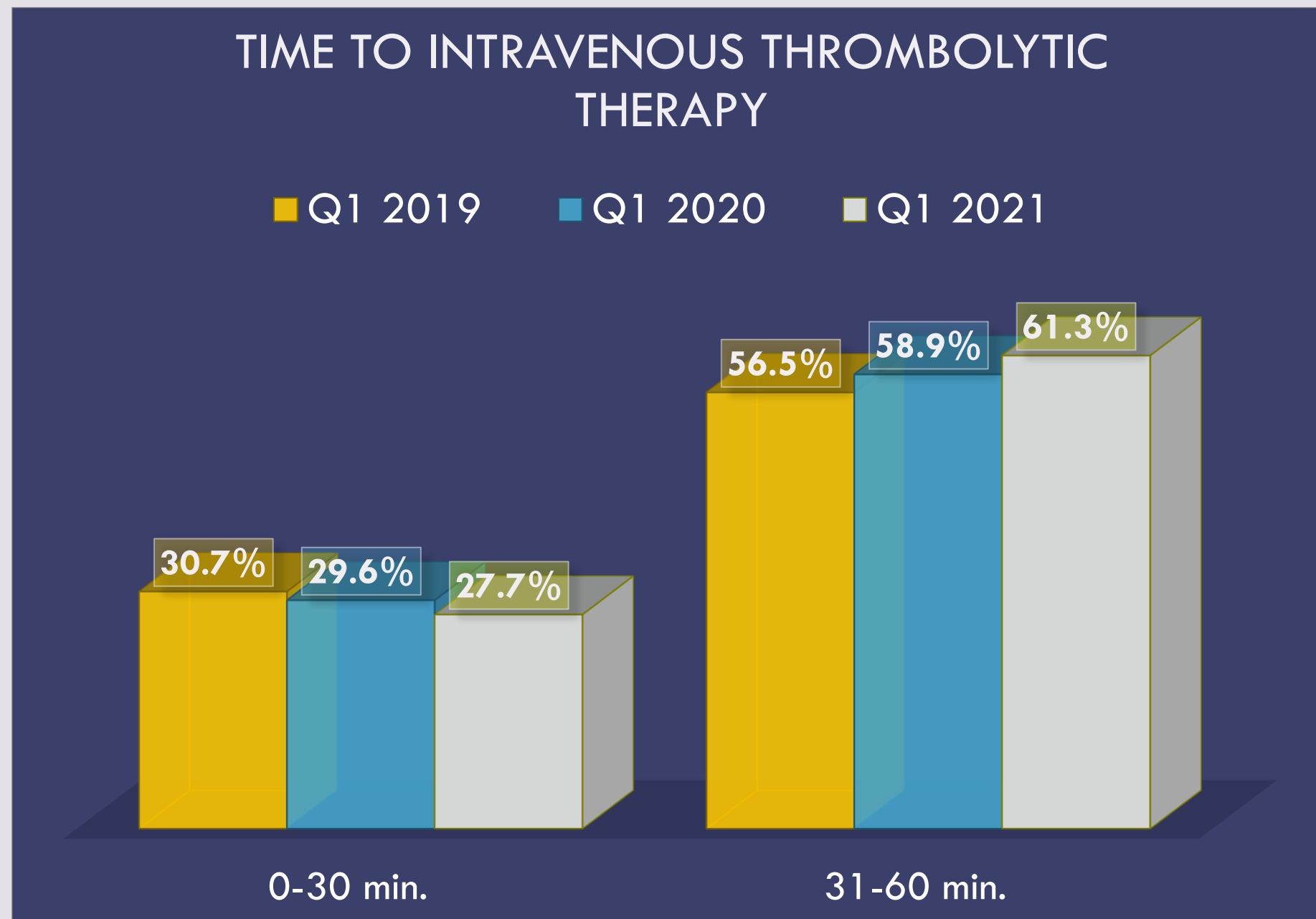
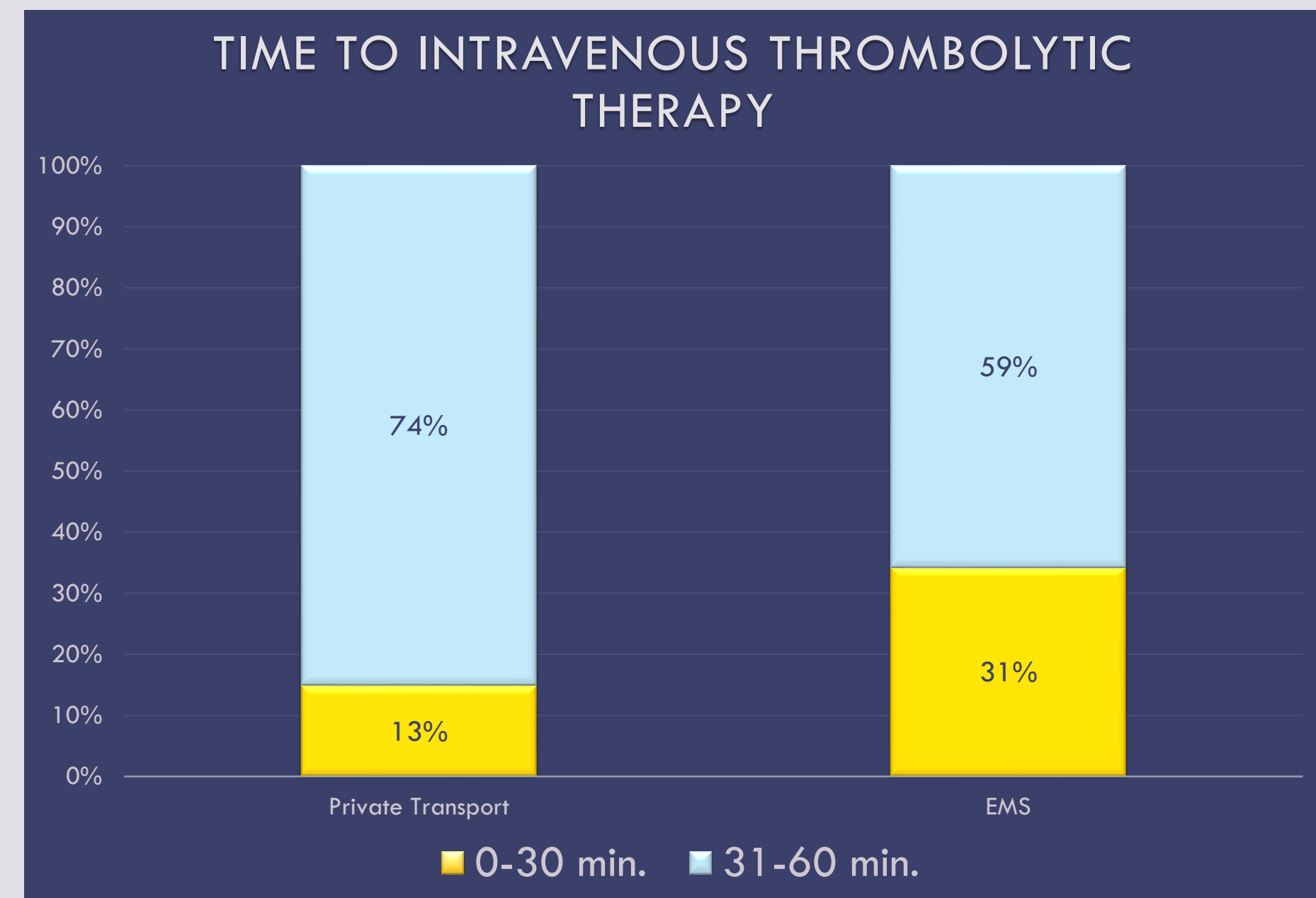


# ISCHEMIC STROKES

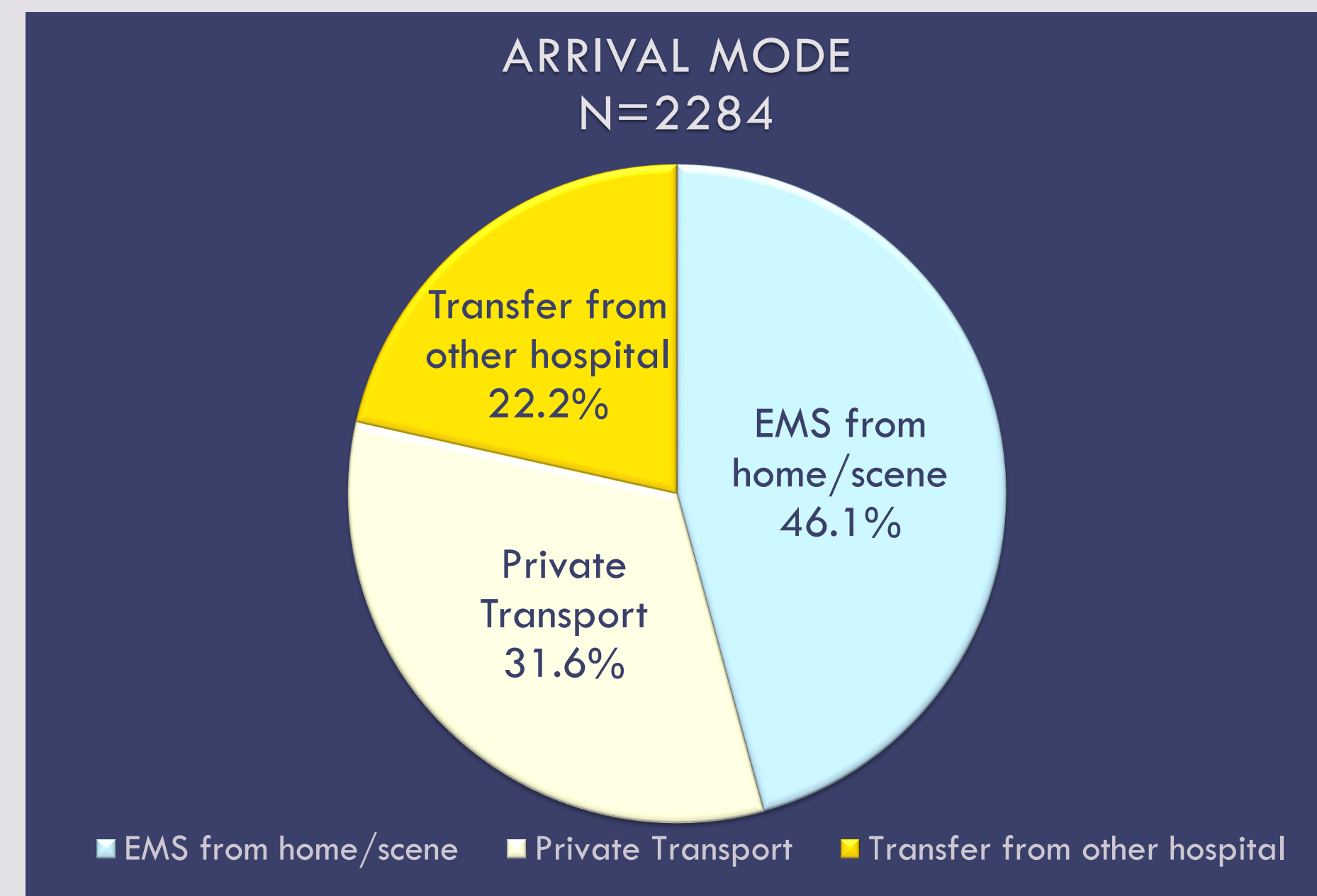
Quarter 1, 2021



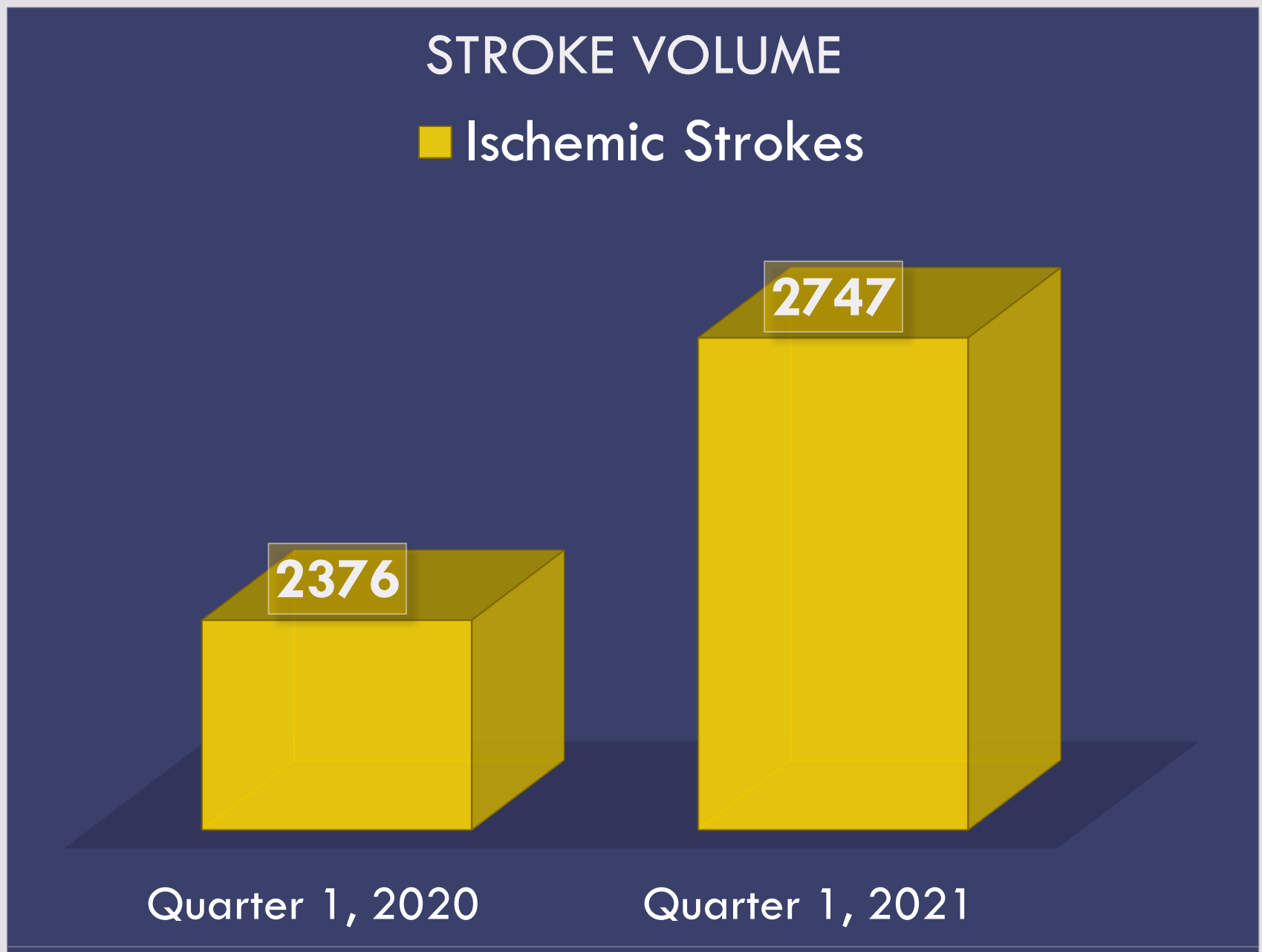
Time from hospital arrival to initiation of thrombolytic therapy administration



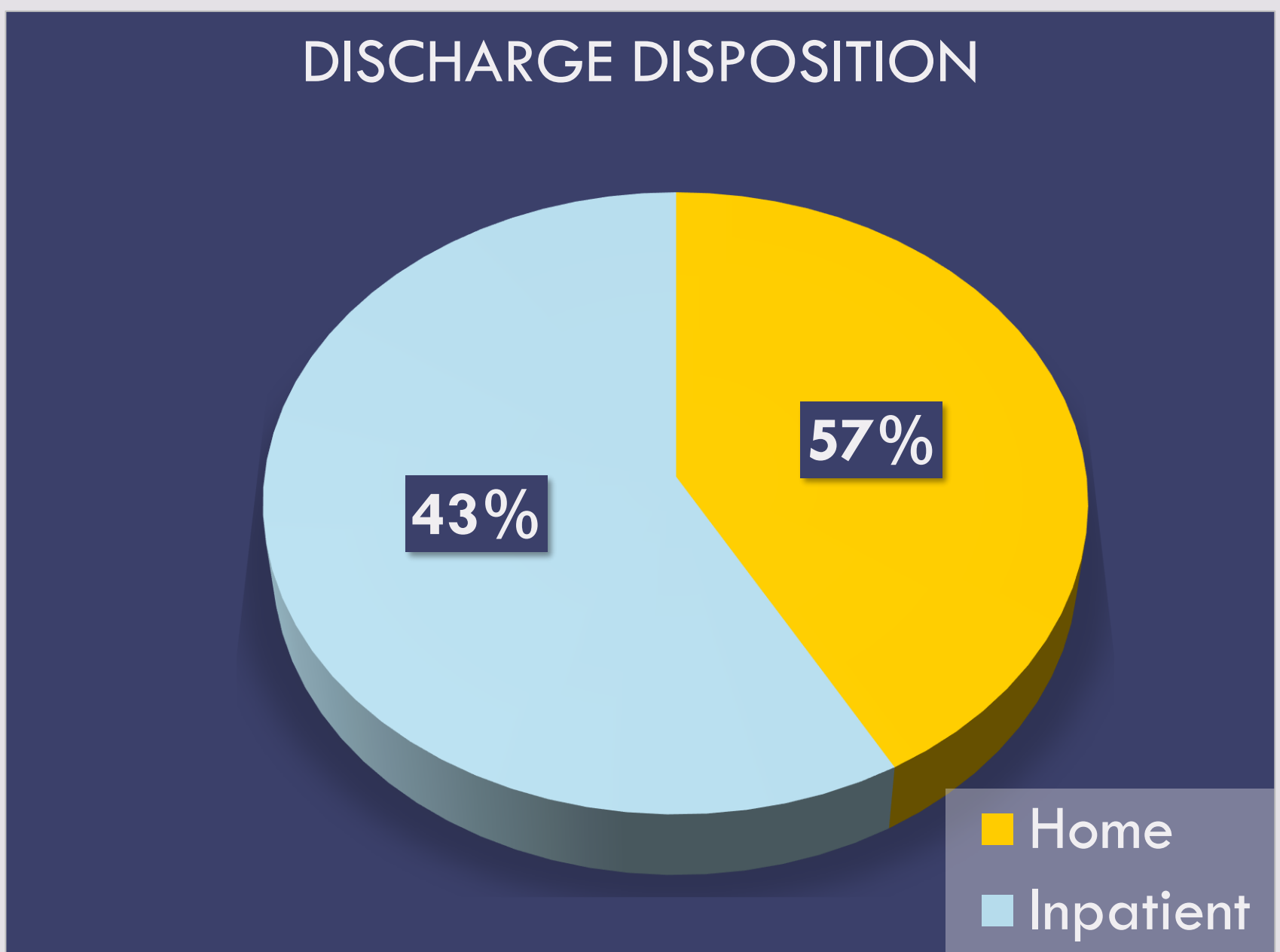
Comparing transport mode with thrombolytic therapy administration



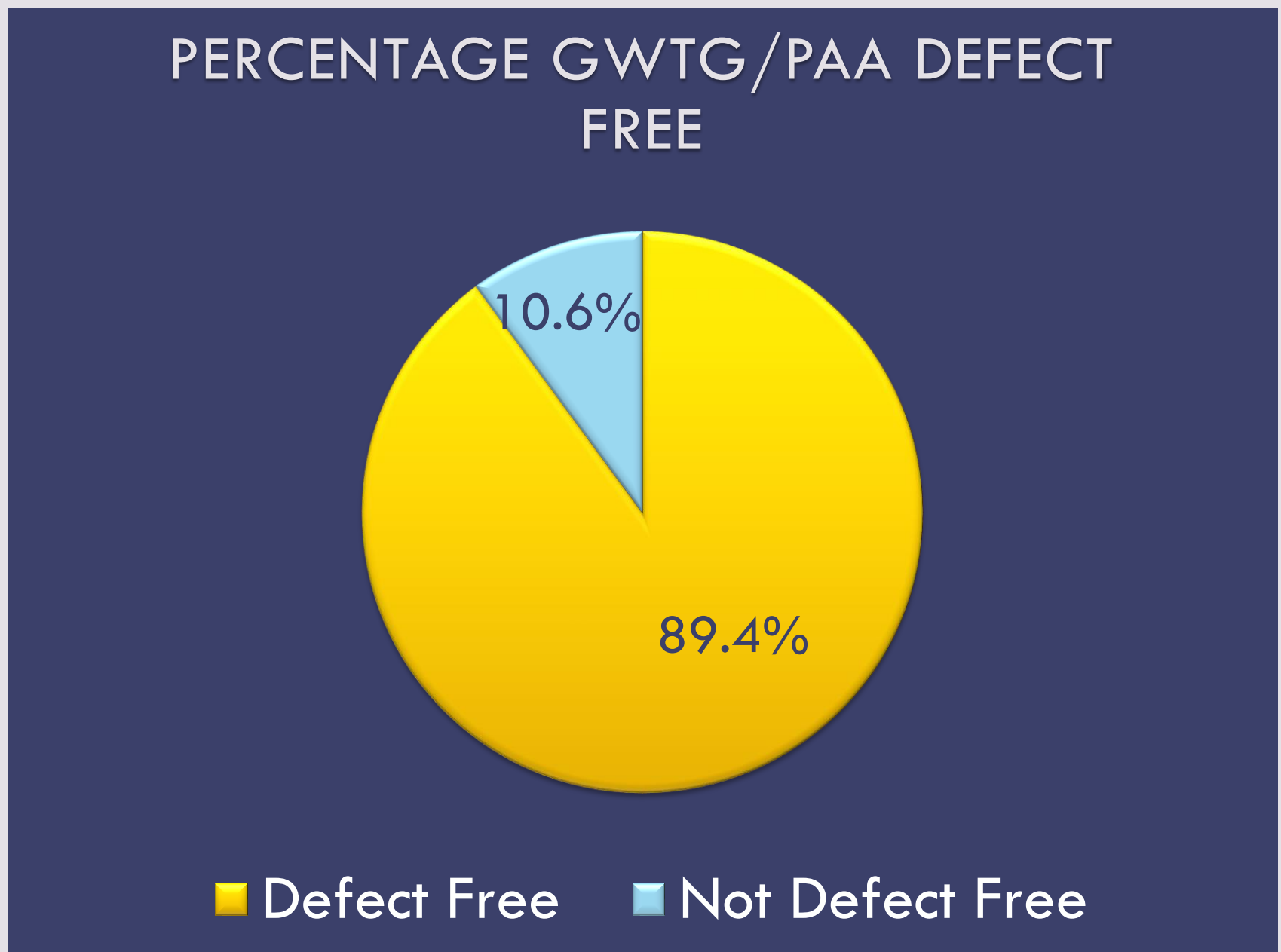
Patients grouped by how they arrived at the hospital



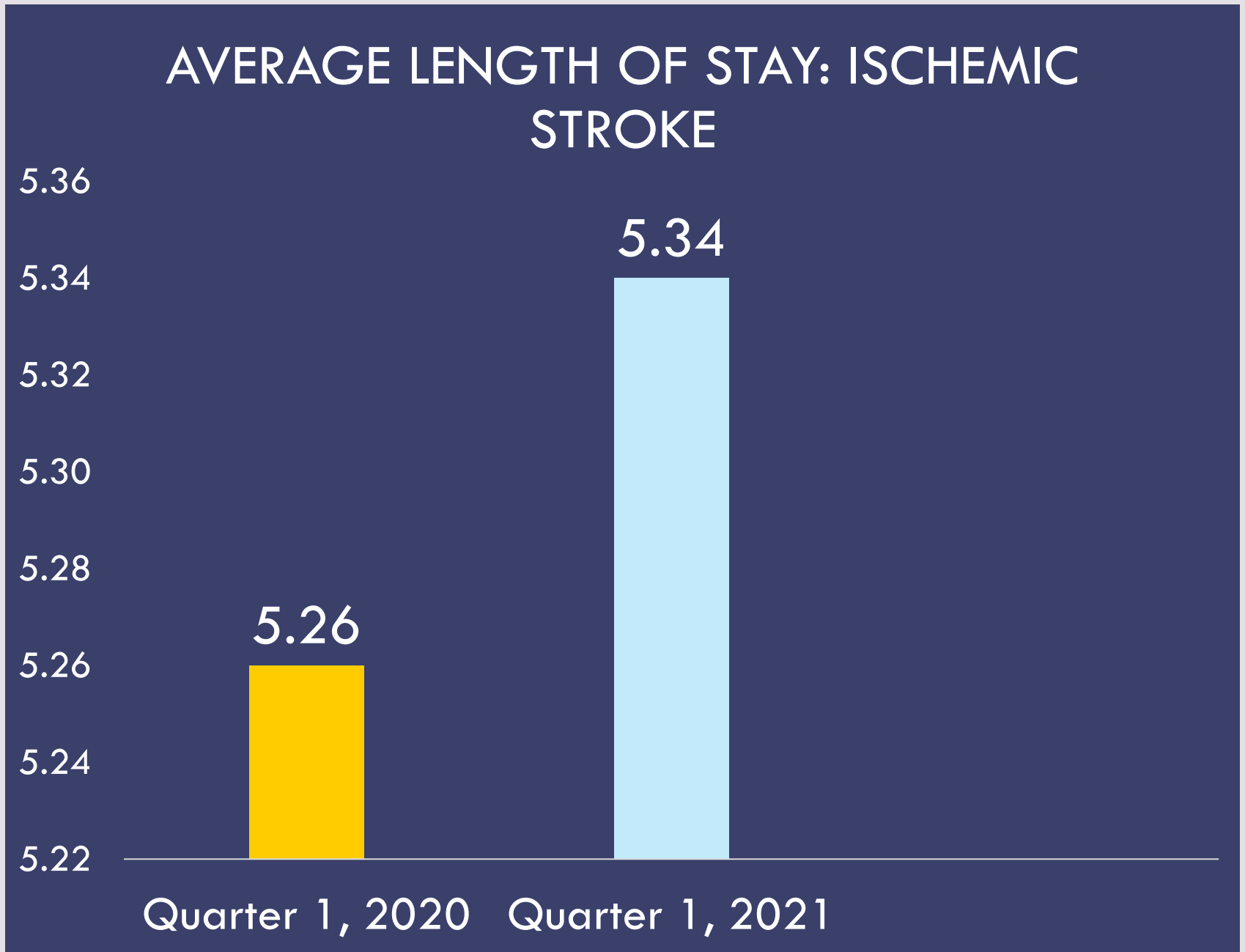
Patients grouped together by diagnosis of Ischemic Strokes



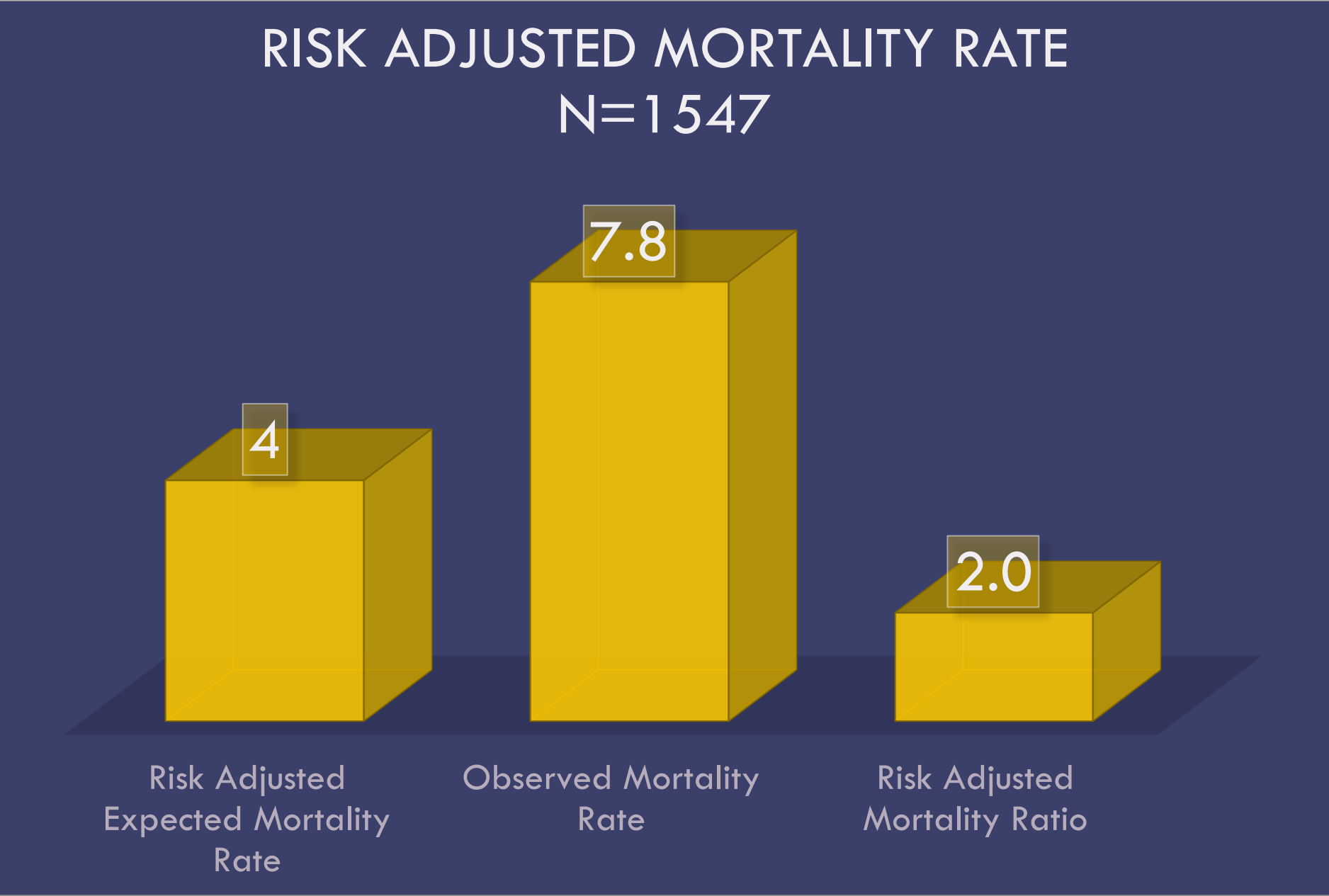
Patients grouped by how they left the hospital



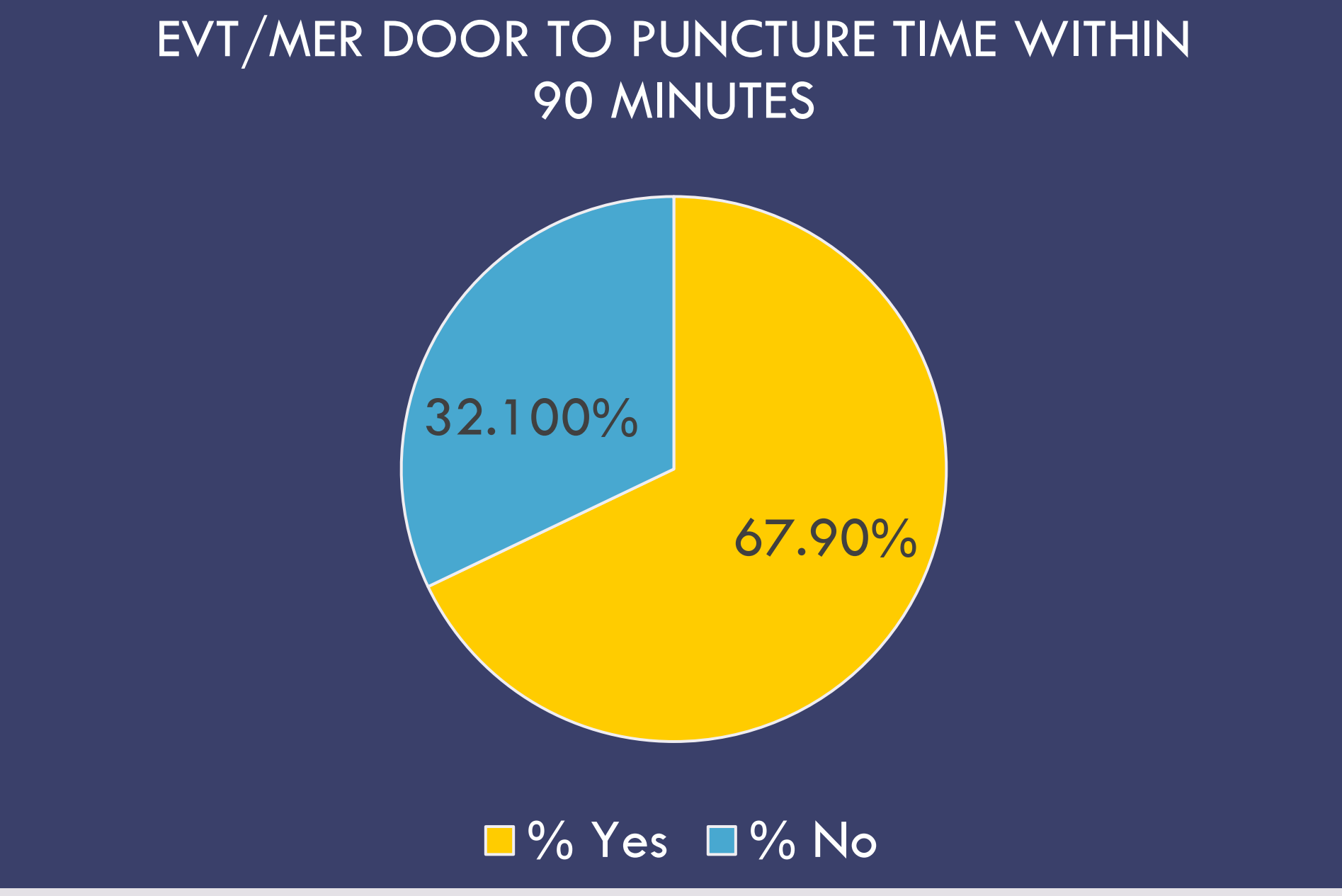
Defect-free measure of the 7 consensus GWTG/PAA measures



Length of stay



A mortality rate that is adjusted for predicted risk of death. This is done when a patient leaves a hospital.

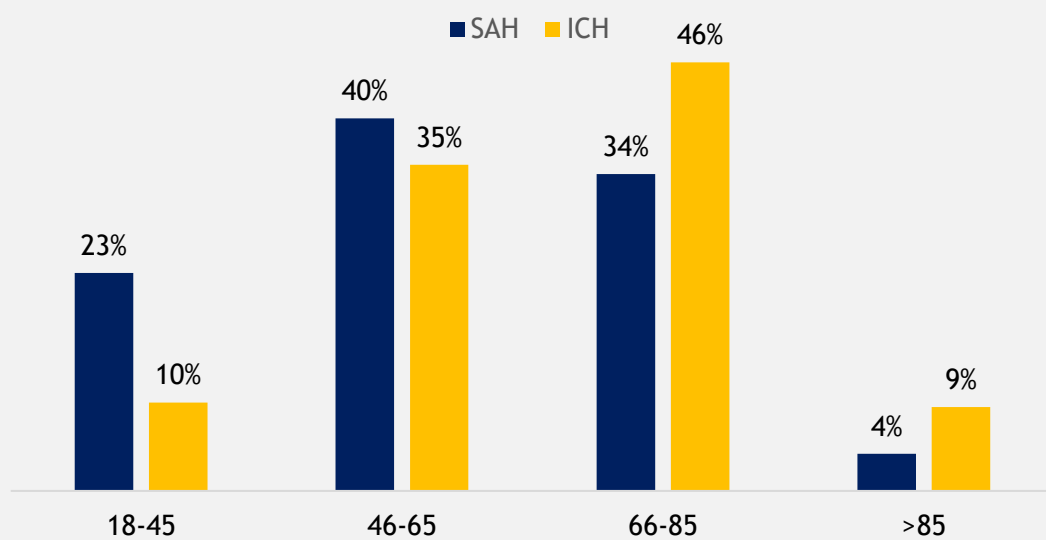


Percentage of patients with acute ischemic stroke who receive mechanical endovascular reperfusion therapy and for whom arterial puncture time is  $\leq$  90 minutes after hospital arrival.

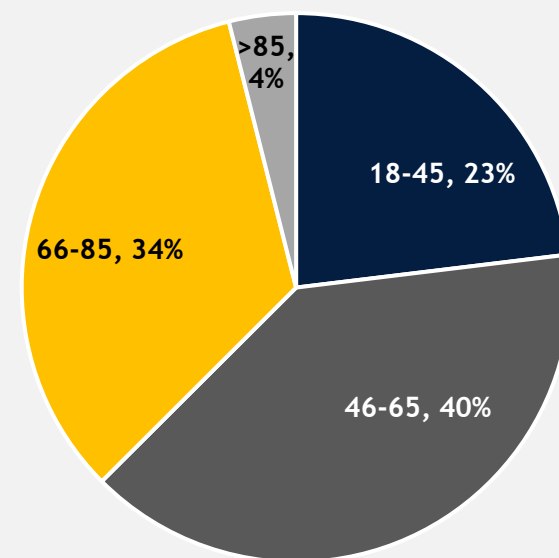
# Hemorrhagic strokes

## Subarachnoid (SAH) and Intracerebral Hemorrhages (ICH)

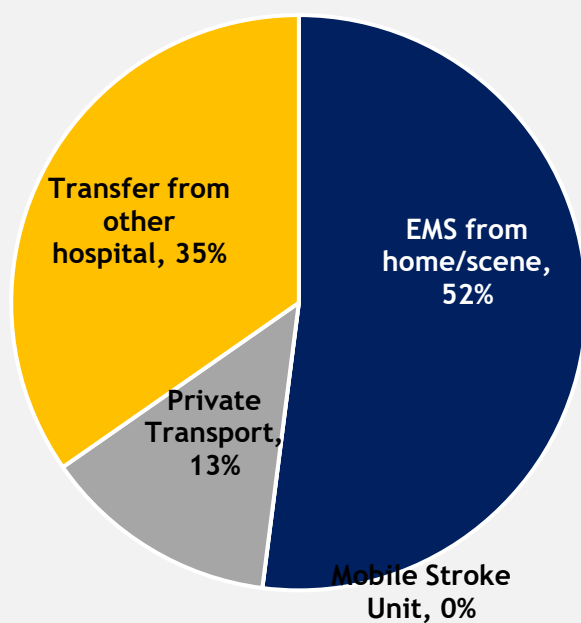
Comparison of Age Distributions



Age Distributions among SAH Patients (N=169)



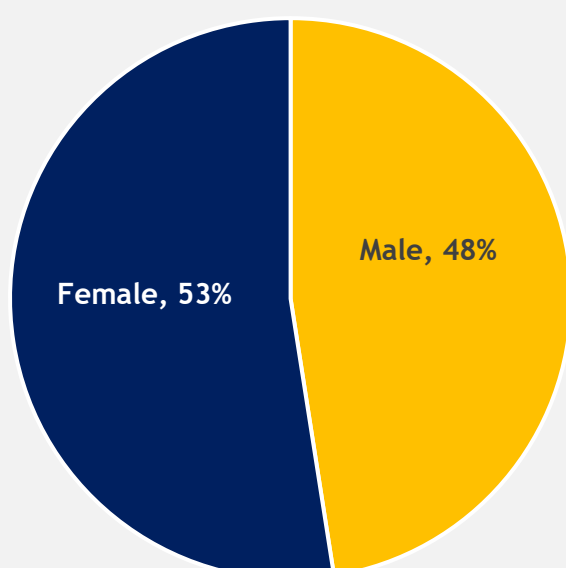
Arrival Mode among ICH Stroke Patients (N=444)



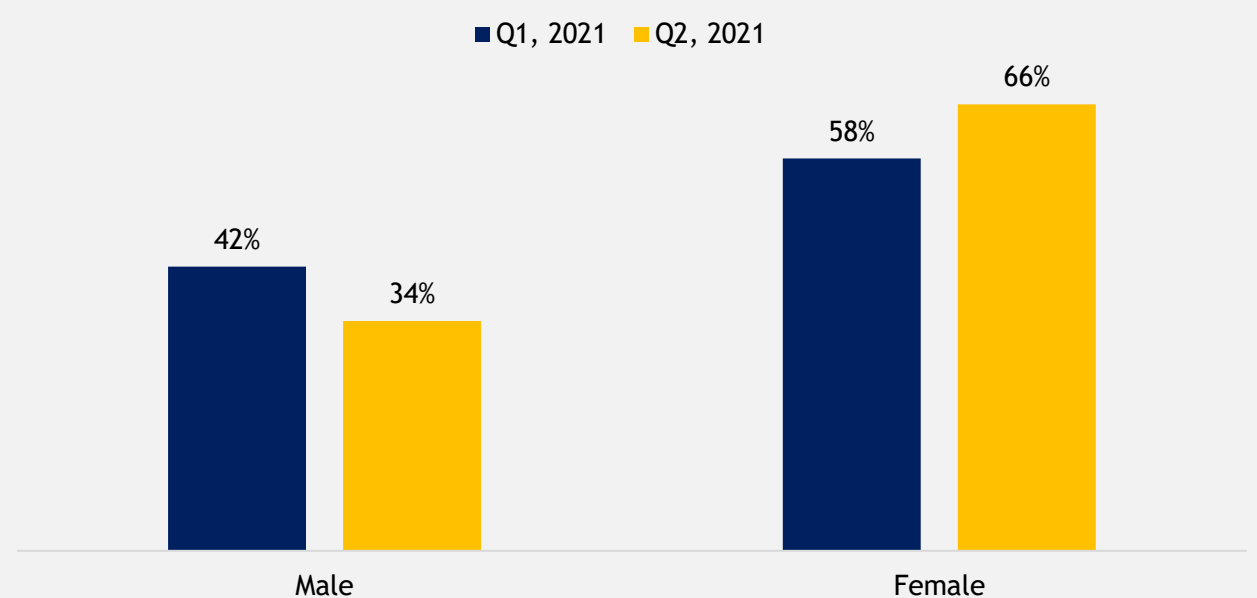
### Discharge

- 18% of SAH patients had no symptoms at discharge
- 5% of ICH patients have no symptoms at discharge
- 4% of SAH patients had moderate to severe disability
- 16% of ICH patients had moderate to severe disability
- The average length of stay for SAH patients was 11 days
- The average length of stay for ICH patients was 8 days

Gender Distribution among ICH Stroke Patients (N=446)

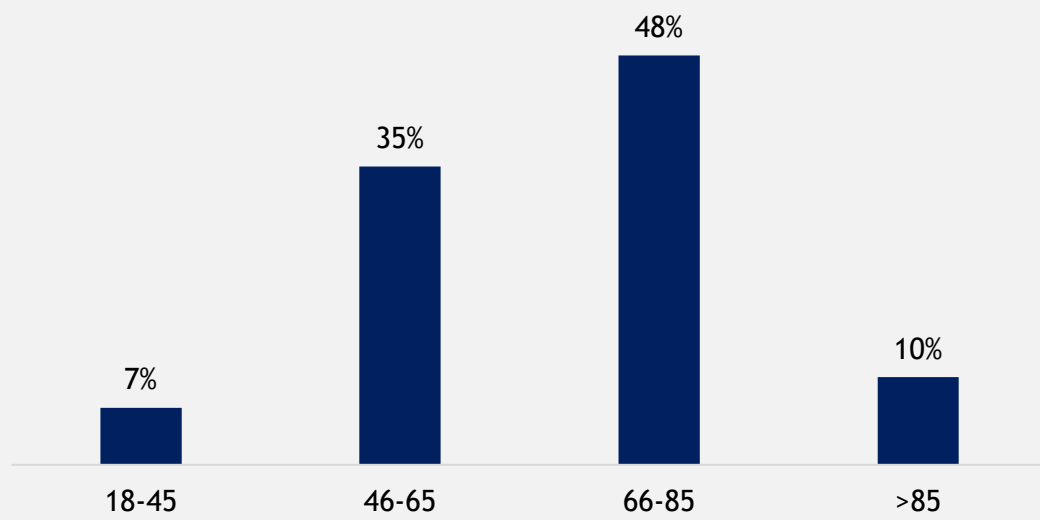


Gender Distribution among SAH Patients, Q1 vs Q2 2021

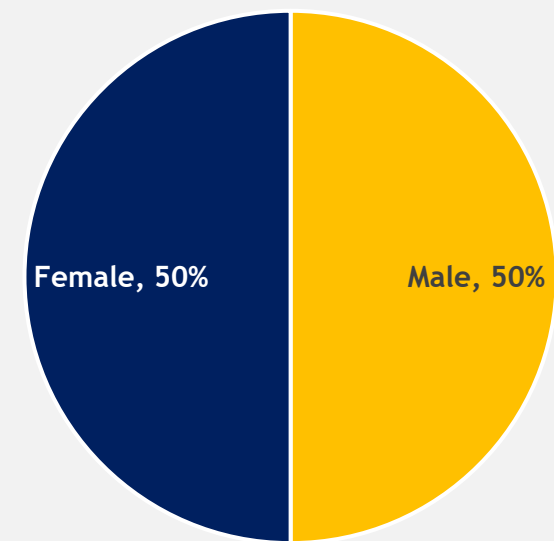


# Ischemic Stroke

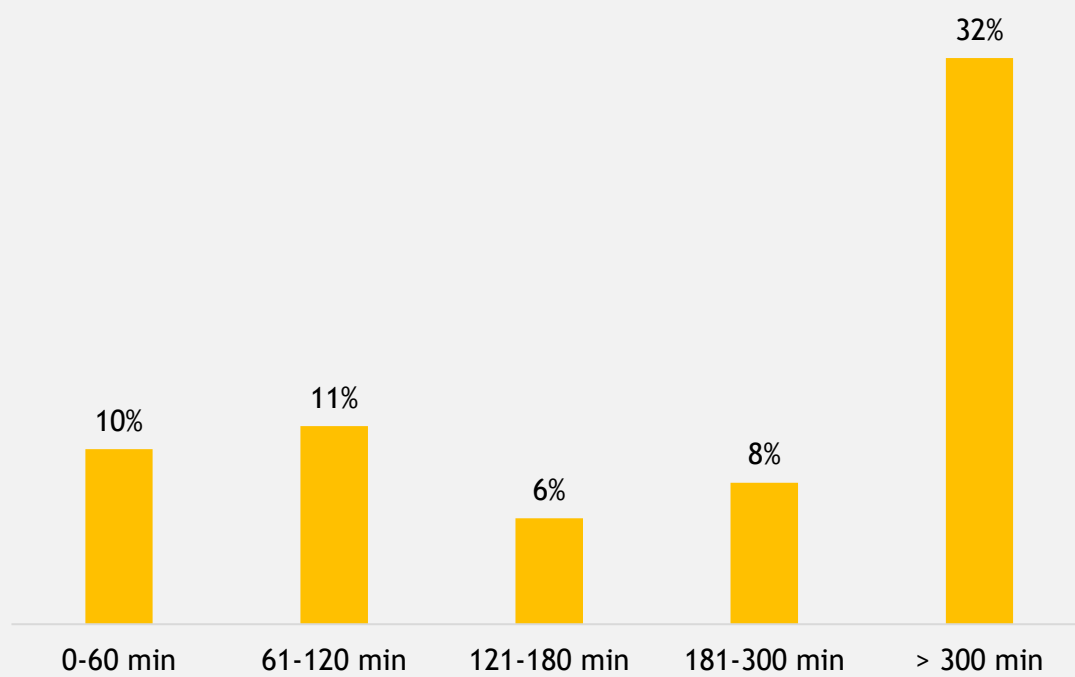
Age Distribution among Ischemic Stroke Patients (N=2521)



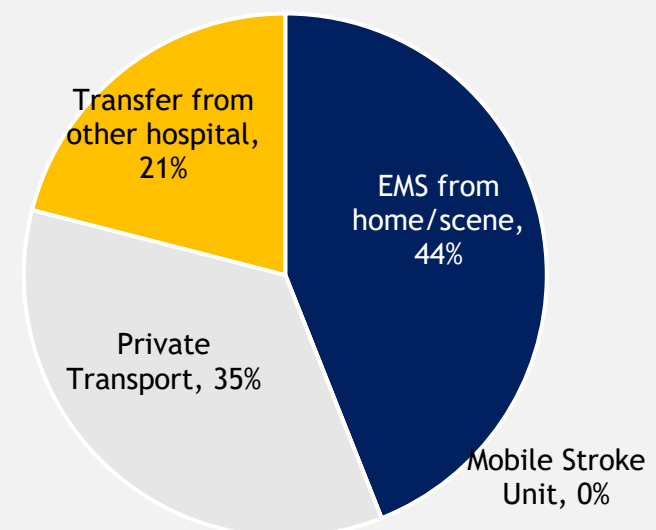
Gender Distribution (N=2521)



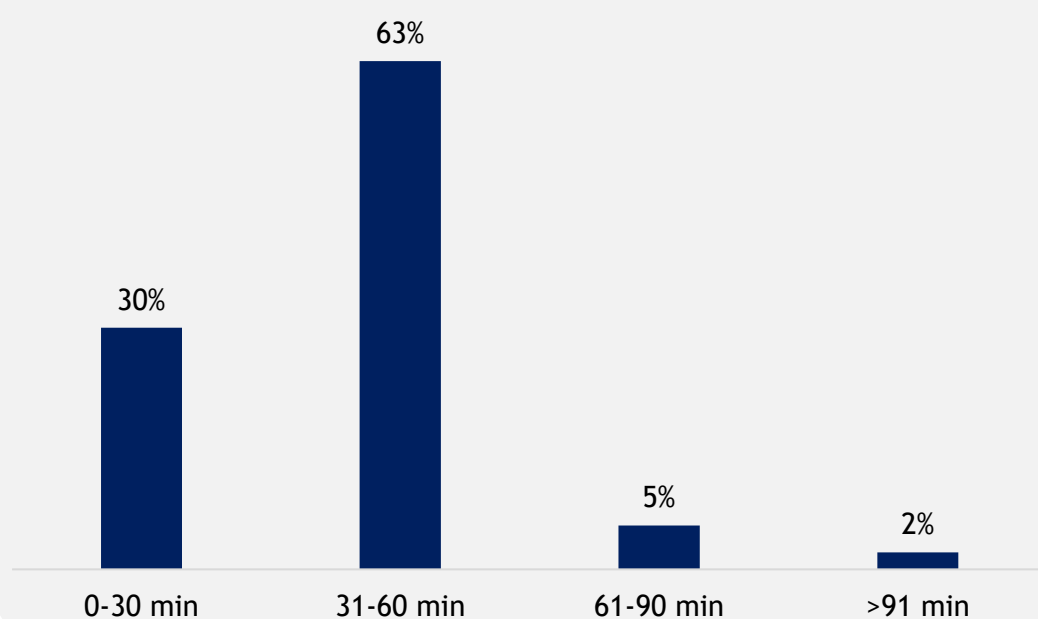
Last Known Well to Arrival Times



Arrival Mode Among Ischemic Stroke Patients (N=2426)



Door To IV rt-PA Times (N=322)



## Discharge

- 10% of patients had no symptoms at discharge
- 15% of patients had moderate to severe disability
- The average length of stay was 5 days

# 2021 Quarter 2 Report

Quarter 2  
April to June 2021

There were  
**3,649** strokes in  
Quarter 2

**5%**

Of strokes were  
subarachnoid  
hemorrhages

**98%** of  
patients  
received IV  
rt-PA within  
90 minutes

## Discharge

- 11% of patients had no symptoms at discharge
- 15% of patients had moderate to severe disability
- The average length of stay was 6 days

**8%**

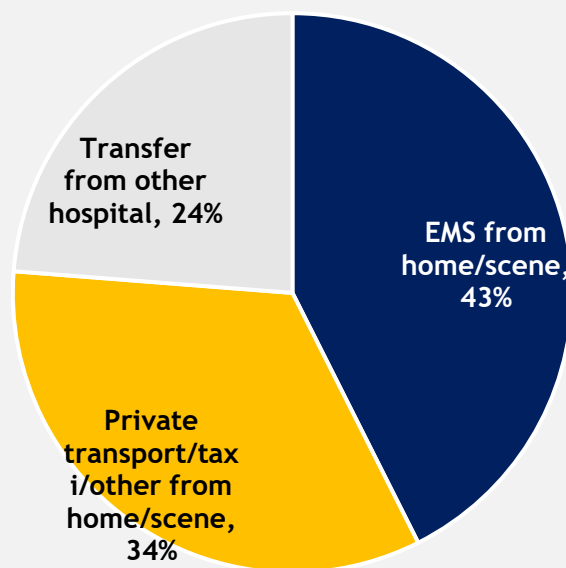
Of strokes  
were  
transient  
ischemic  
attacks

**69%** of  
strokes  
were  
ischemic

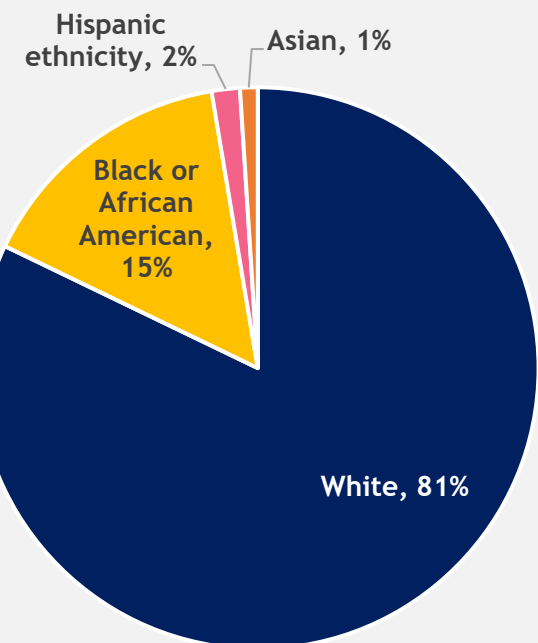
**12%**

Of strokes were  
intracerebral hemorrhages

## Arrival Mode for All Stroke Types



## Race



### Top Reasons for no IV rt-PA initiation:

1. Mild Stroke
2. tPA given outside hospital
3. Acute Bleeding Diathesis

### Top Reasons for IV rt-PA initiation beyond 60 minutes:

1. Care-team unable to determine patient eligibility
2. Hypertension
3. Refusal

## Age

- 48% of strokes occurred in those ages 66-85
- 35% occurred in those age 46-65
- The average age for all strokes was 67

## Arrival Times

- Most patients arrived at the hospital in over 300 minutes via private transportation (66%)
- 43% of patients via EMS services arrived in over 300 minutes

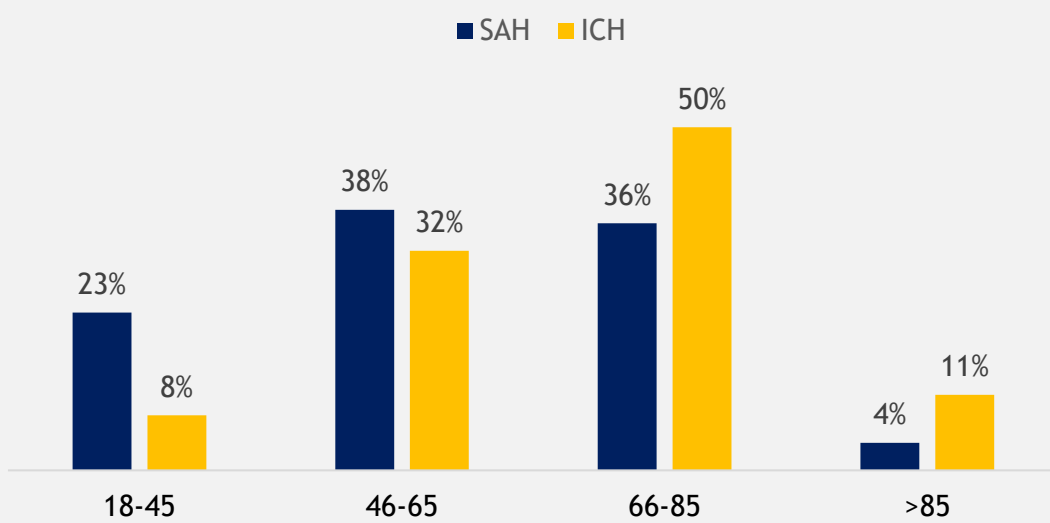
## Risk Factors

- The most common co-morbidities among stroke patients were:
1. Hypertension
  2. Dyslipidemia
  3. Diabetes

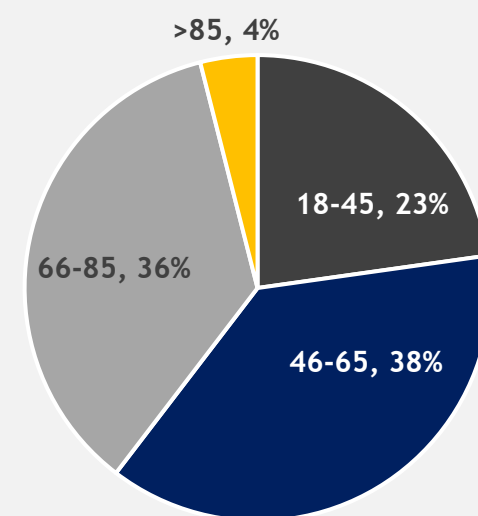
# Hemorrhagic strokes

## Subarachnoid (SAH) and Intracerebral Hemorrhages (ICH)

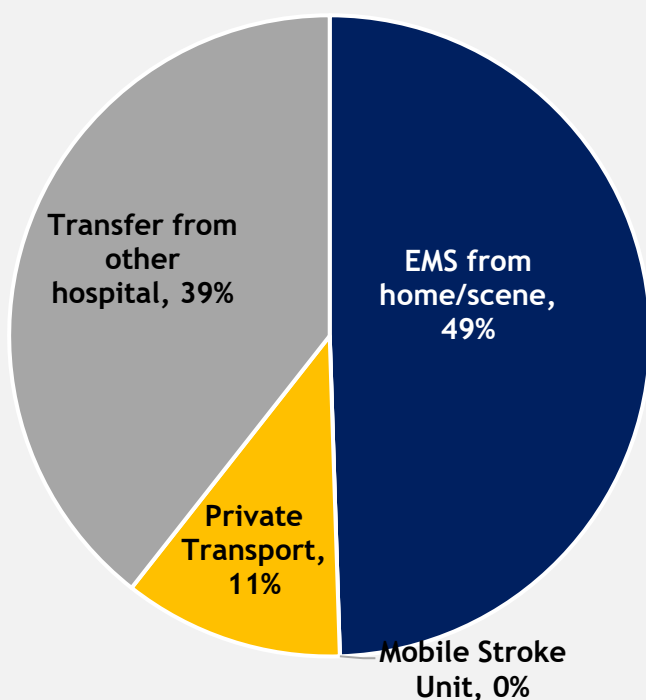
Comparison of Age Distributions



Age Distribution among SAH Patients (N=155)



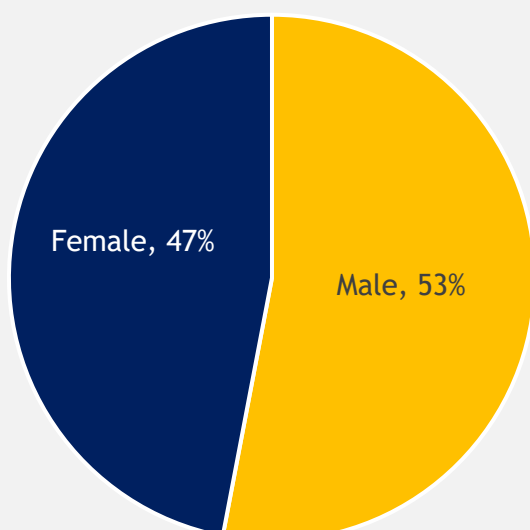
Arrival Mode among ICH Stroke Patients (N=407)



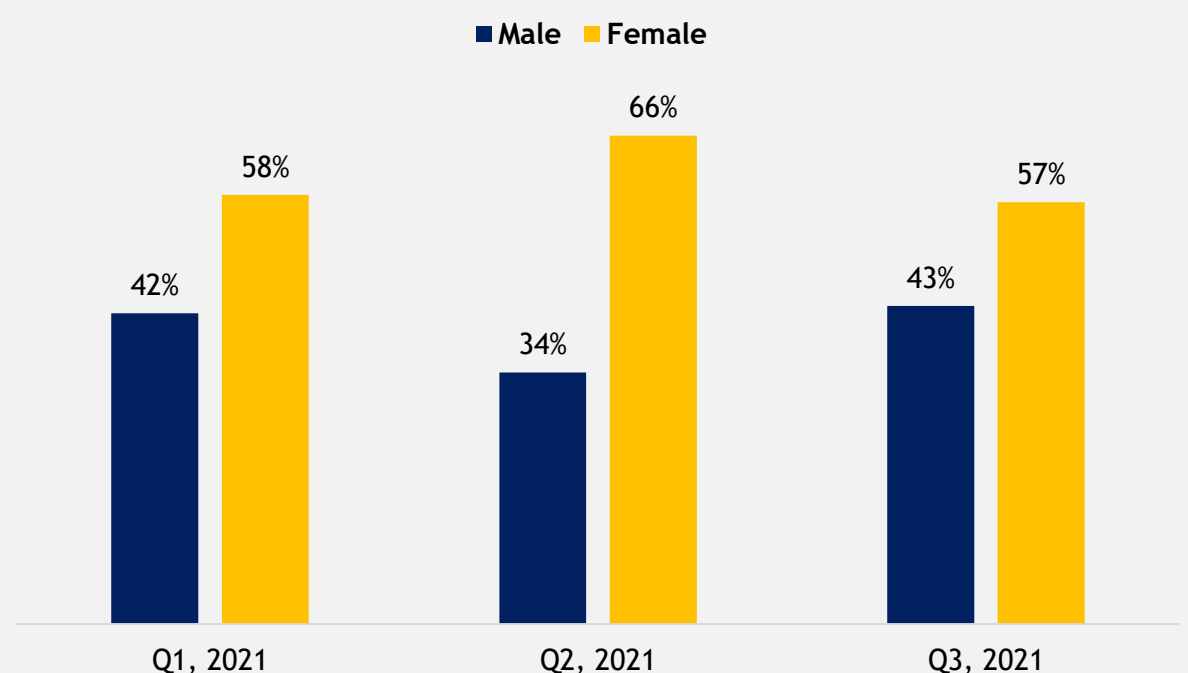
### Discharge

- 9% of SAH patients had no symptoms at discharge
- 6% of ICH patients have no symptoms at discharge
- 12% of SAH patients had moderate to severe disability
- 23% of ICH patients had moderate to severe disability
- The average length of stay for SAH patients was 13 days
- The average length of stay for ICH patients was 8 days

Gender Distribution among ICH Stroke Patients (N=411)

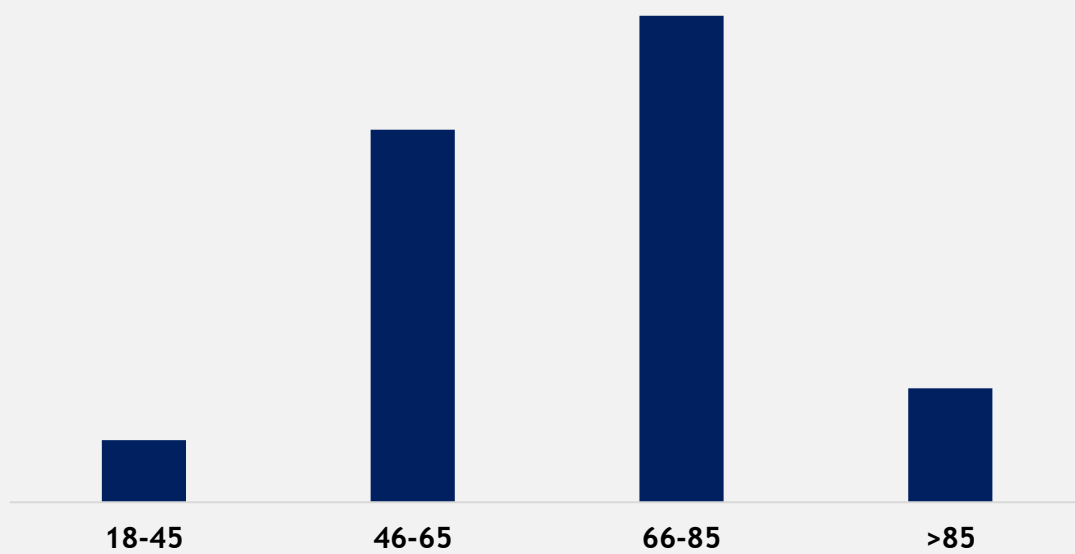


Gender Distribution among SAH Patients (Quarters 1-3)

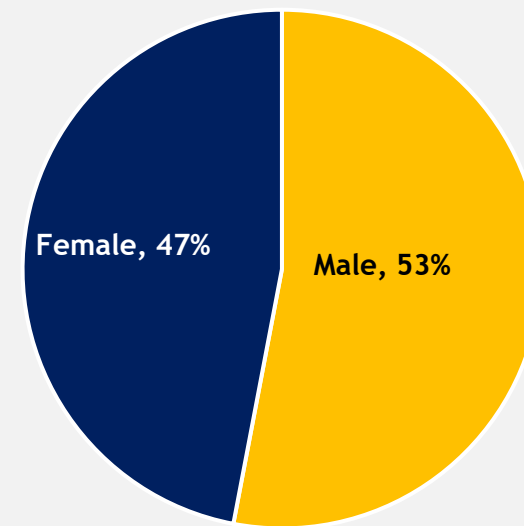


# Ischemic Stroke

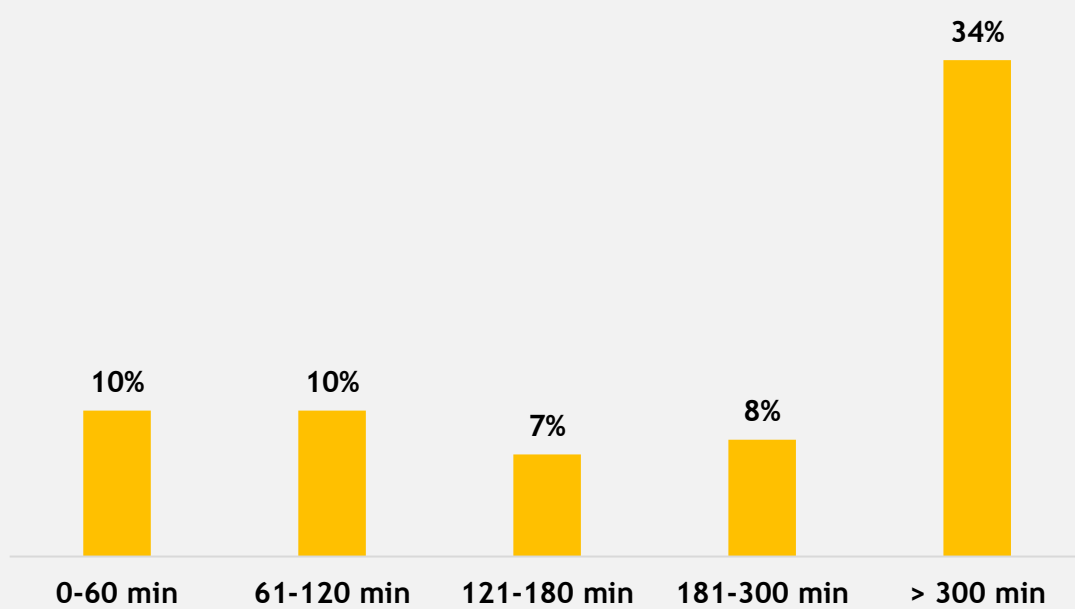
Age Distribution among Ischemic Stroke Patients (N=2409)



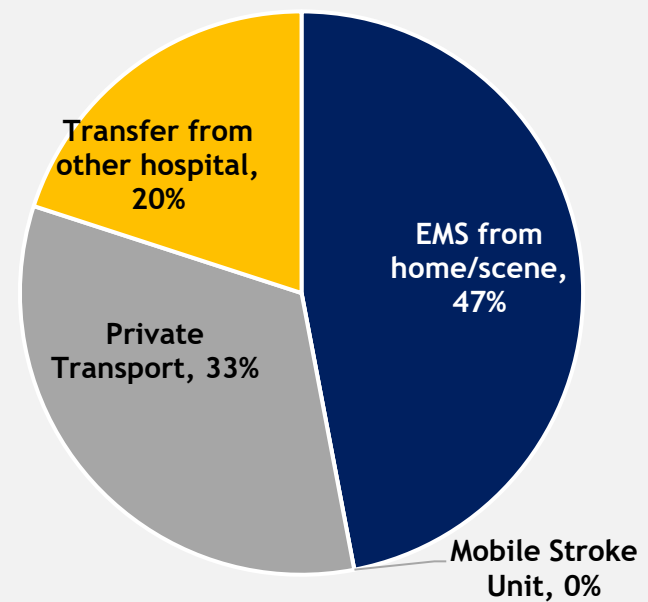
Gender Distribution (N=2409)



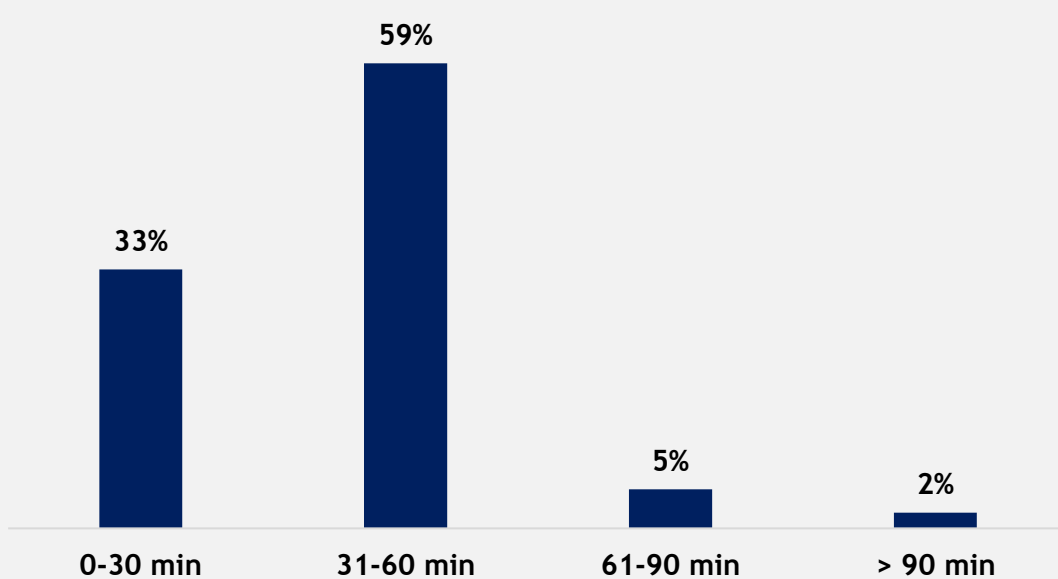
Last Known Well to Arrival Times



Arrival Mode (N=2338)



Door to IV rt-PA Times (N=320)



## Discharge

- 10% of patients had no symptoms at discharge
- 16% of patients had moderate to severe disability
- The average length of stay was 6 days



# 2021 Quarter 3 Report

July to September 2021

There were 3,502 strokes in Quarter 3

4%

Of strokes were subarachnoid hemorrhages

97% of patients received IV rt-PA within 90 minutes

## Discharge

- 10% of patients had no symptoms at discharge
- 17% of patients had moderate to severe disability
- The average length of stay was 6 days

7%

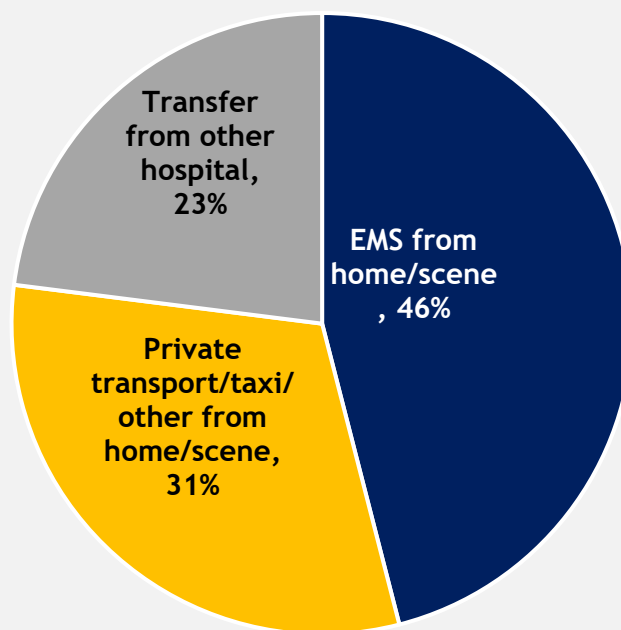
Of strokes were transient ischemic attacks

69% of strokes were ischemic

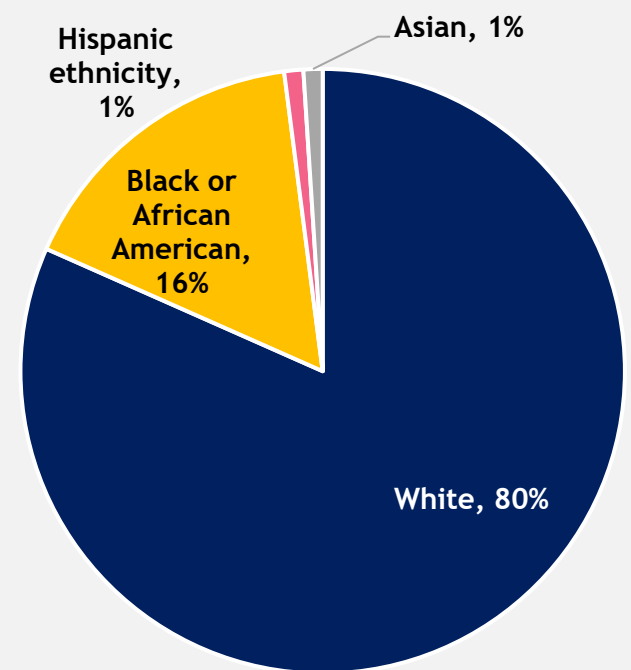
12%

Of strokes were intracerebral hemorrhages

Arrival Mode for All Stroke Types



Race



### Top Reasons for no IV rt-PA initiation:

1. Mild Stroke
2. tPA given outside hospital
3. Acute Bleeding Diathesis

### Top Reasons for IV rt-PA initiation beyond 60 minutes:

1. Care-team unable to determine patient eligibility
2. Hypertension
3. Refusal/Management of concomitant emergent conditions

## Age

- 47% of strokes occurred in those ages 66-85
- 35% occurred in those age 46-65
- The average age for all strokes was 67

## Arrival Times

- Most patients arrived at the hospital in over 300 minutes via private transportation (71%)
- 44% of patients via EMS services arrived in over 300 minutes

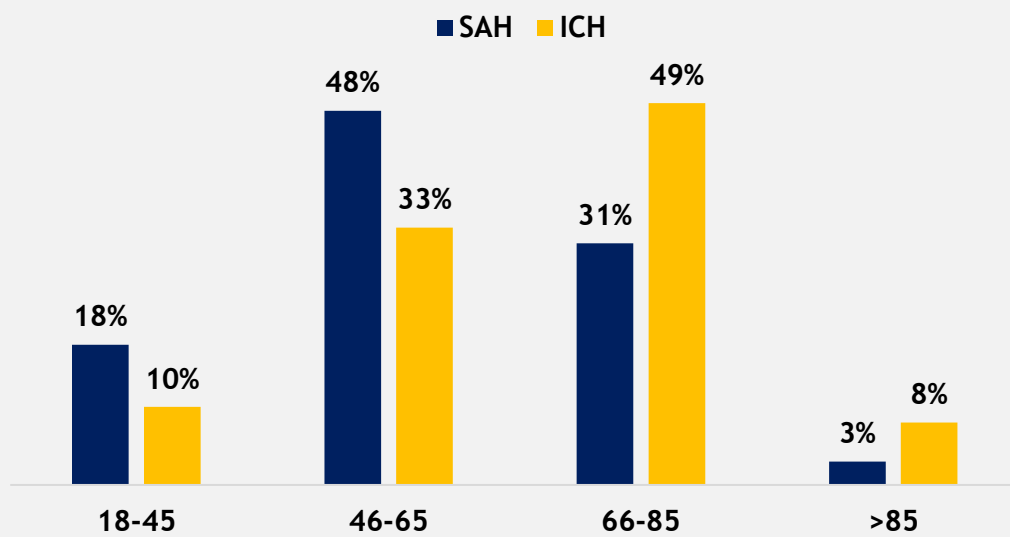
## Risk Factors

- The most common co-morbidities among stroke patients were:
1. Hypertension
  2. Dyslipidemia
  3. Diabetes

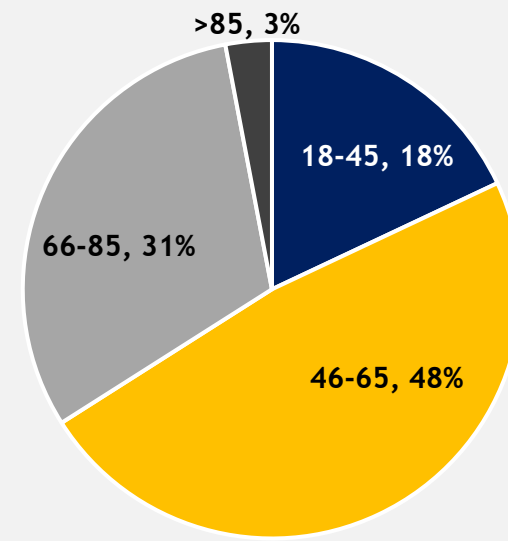
# Hemorrhagic strokes

## Subarachnoid (SAH) and Intracerebral Hemorrhages (ICH)

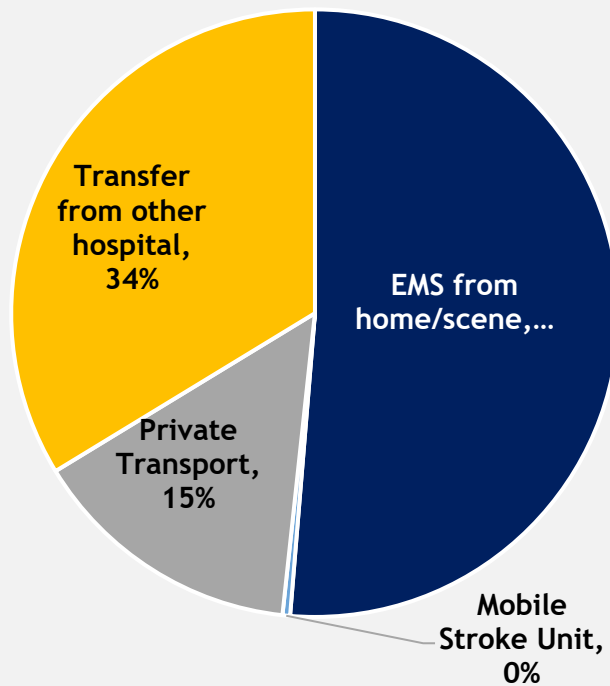
Comparison of Age Distributions



Age Distribution among SAH Patients (N=179)



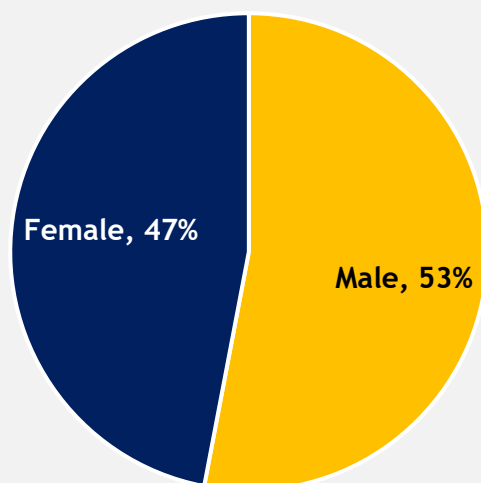
Arrival Mode for ICH Stroke Patients (N=525)



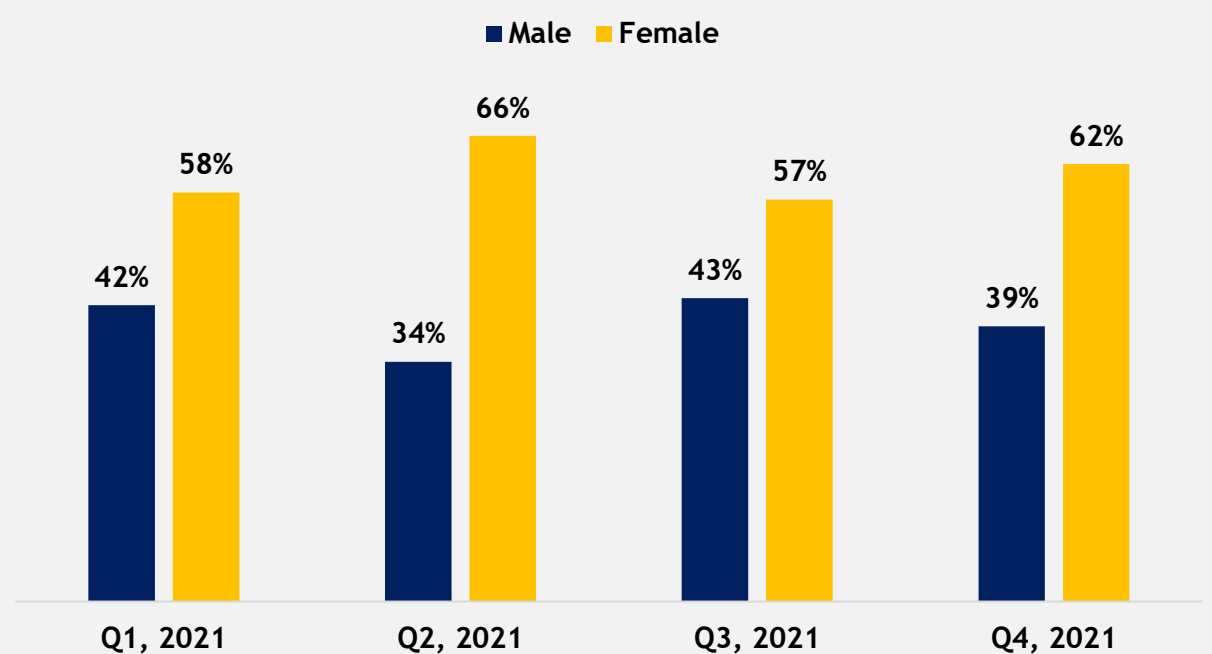
### Discharge

- 13% of SAH patients had no symptoms at discharge
- 3% of ICH patients have no symptoms at discharge
- 7% of SAH patients had moderate to severe disability
- 17% of ICH patients had moderate to severe disability
- The average length of stay for SAH patients was 12 days
- The average length of stay for ICH patients was 8 days

Gender Distribution among ICH Stroke Patients (N=530)

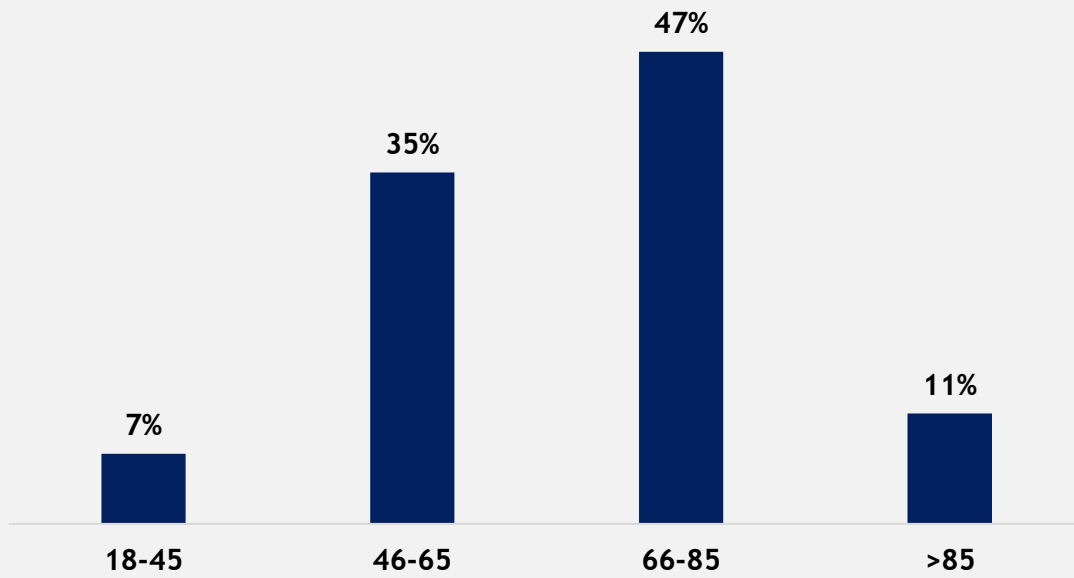


Gender Distribution among SAH Patients (Q1-Q4, 2021)

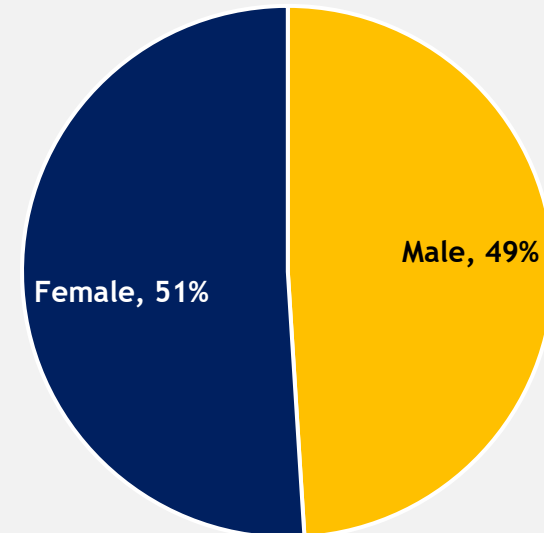


# Ischemic Stroke

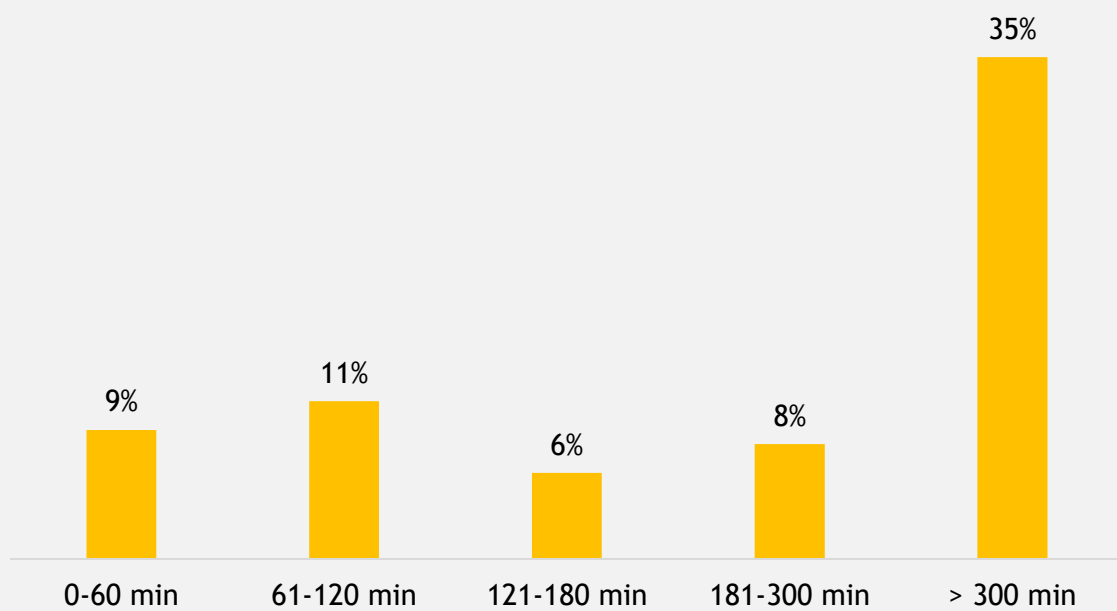
Age Distribution among Ischemic Stroke Patients (N=2333)



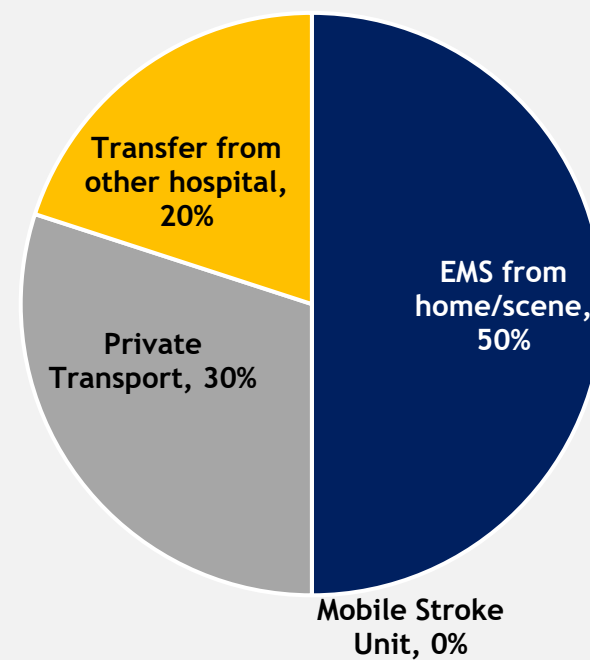
Gender Distribution (N=2333)



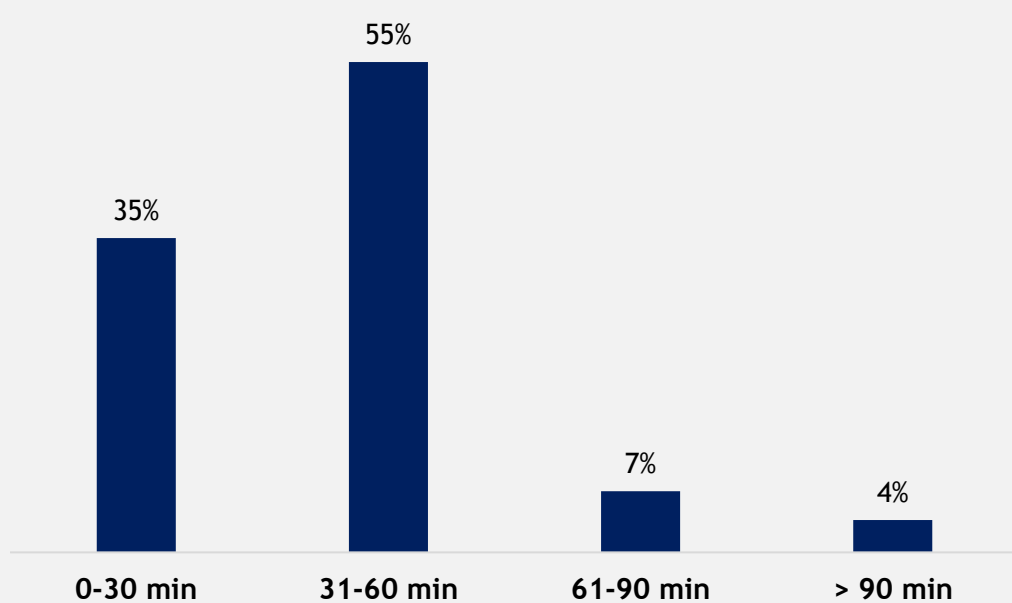
Last Known Well to Arrival Times



Arrival Mode (N=2274)



Door to IV rt-PA Times (N=253)



## Discharge

- 9% of patients had no symptoms at discharge
- 15% of patients had moderate to severe disability
- The average length of stay was 6 days

# 2021 Quarter 4 Report

October to December 2021

There were 3,591 strokes in Quarter 4

5%

Of strokes were subarachnoid hemorrhages

97% of patients received IV rt-PA within 90 minutes

## Discharge

- 8% of patients had no symptoms at discharge
- 15% of patients had moderate to severe disability
- The average length of stay was 6 days

7%

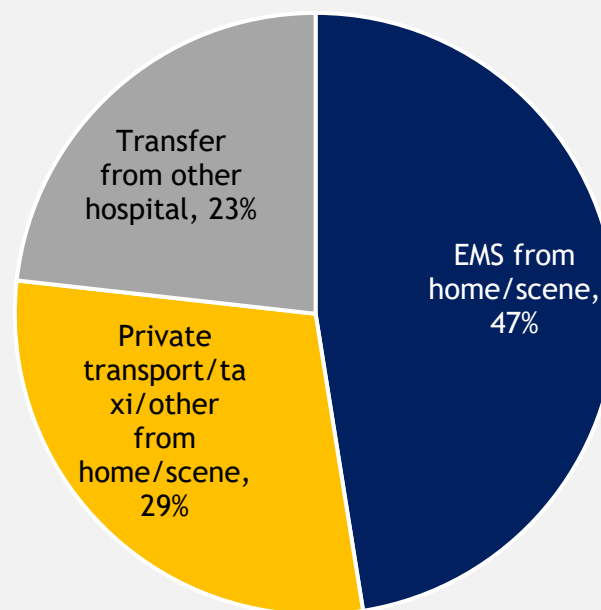
Of strokes were transient ischemic attacks

65% of strokes were ischemic

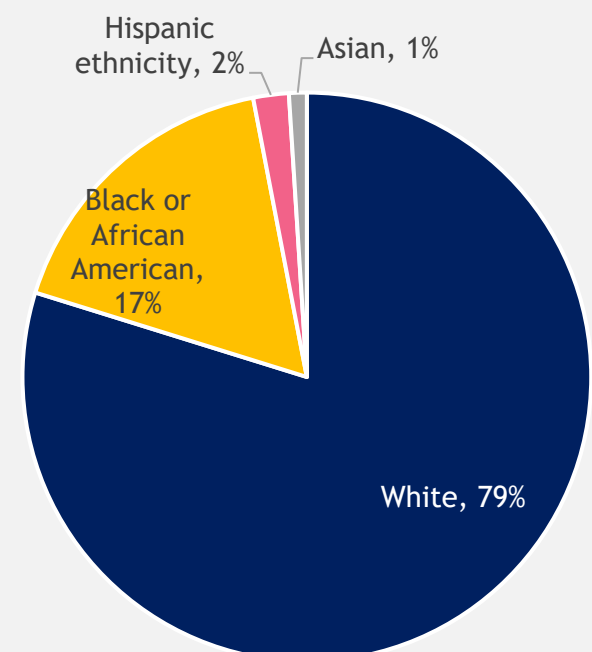
15%

Of strokes were intracerebral hemorrhages

## Arrival Mode for All Stroke



## Race



## Top Reasons for no IV rt-PA initiation:

1. Mild Stroke
2. Acute Bleeding Diathesis
3. tPA given outside hospital

## Top Reasons for IV rt-PA initiation beyond 60 minutes:

1. Care-team unable to determine patient eligibility
2. Hypertension
3. Refusal

## Age

- 49% of strokes occurred in those ages 66-85
- 35% occurred in those age 46-65
- The average age for all strokes was 67

## Arrival Times

- Most patients arrived at the hospital in over 300 minutes via private transportation (72%)
- 54% of patients via EMS services arrived in over 300 minutes

## Risk Factors

- The most common co-morbidities among stroke patients were:
1. Hypertension
  2. Dyslipidemia
  3. Diabetes