

Stroke Encounter Quality Improvement Project Annual Meeting 2021



Topics

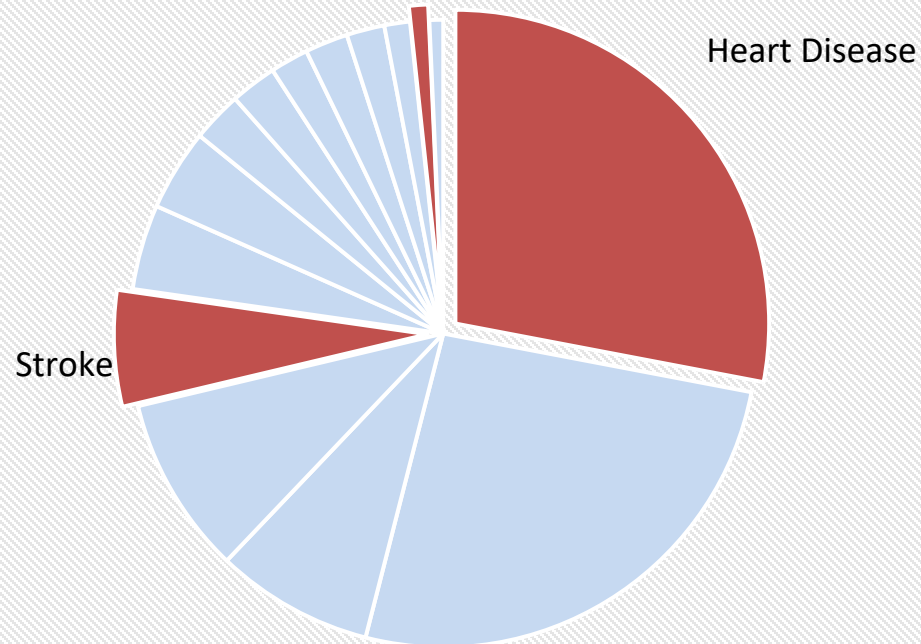
- State level data
- Registry data – 2020
- EMS
- COVID



Leading causes of death in Kentucky, 2019

15 Leading Causes of Death in Kentucky, 2019

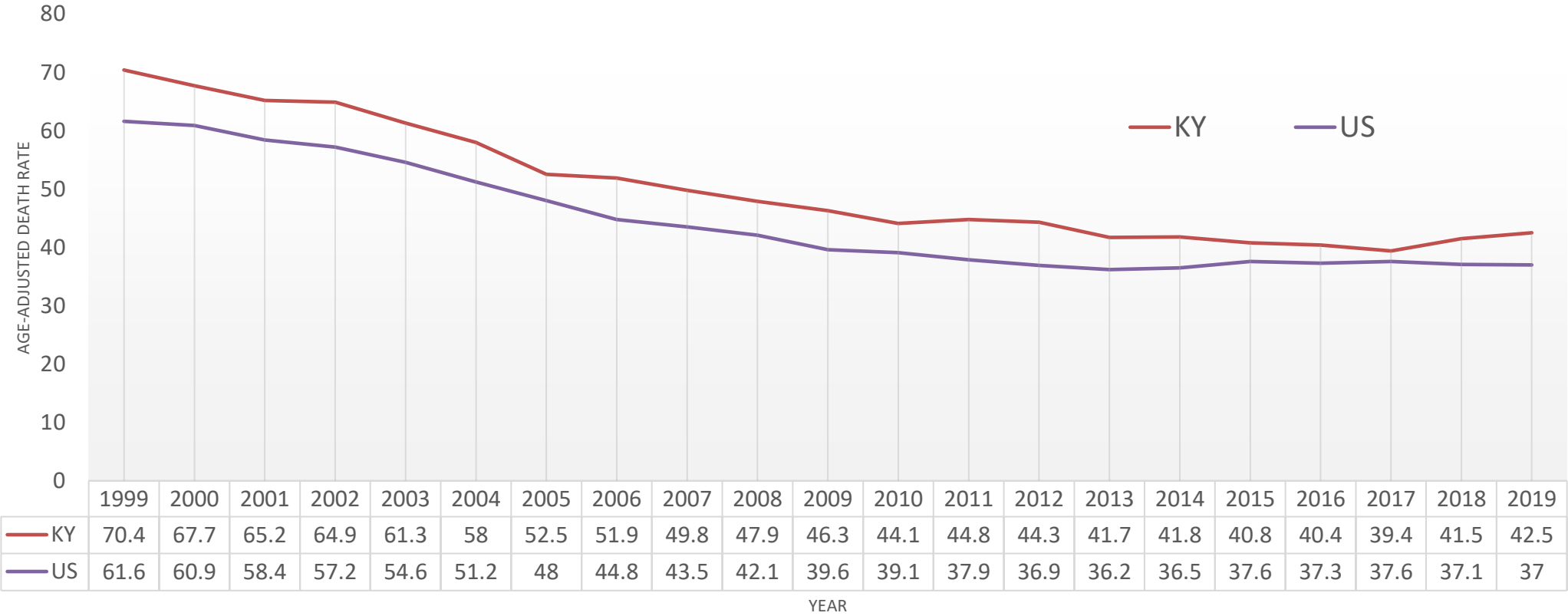
Essential hypertension and hypertensive renal disease →



15 Leading causes of Death in Kentucky, 2019	Age Adjusted Death Rate	Number of Deaths
Heart Disease	196.4	10742
Cancer	176.4	9975
Accidents (unintentional injuries)	68.1	3121
Chronic lower respiratory diseases	62.4	3517
Cerebrovascular diseases (Stroke)	42.5	2296
Alzheimer disease	32.1	1684
Diabetes mellitus	29.1	1611
Nephritis, nephrotic syndrome and nephrosis (Kidney disease)	18.2	997
Septicemia	16.7	918
Suicide	16.5	756
Influenza and pneumonia	15.7	850
Chronic liver disease and cirrhosis	13.7	750
Parkinson disease	9.6	507
Essential hypertension and hypertensive renal disease	7.1	378
Pneumonitis due to solids and liquids	5.1	272

Stroke, Age-adjusted Death Rate, 1999-2019, Kentucky and US

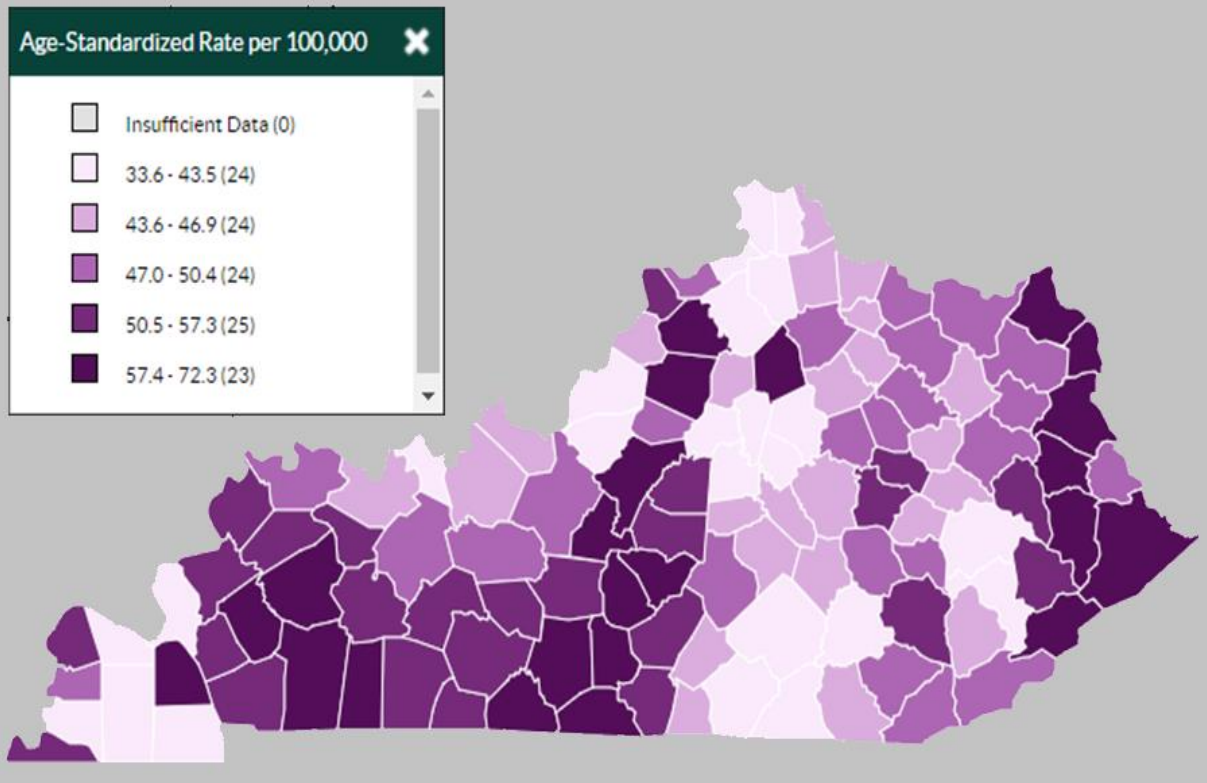
Stroke, Age Adjusted Mortality Rate, 1999-2019
Kentucky and US



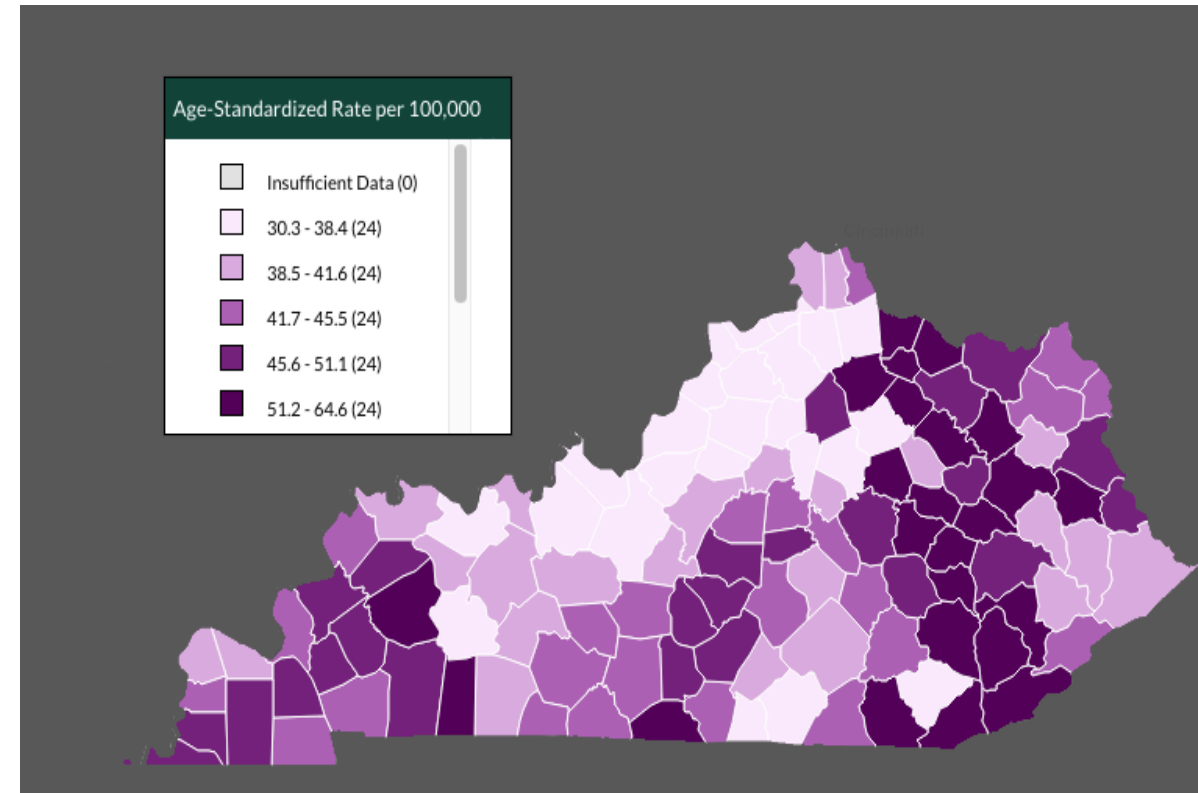
Source: CDC WONDER Online Database. Accessed at <http://wonder.cdc.gov/ucd-icd10.html> on Sept 6, 2021

Stroke, All Ages, All Races, Both Genders, Age Standardized Death rate per 100,000

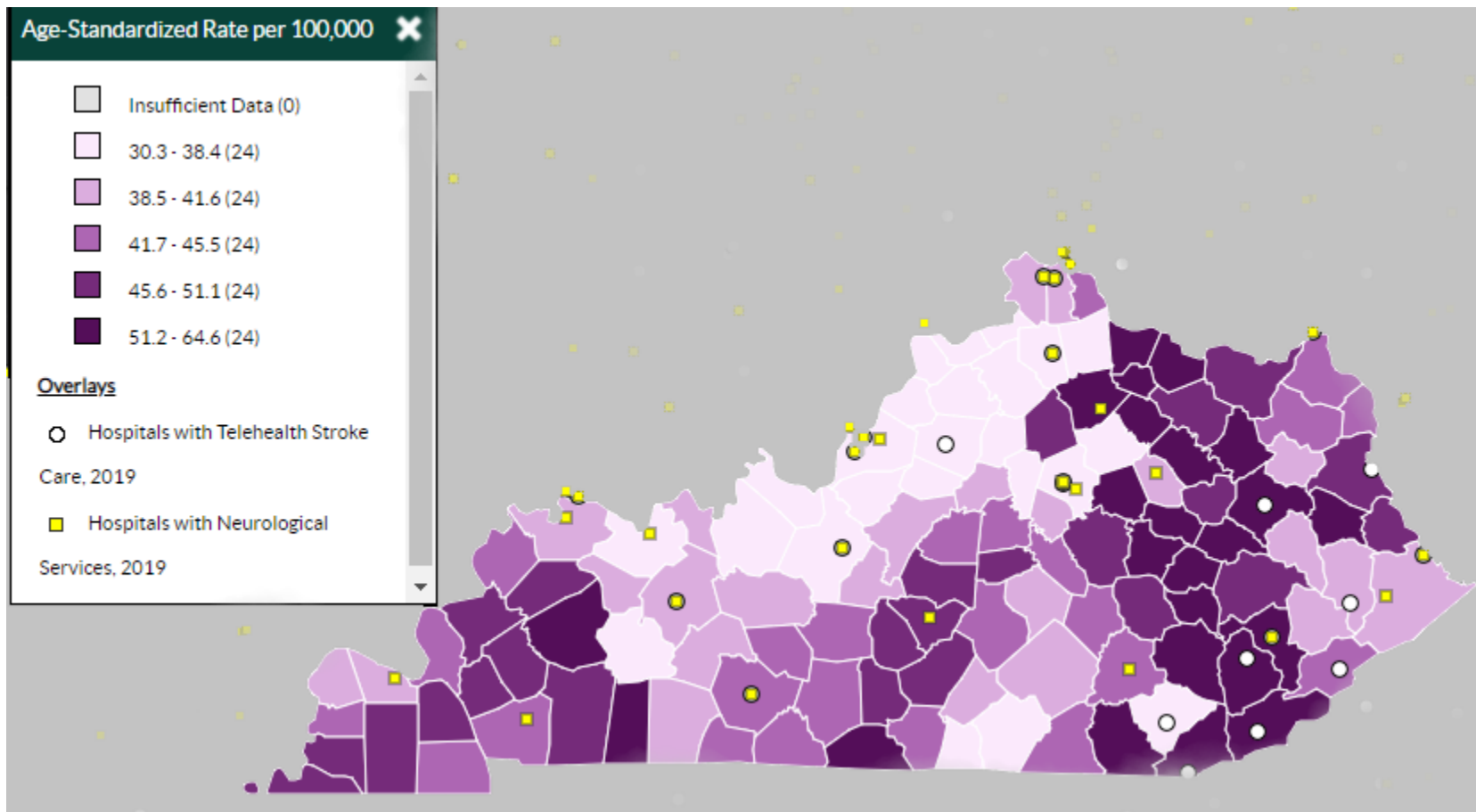
2007-2009



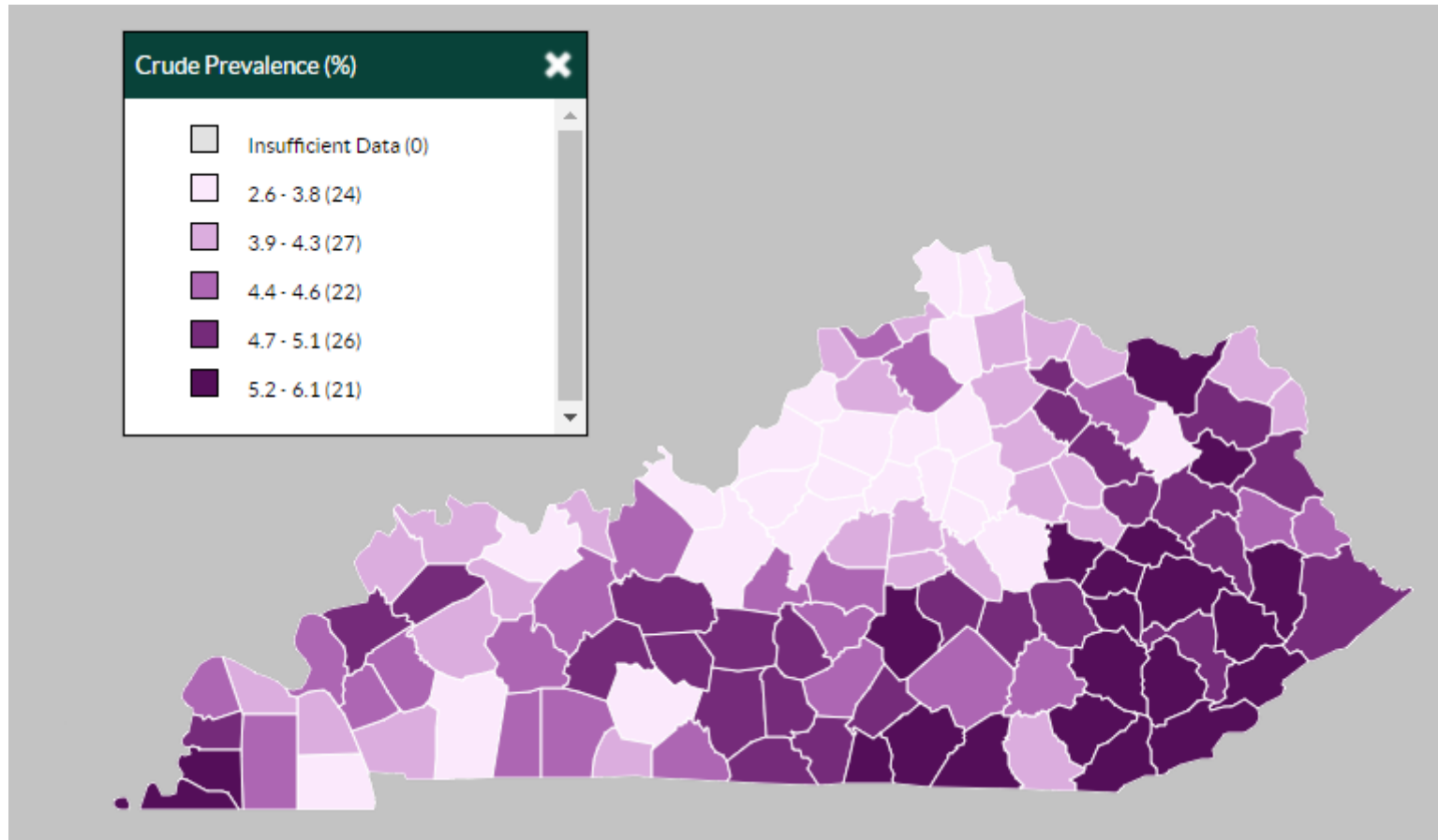
2017-2019



Stroke Death Rate (2017-2019) with overlay of Hospitals having Neurological Services and Telehealth Stroke Care (2019)

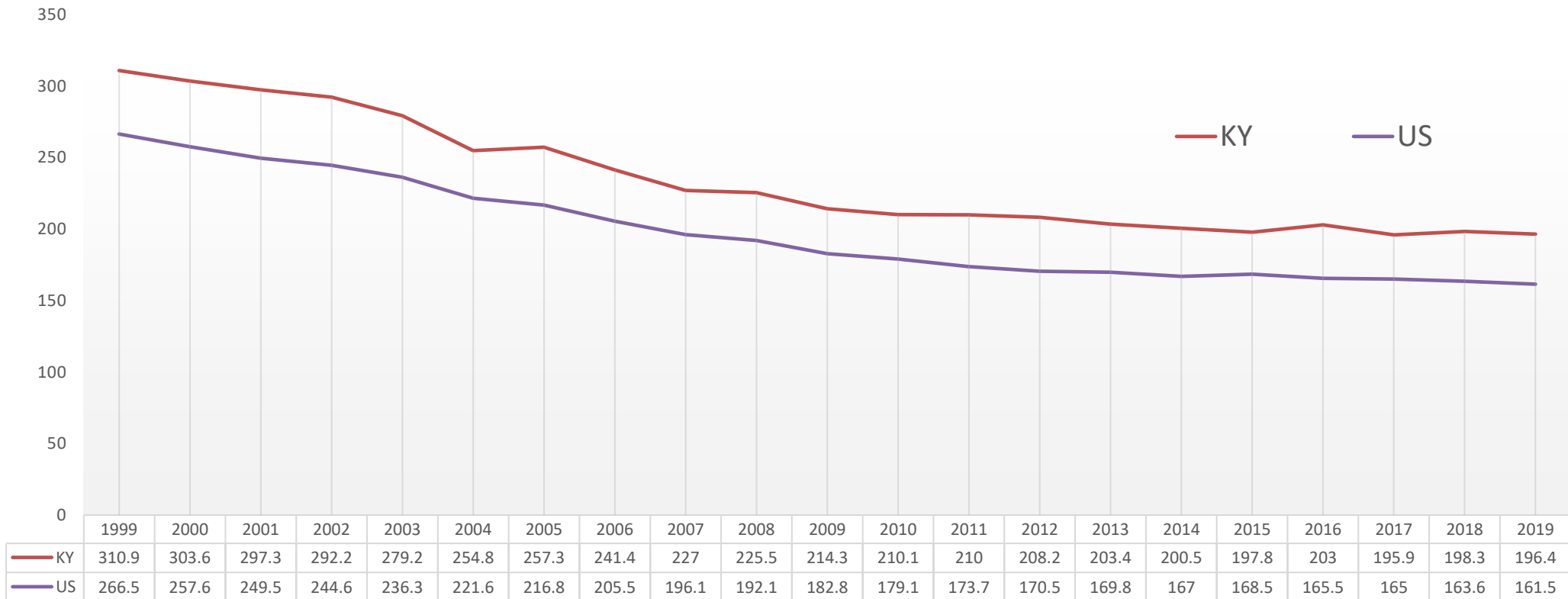


Stroke Prevalence in Kentucky, 2018, 18+ ages



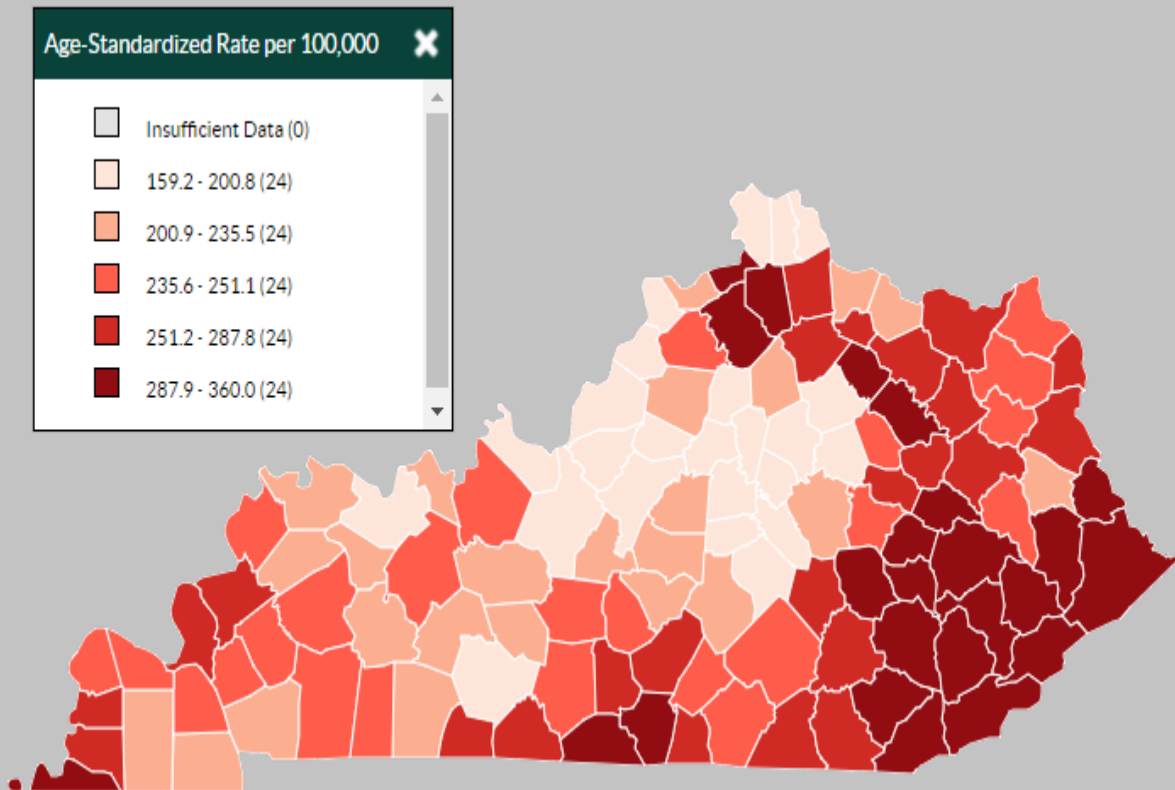
Heart Disease, Age-Adjusted Death Rate, Kentucky and US, 1999-2019

Diseases of the Heart, Kentucky versus US, Age-adjusted Mortality Rate, 1999-2019

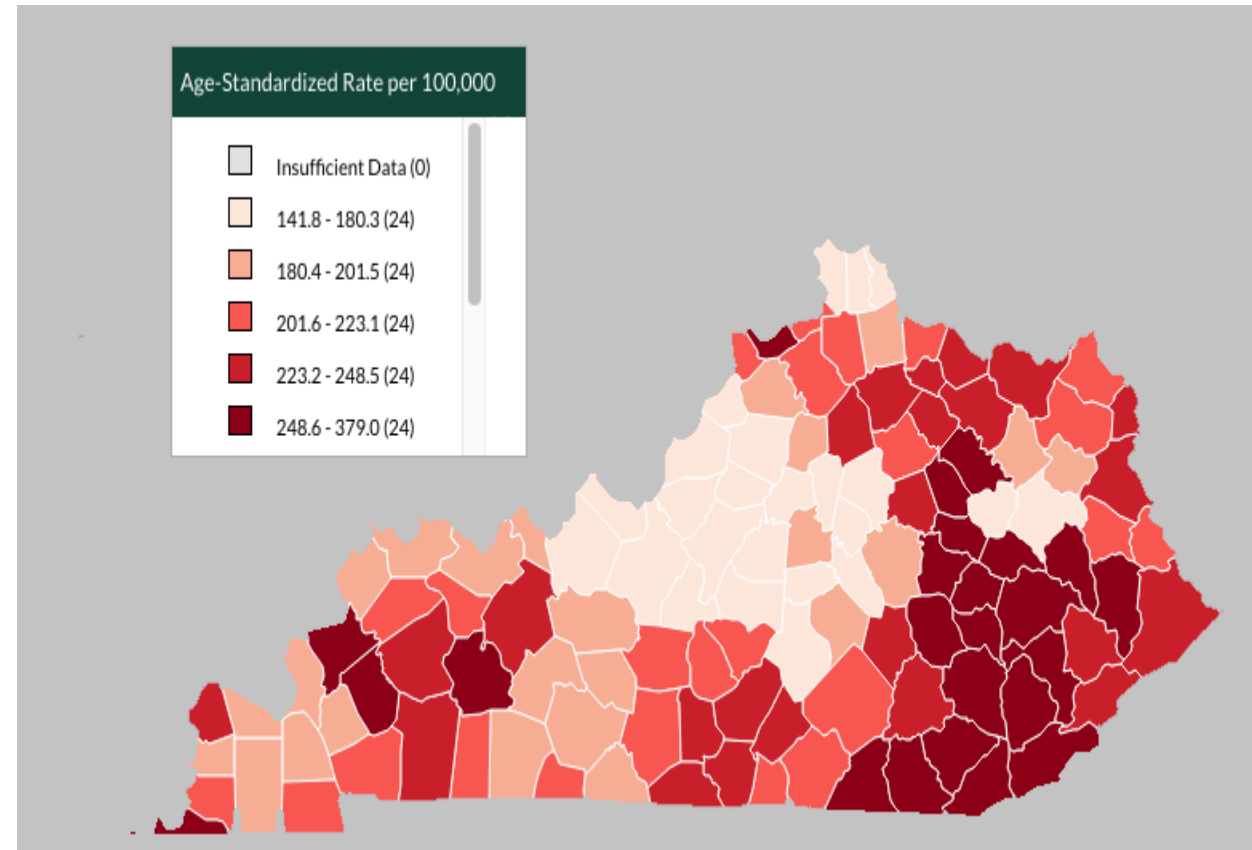


Heart Disease, Age Standardized Death Rate per 100,000, All Ages, All Races, Both Genders

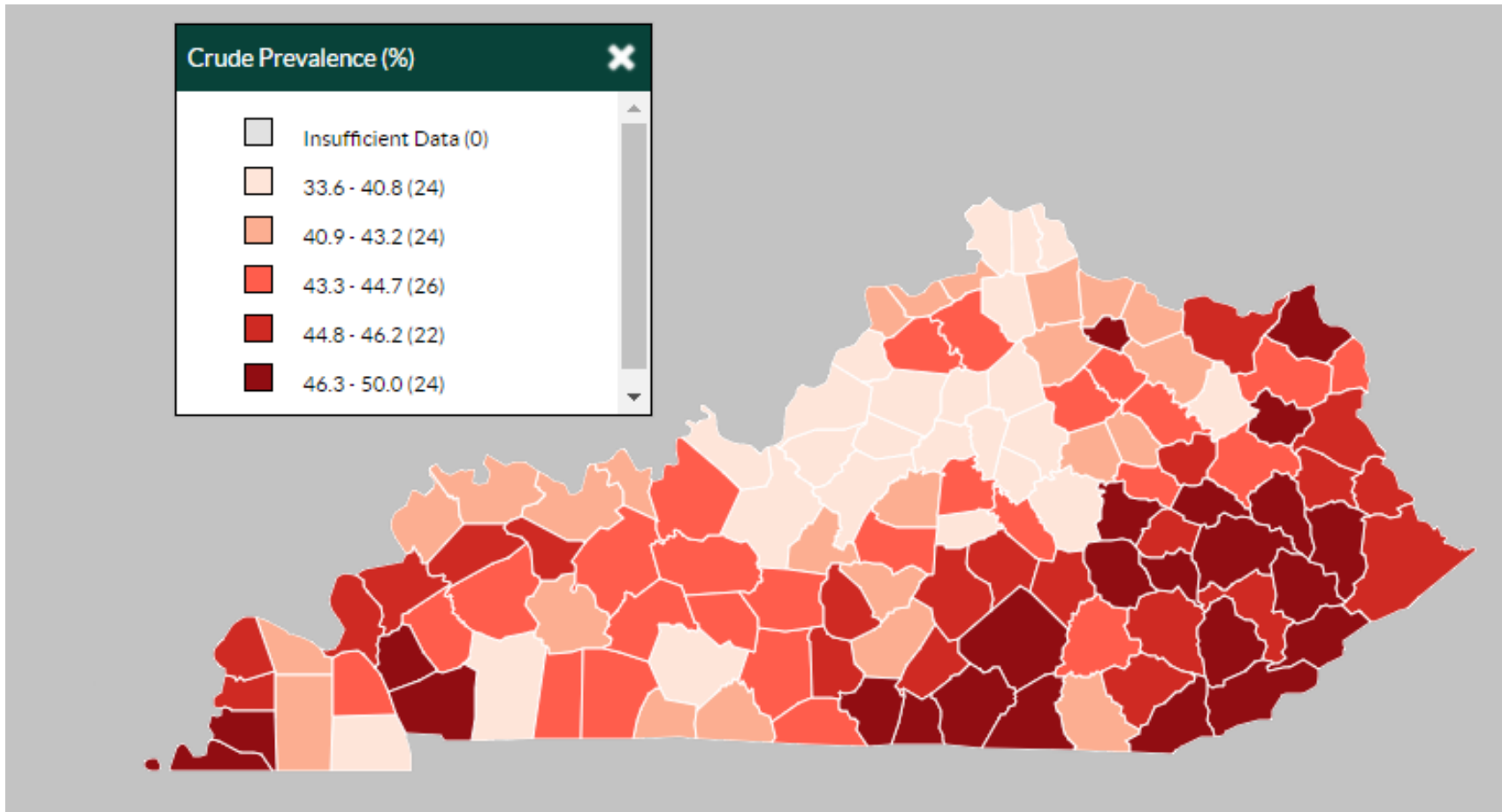
2007-2009



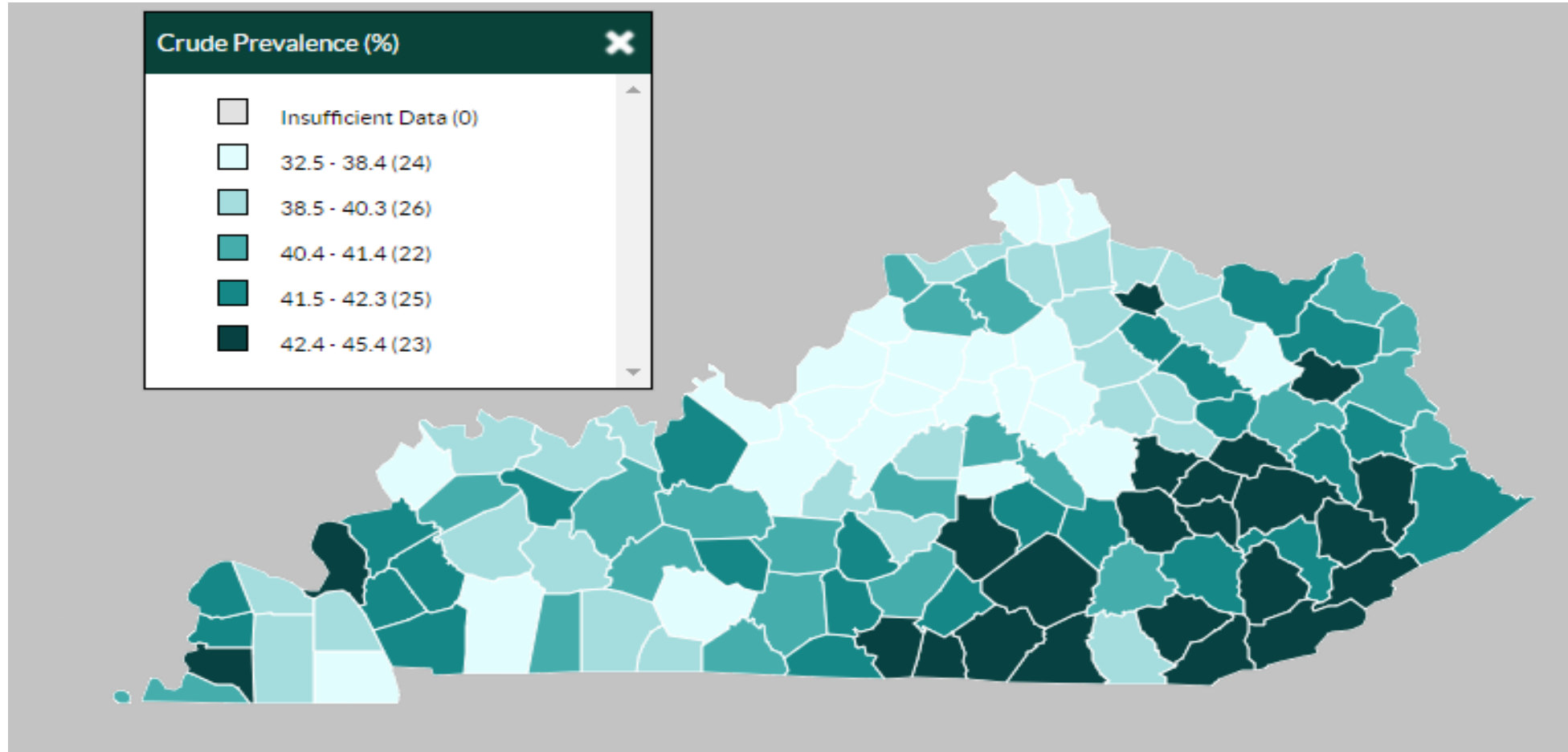
2017-2019



High Blood Pressure Prevalence among Adults aged 18+, 2017



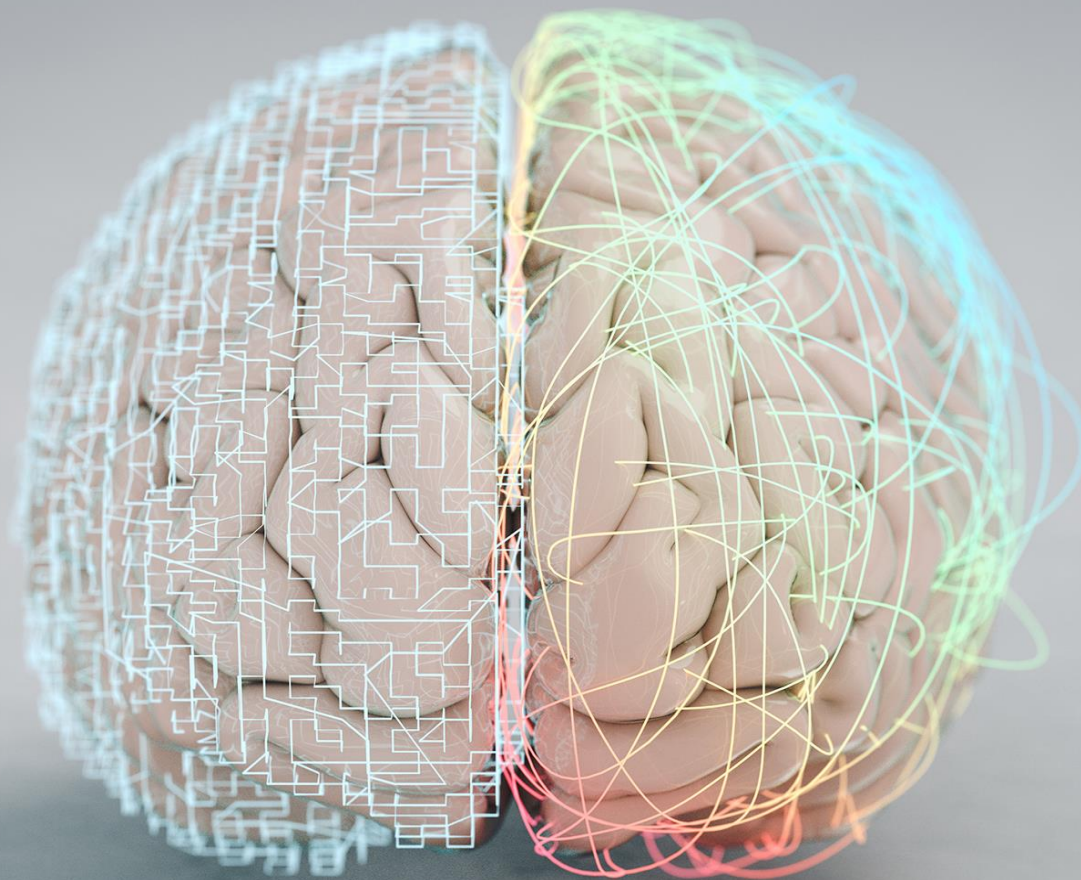
High Cholesterol Among Adults Screened in Past 5 Years Aged 18+, 2017



Prevalence among adults aged 18+ , 2019	Kentucky (CI)	US
Adults who have been told they have angina or coronary heart disease	4.9% [4.3-5.6%]	3.9%*
Adults who have been told they had a heart attack (MI)	5.4% [4.8-6.1}	4.3 %*
Adults who have been told they have had a stroke	4.3% [3.7-5.0]	3.2%*
Adults who reported ever having CHD or myocardial infarction (MI)	7.8 [6.9-8.6]	6.3%*
Adults who are current smokers	24.4% [22.8-26.1]	16.0%*
Adults who have been told they have high blood pressure	(37.6%) (36-39.2)	32.3%*
Adults who have been told they have high cholesterol	37.9% (36.1-39.7)	33.1%*
Obesity among adults >=18 years (BMI 30.0-99.8)	36.4 % (34.6- 38.3]	32.1%*
Overweight (BMI 25.0-29.9)	35.4% [33.6 – 37.1]	34.6%*
Overweight or obesity among adults >= 18 years	71.5% [69.7-73.2]	67% (65.5-69]
Adults who have been told they have diabetes	11.7% (10.8-12.6)	10.7%*
Adults who reported having any kind of health care coverage.	91.7% (90.6-92.7}	89.0%*
Adults who have been told they have depression	26.4% (24.7-28)	19.9%*
Alcohol consumption (heavy drinkers, adult men > 14 drinks/week, adult women > 7 drinks/week)	6.8% (5.7-7.8)	6.5%*
Did not participate in enough aerobic & muscle strengthening exercises to meet guidelines	83.9% (82.2-85.7)	76.8%*
Did not participate in any physical activities in the past month	31.5% [29.7-33.3]	26.3%

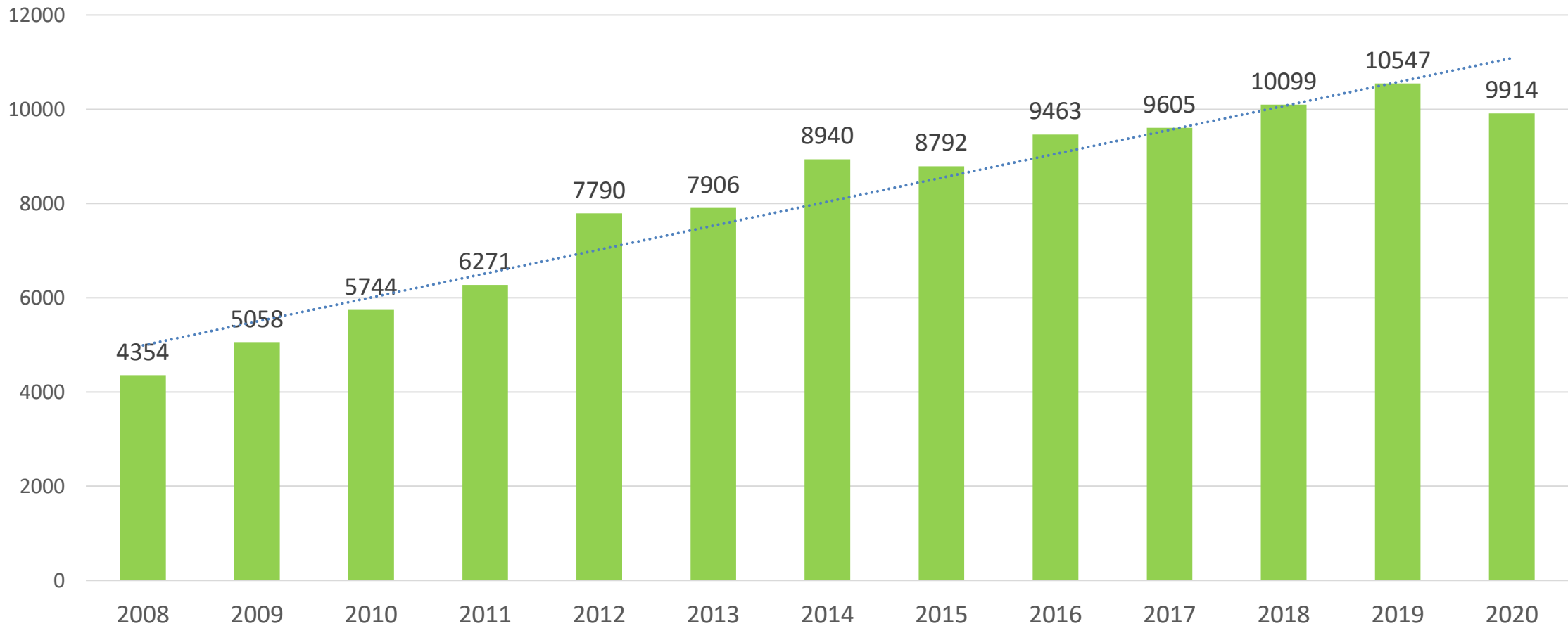


SEQIP Registry Data 2020

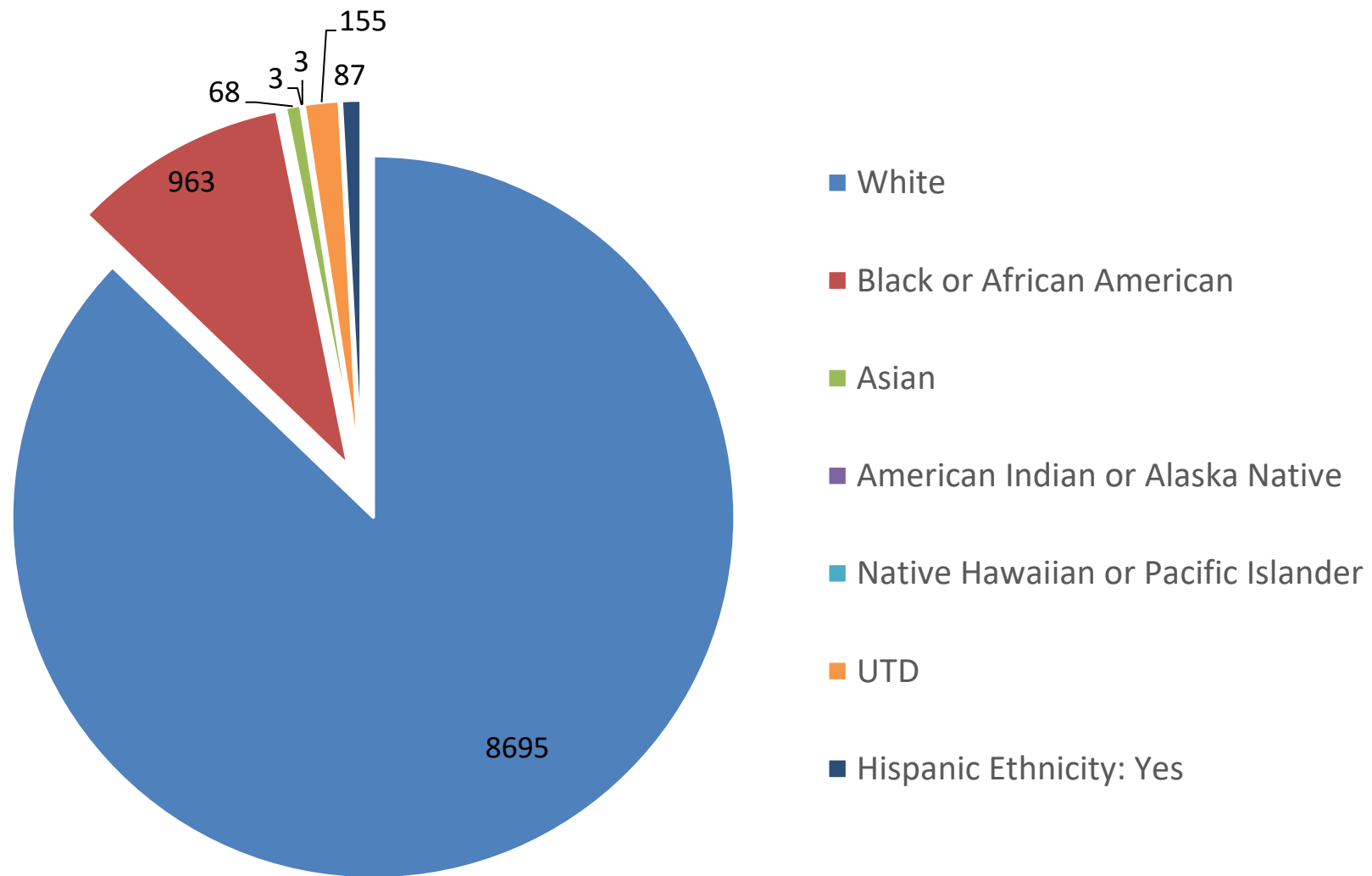


SEQIP Registry Volume

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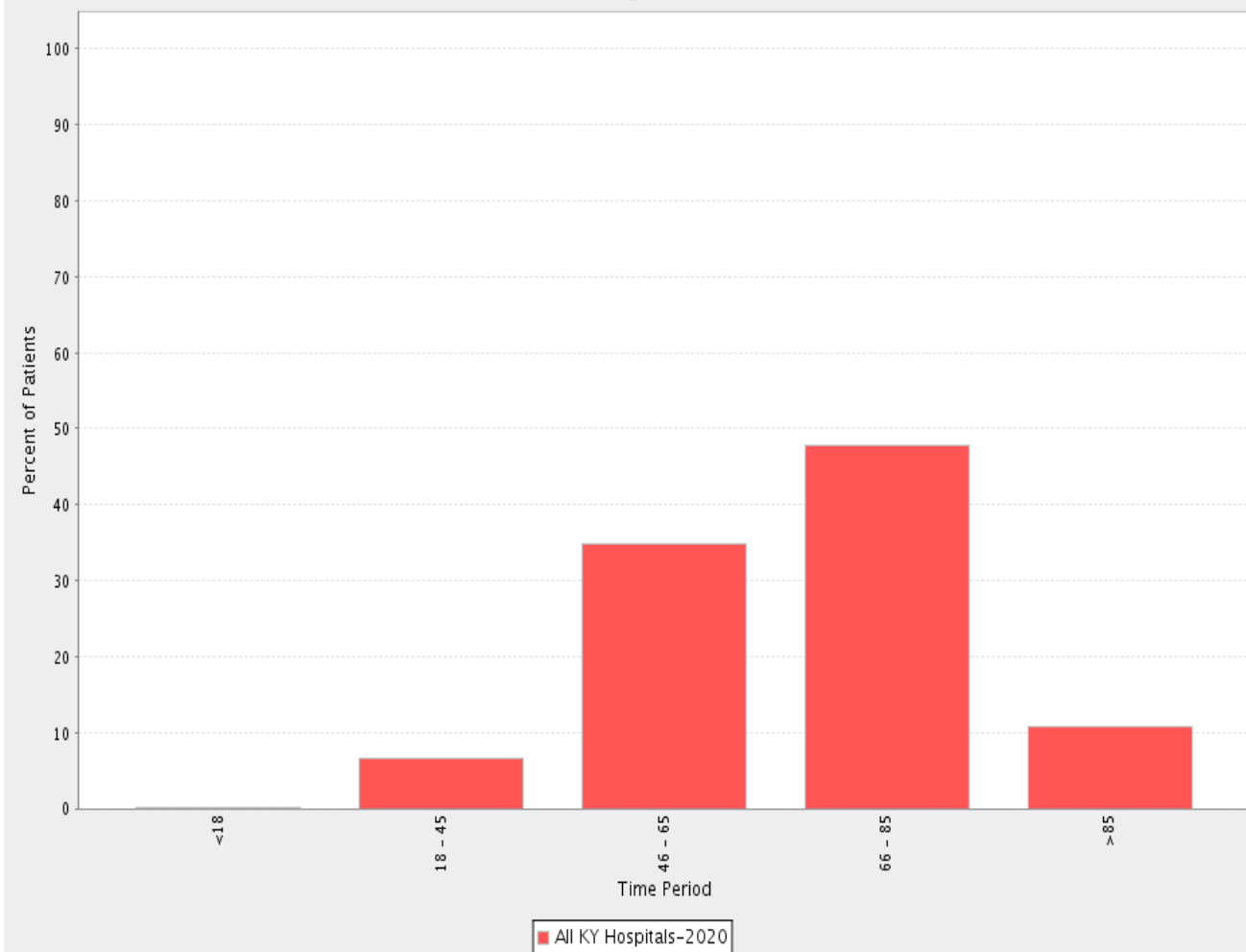
SEQIP – Patient's Race 2020



SEQIP- Patient's Age

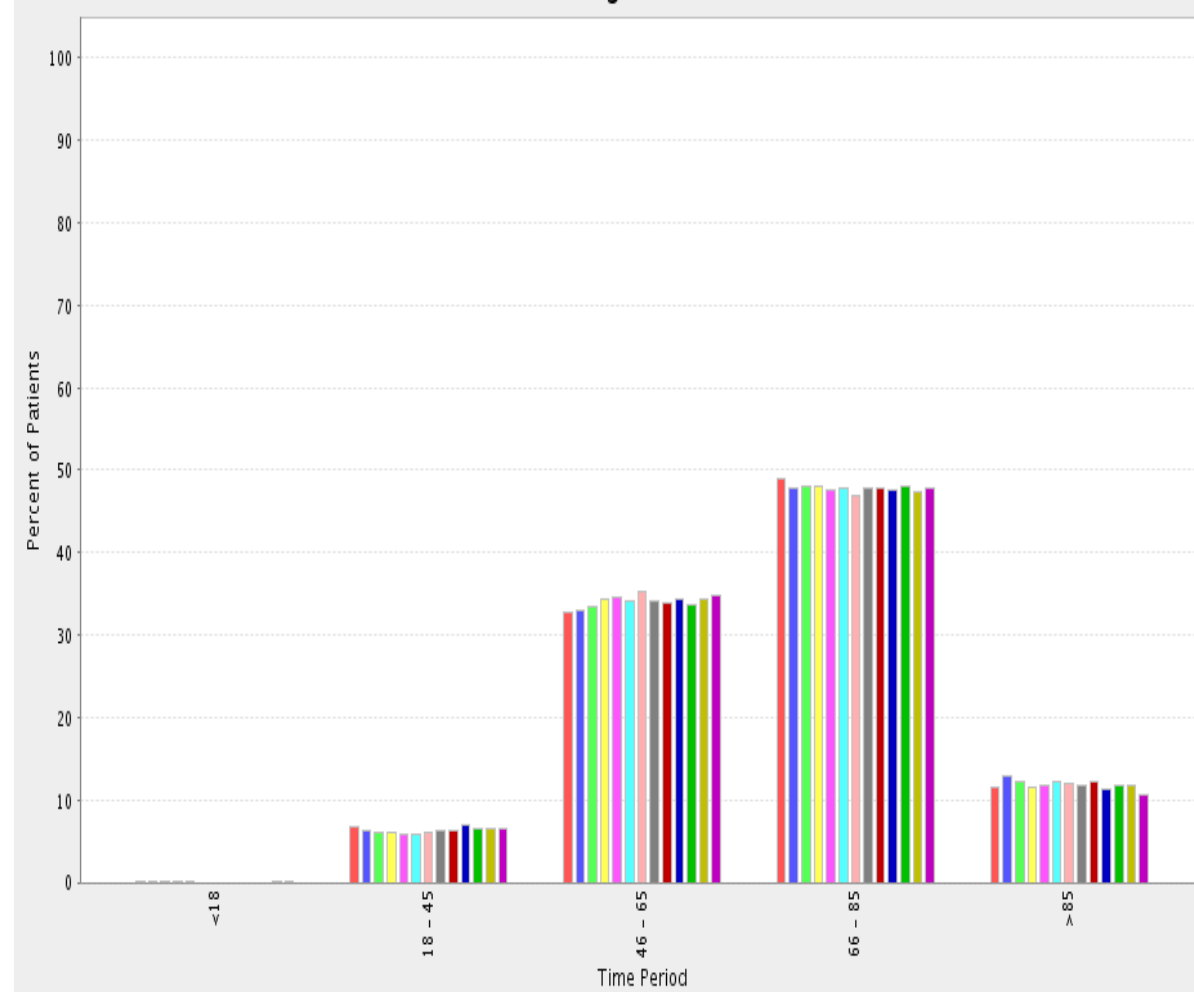
2020

Age



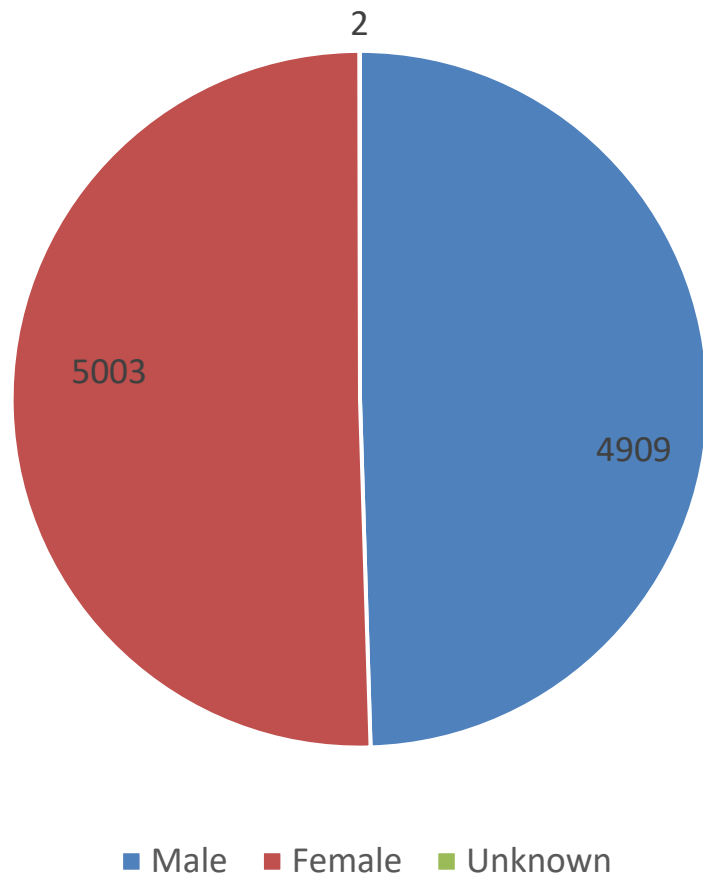
2008-2020

Age

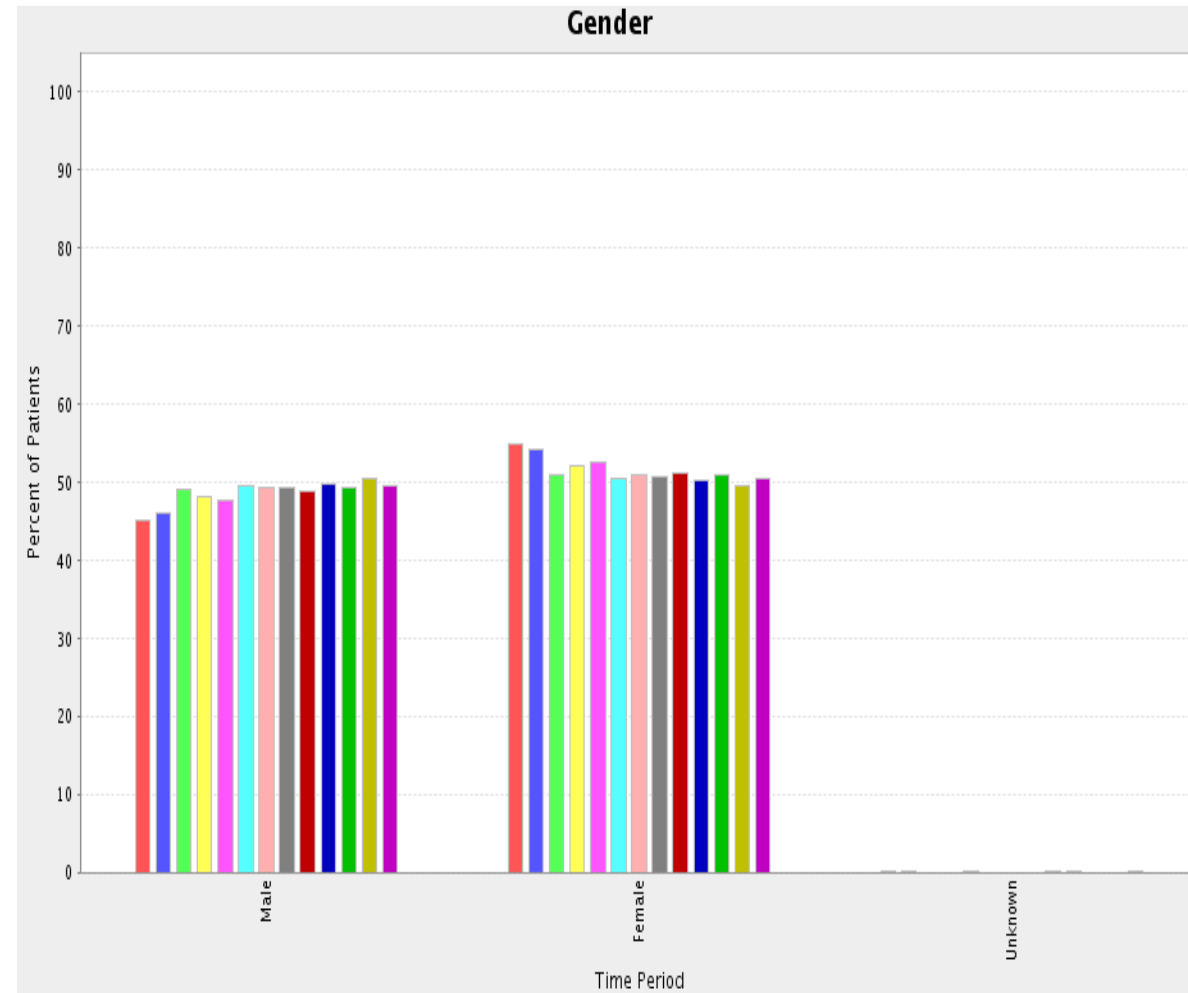


SEQIP – Patient's Gender

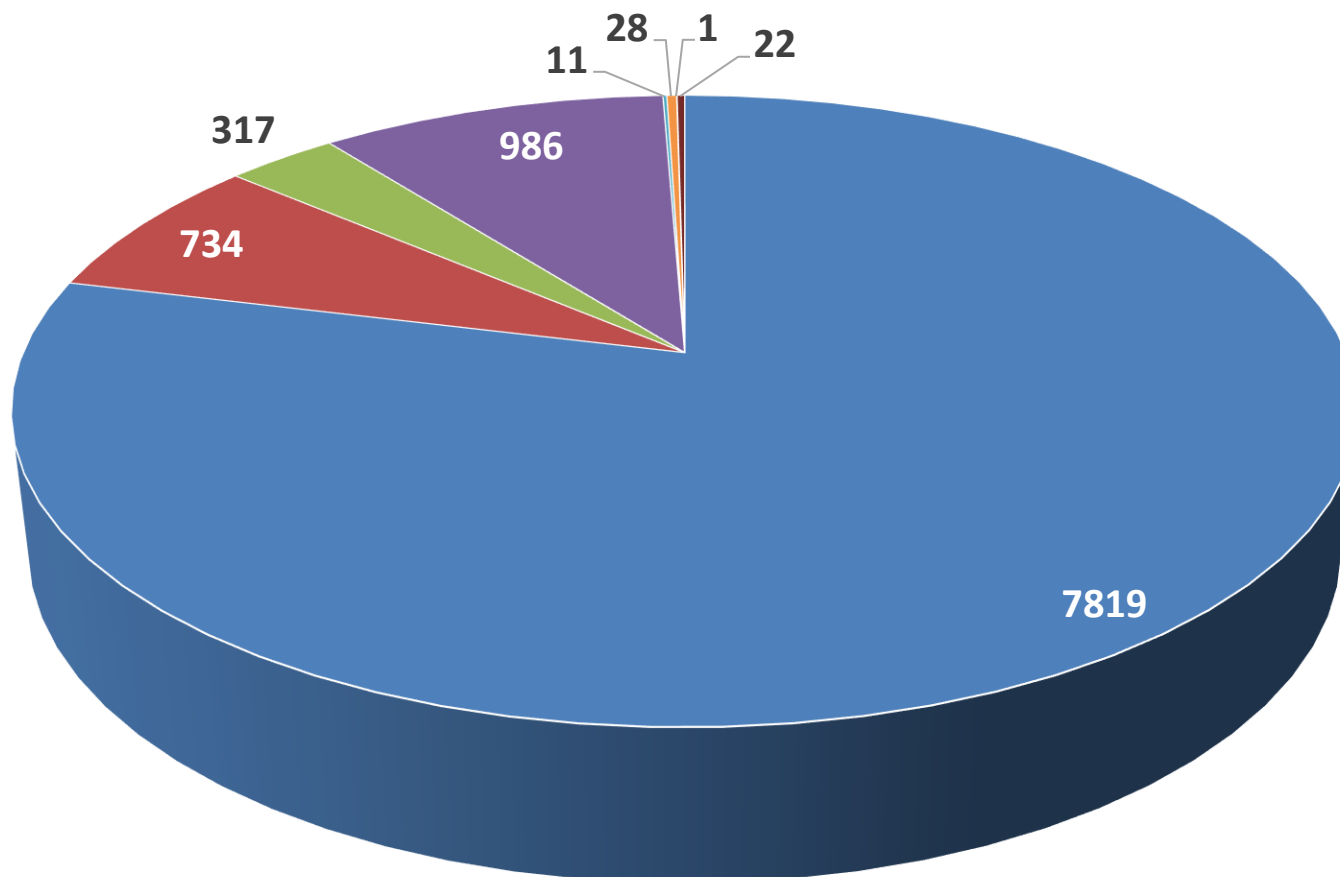
SEQIP Patient Gender 2020



2008-2020



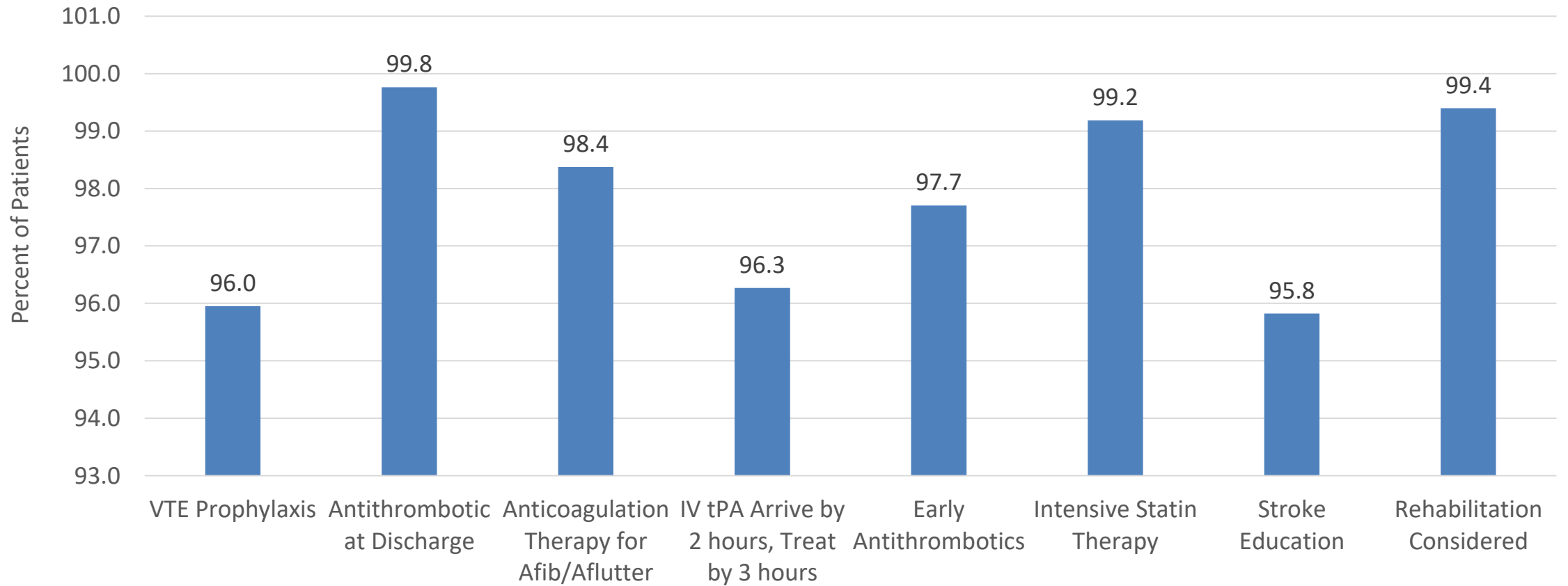
Type of Stroke



- Ischemic Stroke
- Subarachnoid Hemorrhage
- Stroke not otherwise specified
- Elective Carotid Intervention only
- Transient Ischemic Attack (< 24 hours)
- Intracerebral Hemorrhage
- No stroke related diagnosis
- Missing data

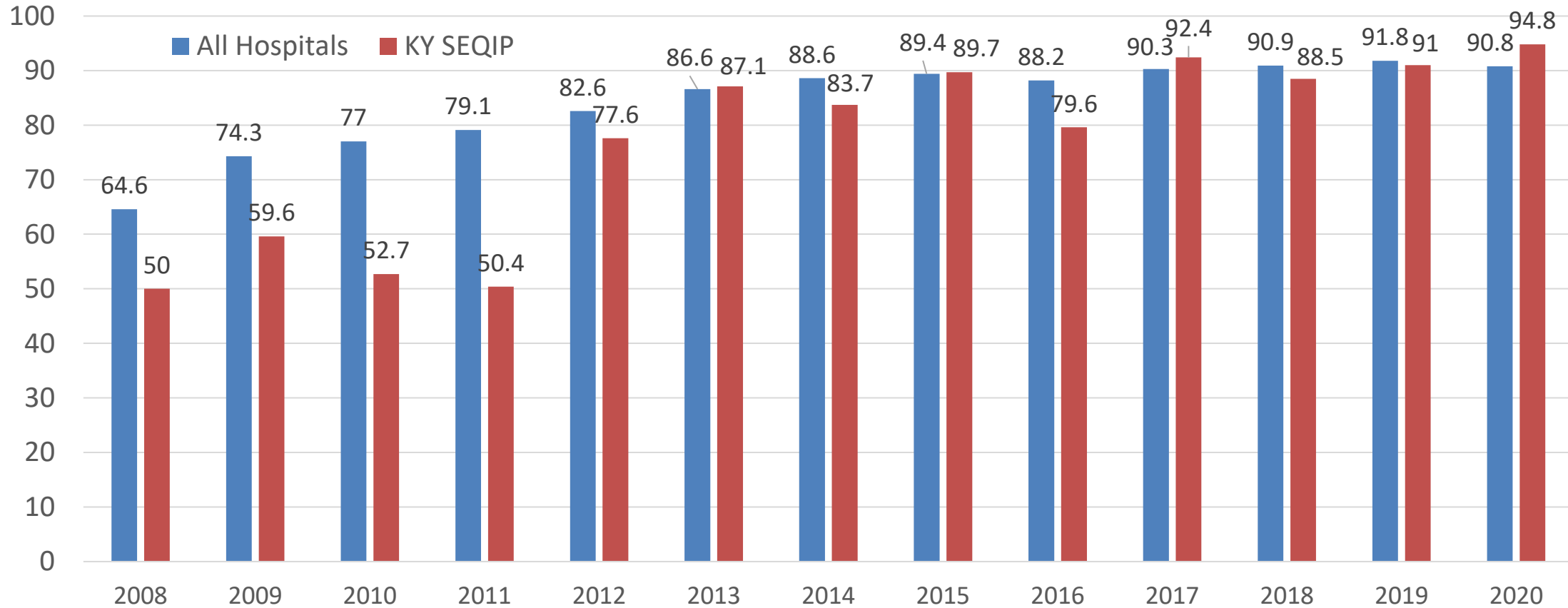
STK Measure Set

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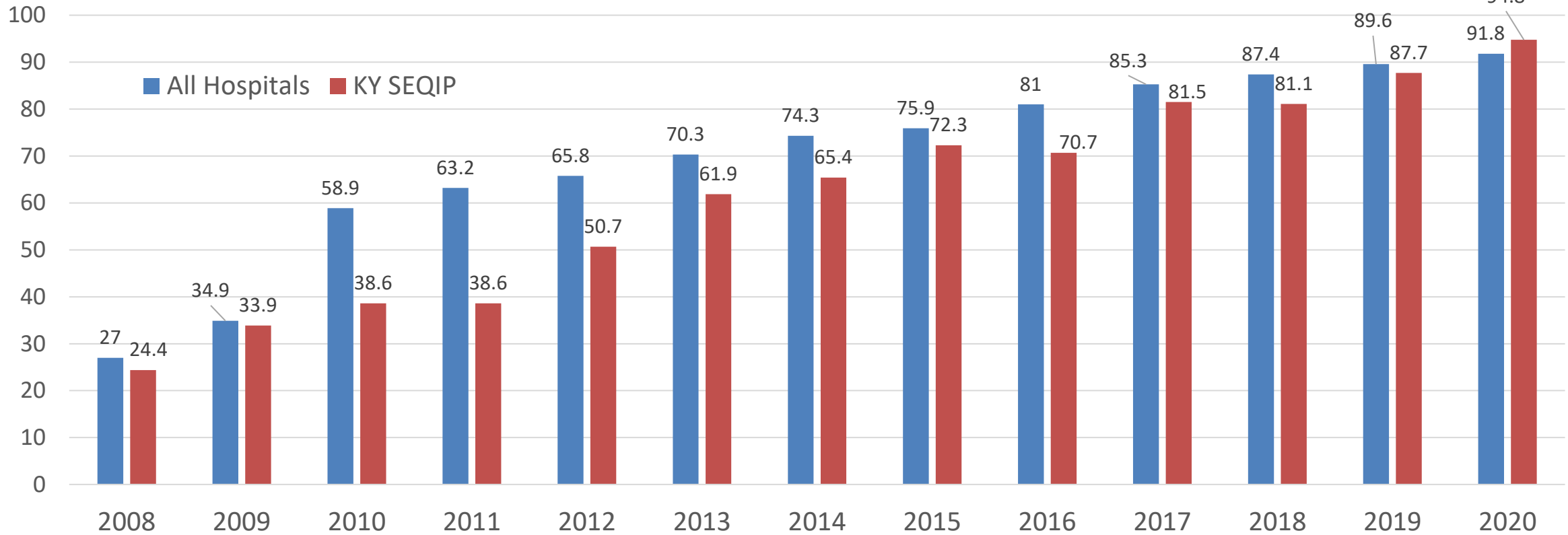
IV Thrombolytic Therapy arrive by 2 hours treat by 3 hour

IV Thrombolytic Therapy arrive by 2 hours treat by 3 hour



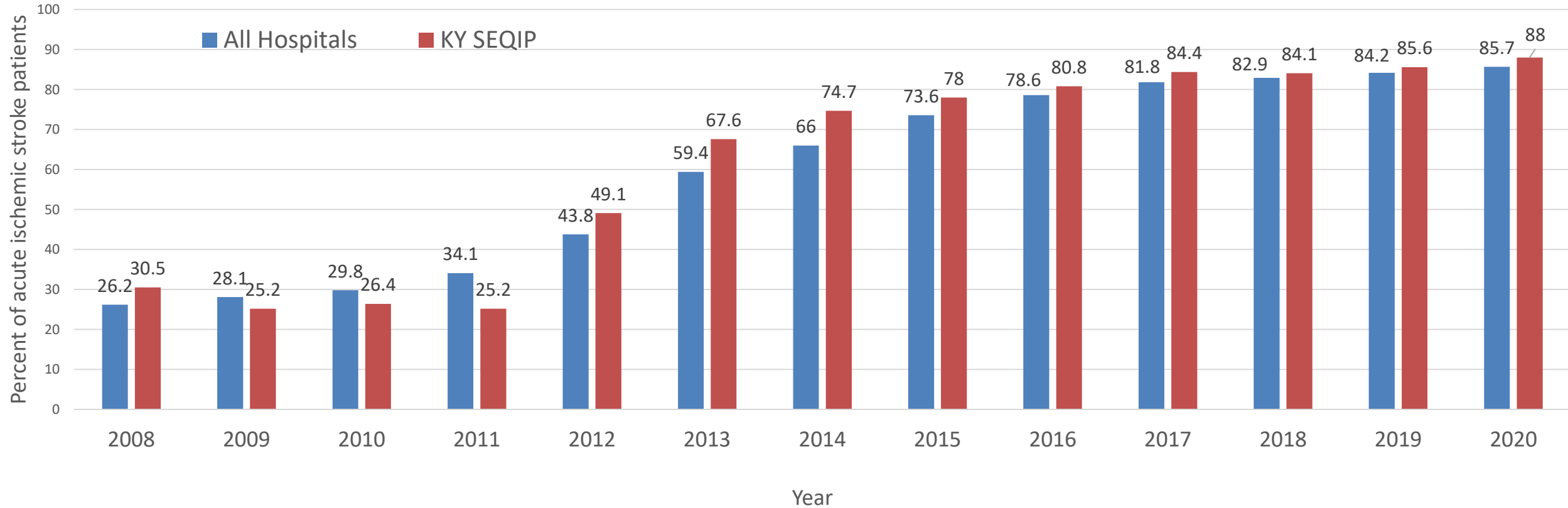
IV Thrombolytic Arrive by 3.5 Hour, Treat by 4.5 Hour

IV Thrombolytic Arrive by 3.5 Hour, Treat by 4.5 Hour

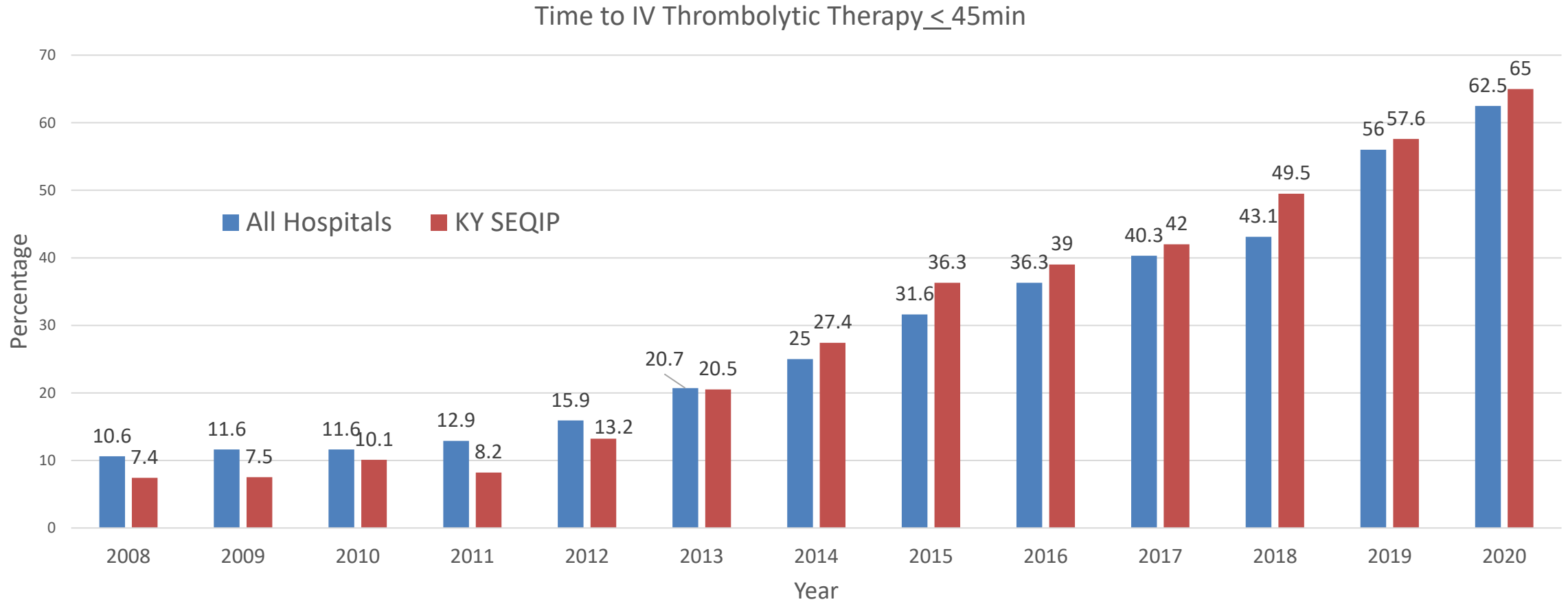


Time to IV Thrombolytic Therapy ≤ 60 min (DTN ≤ 60 min)

Time to IV Thrombolytic Therapy ≤ 60 minutes

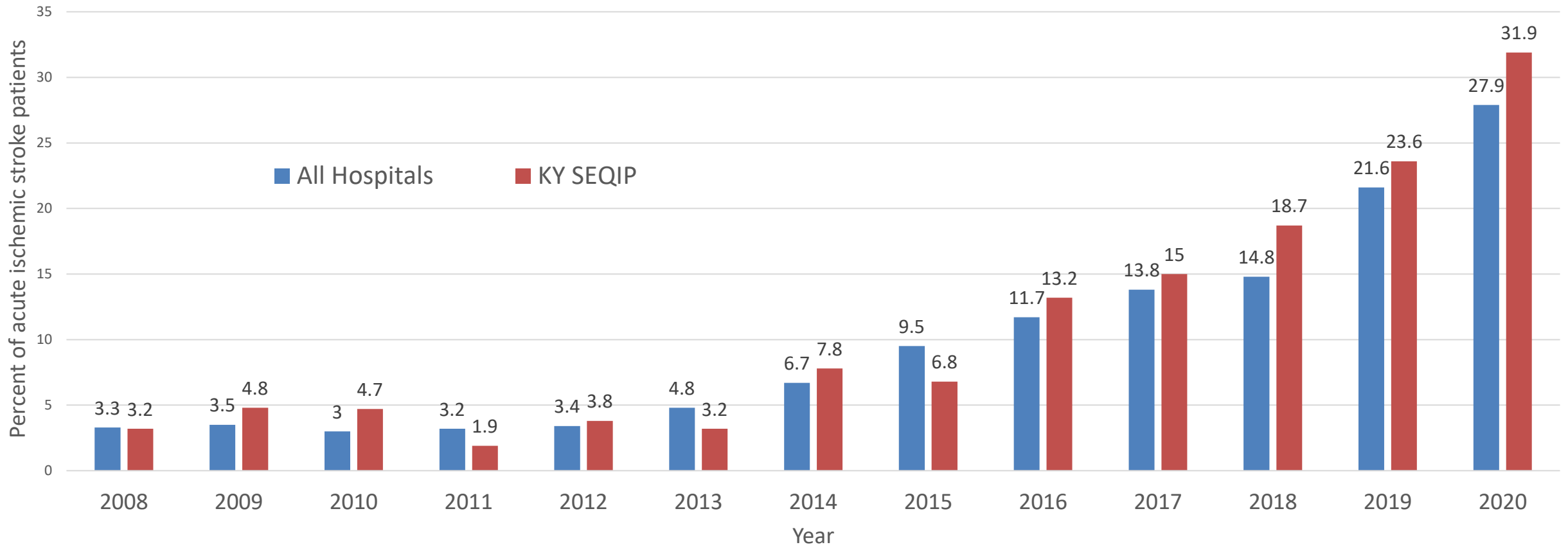


Time to IV Thrombolytic Therapy \leq 45 min (DTN \leq 45 min)



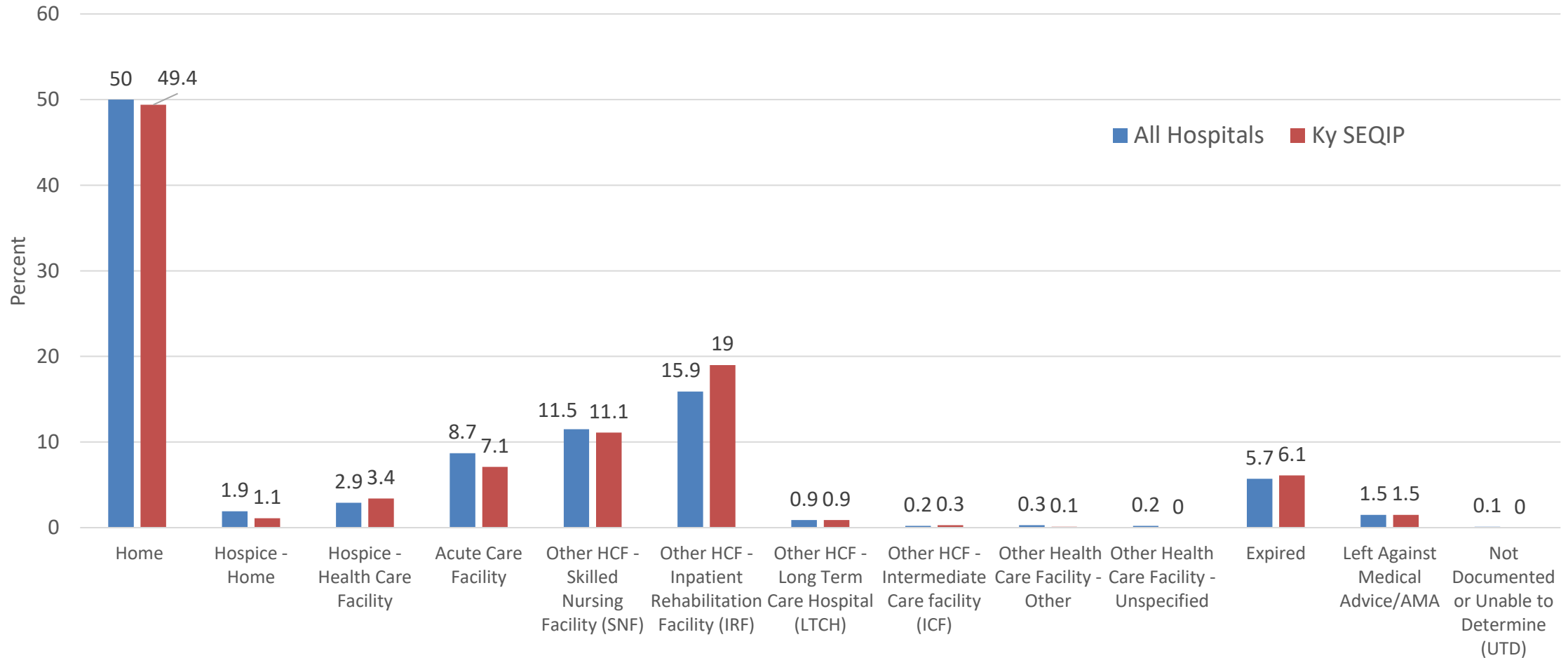
Time to IV Thrombolytic Therapy \leq 30 min (DTN \leq 30 min)

Time to IV Thrombolytic Therapy \leq 30 min, 2008-2020

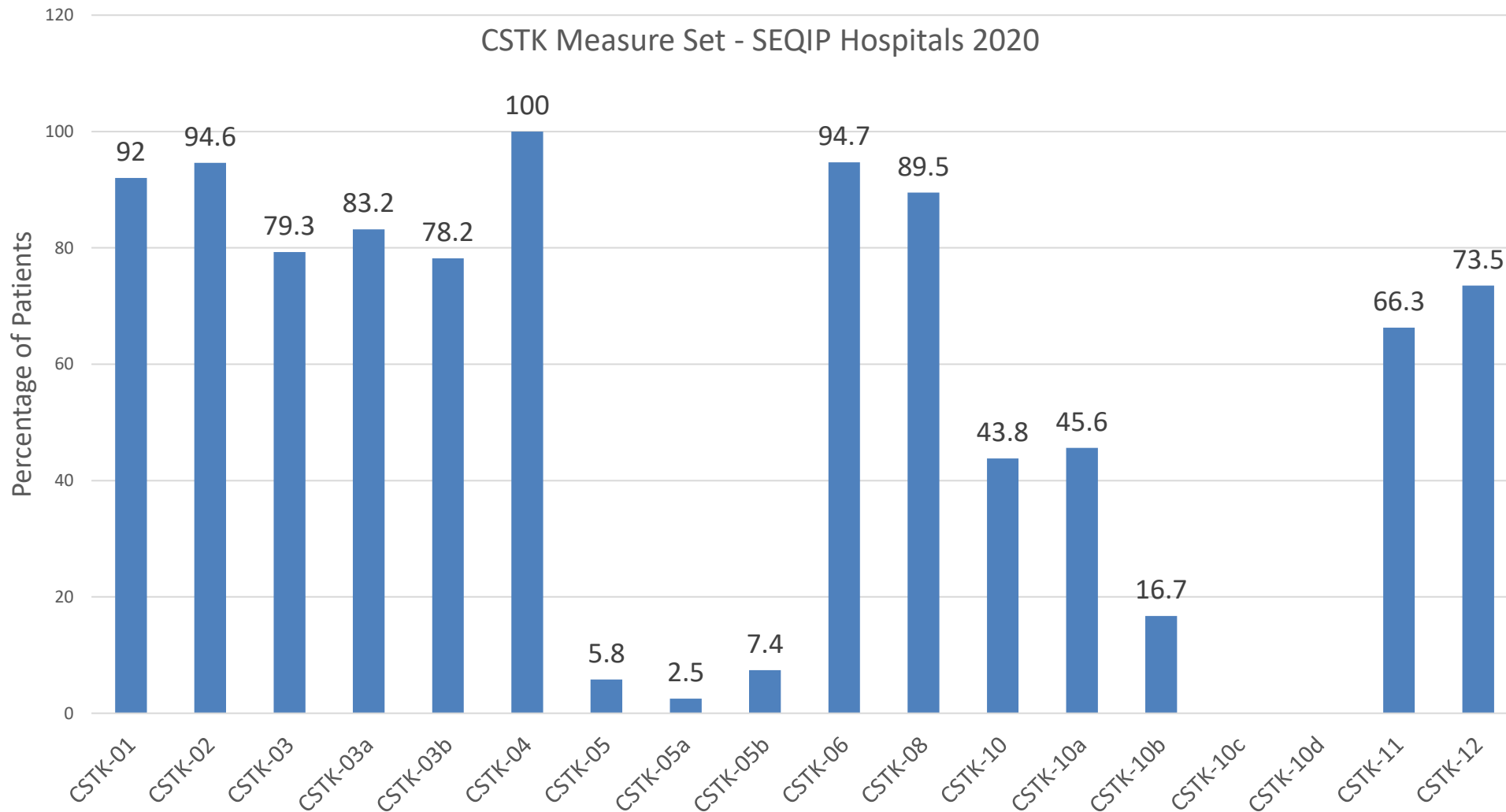


Discharge Disposition 2020

DischargeDisposition - 2020



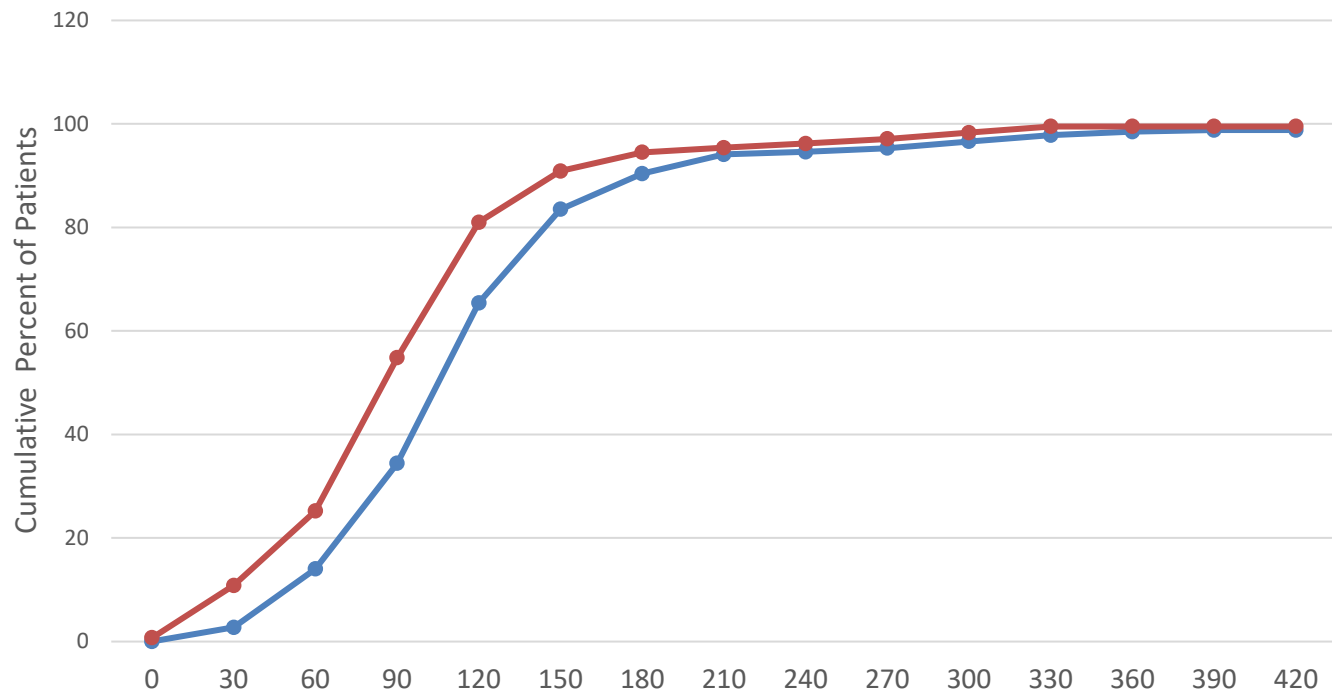
CSTK Measure Set 2020



CSTK Measure Set

CSTK Measure Set	CSTK Measure Set	Percentage of patients
NIHSS Performed	CSTK-01	92
Modified Rankin Score	CSTK-02	94.6
Severity Measurement Performed for SAH and ICH Patients (Overall Rate)	CSTK-03	79.3
Hunt & Hess Scale Performed	CSTK-03a	83.2
ICH Score Performed for ICH Patients	CSTK-03b	78.2
Procoagulant Reversal Agent Initiation for Intracerebral Hemorrhage (ICH)	CSTK-04	100
Hemorrhagic Transformation (Overall Rate)	CSTK-05	5.8
Hemorrhagic Transformation for Patients Treated with Intra-Venous (IVO) Thrombolytic (alteplase) Therapy only	CSTK-05a	2.5
Hemorrhagic Transformation for Patients Treated with Intra-Arterial (IA) Thrombolytic (alteplase) Therapy or Mechanical Endovascular Reperfusion Therapy	CSTK-05b	7.4
Nimodipine Treatment Administered	CSTK-06	94.7
Thrombolysis in Cerebral Infarction (TICI) Post-Treatment Reperfusion Grade	CSTK-08	89.5
Modified Rankin Score (mRS) at 90 Days: Favorable Outcome	CSTK-10	43.8
Functional Status Prior to Stroke-Independent: IV Alteplase Only	CSTK-10a	45.6
Functional Status Prior to Stroke-Dependent: IV Alteplase Only	CSTK-10b	16.7
Functional Status Prior to Stroke-Independent: MER Therapy	CSTK-10c	
Functional Status Prior to Stroke-Dependent: MER Therapy	CSTK-10d	
Rate of Rapid Effective Reperfusion From Hospital Arrival	CSTK-11	66.3
Rate of Rapid Effective Reperfusion From Skin Puncture	CSTK-12	73.5

CSTK-07 + CSTK 09 Measures

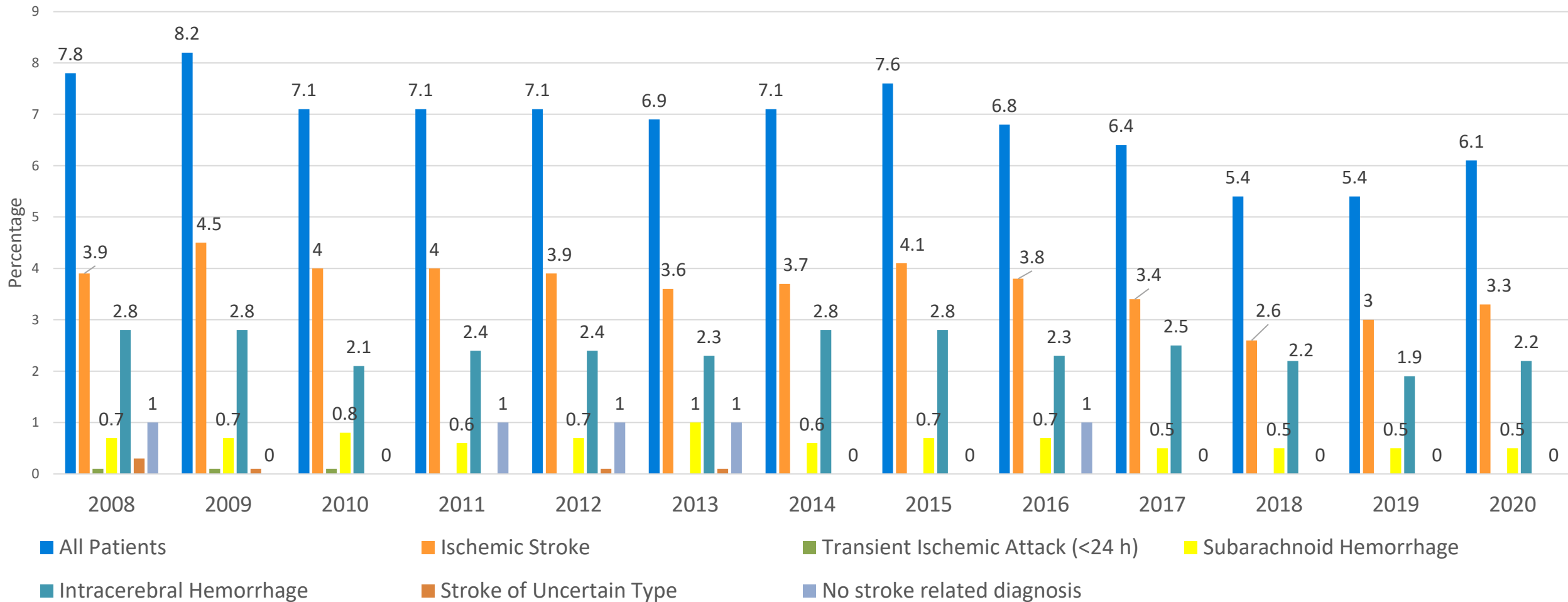


- Median Time to Revascularization
- Arrival Time to Skin Puncture (Overall Rate)
- Transferred from another hospital.
- Direct Arrivals

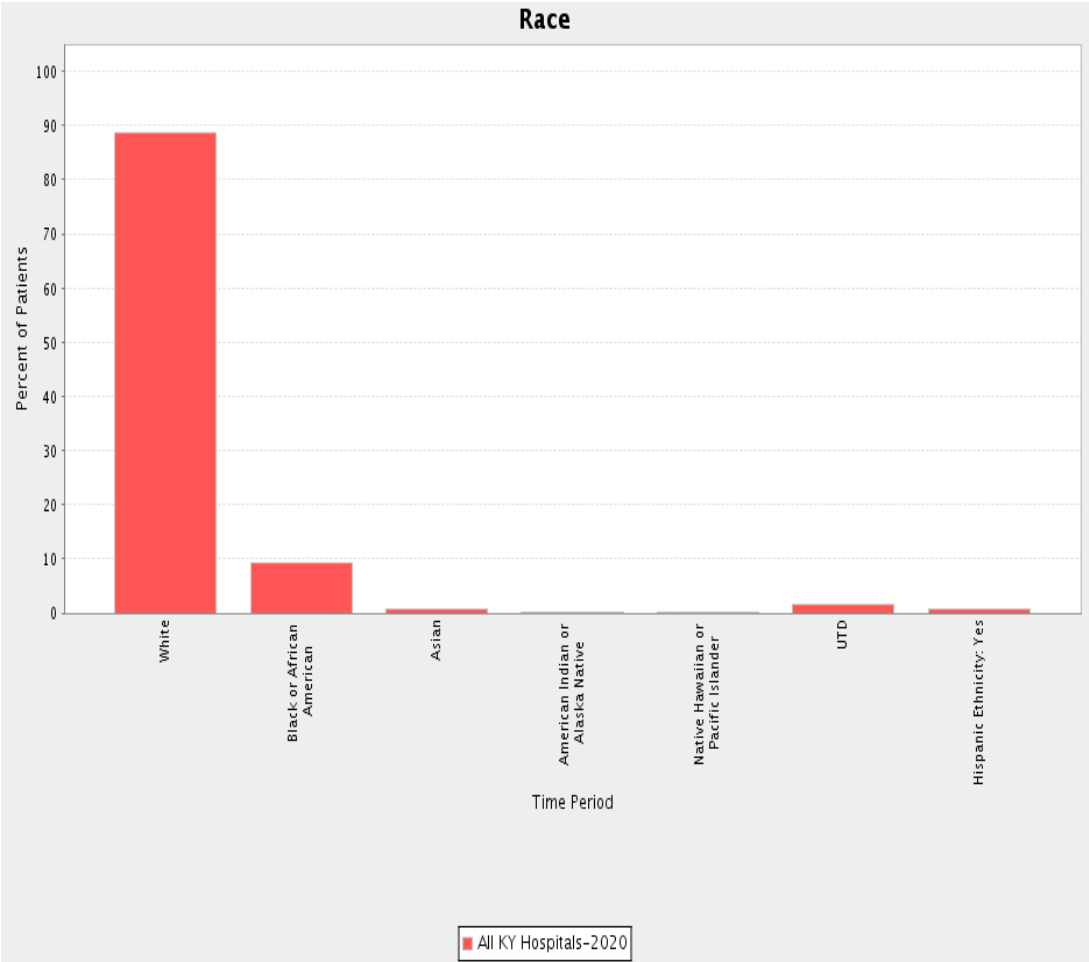
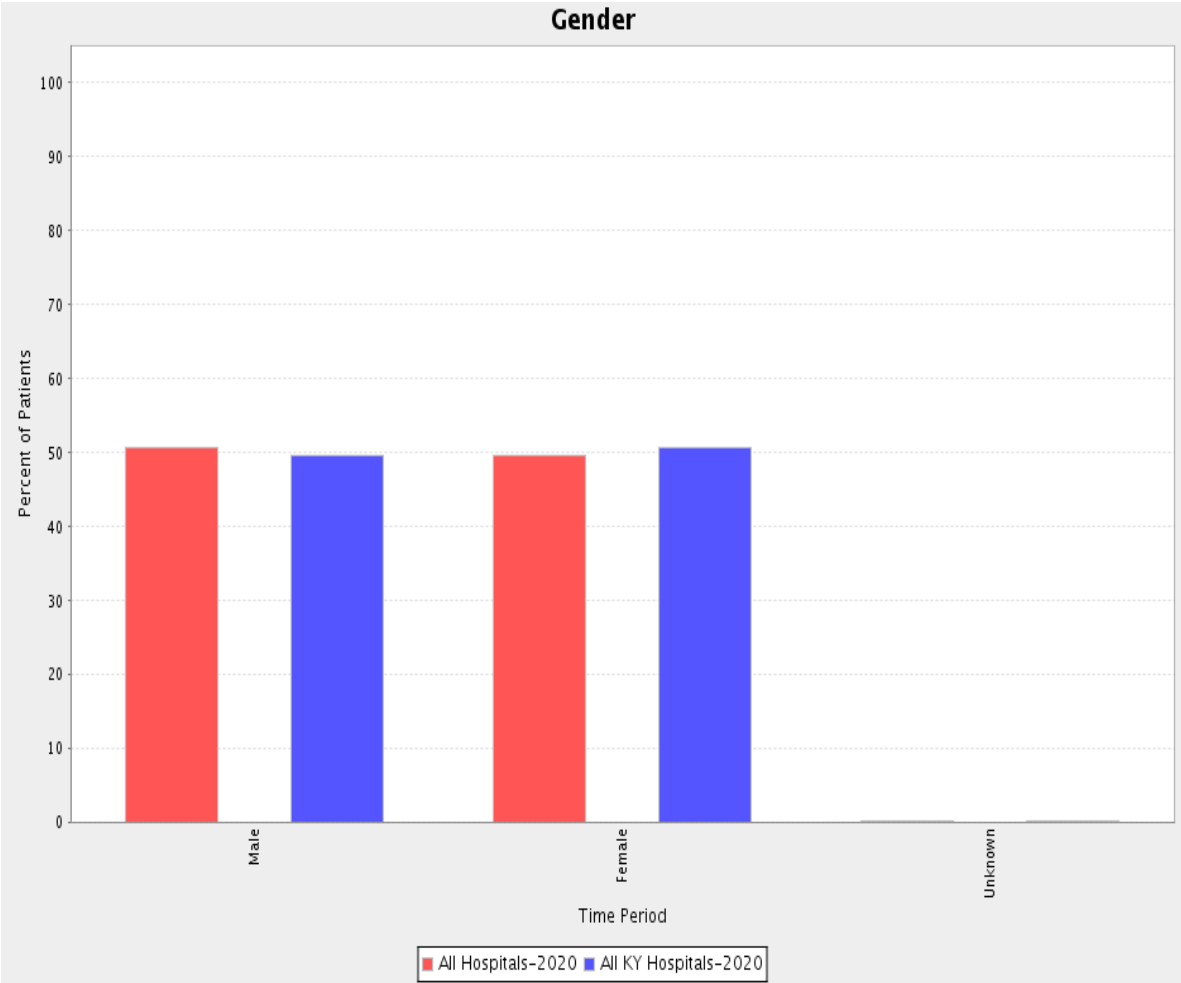
CSTK Measure Set	Total # of patients	Mean Time (minutes)	Standard Deviation	Median (minutes)
Median Time to Revascularization	407	124.9	183.4	103
Arrival Time to Skin Puncture (Overall Rate)	416	142.8	786.9	86
Transferred from another hospital.				
Direct Arrivals				

In-hospital Mortality by Stroke Type, 2008-2020

In-hospital Mortality by Stroke Type, 2008-2020

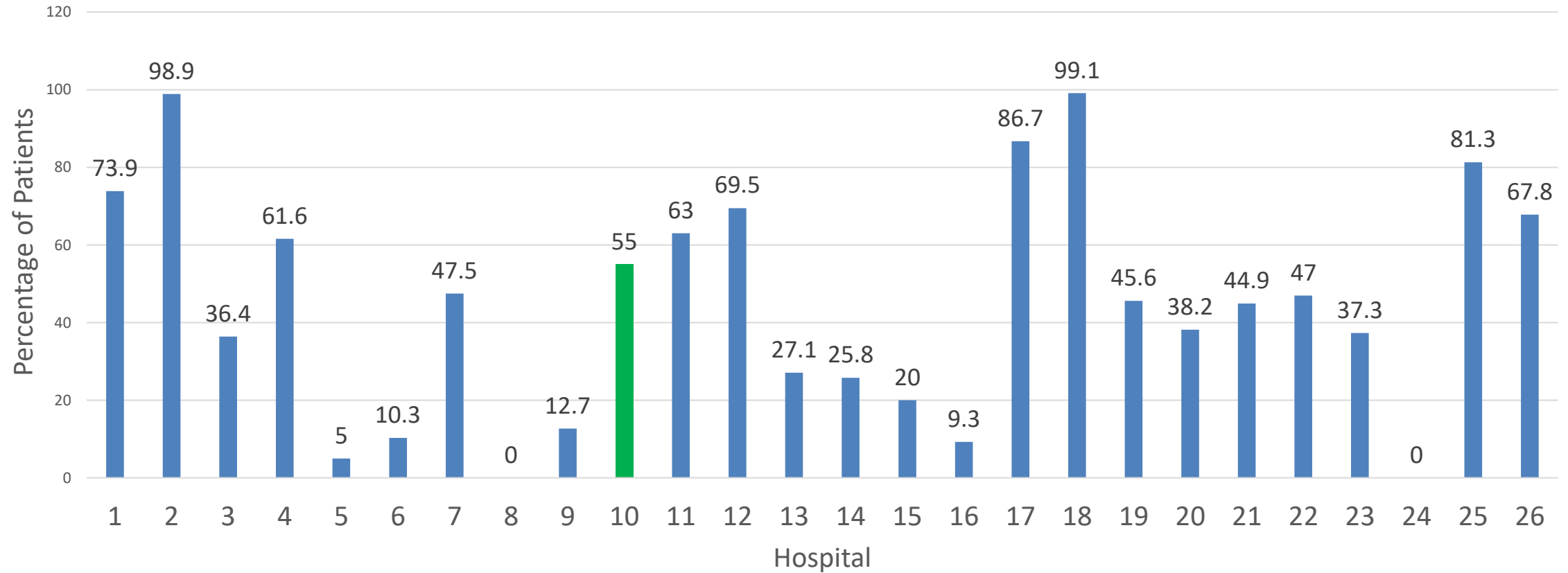


All Kentucky Hospitals – Patient Gender & Race, 2020



EMS Pre-notification by Hospital

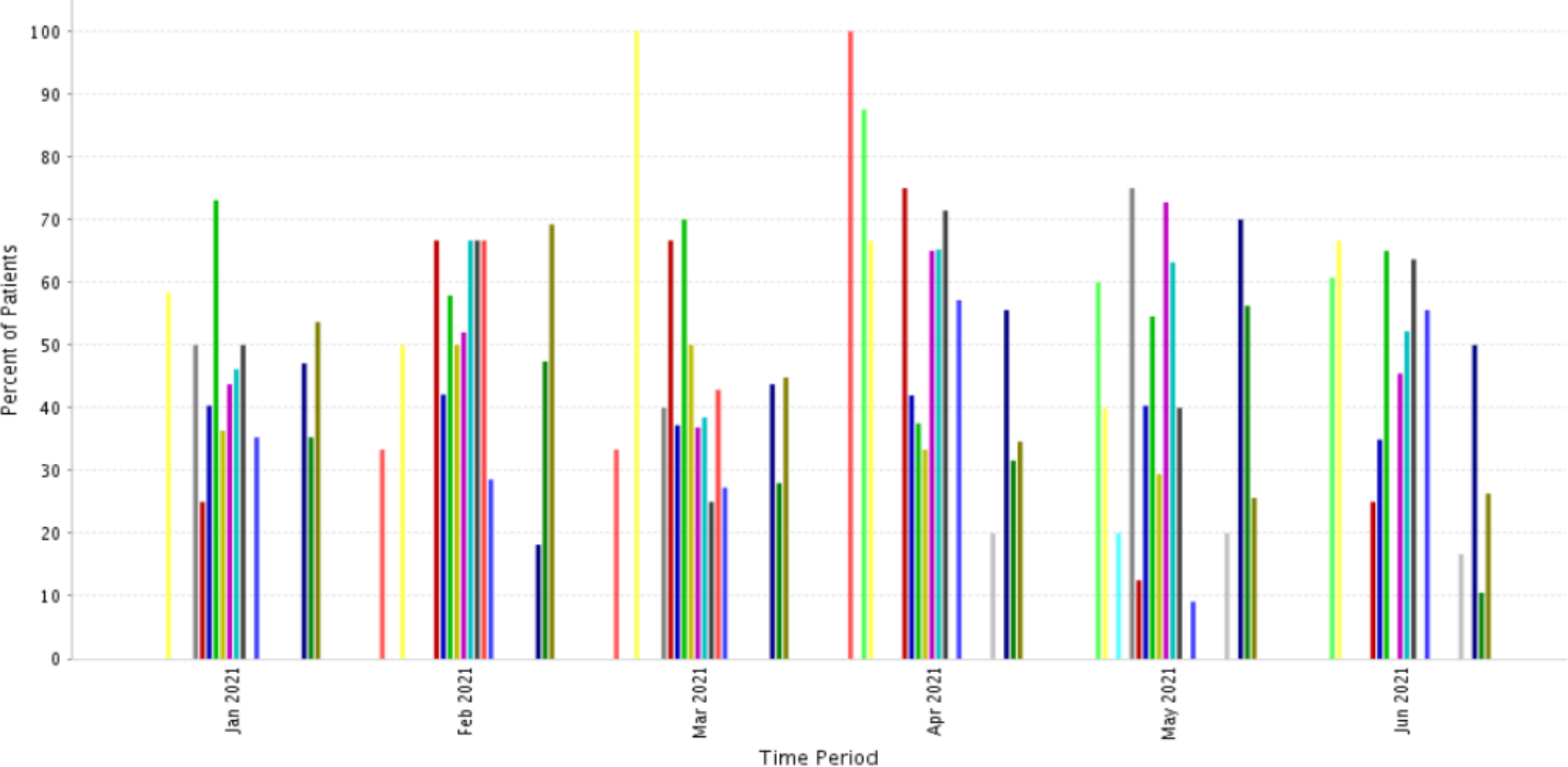
EMS Pre-notification KY SEQIP Hospitals 2020



Patient transported by EMS, Stroke Screen Performed & Reported, SEQIP hospital data, Jan- Jun 2021

Stroke Screen Performed and Reported

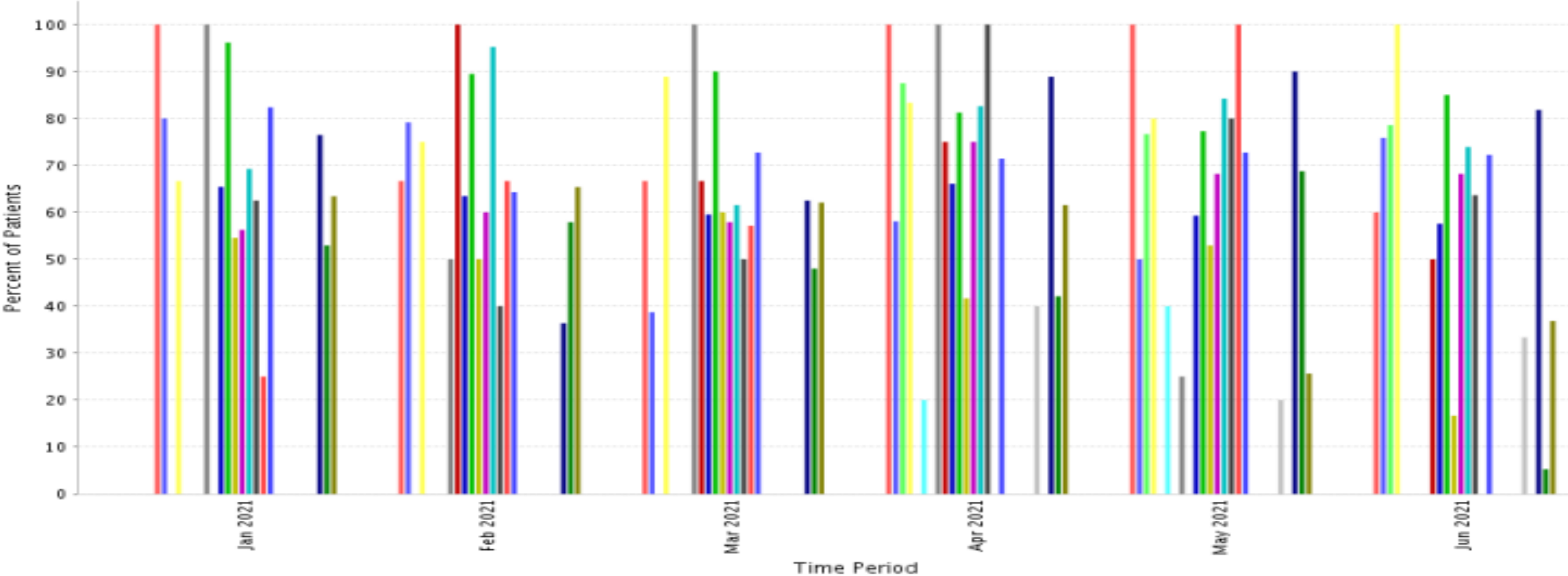
Percentage of confirmed stroke patients transported to your hospital by EMS and for whom a validated regional or national stroke screen tool was used with documentation of the outcome.
Time Period: Jan 2021 - Jun 2021; Site: Kentucky SEQIP (42135)



Evaluation of Blood Glucose by EMS, Jan- Jun 2021

Evaluation of Blood Glucose

Percentage of confirmed stroke patients transported to your hospital by EMS and for whom blood glucose was evaluated by EMS.
Time Period: Jan 2021 - Jun 2021; Site: Kentucky SEQIP (42135)



Query	Date	N	Total number of stroke cases in the same time period	Percentage
COVID-19 vaccine was received prior to admission, not during this hospitalization	May 2020 - Sept 2021	545	13,362	4.1%
Had a medical history of SARS-COV-2 (COVID19)	Mar 2020 – June 2021	184	13,092	1.4%

COVID-19 Vaccine Manufacturer	Number of patients, documented to have received a COVID vaccine (May 2020-Sept 2021)
AstraZeneca	0
Johnson & Johnson's / Janssen	25
Moderna	121
Novavax	0
Pfizer	115
Other	1
Not Documented	49
Total	311



Thank you!
