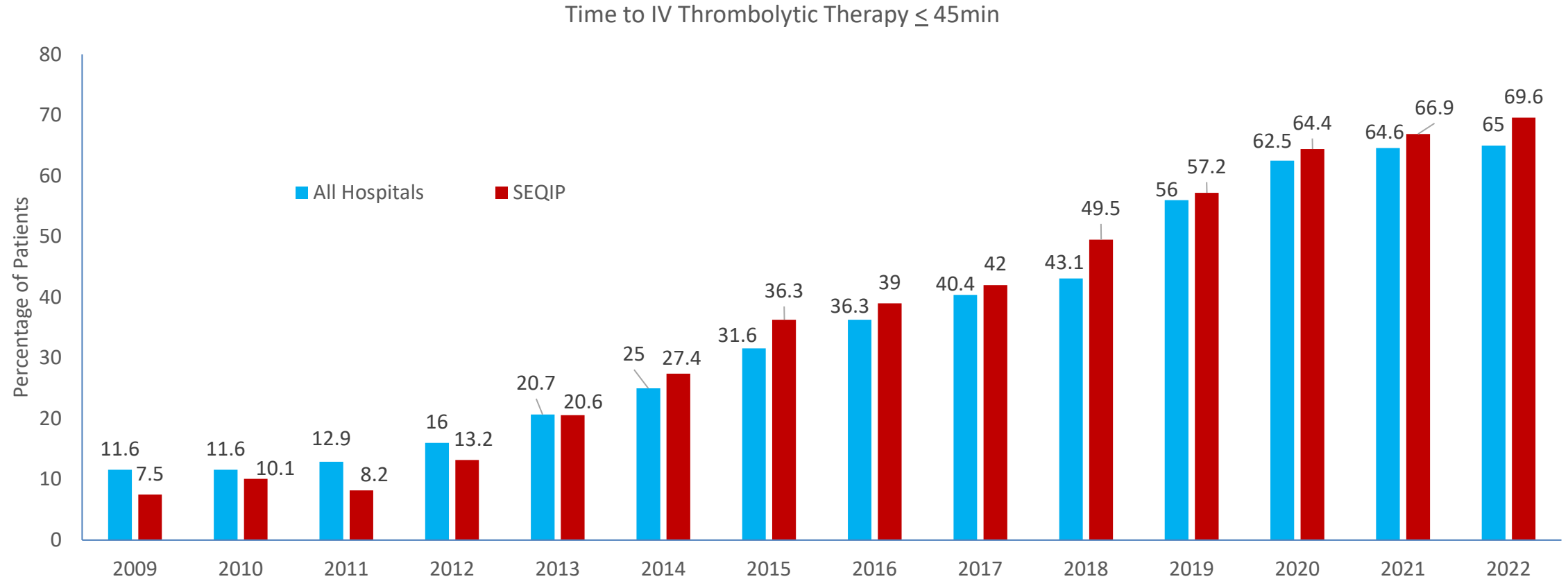


Time to IV Thrombolytic Therapy ≤ 60 min (DTN ≤ 60 min)

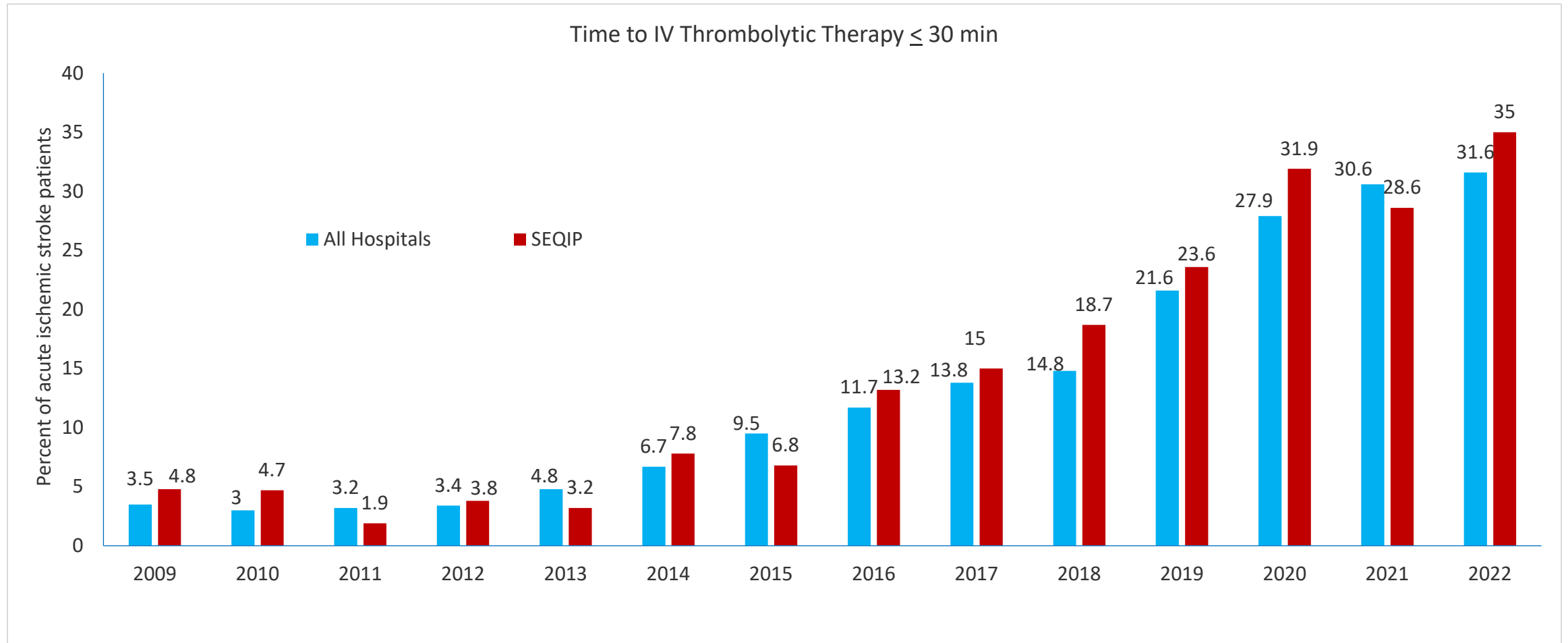
Time to IV Thrombolytic Therapy - 60 min



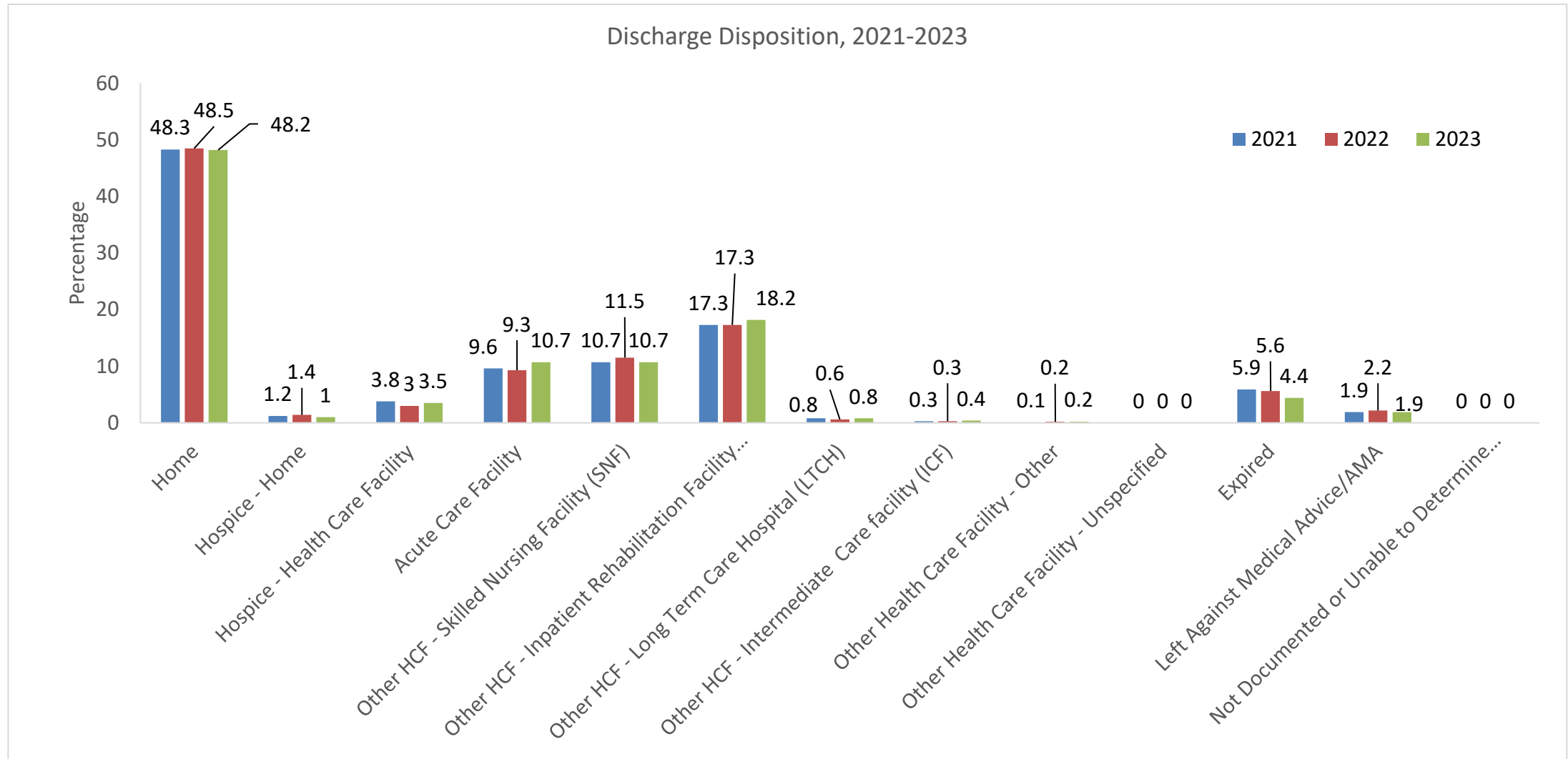
Time to IV Thrombolytic Therapy ≤ 45 min (DTN ≤ 45 min)



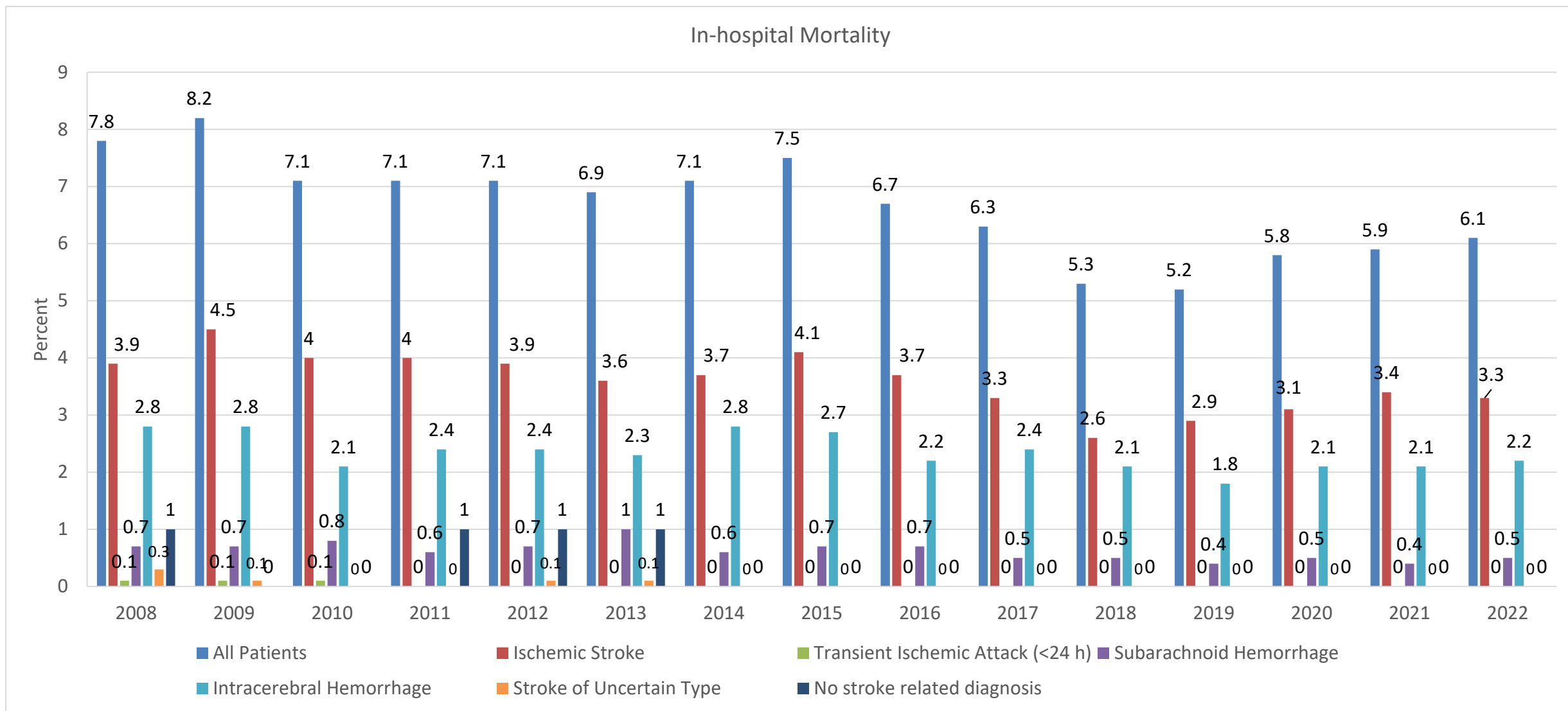
Time to IV Thrombolytic Therapy ≤ 30 min (DTN ≤ 30 min)



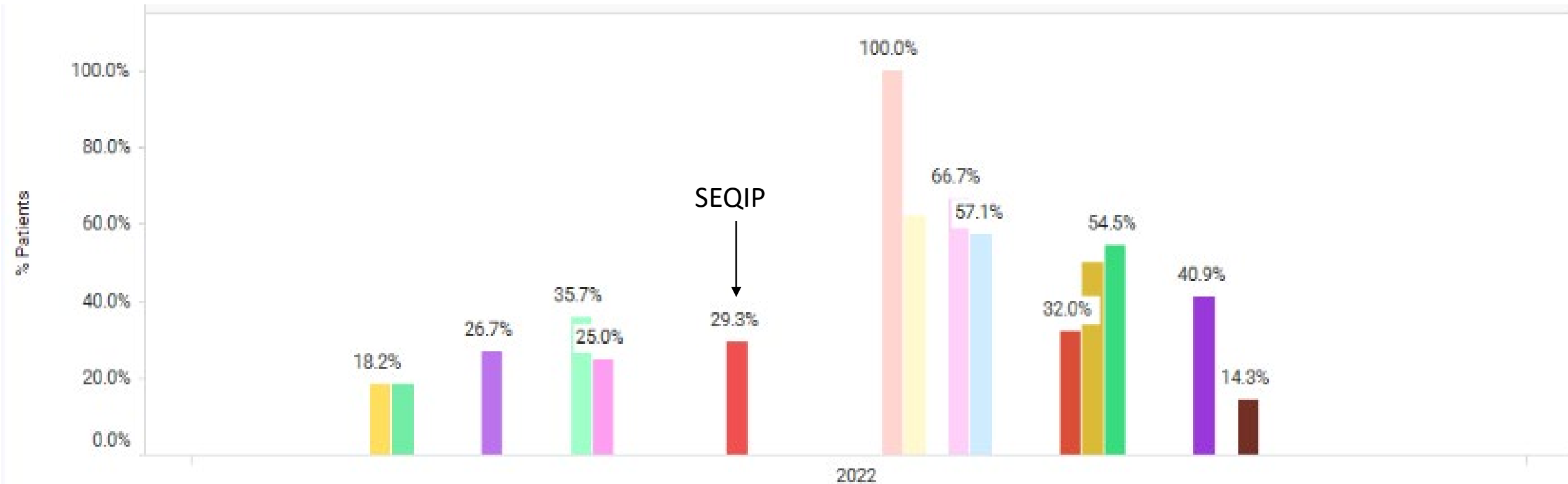
Discharge Disposition 2021-2023



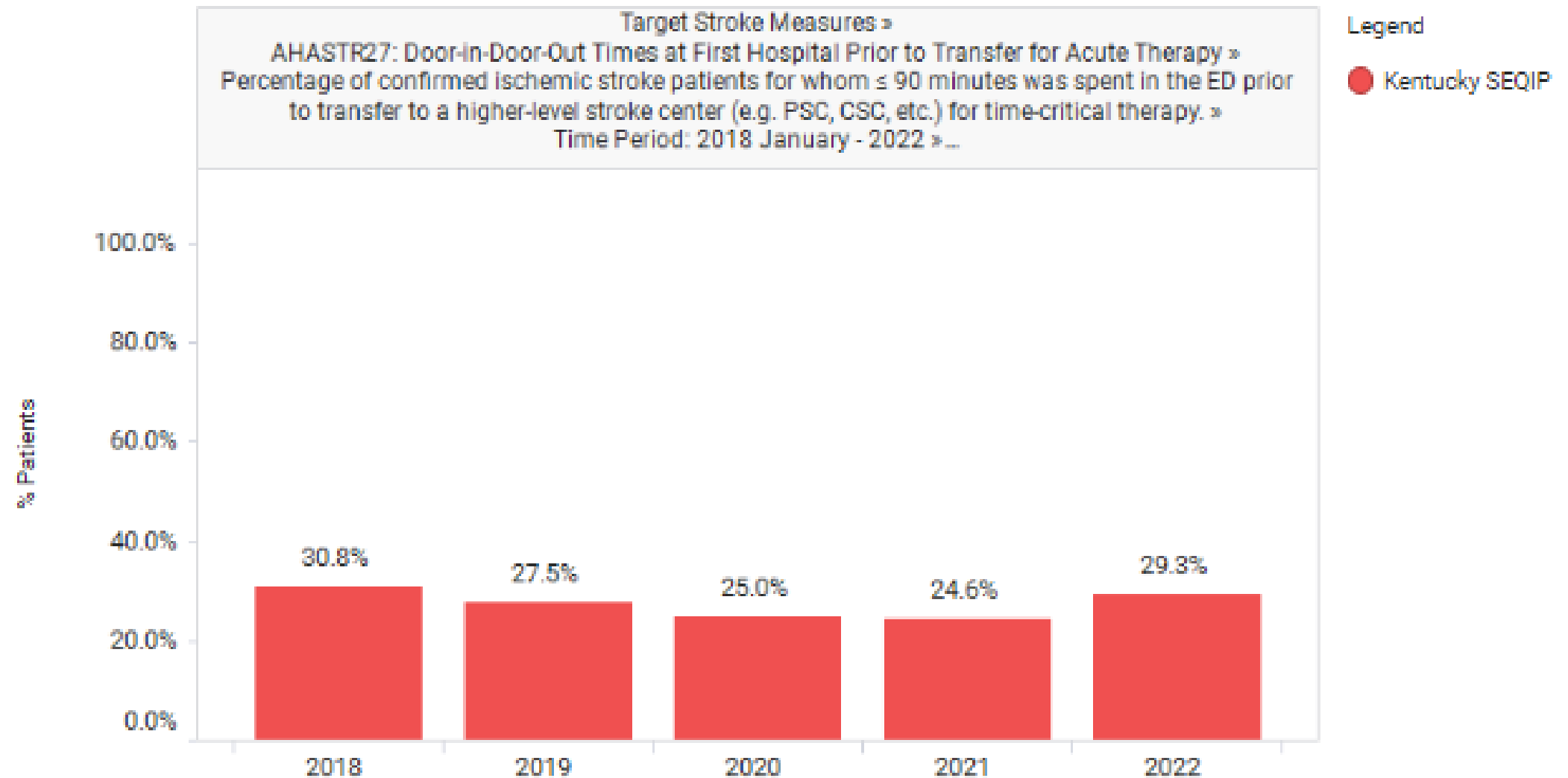
In-hospital Mortality by Stroke Type, 2008-2022



Percentage of patients with DIDO Times at First Hospital ≤ 90 mins Prior to Transfer for Acute Therapy, 2022



DIDO, 2018-2022



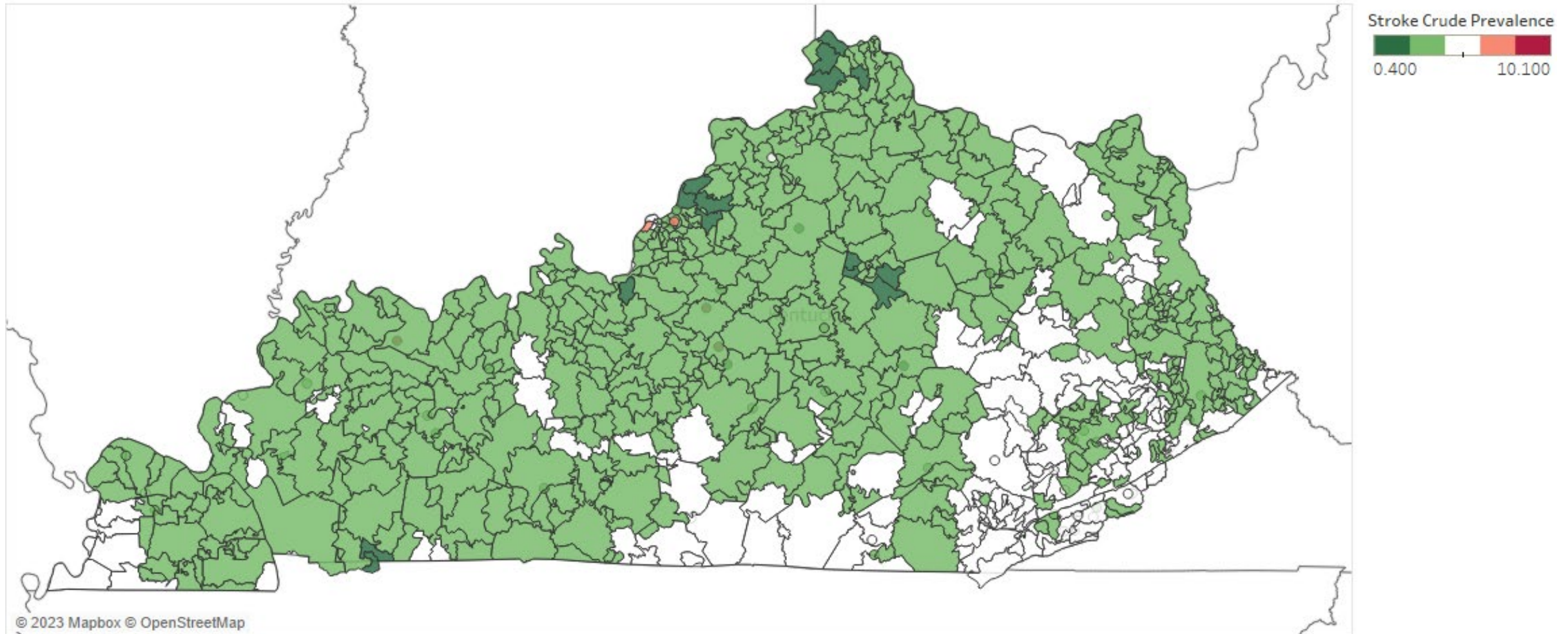
ZCTA

- ZIP Code Tabulation Area
- ZIP Code USPS
- ZCTA Census Bureau
- General representation of ZIP codes assigned to census blocks
- In most cases, ZCTA = ZIP Codes
- No ZCTA for large unpopulated areas, single or very few addresses, or areas with only businesses



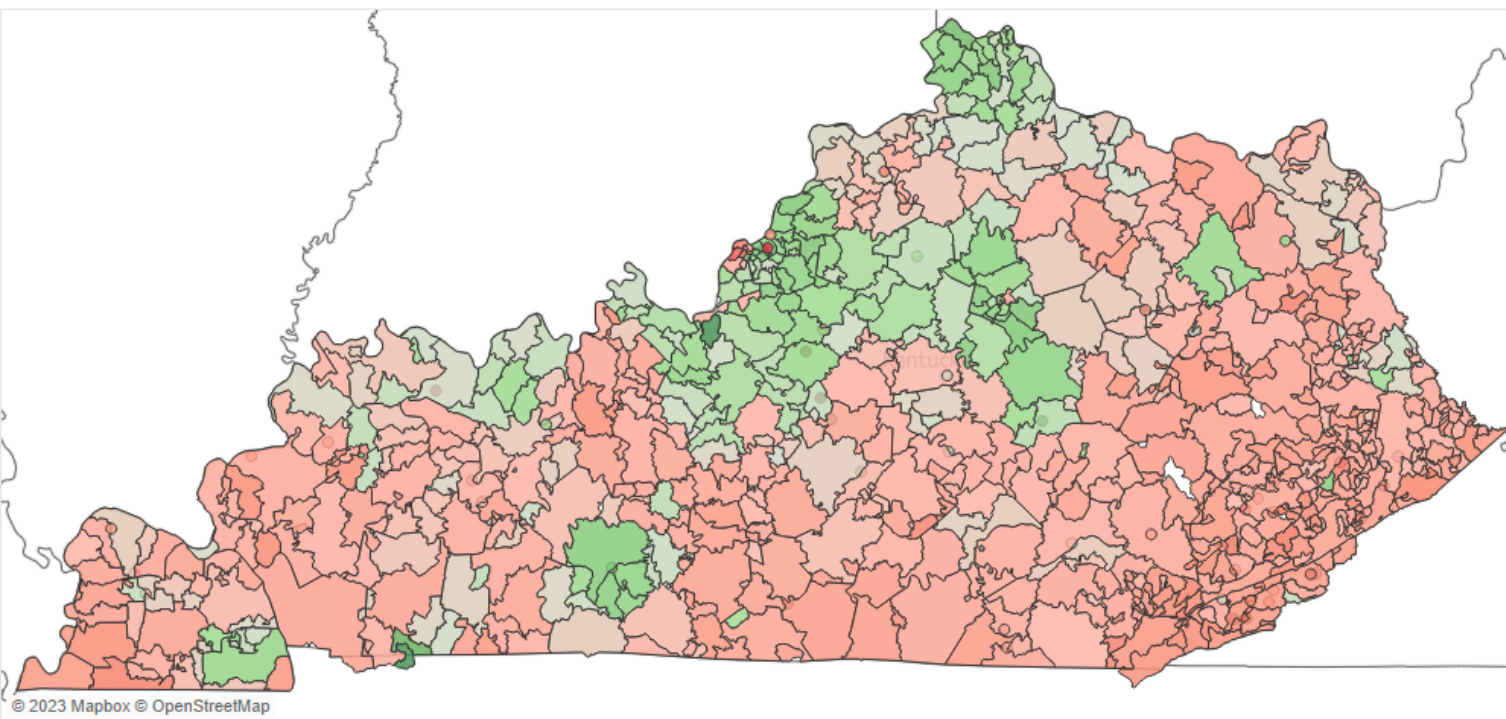
Stroke Crude Prevalence by ZCTA

Stroke Crude Prevalence by ZCTA



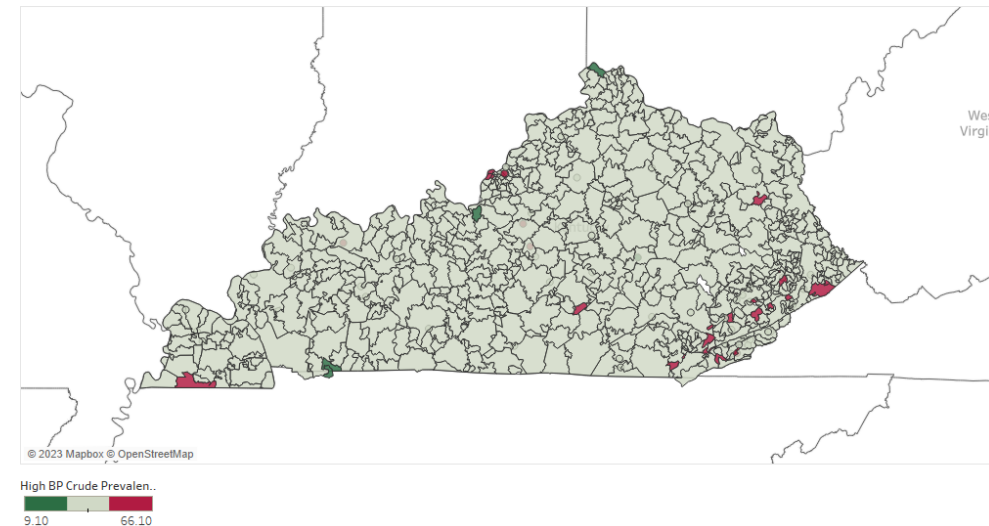
High BP Crude Prevalence by ZCTA

High BP Crude Prevalence by ZCTA



High BP Crude Prevalen..
9.10 66.10

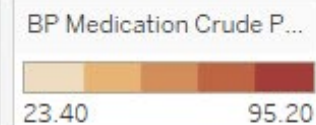
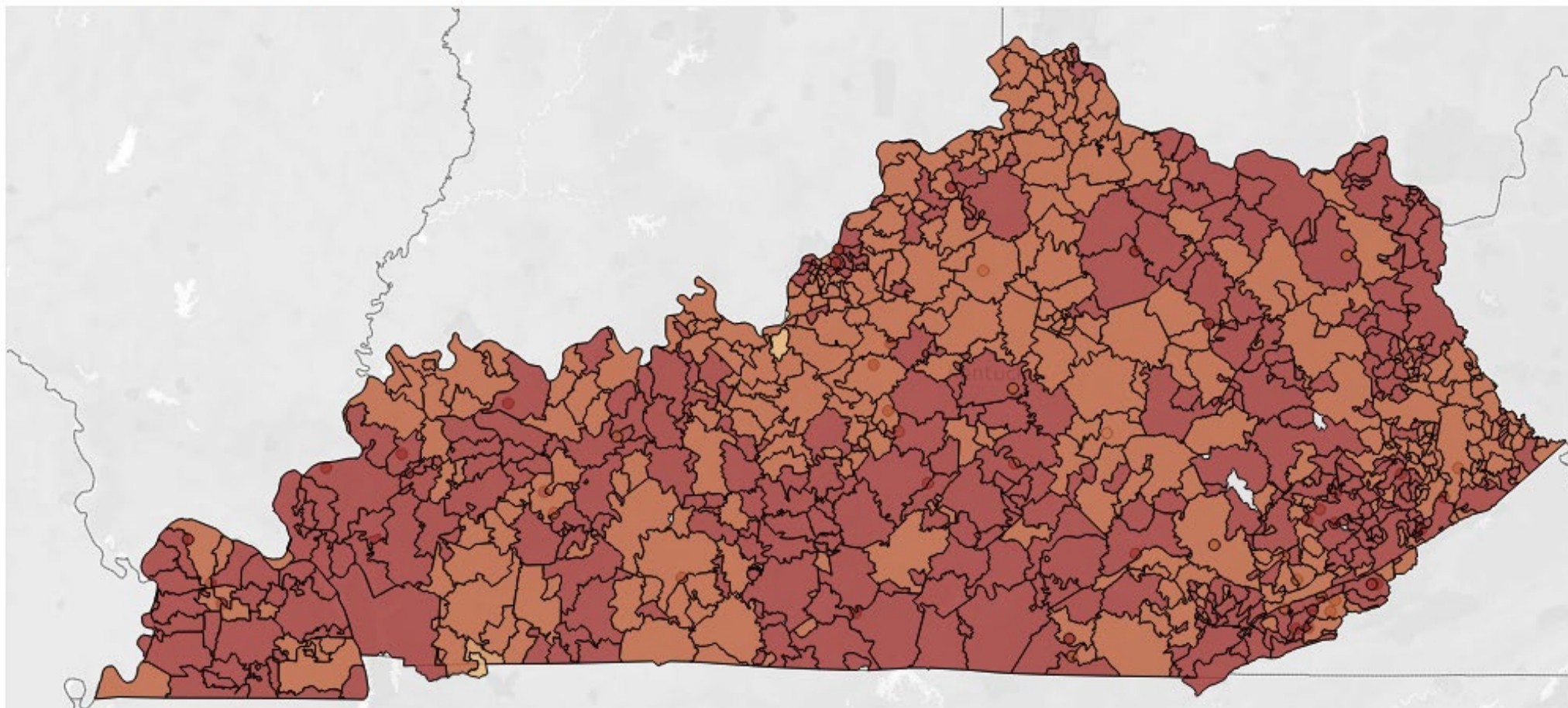
High BP Crude Prevalence by ZCTA



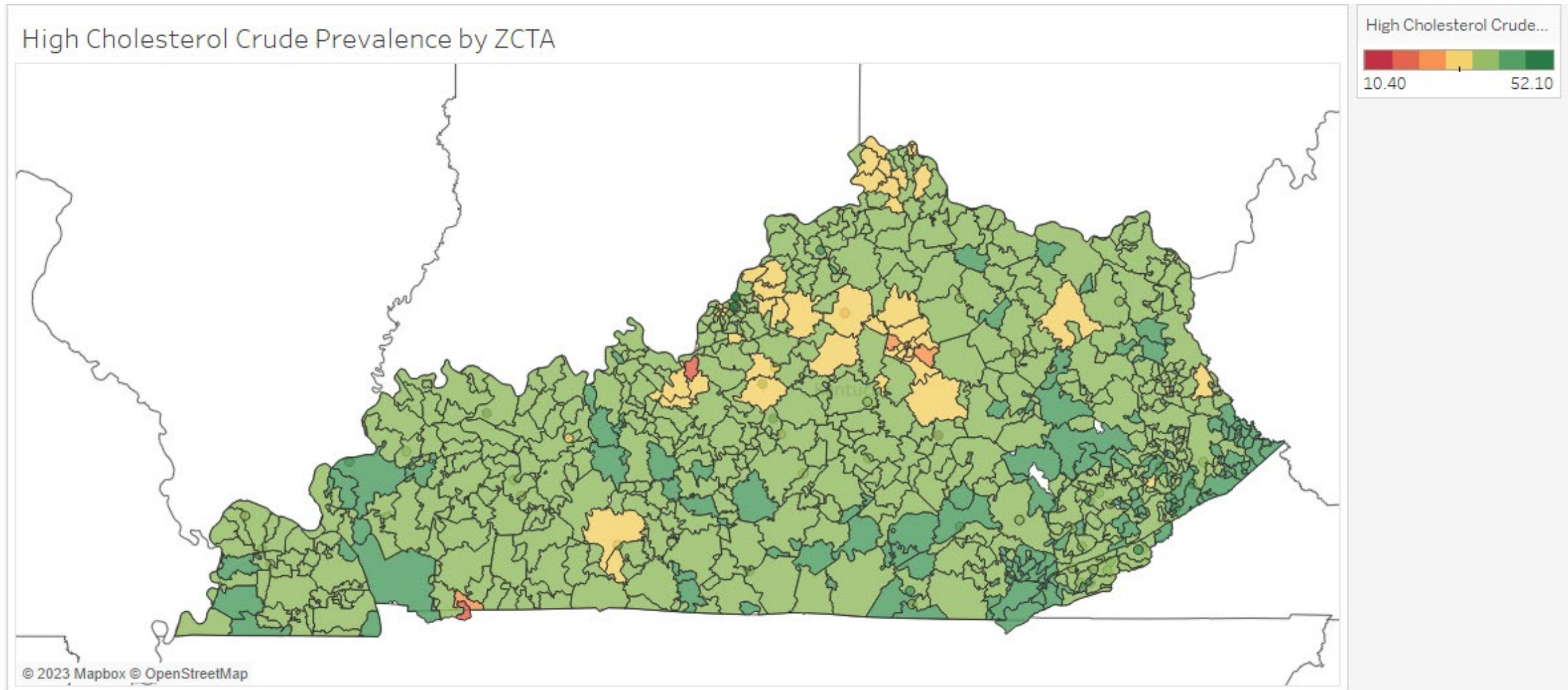
High BP Crude Prevalen..
9.10 66.10

BP Medication Crude Prevalence by ZCTA

BP Medication Crude Prevalence by ZCTA

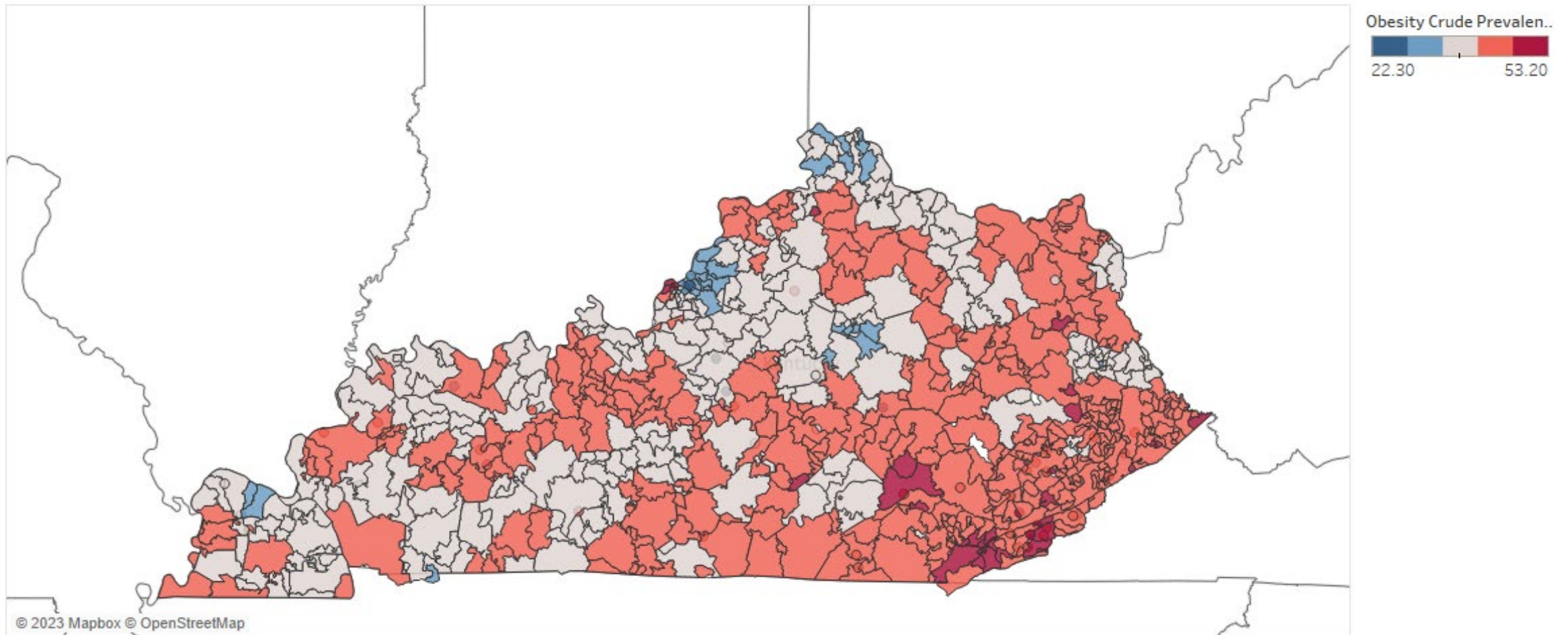


High Cholesterol Crude Prevalence by ZCTA



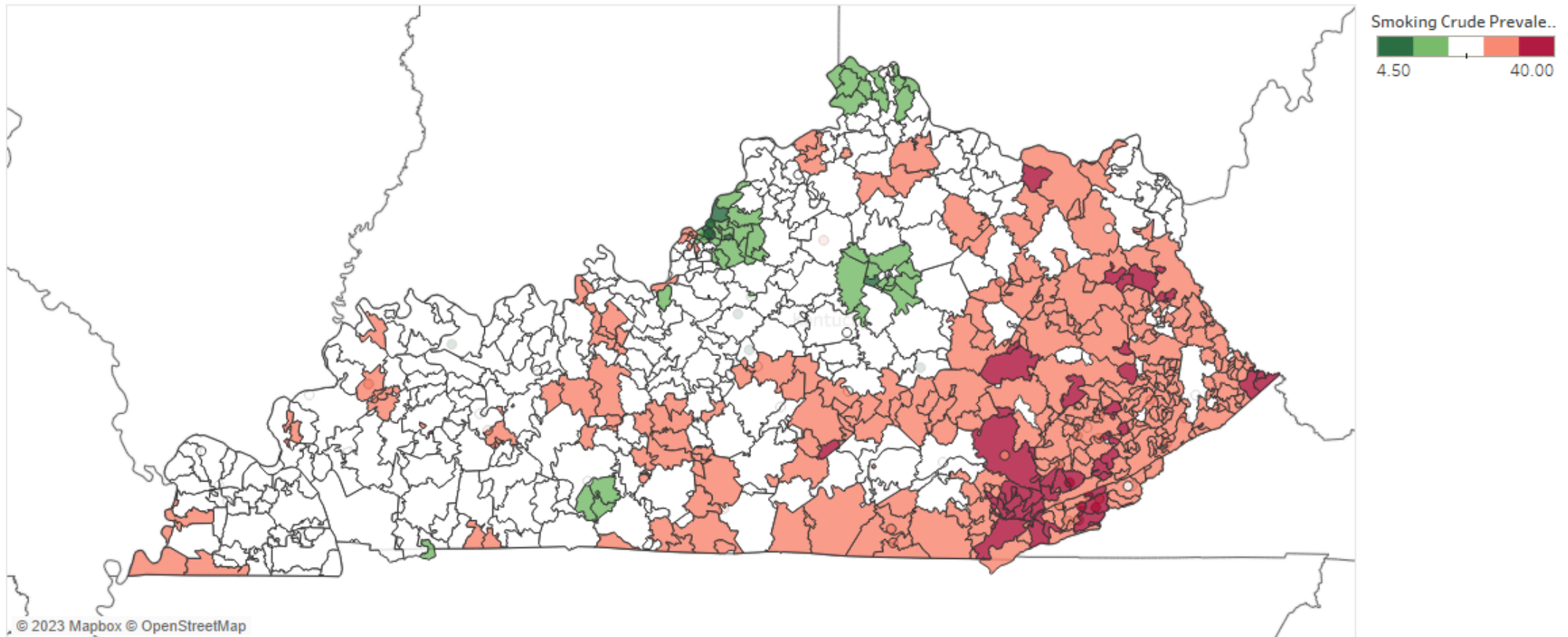
Obesity Crude Prevalence by ZCTA

Obesity Crude Prevalence by ZCTA



Smoking Crude Prevalence by ZCTA

Smoking Crude Prevalence by ZCTA



Inpatient Hospital Charges for Cerebrovascular Disease* by Patient Area Development District, 2022

ADD	2022			
	Cases	ALOS	Avg Charge	Total Charges
01 - Purchase	677	5.33	59,131.04	\$40,031,713.01
02 - Pennyrile	503	5.70	63,759.27	\$32,070,913.43
03 - Green River	534	7.04	60,310.64	\$32,205,881.14
04 - Barren River	957	8.05	65,972.78	\$63,135,950.72
05 - Lincoln Trail	992	7.26	88,286.81	\$87,580,520.35
06 - KIPDA	3,328	7.90	102,309.75	\$340,486,864.12
07 - Northern Kentucky	1,447	7.26	39,972.25	\$57,839,851.79
08 - Buffalo Trace	151	6.83	78,426.11	\$11,842,341.88
09 - Gateway	250	6.10	68,183.27	\$17,045,817.96
10 - Fivco	416	5.41	72,325.35	\$30,087,344.93
11 - Big Sandy	517	7.20	86,985.54	\$44,971,524.43
12 - Kentucky River	429	8.13	85,721.35	\$36,774,459.86
13 - Cumberland Valley	775	7.51	90,053.80	\$69,791,693.59
14 - Lake Cumberland	782	7.70	97,397.68	\$76,164,986.26
15 - Bluegrass	2,527	7.76	90,868.53	\$229,624,776.31
Out of State	1,500	7.06	101,401.57	\$152,102,349.67
Total	15,785	7.35	83,735.00	\$1,321,756,989.45

*Primary ICD-10 diagnosis Code (any): I60-I69



Thank you!