Tennessee Stroke Registry
Annual Report 2021

TN Department of Health

COLLEGE of PUBLIC HEALTH
EAST TENNESSEE STATE UNIVERSITY

American Heart Association | American Stroke Association
life is why

TABLE OF CONTENTS

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EXECUTIVE SUMMARY

The Tennessee Stroke Registry (TSR) was created in 2009 through the Tennessee Stroke Registry Act of 2008. In July 2017, legislation was updated with the Tennessee House Bill 123 requiring all certified comprehensive and primary stroke centers in Tennessee to share their data with the TSR to improve stroke care in TN. The bill requires data be provided from hospitals on a quarterly basis through the American Heart Association's Patient Management Tool™ provided by the Quintiles Real World & Late Phase Research. This report provides a summary of aggregate TSR data from 40 hospitals reported to the Tennessee Stroke Registry, obtained through Quintiles software, for January 2021 through December 2021. Comparisons to year 2020 are also provided where indicated throughout this report.

List of Certified Stroke Centers by Certification

Joint Commission Certified Hospitals

Certification	Organization Name	City
Acute Stroke Ready Hospital	Claiborne Medical Center	Tazewell
	Tennova Healthcare	Cleveland
Acute Stroke Ready Hospital	Johnson City Medical Center/Franklin Woods Hospital	Johnson City
Acute Stroke Ready Hospital	Turkey Creek Medical Center	Powell
	Tennova Healthcare-Cleveland	Cleveland
Acute Stroke Ready Hospital	Jefferson Memorial Hospital	Jefferson City
Acute Stroke Ready Hospital	Tennova Newport Medical Center	Newport
Advanced Comprehensive Stroke Center	TriStar Skyline Medical Center	Nashville
Advanced Comprehensive Stroke Center	Baptist Memorial Hospital – Memphis	Memphis
	Fort Sanders Regional Medical Center	Knoxville
Advanced Comprehensive Stroke Center	Saint Thomas West Hospital	Nashville
	Vanderbilt University Medical Center	Nashville
Advanced Comprehensive Stroke Center	The University of Tennessee Medical Center	Knoxville
Advanced Primary Stroke Center	LeConte Medical Center	Sevierville
Advanced Primary Stroke Center	Jackson-Madison County General Hospital	Jackson
Advanced Primary Stroke Center	TriStar Hendersonville Medical Center	Hendersonville
Advanced Primary Stroke Center	Vanderbilt Wilson County Hospital	Lebanon
Advanced Primary Stroke Center	Sumner Regional Medical Center, LLC	Gallatin
Advanced Primary Stroke Center	Roane Medical Center	Harriman
Advanced Primary Stroke Center	Bristol Regional Medical Center	Bristol
Advanced Primary Stroke Center	TriStar Summit Medical Center	Hermitage
Advanced Primary Stroke Center	CHI Memorial Health Care System, Inc.	Chattanooga
Advanced Primary Stroke Center	Parkridge Medical Center, Inc.	Chattanooga
Advanced Primary Stroke Center	Maury Regional Hospital	Columbia
Advanced Primary Stroke Center	Cookeville Regional Medical Center	Cookeville
Advanced Primary Stroke Center	Cumberland Medical Center	Crossville
Advanced Primary Stroke Center	Fort Loudoun Medical Center	Lenoir City
Advanced Primary Stroke Center	Blount Memorial Hospital, Inc.	Maryville

Advanced Primary Stroke Center	Baptist Memorial Hospital - Memphis	Memphis
Advanced Primary Stroke Center	Morristown-Hamblen Hospital Association	Morristown
Advanced Primary Stroke Center	Saint Thomas Rutherford Hospital	Murfreesboro
Advanced Primary Stroke Center	Saint Thomas Midtown Hospital	Nashville
Advanced Primary Stroke Center	Methodist Medical Center of Oak Ridge	Oak Ridge
Advanced Primary Stroke Center	NorthCrest Medical Center	Springfield
Advanced Primary Stroke Center	Parkwest Medical Center	Knoxville
Advanced Primary Stroke Center	North Knoxville Medical Center	Powell
Advanced Primary Stroke Center	Holston Valley Medical Center	Kingsport
Advanced Primary Stroke Center	TriStar Southern Hills Medical Center	Nashville
Advanced Primary Stroke Center	TriStar Horizon Medical Center	Dickson
Advanced Primary Stroke Center	TriStar StoneCrest Medical Center	Smyrna
Advanced Primary Stroke Center	Saint Francis Hospital - Bartlett	Bartlett
Advanced Thrombectomy Capable Stroke Center	Johnson City Medical Center	Johnson City
Advanced Thrombectomy Capable Stroke Center	TriStar Centennial Medical Center	Nashville
Advanced Thrombectomy Capable Stroke Center	Saint Francis Hospital-Memphis	Memphis
Stroke Rehabilitation	Encompass Health Rehabilitation Hospital of Kingsport, LLC	Kingsport
Stroke Rehabilitation	Rebound, LLC	Chattanooga
Stroke Rehabilitation	TriStar Horizon Medical Center	Dickson
Stroke Rehabilitation	TriStar Summit Medical Center	Hermitage
Stroke Rehabilitation	Encompass Health Rehabilitation Hospital of Memphis	Memphis
Stroke Rehabilitation	Encompass Health Corporation	Nashville
Stroke Rehabilitation	Encompass Health Methodist Rehabilitation Hospital, LP	Memphis
Stroke Rehabilitation	West Tennessee Rehabilitation Hospital, LLC	Martin
Stroke Rehabilitation	West Tennessee Rehabilitation Hospital, LLC	Jackson
Stroke Rehabilitation	Encompass Health Rehabilitation Hospital of Franklin, LLC	Franklin
Stroke Rehabilitation	Quillen Rehabilitation Hospital of Johnson City, LLC	Johnson City

*This list was last updated on August 10, 2022. The most up-to-date listing of certified stroke centers can be found on The Joint Commission website or American Heart/American Stroke Association website. **Includes Ballad Health, Johnson City Medical Center and Ballad Health Holston Valley Medical Center.

DNV-GL Certified Hospitals

Organization Name	City	County	Certification program
Erlanger East Hospital	Chattanooga	Hamilton	Acute Stroke Center Certification
Erlanger Health System	Chattanooga	Hamilton	Advanced Comprehensive Stroke Center
Methodist Le Bonheur Germantown Hospital	Germantown	Shelby	Advanced Primary Stroke Center
Methodist North Hospital	Memphis	Shelby	Advanced Primary Stroke Center
Methodist South Hospital	Memphis	Shelby	Advanced Primary Stroke Center
Methodist University Hospital	Memphis	Shelby	Advanced Comprehensive Stroke Center

*This list was last updated on August 10, 2022. The most up-to-date listing of stroke certification of these hospitals can be found on the Methodist Le Bonheur Healthcare website: https://www.methodisthealth.org/healthcare-services/neurology-neurosurgery/stroke-center/.

OVERVIEW OF CERTIFIED STROKE CENTERS

Stroke Centers by Tennessee Department of Health (TDH) Region and Metro Counties

Northeast and Sullivan Metro:
- **Ballad Health**
- **Bristol Regional Medical Center**
- **Holston Valley Medical Center**
- **Johnson City Medical Center**
- **Sycamore Shoals Hospital**

East and Knox Metro:
- **Blount Memorial Hospital**
- **Campbell County HMA, LLC**
- **Fort Sanders Regional Medical Center**
- **Fort Loudon Medical Center**
- **Jefferson County HMA, LLC**
- **Parkwest Medical Center**
- **LeConte Medical Center**
- **Methodist Medical Center Oak Ridge**
- **Newport Medical Center**
- **North Knoxville Medical Center (Tennova)**
- **Turkey Creek Medical (Tennova)**
- **University of Tennessee Medical Center**

Southeast and Hamilton Metro:
- **Erlanger Health System**
- **Memorial Healthcare System**
- **Parkridge Medical Center**

South-Central:
- **Maury Regional Hospital**

Southwest, and Shelby and Madison Metro:
- **Baptist Memorial Hospital**
- **Jackson-Madison County General Hospital**
- **Methodist University Hospitals**
- **Saint Francis Hospital Bartlett**
- **Saint Francis Hospital Memphis**

Mid-Cumberland and Davidson Metro:
- **NorthCrest Medical Center**
- **Morristown-Hamblen Hospital Association**
- **Roane Medical Center**
- **Southern Hills Medical Center**
- **St. Thomas Midtown Hospital**
- **St. Thomas Rutherford Hospital**
- **St. Thomas West**
- **StoneCrest Medical Center**
- **Sumner Regional Medical Center**
- **Tennova Healthcare-Lebanon**
- **TriStar Centennial Medical Center**
- **TriStar Hendersonville Medical Center**
- **TriStar Horizon Medical Center**
- **Tristar Skyline Medical Center**
- **TriStar Summit Medical Center**
- **Vanderbilt University Medical Center**

Upper-Cumberland:
- **Cookeville Regional Medical Center**

2021 TENNESSEE STROKE REGISTRY DATA AND INTERPRETATION

The following figures and tables represent aggregate data from the 40 hospitals reporting to the Tennessee Stroke Registry 2021 with data from January to December of each year. All stroke cases reported include transient ischemic attack (TIA) patients, unless otherwise stated. Data were obtained from Quintiles throughout the month of July in 2022. Illustrations are made on similarities and differences between 2020 and 2021 data.

Variable Descriptions

Measure	Numerator	Denominator
Age	Patients in specific age groups	Patients with a diagnosis of Ischemic stroke, TIA, Subarachnoid hemorrhage, or Intracerebral hemorrhage
Co-morbidities	Patients with co-morbidity	All patients
Transportation times	Patients arriving in time interval	Patients with a diagnosis of Ischemic stroke, TIA, Subarachnoid hemorrhage, Intracerebral hemorrhage, or Stroke not otherwise specified
NIHSS reported	NIH Stroke scale performed as part of initial evaluation AND Total Score is reported	Patients with a diagnosis of Ischemic stroke or Stroke not otherwise specified
Time to Intravenous Thrombolytic Therapy	Patients in time intervals based on time from patient arrival at the ED to time of administration of IV t-PA	Patients with a primary stroke diagnosis of ischemic stroke who received IV t-PA at my hospital
Reasons for no IV-rtPA	Patients in exclusion criteria group	Patients with a primary stroke diagnosis of ischemic stroke who arrived at the ED <270 minutes after the onset of stroke symptoms and had reason(s) why IV t-PA was not started at my hospital
Reasons for no IV-rtPA beyond 60 min	Patients grouped by reason	Patients with a primary stroke diagnosis of ischemic stroke in whom IV tPA was initiated greater than 60 minutes after hospital arrival
Modified Rankin Scale at discharge	Patients in each Modified Rankin Scale at discharge value	Patients with a diagnosis of Ischemic Stroke or Subarachnoid Hemorrhage or Intracerebral Hemorrhage or Stroke not otherwise specified
Complication types	Patients in each of the 4 combination groups (therapy received versus complication experienced)	Patients with a primary stroke diagnosis of ischemic stroke who received IV t-PA or intra-arterial thrombolytic therapy at my hospital
Initial exam findings	Patients grouped by exam finding	Patients with a diagnosis of Ischemic Stroke or TIA or Subarachnoid Hemorrhage

		or Intracerebral Hemorrhage or Stroke not otherwise specified
Length of stay	Patients grouped by stroke type	All patients
GWTG/PAA Defect Free	All patients which were included in the numerator for all of the measures that they were not excluded from	All patients which are included in the denominator for at least one of these measures: • IV rt-PA 2 Hour • Early Antithrombotics • VTE Prophylaxis (for patients discharged on or after 4/7/2012) • DVT Prophylaxis (GWTG Historic) (for patients discharged before 4/7/2012) • Antithrombotics* • Anticoag for AF* • LDL 100 or ND-Statin * • Smoking Cessation
CDC/COV Defect Free	All patients which were included in the numerator for all of the measures that they were not excluded from	All patients which are included in the denominator for at least one of these measures: • IV rt-PA 2 Hour • Early Antithrombotics • VTE Prophylaxis • Antithrombotics • Anticoag for AF • LDL 100 or ND • Smoking Cessation • Dysphagia Screen • Stroke Education • Rehabilitation Considered

*Percentages in graphs are based on the number of cases per year, unless otherwise specified.

Diagnosis

Overall, the patterns and distributions for 2021 are similar to what was seen the previous year, 2020. The total number of stroke cases reported for 2021 was 13,577, of which the most common type was ischemic stroke at (71%) . Subarachnoid hemorrhage (SAH) and intracerebral hemorrhage (ICH) consisted of 19% combined whereas only 8% reported were transient ischemic attacks (TIAs). See Figure 1 below for reference.

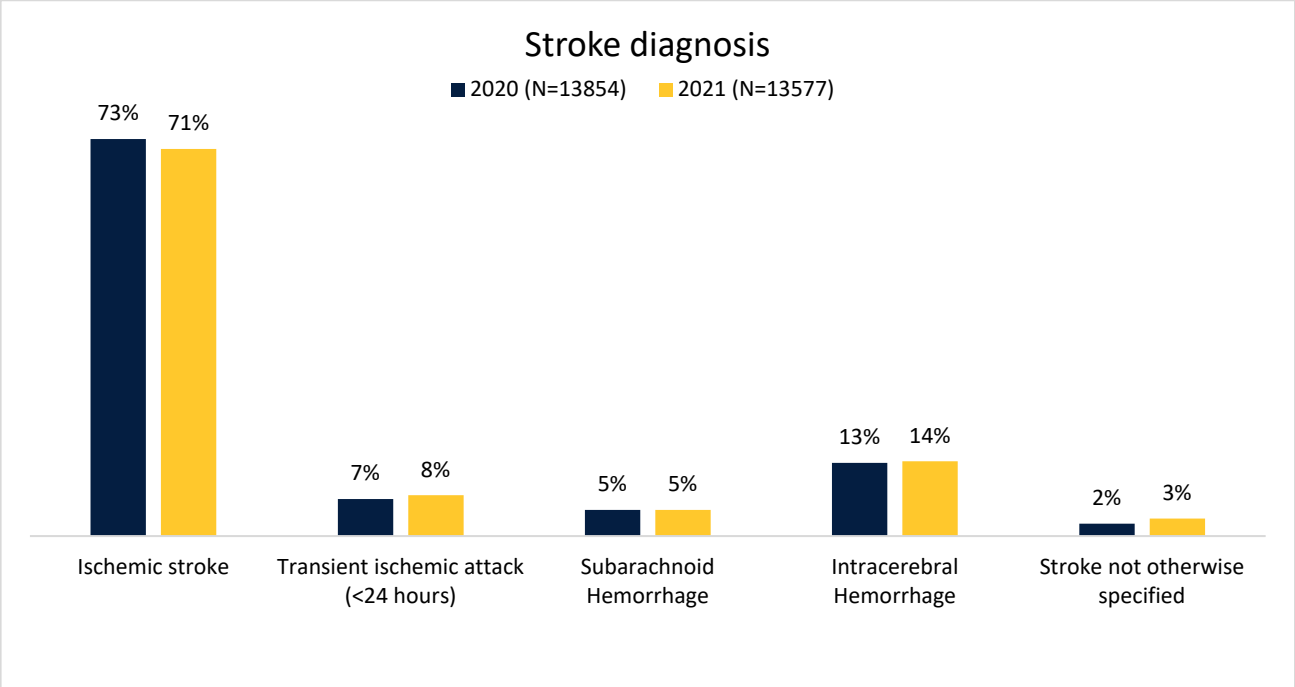

Figure 1. Distribution of stroke diagnosis in 2021.

Gender Distributions

Gender distributions in 2021 were consistent with data from 2020 with similar percentages of male and female cases for ischemic stroke, and slightly higher percentages of female cases for TIA (54% versus 46%) and similar proportions of male and female cases of ICH (53% versus 47%). Gender differences in strokes were nearly double for females vs males for both years 2020 and 2021. See Figure 2 below for reference.

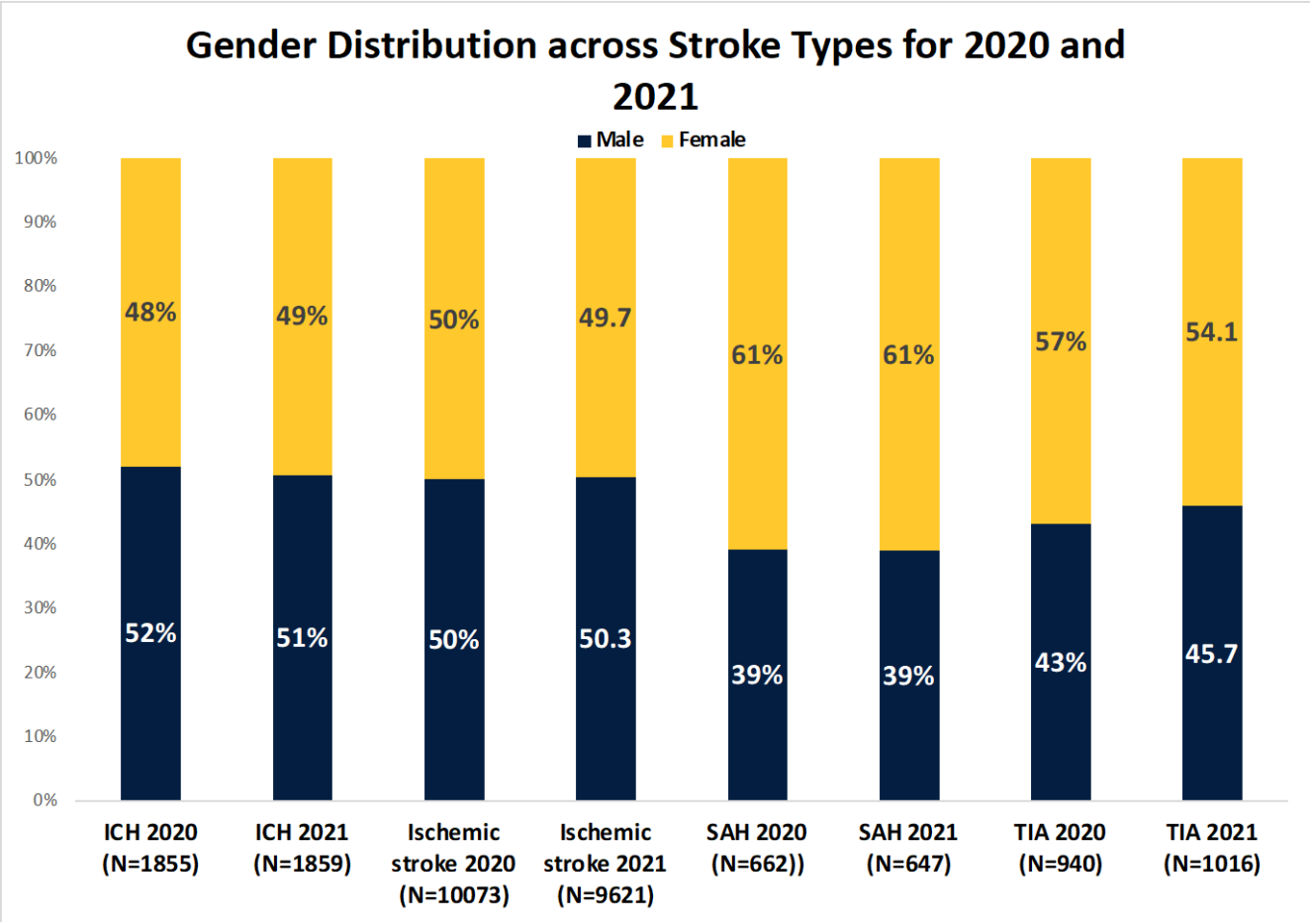

Figure 2. Comparison of the distribution of stroke by gender, years 2020 and 2021.

Age Distributions

Majority of strokes occurred in adults aged 66-85 followed by adults aged 46-65. The least number of strokes occurred among adults aged 85 or older followed by adults 18-45 years of age. Among ages 66-85 years, majority experienced a transient ischemic attack (<24 hours) followed by an ischemic stroke or intracerebral hemorrhage. Among adults aged 46-65, majority of strokes were subarachnoid hemorrhage followed by ischemic and intracerebral hemorrhage. Among adults aged 85 or older, the least occurring type was subarachnoid hemorrhage whereas all other stroke types occurred nearly the same frequency. Comparatively, among adults aged 18-45 years, the most common stroke type was subarachnoid hemorrhaging whereas all other stroke types occurred less frequently (see Figure 3 for reference).

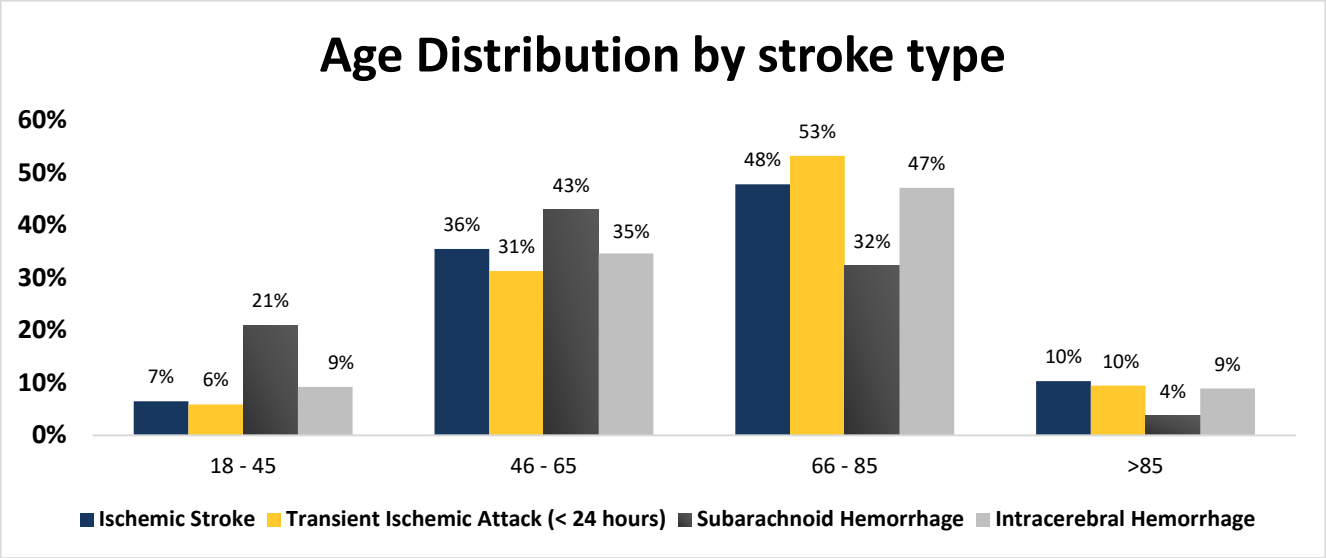

Figure 3. Age distribution for all stroke types in 2021

Race

The two most common stroke types among White, Black or African American, and UTD races were Intracerebral Hemorrhage or Ischemic Stroke. Strokes were most common among White and second most common among Black or African American. All other races reported strokes less frequently across all stroke types at or less than 5.1% (see Figure 4 for reference).

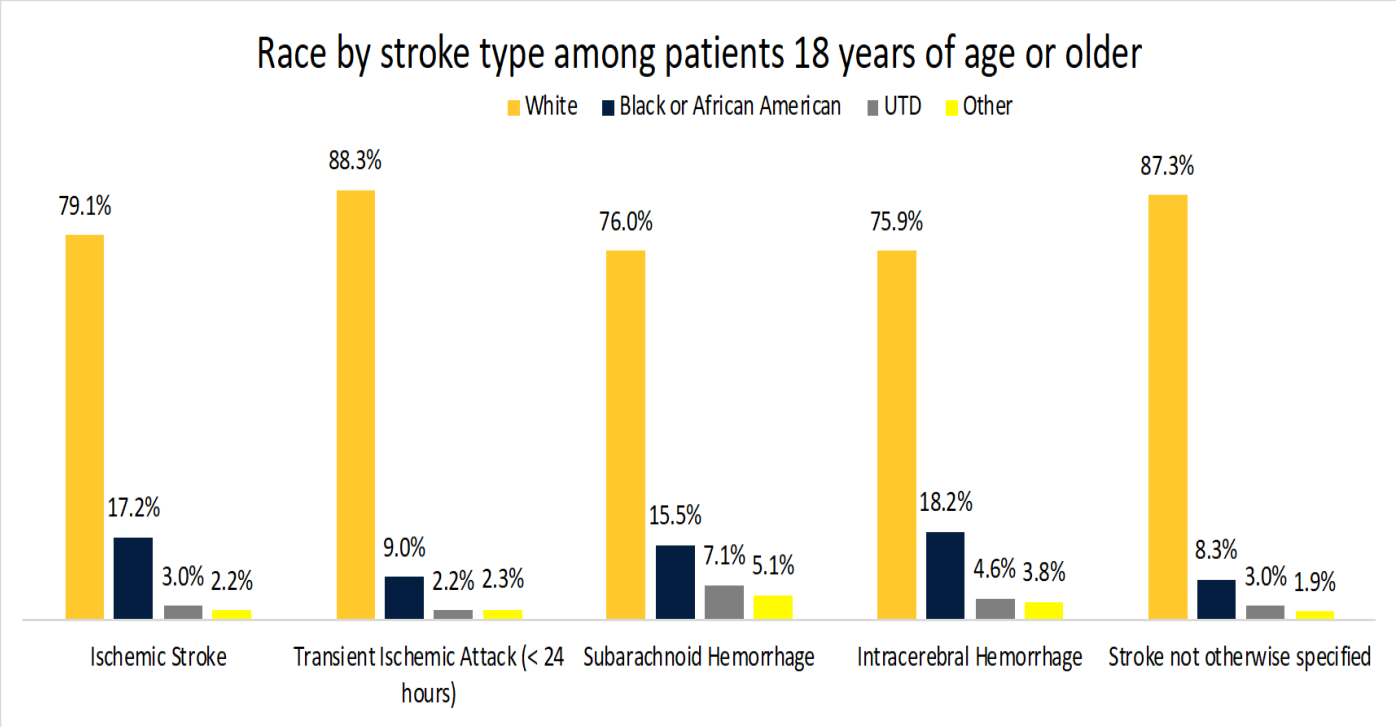

Figure 4. Race distribution of stroke patients aged 18 and older for all stroke types in 2020.

Co-morbidities

The top three co-morbidities among stroke patients in 2021 were hypertension (75%), dyslipidemia (43%), and diabetes mellitus (33%); all proportions were slightly similar or the same as year 2020. Few differences in proportions were seen across all seven co-morbidities for both years 2020 and 2021. See Figure 5 below for reference.

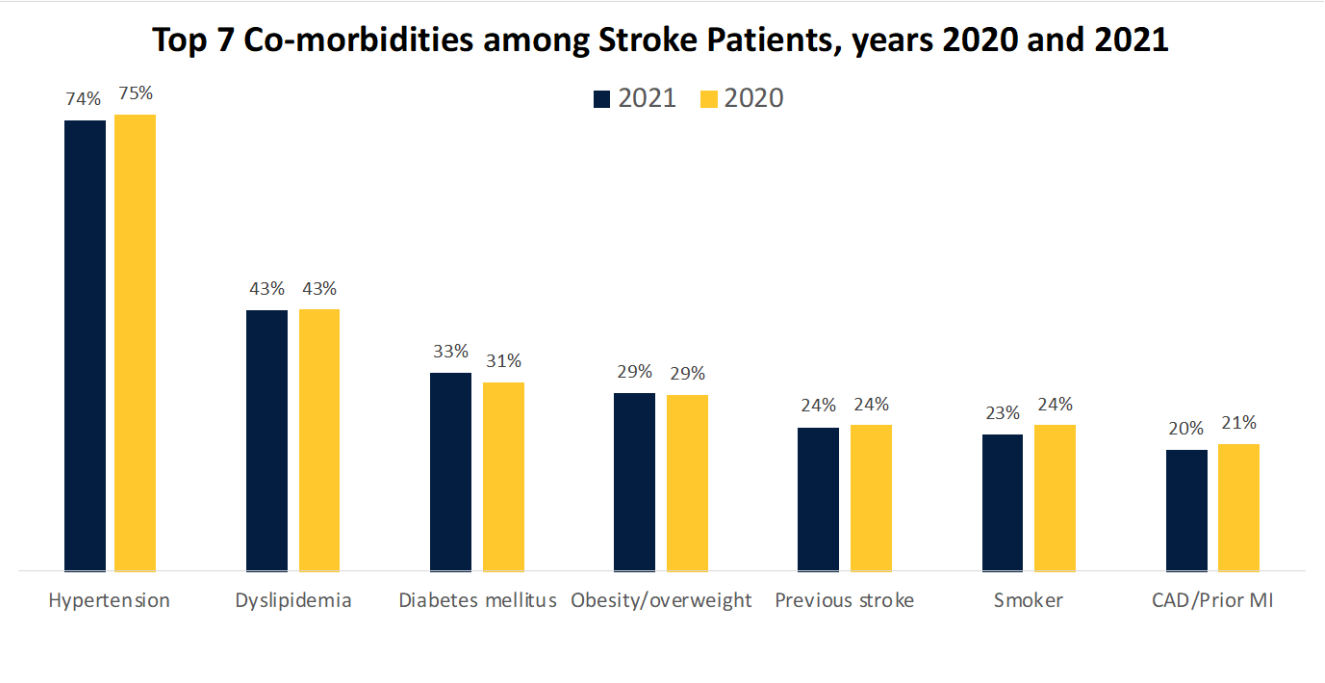

Figure 5. Most common comorbidities for all stroke types in 2020 and 2021.

Arrival Mode

Majority of arrival modes were via Emergency Medical Services (EMS) from home/scene (45.2%) followed by Private Transport (30.8%) and then transfer from other hospital (23.9%). Refer to Figure 6 below for reference. EMS from home/scene was most common for Intracerebral hemorrhage and stroke not otherwise specified whereas private transport was most common for transient ischemic attack (<24 hours). Transfer from other hospital was most common for subarachnoid hemorrhage. Less than 1% arrived by ND or Unknown across all stroke types not reported here. Refer to Figure 7 for reference.

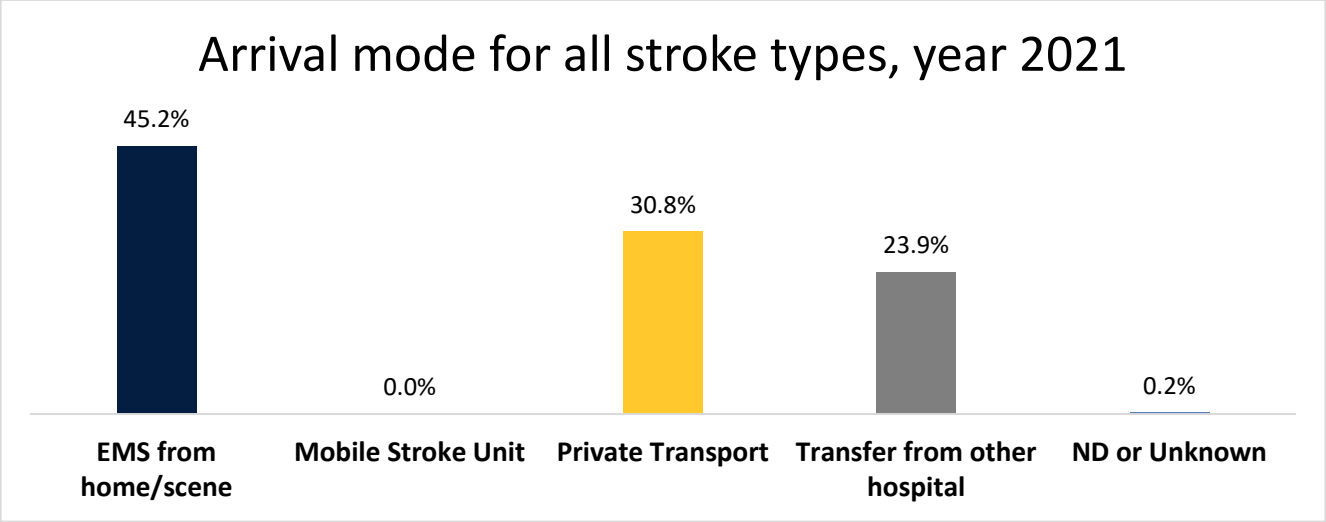

Figure 6. Arrival mode for all stroke types in 2021.

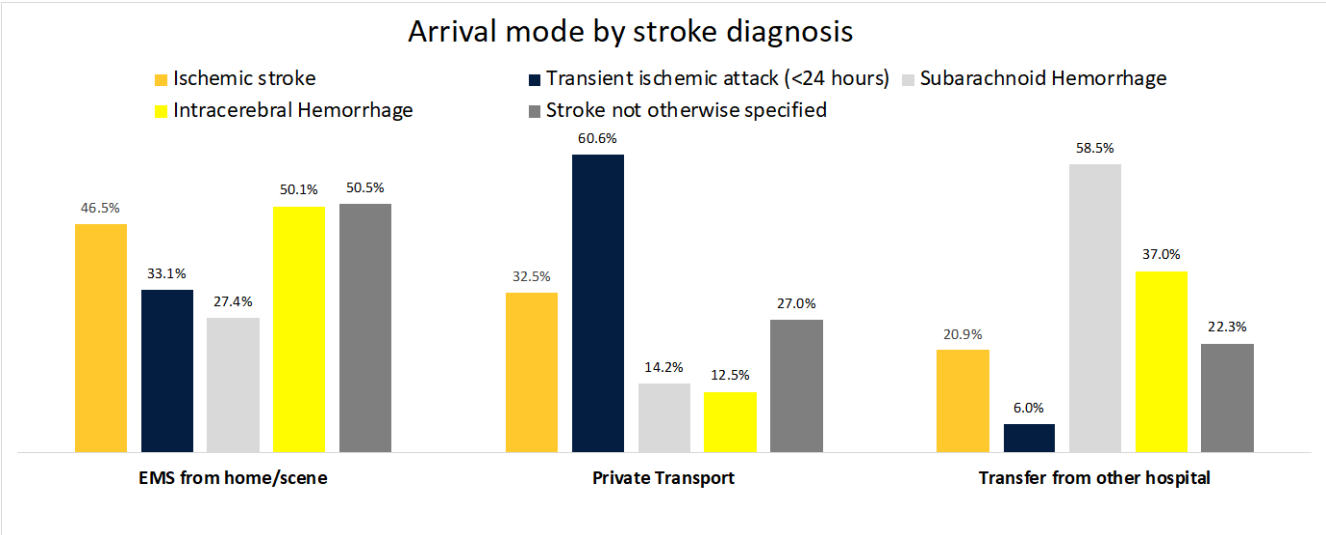

Figure 7. Arrival mode categorized by stroke types in 2021.

Last Known Well to Arrival times

LKW to arrival time is defined as the amount of time between when the patient first began experiencing stroke symptoms and their arrival at the hospital.

Overall, private transport observes longer transportation times from home/scene in comparison to Emergency Medical Services (EMS) transport. Most patients arrived at the hospital in over 300 minutes via private transportation (75%), while only 55.4% of patients via EMS services arrived in that time frame. Meanwhile, 13.7% of patients arrived to the hospital via EMS services in less than 60 minutes. Refer to Figure 8 below for reference.

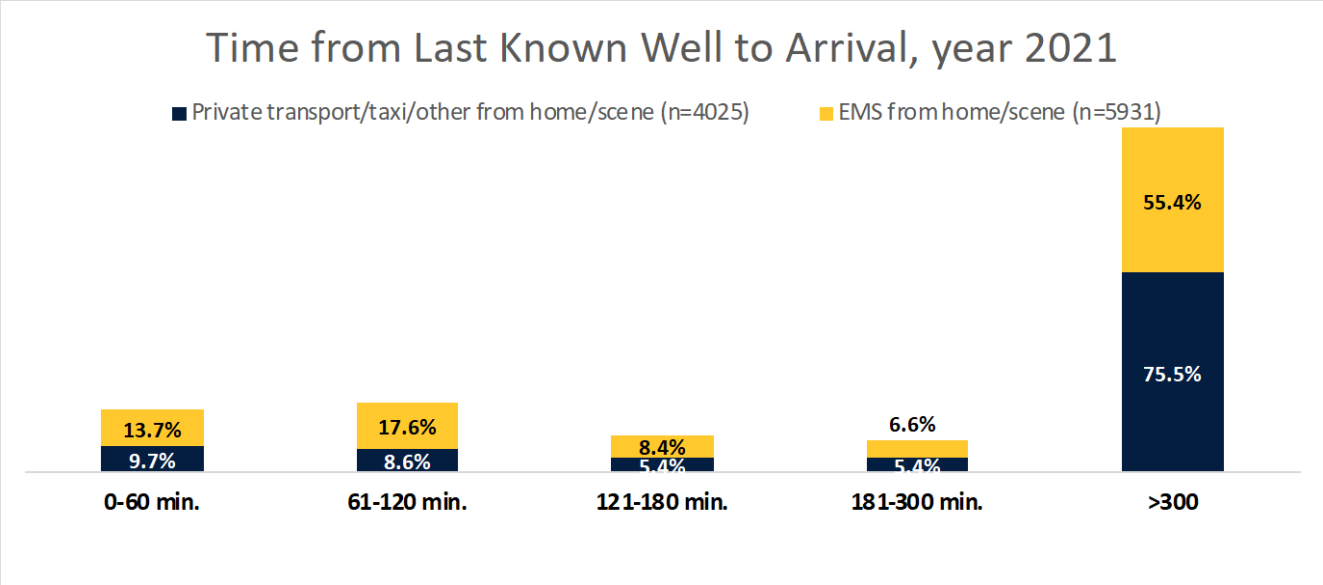

Figure 8. Last Known Well (LKW) to arrival times for all stroke types in 2021.

Insurance status

The majority of stroke patients had Medicare, with 56% of patients paying with Medicare in 2021 compared with 50% in 2020. This reflects that the most common age group experiencing strokes are those from ages 66-85, the group most likely to have Medicare insurance (see Figure 9 below).

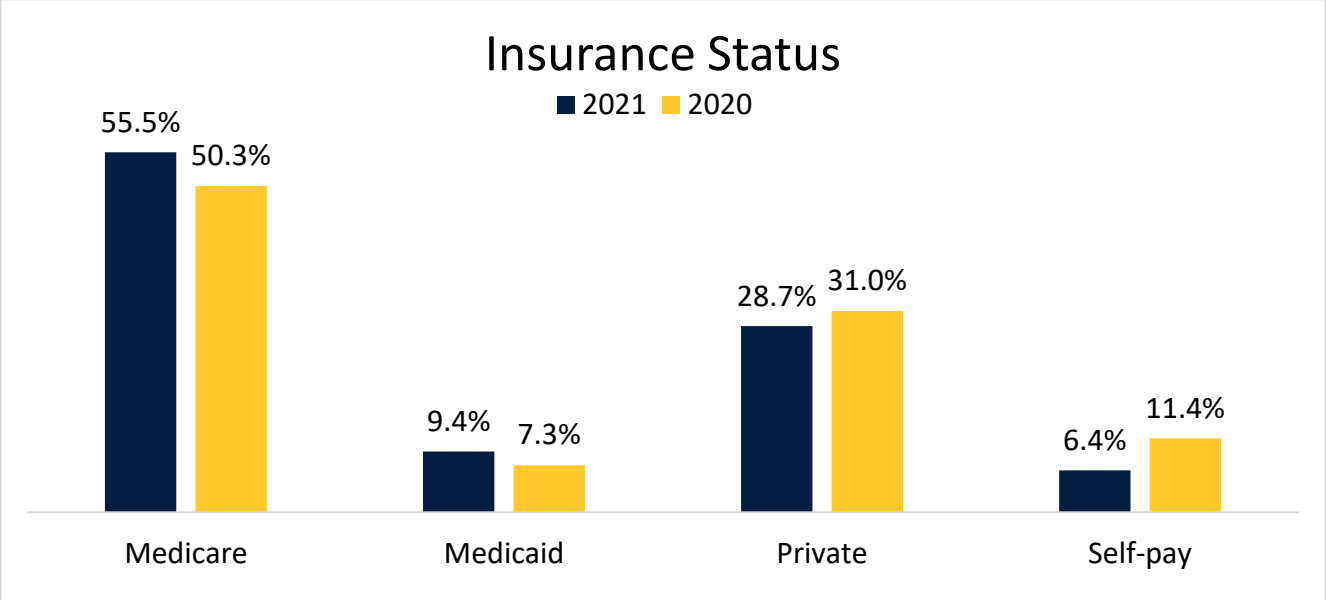

Figure 9. Insurance status of patients in 2021 compared to 2020.

Achievement Measures

The GWTG-Stroke program requires the following consensus measures. Descriptions are from the Patient Management Tool program, IQVIA.

IV Thrombolytic Arrive by 3.5 Hour, Treat by 4.5 Hour: Percent of acute ischemic stroke patients who arrive at the hospital within 210 minutes (3.5 hours) of time last known well and for whom IV thrombolytic was initiated at this hospital within 270 minutes (4.5 hours) of time last known well.

Early Antithrombotics: Percent of patients with ischemic stroke or TIA who receive antithrombotic therapy by the end of hospital day two.

VTE Prophylaxis: Percent of patients with an ischemic stroke, hemorrhagic stroke, or stroke not otherwise specified who receive VTE prophylaxis the day of or the day after hospital admission.

Antithrombotics: Percent of patients with an ischemic stroke or TIA prescribed antithrombotic therapy at discharge.

Anticoag for Afib/Aflutter: Percent of patients with an ischemic stroke or TIA with atrial fibrillation/flutter discharged on anticoagulation therapy.

Smoking Cessation: Percent of patients with ischemic stroke, hemorrhagic stroke, or TIA with a history of smoking cigarettes, who are, or whose caregivers are, given smoking cessation advice or counseling during hospital stay.

Intensive Statin Therapy: Percentage of ischemic stroke or TIA patients who are prescribed high-intensity statin therapy at discharge OR, if > 75 years of age, are prescribed at least moderate-intensity statin therapy at discharge.

Achievement measure	2020	2021
IV Thrombolytic Arrive by 3.5 Hour, Treat by 4.5 Hour	93.3%	95.1%
Early Antithrombotics	97.6%	97.4%
VTE Prophylaxis	97.1%	95.2%
Antithrombotics	99.4%	99.6%
Anticoag for Afib/Aflutter	98.0%	95.4%
Smoking Cessation	98.7%	98.8%
Intensive Statin Therapy	92.4%	94.1%

Table 1. Percent of patients receiving achievement measures, 2020 vs 2021.

There was a slight increase in IV Thrombolytic Arrive by 3.5 Hour, Treat by 4.5 Hour and intensive statin therapy by about 2% from 2020 to 2021. Early Antithrombotics,

Antithrombotics, and Smoking Cessation remained about the same from 2020-2021. VTE prophylaxis and Anticoag for Afib/Aflutter decreased approximately 2% from 2020 to 2021 (refer to Table 1 above).

Quality Measures

The GWTG-Stroke program requires the following consensus measure. Descriptions are from the Patient Management Tool program, IQVIA.

Dysphagia Screen: Percent of stroke patients who undergo screening for dysphagia with an evidence-based bedside testing protocol approved by the hospital before being given any food, fluids, or medication by mouth.

Stroke Education: Percent of patients with stroke or TIA or their caregivers who were given education and/or educational materials during the hospital stay addressing ALL of the following: personal risk factors for stroke, warning signs for stroke, activation of emergency medical system, need for follow-up after discharge, and medications prescribed.

Rehabilitation Considered: Percent of patients with stroke who were assessed for rehabilitation services.

Time to Intravenous Thrombolytic Therapy - 60 min: Percent of acute ischemic stroke patients receiving intravenous tissue plasminogen activator (thrombolytic) therapy during the hospital stay who have a time from hospital arrival to initiation of thrombolytic therapy administration (door-to-needle time) of 60 minutes or less.

LDL Documented: Percent of ischemic stroke or TIA patients with a documented Lipid profile.

NIHSS Reported: Percent of ischemic stroke and stroke not otherwise specified patients with a score reported for NIH Stroke Scale (Initial)

Quality measure	2020	2021
Dysphagia screen	88.0%	86.5%
LDL documented	94.8%	95.4%
NIHSS reported	95.9%	95.3%
Rehabilitation considered	99.0%	99.4%
Stroke education	94.8%	95.3%
Time to intravenous thrombolytic therapy - 60 min	89.0%	91.1%

Table 2. Percent of patients receiving quality measures, 2020 vs 2021.

There was a slight decrease in dysphagia screening from 2020 to 2021, 88 to 86.5% respectively. Rehabilitation considered, NIHSS reported, and stroke education remained the same from 2020-2021. All other categories increased by 1-2% from 2020 to 2021 (refer to Table 2).

Time to Intravenous Thrombolytic Therapy

IV t-PA was initiated within 60 minutes in 2021 overall was at 91.1%, slightly lower than in 2020 at 93% (refer to Figure 10 below). Arriving by EMS was nearly twice as fast as private transport specifically for the 0-30 minute time frame (34.5% vs 19.3% respectively). Comparatively, private transport was slightly faster than EMS specifically for the 30–60-minute timeframe (64.5% vs 58.4% respectively). Refer to Figure 11 below for reference.

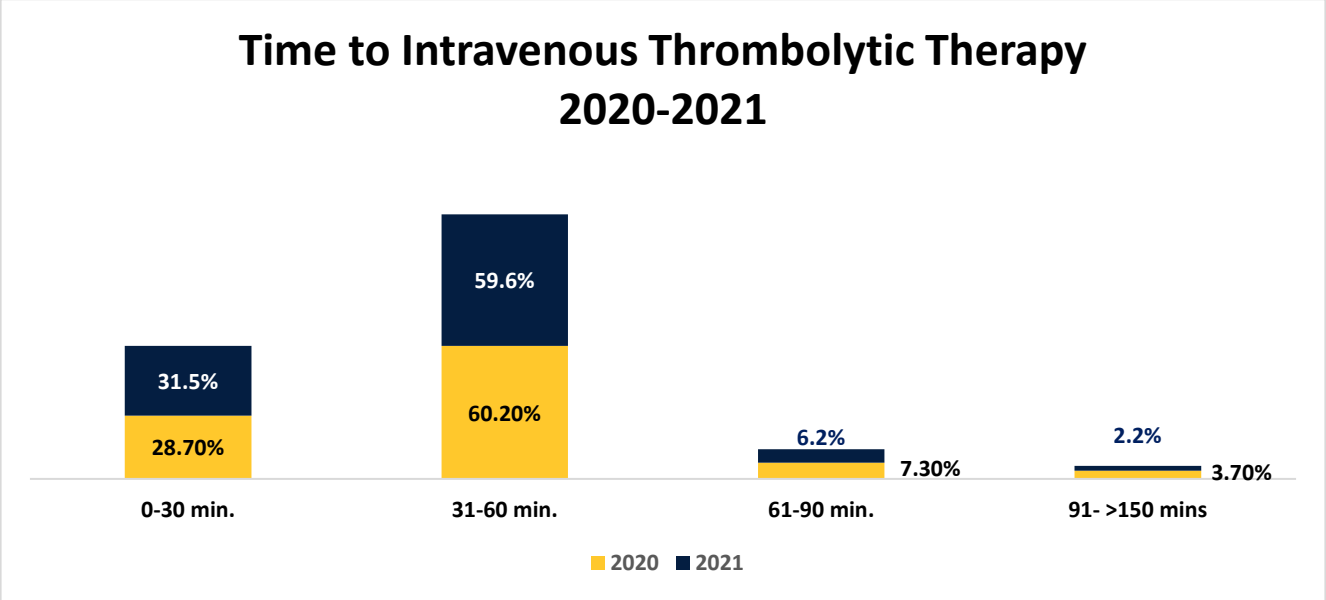

Figure 10. Time to intravenous thrombolytic therapy from 2020-2021.

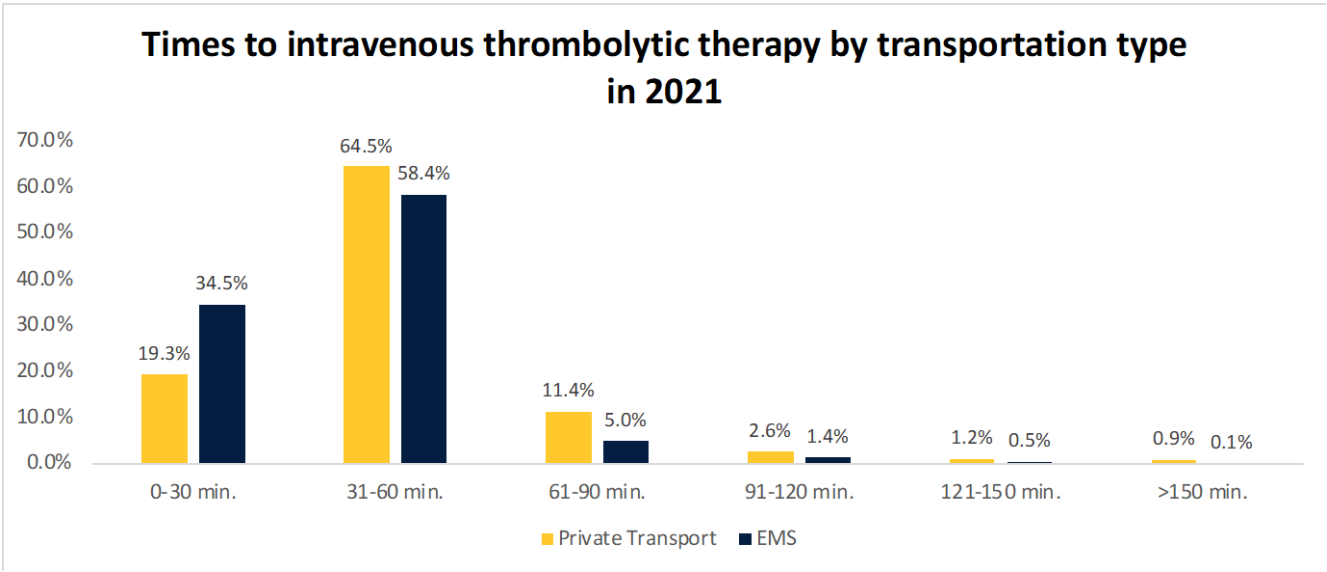

Figure 11. Comparison of times to intravenous thrombolytic therapy by transportation type in 2021.

Reasons for no IV rt-PA

The percentages in the chart below (Figure 12) represent the most frequent reason for IV rt-PA not initiated among patients with a primary stroke diagnosis of ischemic stroke who arrived at the ED <270 minutes after the onset of stroke symptoms. The top reasons for no IV rt-PA initiation in 2021, in order of highest proportion of patients to lowest, were because the stroke was too mild, IV or IA tPA was given outside the hospital, acute bleeding diathesis, UTD eligibility, Recent IC or spinal surgery, anticoagulant use and patient refusal. These were all the same from year 2020 except age over 80 was more common than patient refusal.

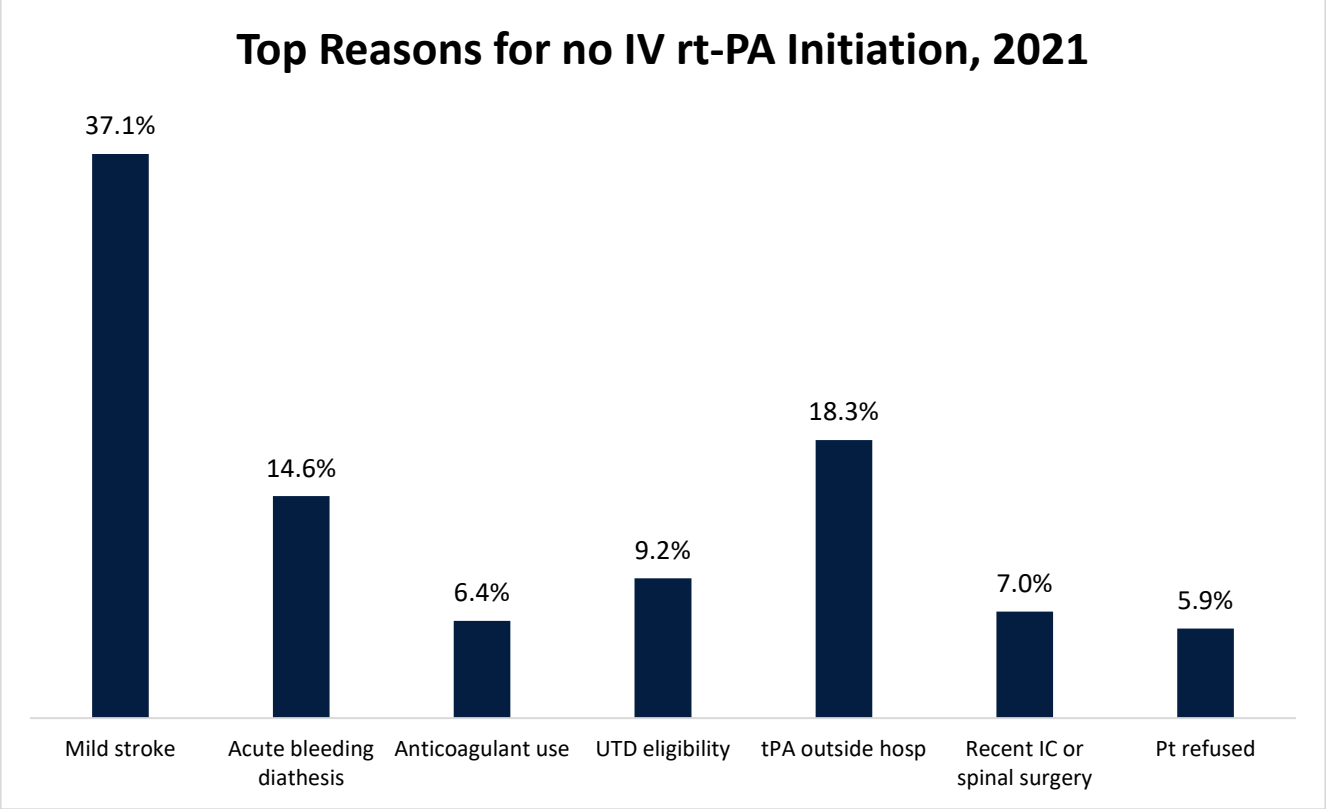

Figure 12. Top seven reasons in 2021 for no IV rt-PA initiation.

Reasons for Delay of IV rt-PA Beyond 60 Minutes

The percentages below (Figure 13) represent patients with a primary stroke diagnosis of ischemic stroke in whom IV tPA was initiated greater than 60 minutes after hospital arrival. The most common reason for delay in IV rt-PA beyond 60 minutes was the care-team being unable to determine the eligibility of the patient (47%) followed by the patient having hypertension (33.4%).

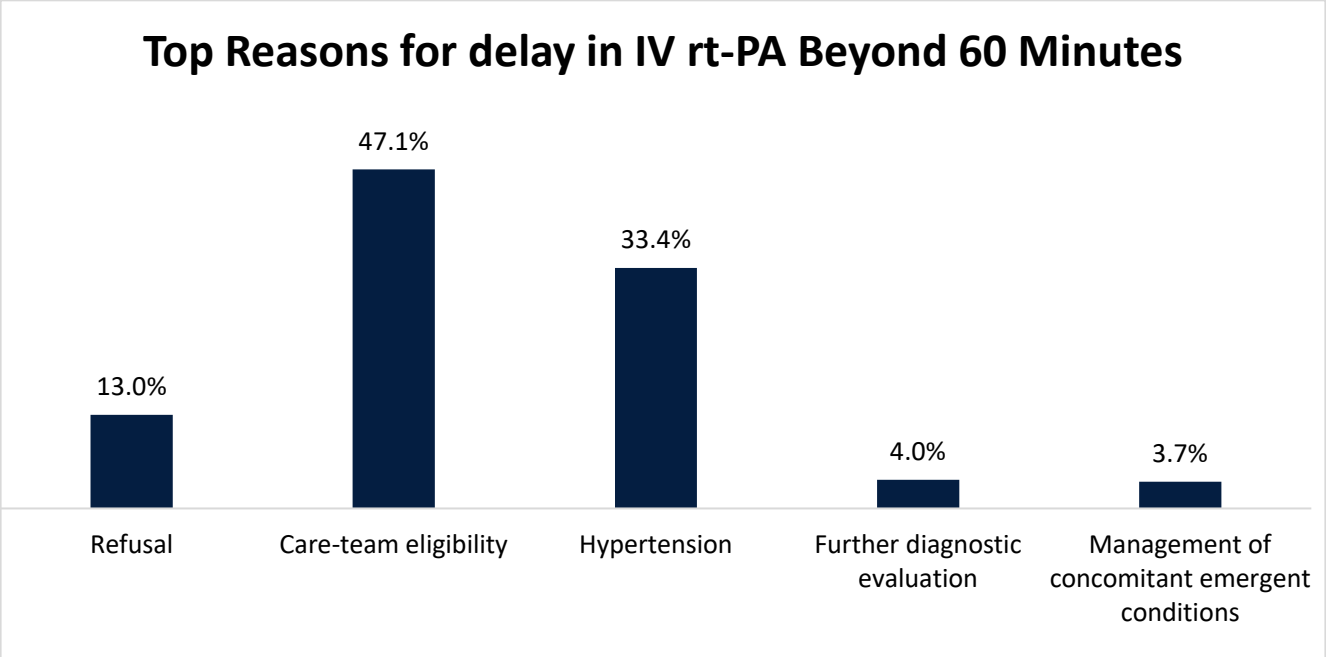

Figure 13. Top five reasons in 2021 for IV rt-PA initiation beyond 60 mins.

Modified Rankin Scale at Discharge

In year 2020, 75% of patients had their Modified Rankin Scale at discharge documented in 2020 whereas a 4% decrease was observed in 2021 with 71.4% having had their Modified Rankin Scaled at discharge documented (see Figure 14).

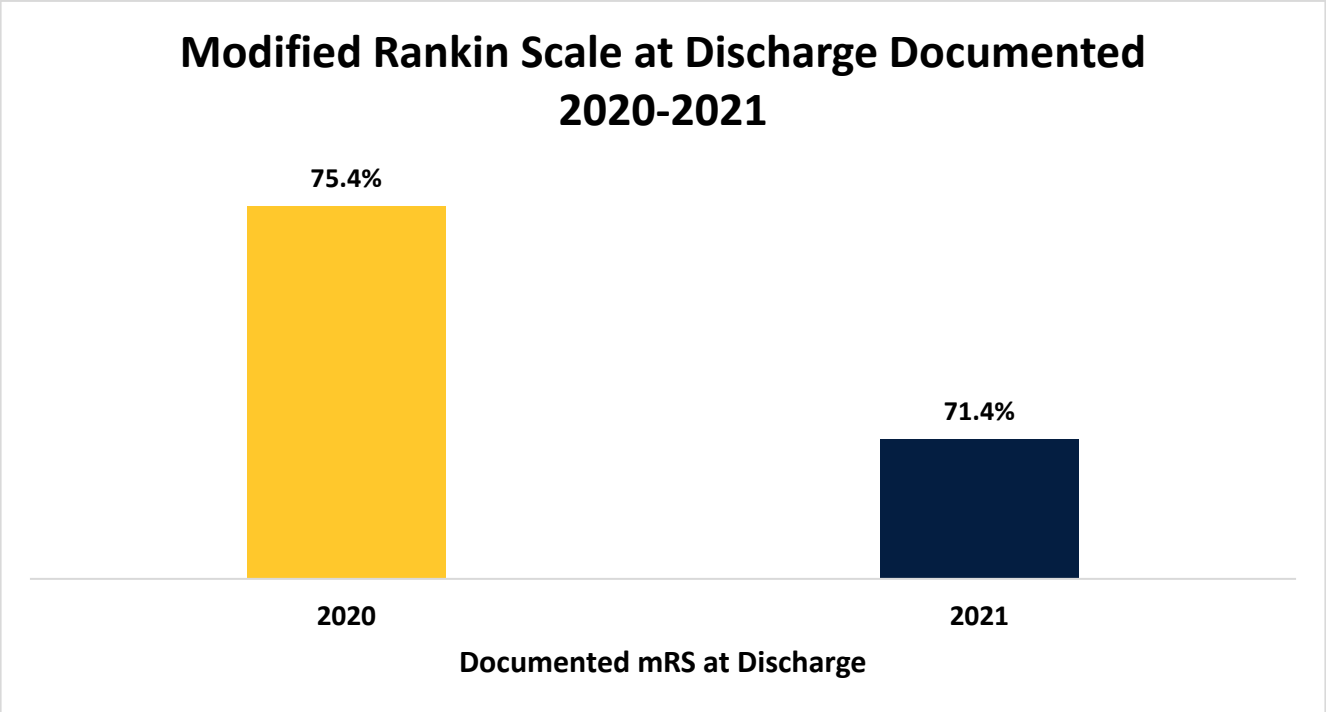

Figure 14. Percentage of patients with Modified Rankin Scale documented from 2020 compared to 2021.

The Modified Rankin Scale ranges from 0-6, with the following designations for values:

- 0 - No symptoms at all
- 1 - No significant disability despite symptoms: Able to carry out all usual activities
- 2 - Slight disability
- 3 - Moderate disability: Requiring some help but able to walk without assistance
- 4 - Moderate to severe disability: Unable to walk without assistance and unable to attend to own bodily needs without assistance
- 5 - Severe disability: Bedridden, incontinent and requiring constant nursing care and attention
- 6 - Death

Majority of individuals fell into “moderate to severe disability” under category 4 followed by categories 1-3 which involved no significant disability to moderate disability levels. See Figure 15 below.

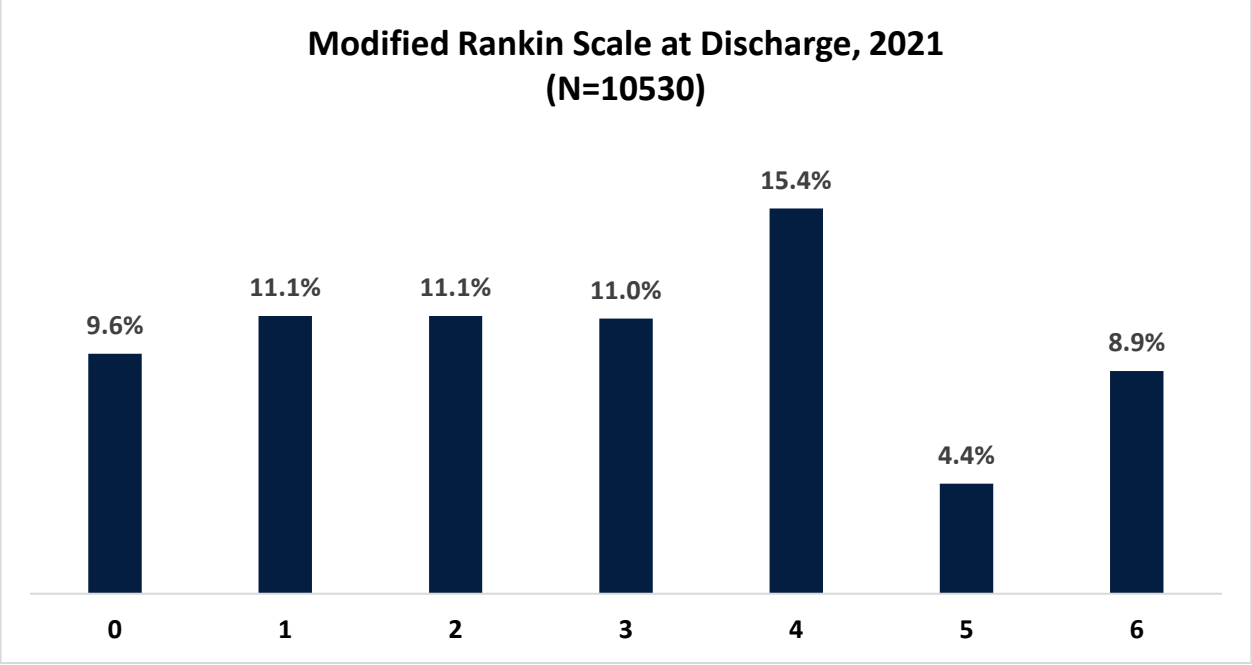

Figure 15. Modified Rankin Scale at Discharge 2021.

Complication Types

The most common type of complication for IV-tPA in 2021 was Intra-arterial and Symptomatic Intracranial Hemorrhage at 53%, a decrease compared to 2020 at 57%. This means that out of all patients with a primary stroke diagnosis of ischemic stroke who received IV t-PA or intra-arterial thrombolytic therapy, most complications were an Intra-arterial and Symptomatic Intracranial Hemorrhage. A dramatic increase was seen in IV t-PA and Symptomatic Intracranial Hemorrhage in 2021 at 50.9% whereas in 2020 it was only 32.3%. All other complications remained fairly close between both years. See Figure 16 below.

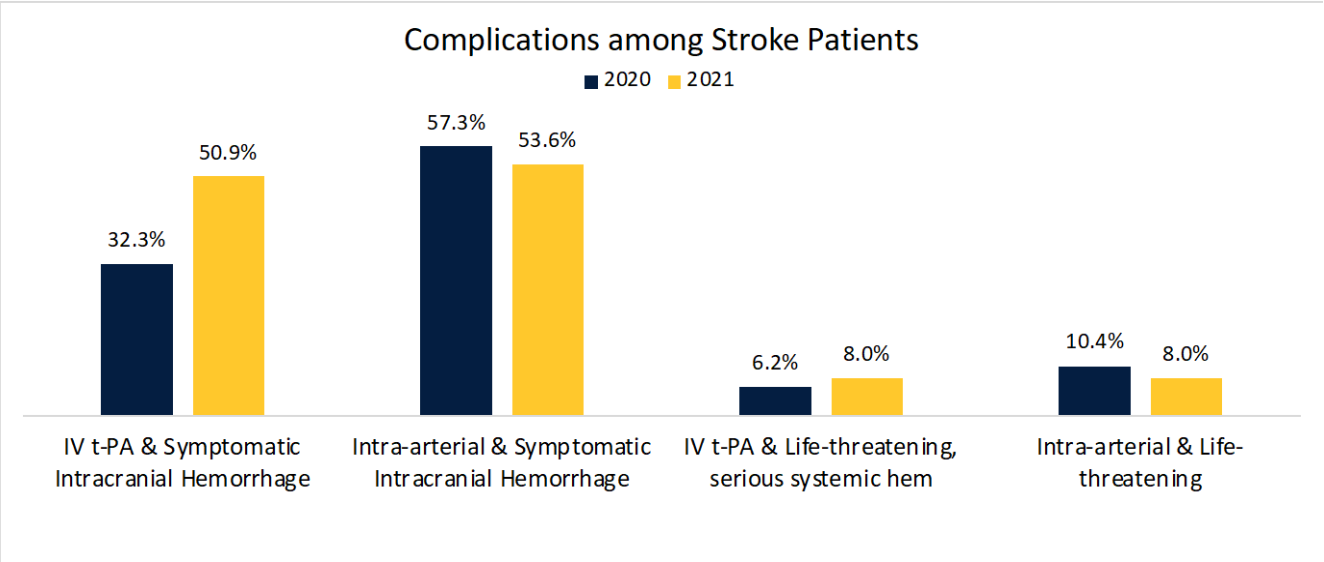

Figure 16. Complications found in IV rt-PA from 2020-2021.

Initial Exam Findings

The two most common findings in initial exam of patients in 2020 and 2021 were weakness/paresis (54%) and neurological symptoms other than altered level of consciousness and aphasia (40%). Refer to Figure 17 below.

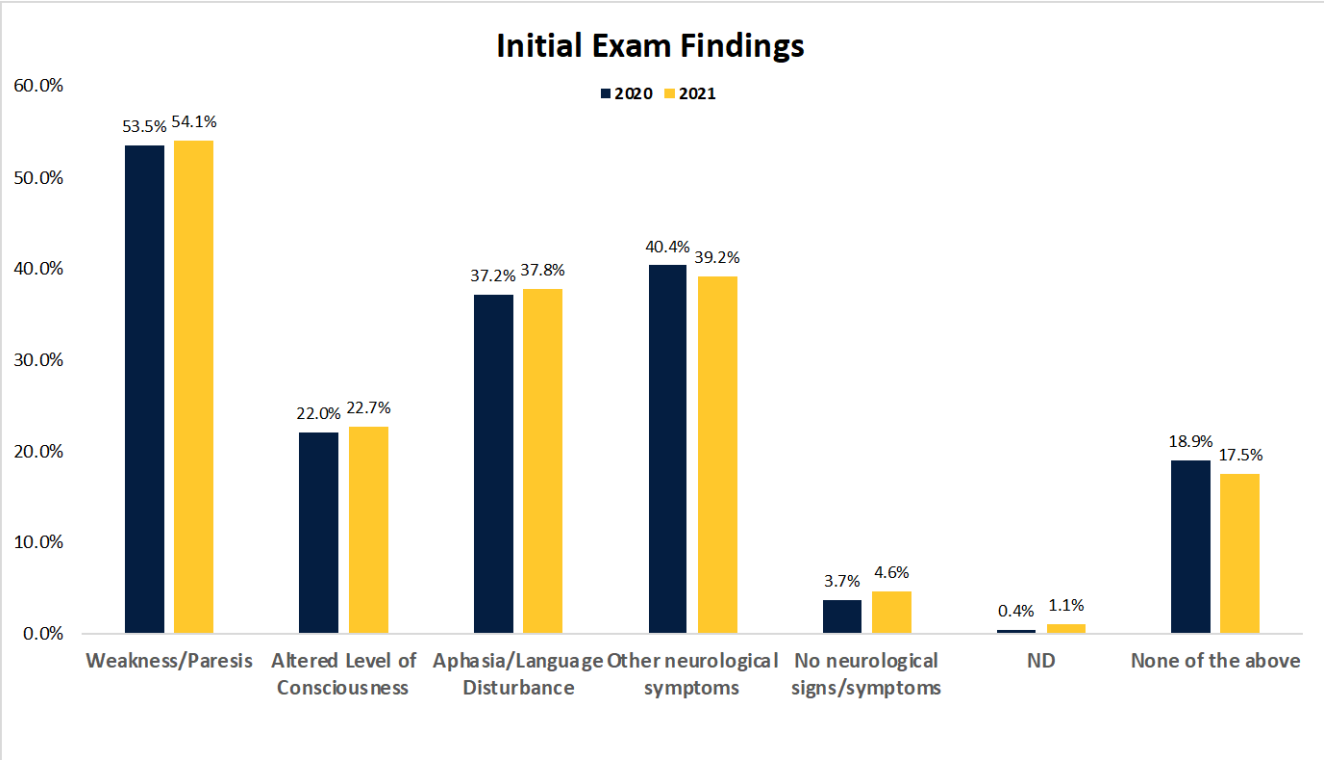

Figure 17. Initial exam findings in 2020 and 2021.

Average Length of Stay

The type of stroke with the longest length of hospital stay (LOS) was SAH at about 12 days, and the shortest LOS was TIA and Elective Carotid Intervention only at about 2 days. This was true for both 2020 and 2021. Refer to Figure 18 below.

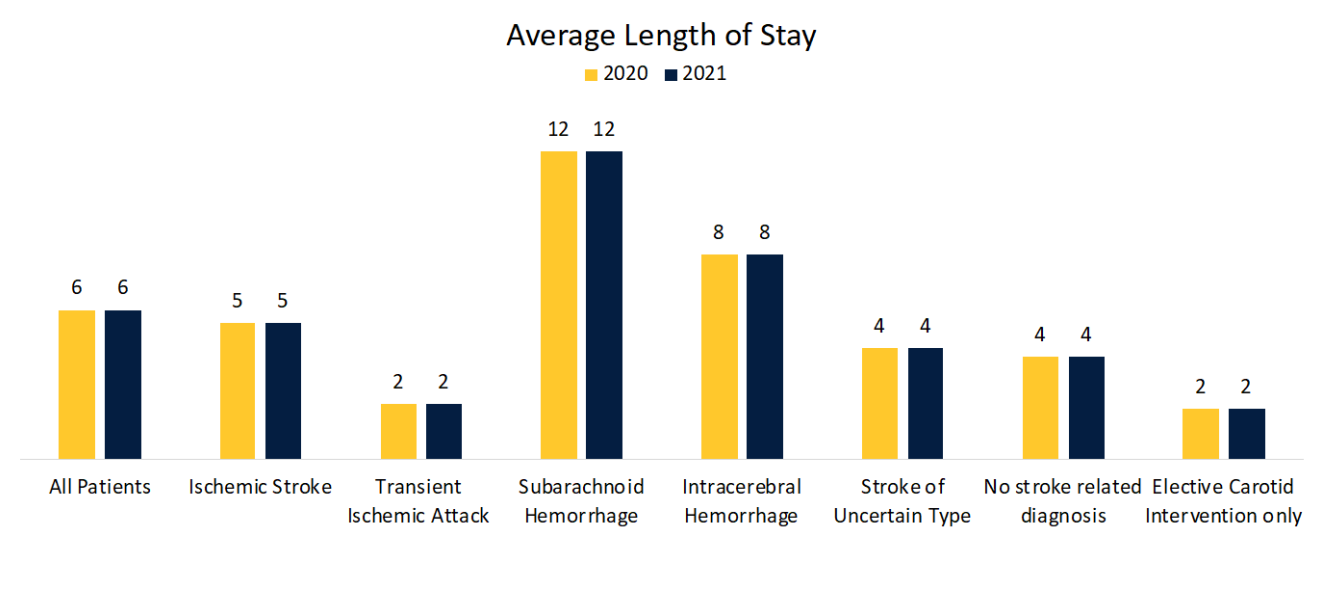

Figure 18. Average length of stay in 2020 and 2021.

GTWTG/PAA Defect Free

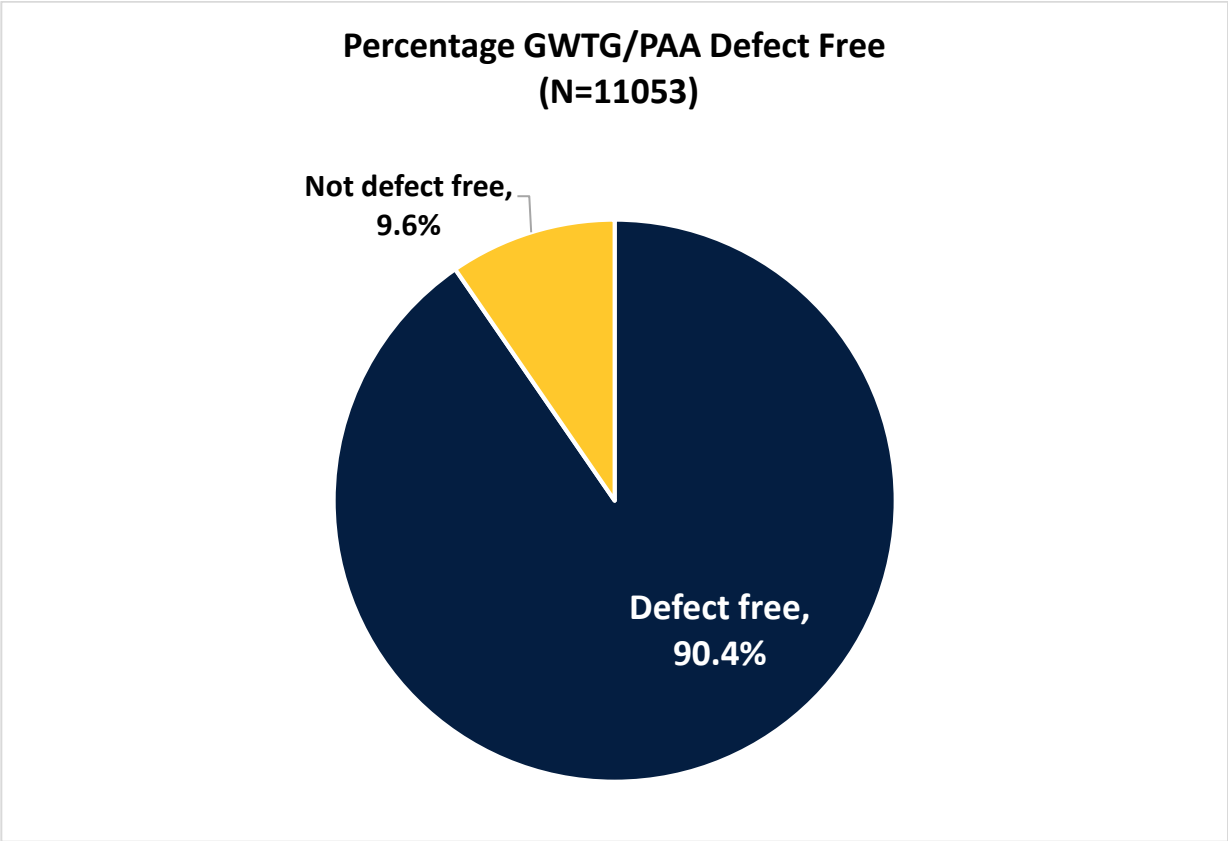

Figure 19. Percent of patients who received defect-free care according to GWTG standards.

CDC/COV Defect Free

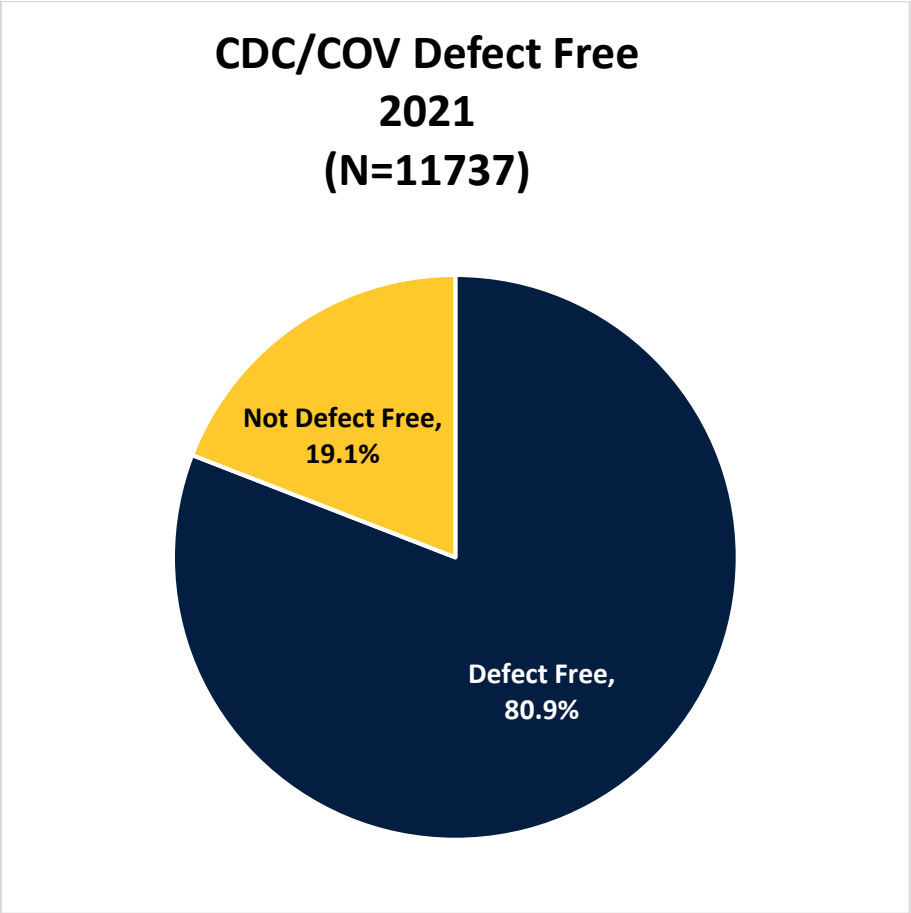

Figure 20. Percent of patients who received defect-free care according to Center for Disease Control (CDC) standards.

Limitations to data presented in this report

Data reported are based on data provided to the Tennessee Stroke Registry from reporting hospitals and may not be inclusive of all strokes in the state of Tennessee. Data are combined for all hospitals and are reported in aggregate.

How To Participate in GWTG-Stroke

According to Tennessee House Bill 123, all certified comprehensive and primary stroke centers in Tennessee are required to submit their data to the TSR in order to improve stroke care in the state. The bill requires data to be provided from hospitals on a quarterly basis. Additional information is available on the TSR website, as well as the Hospital Participation form and the Amendment to Hospital Participation Form: https://www.etsu.edu/cph/biostat_epidemiology/tnstroke.php.

The local GWTG contact is Kaley Pelton, who can assist hospitals in enrolling in GWTG-Stroke and the Tennessee Stroke Registry.

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1. The Type of Treatment Depends on the Type of Stroke. Am Stroke Assoc. *http://www.strokeassociation.org/STROKEORG/AboutStroke/Treatment/Stroke-Treatment_UCM_492017_SubHomePage.jsp*