

# **OLOL Pre-Hospital Cardiac Review**

**January – July 2003**

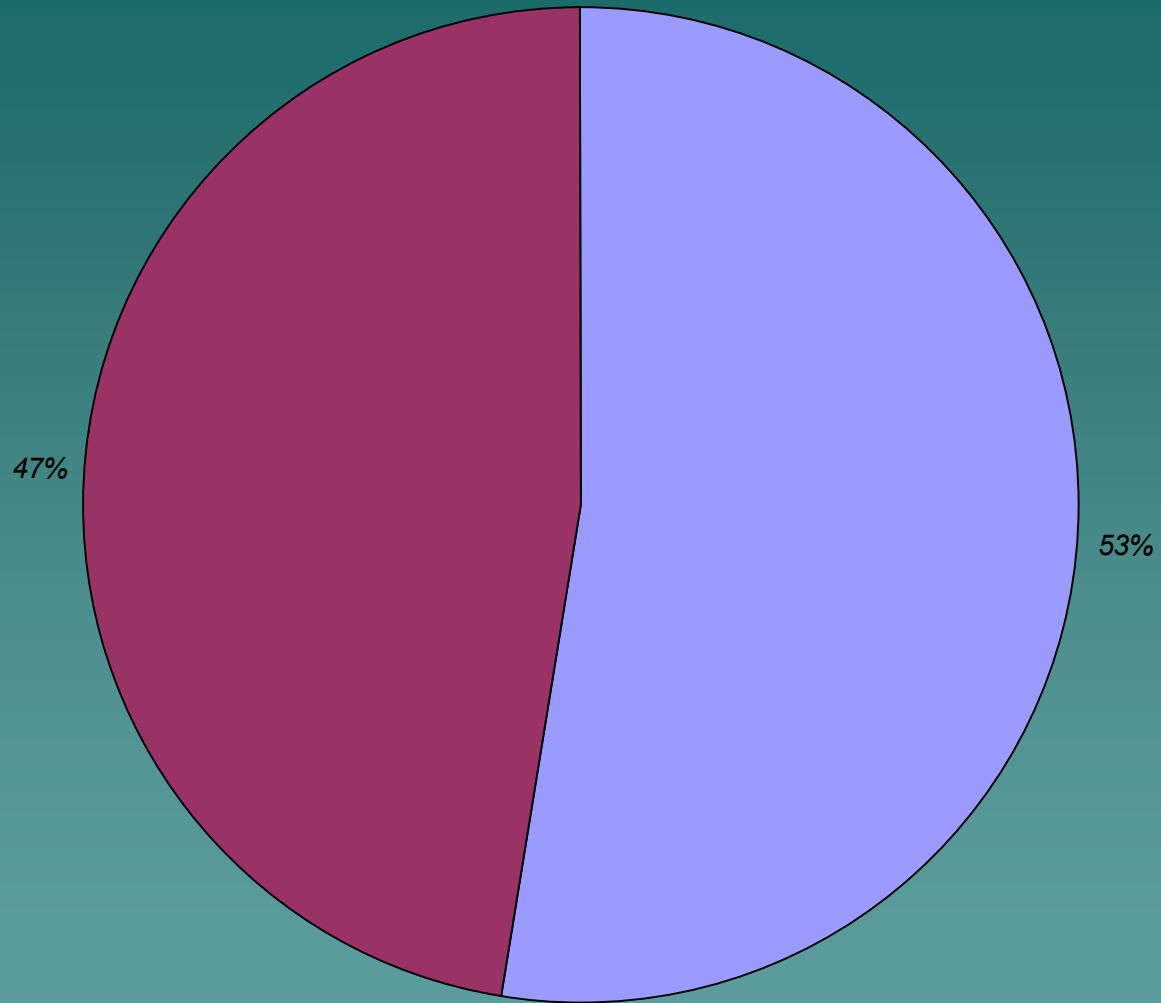
**Maria Berry , RN , Nurse Manager ED OLOL**  
**Frank Ciallelo , Director , SREMS Program**  
**Agency**

**E . James Radin , MD , SREMS / OLOL ED**  
**CQI**

# Clarification of Data

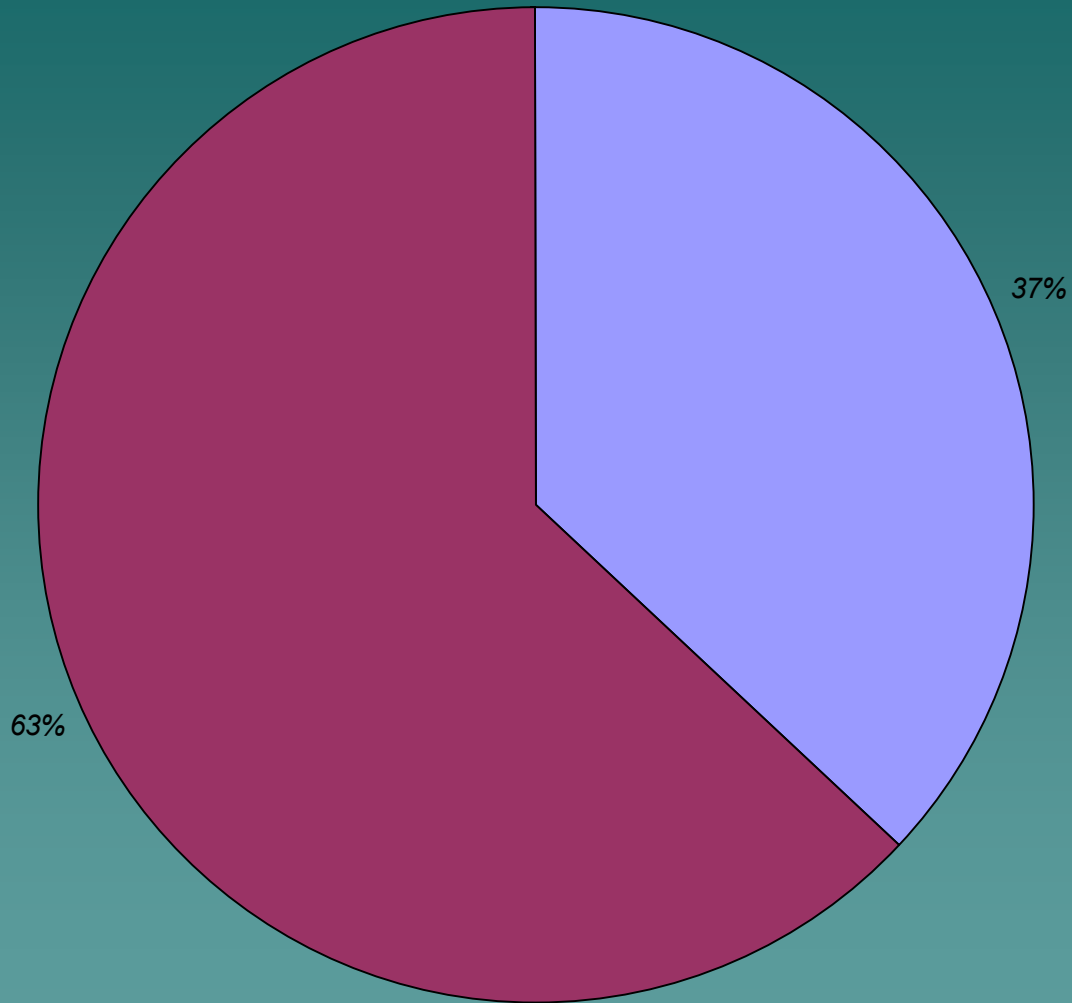
- ◆ There are some variations in the number of total cardiac related presentations to EMS
- ◆ In selection of patients to include in the study , we tried to limit the data to just pure cardiac patients but the patients with a discharge diagnosis of MI had a multitude of non – chest pain complaints .
- ◆ Factoring this into the data was difficult , and presents the Pre–Hospital provider with his greatest challenge in the field
- ◆ Hence , you may notice some variations in the numerical totals at times , the trends are consistent

Cardiac related , Regional , sex , January to August 2003



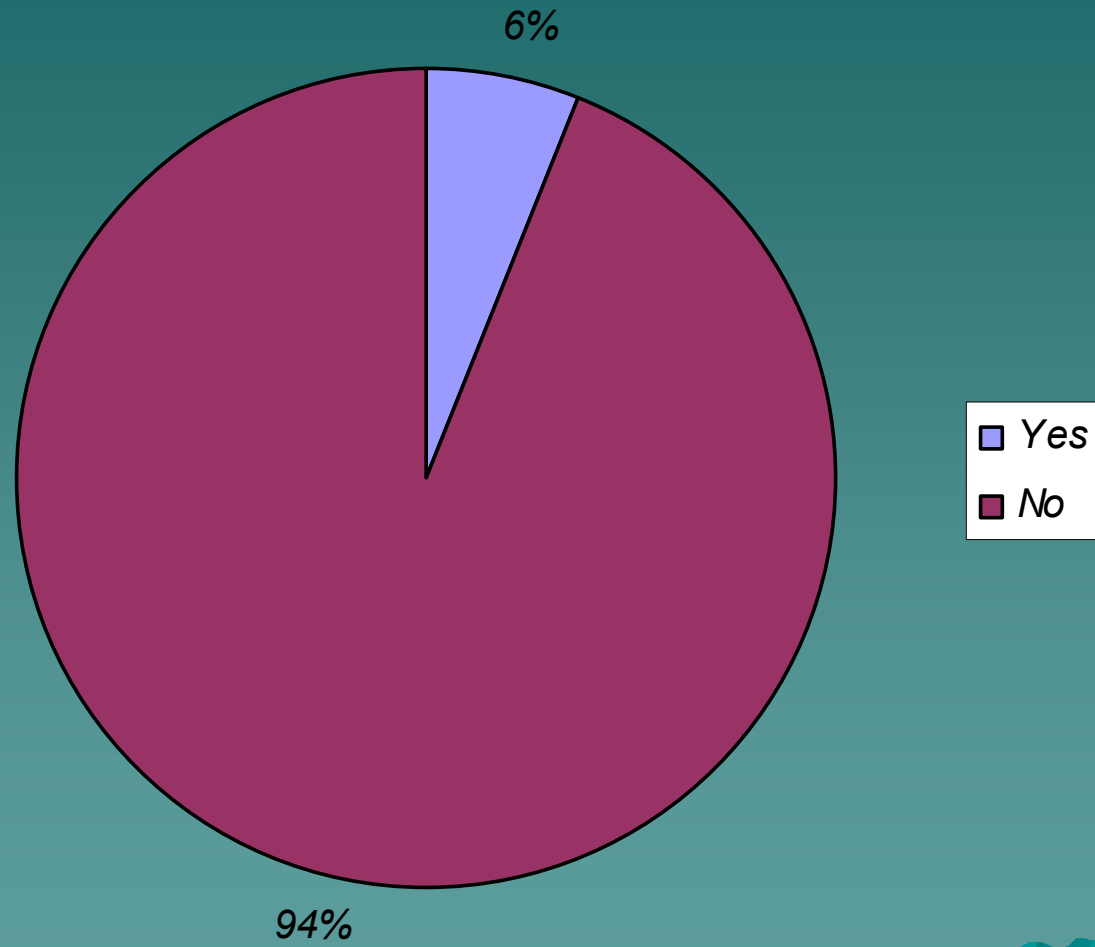
■ male ■ female

Cardiac related , OLOL , sex , January to August 2003

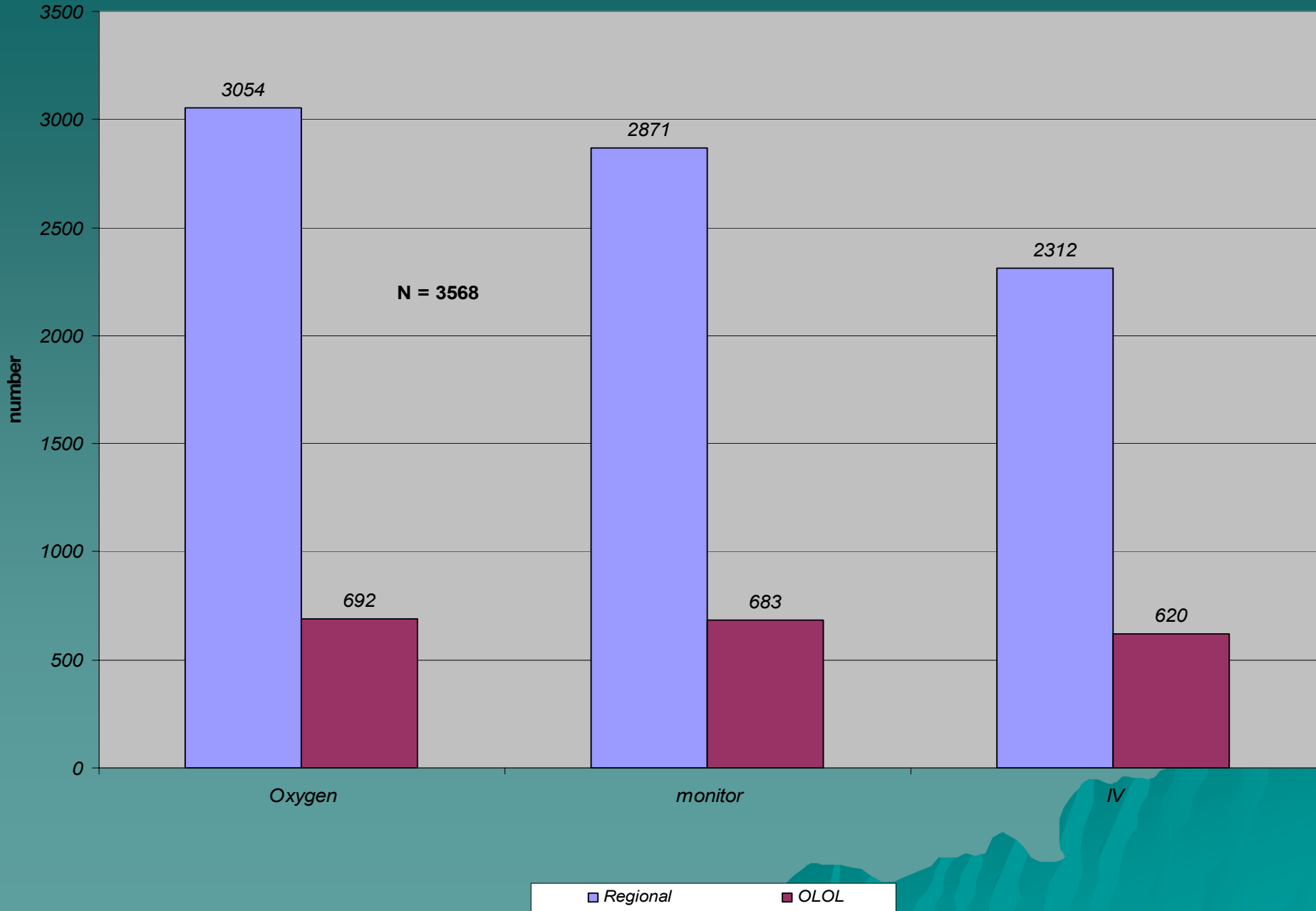


■ male ■ female

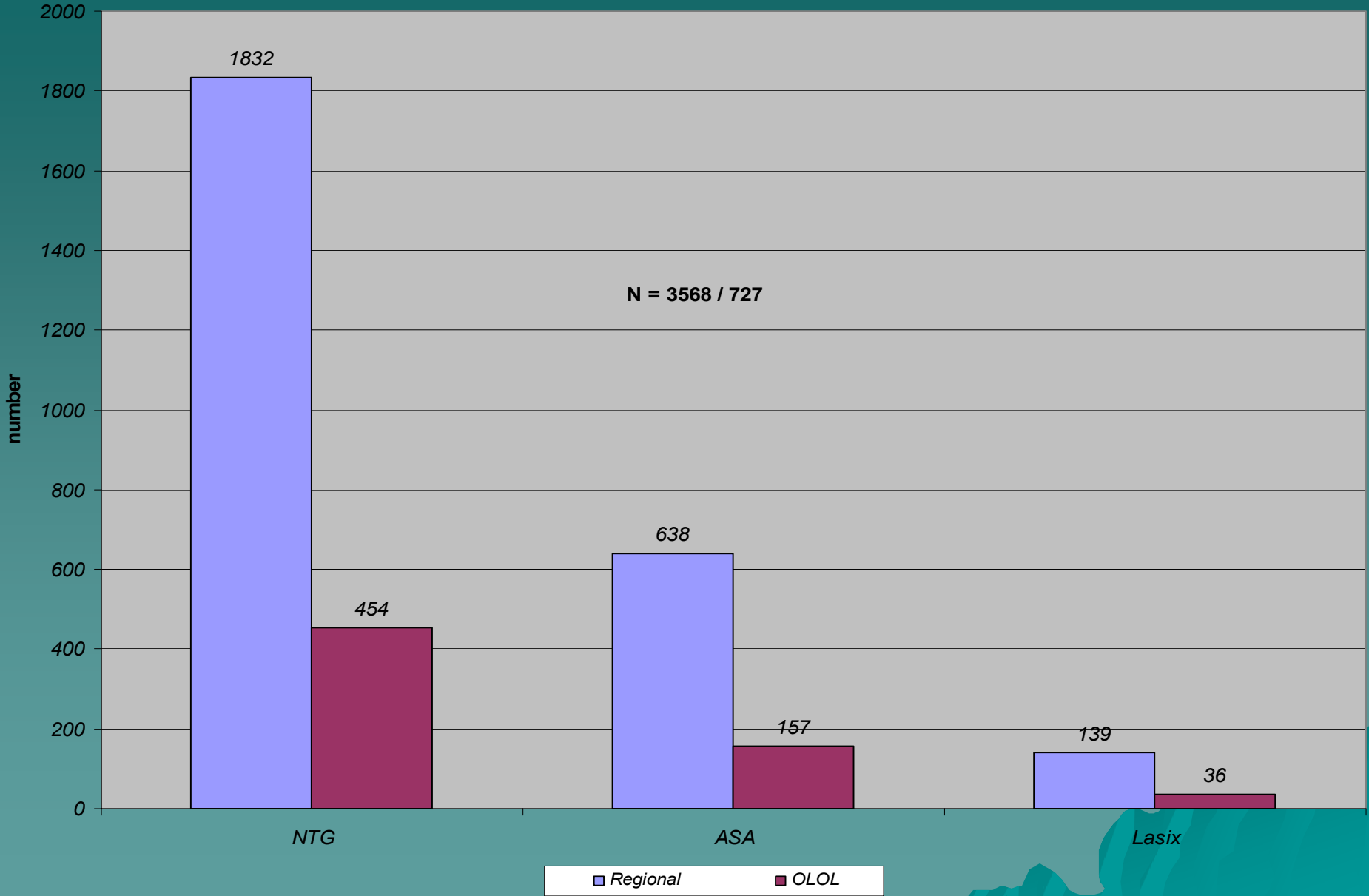
Total MI, n = 81



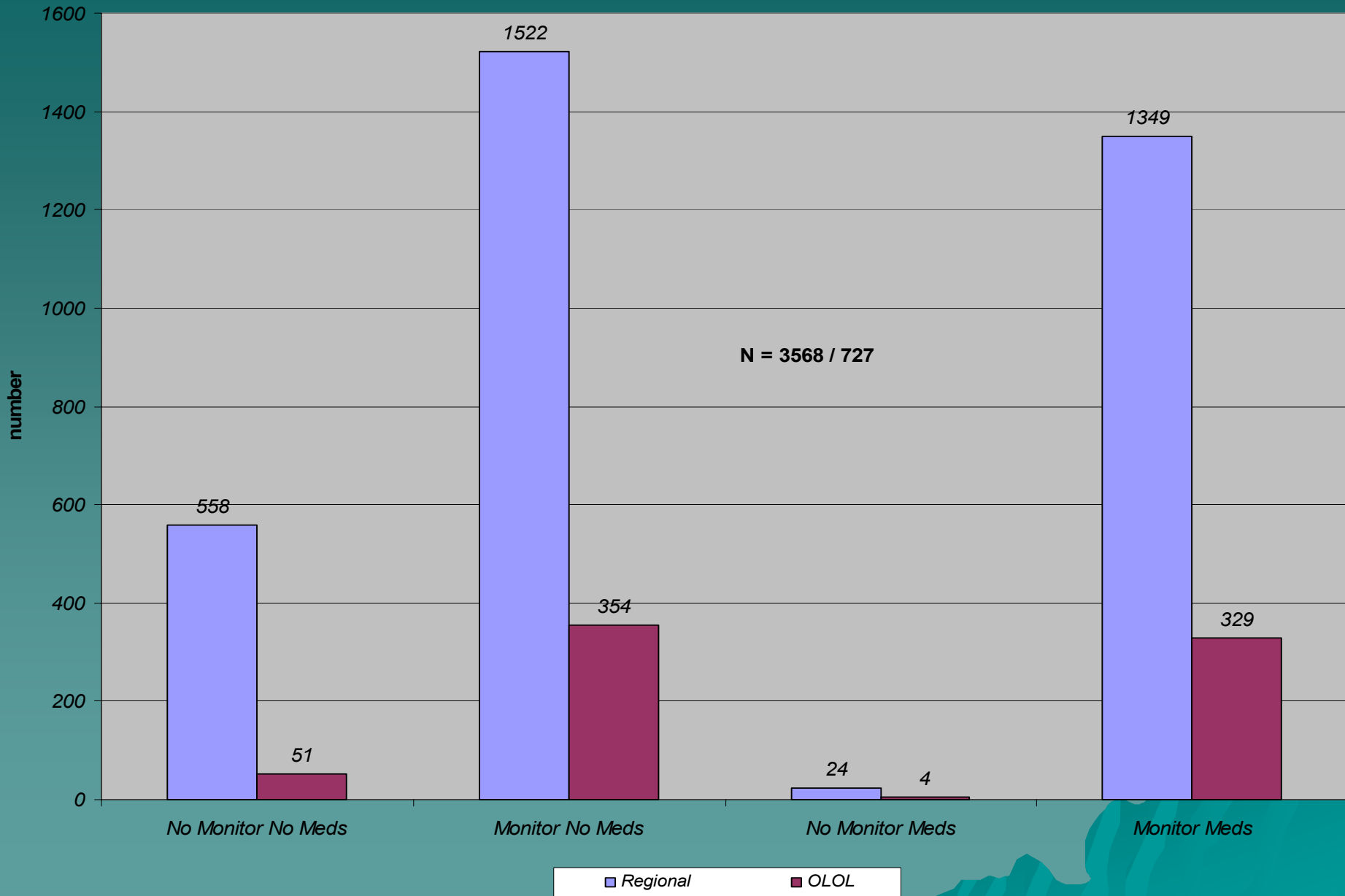
# Cardiac related , ALS skills , January to August 2003



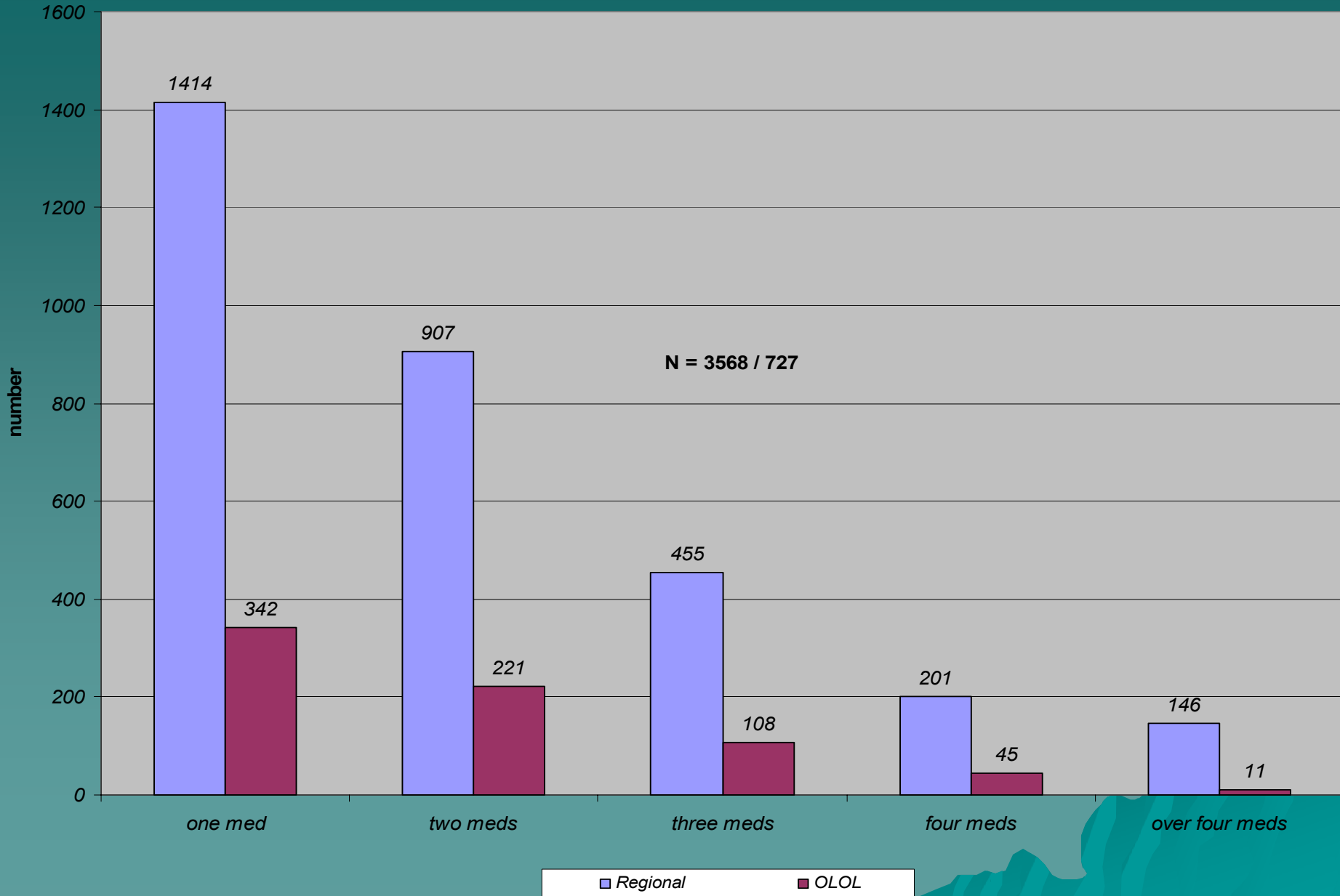
# Cardiac related , Meds , January to August 2003



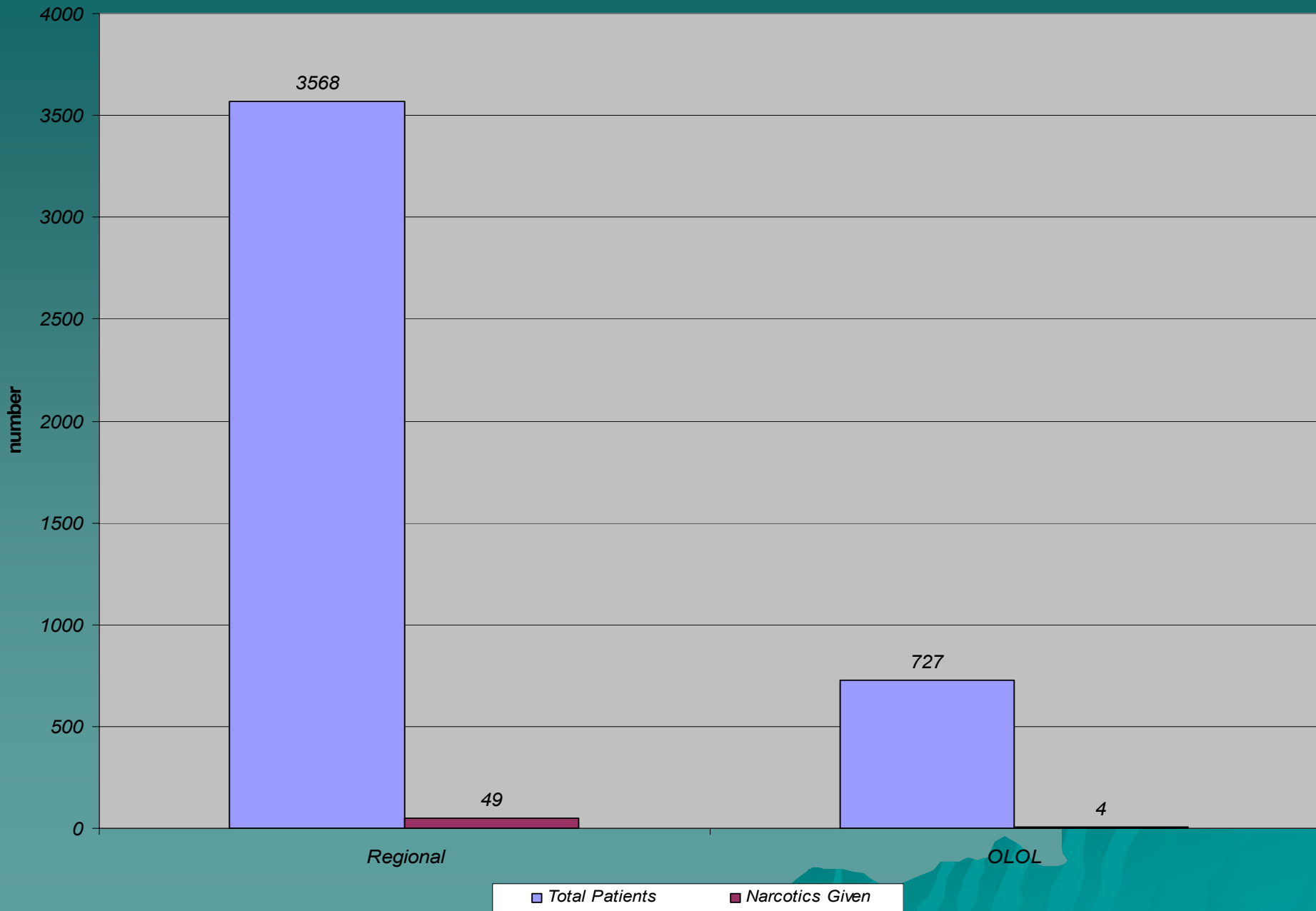
# Cardiac related , Monitor and Meds , January to August 2003



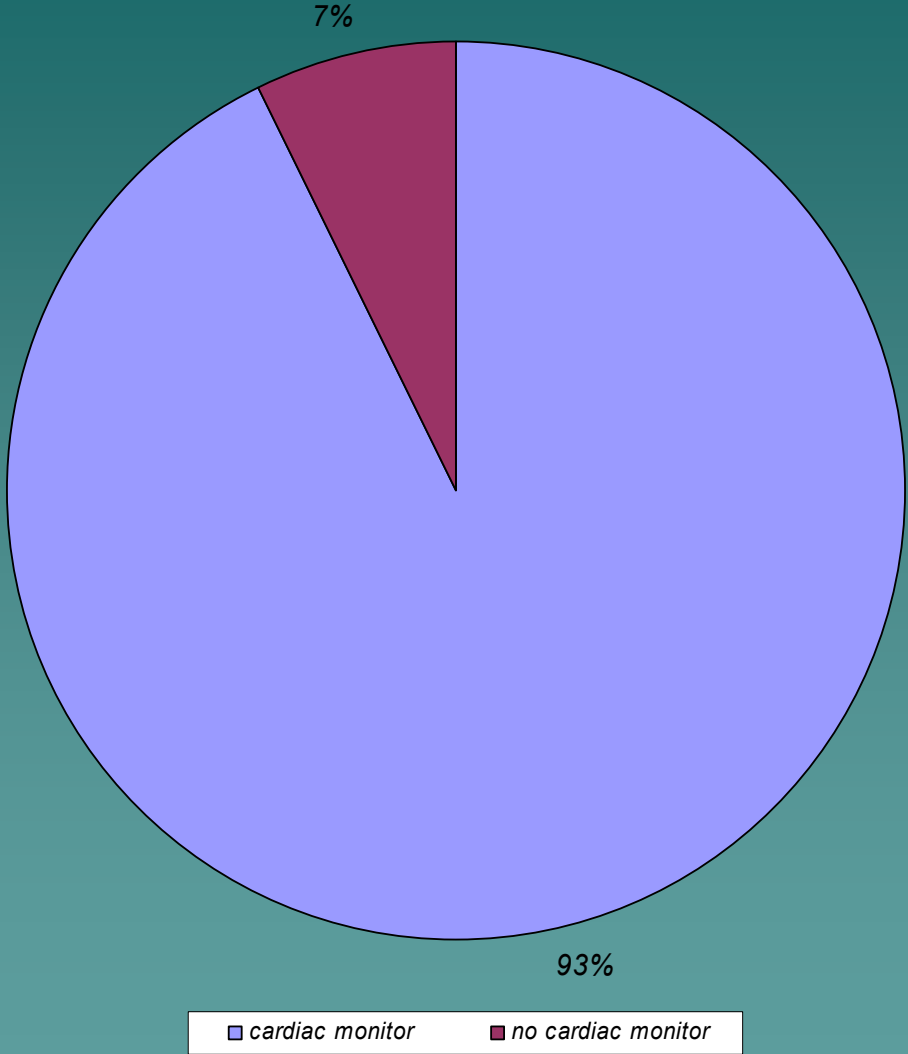
# Cardiac related , Number of Meds Administered , January to August 2003



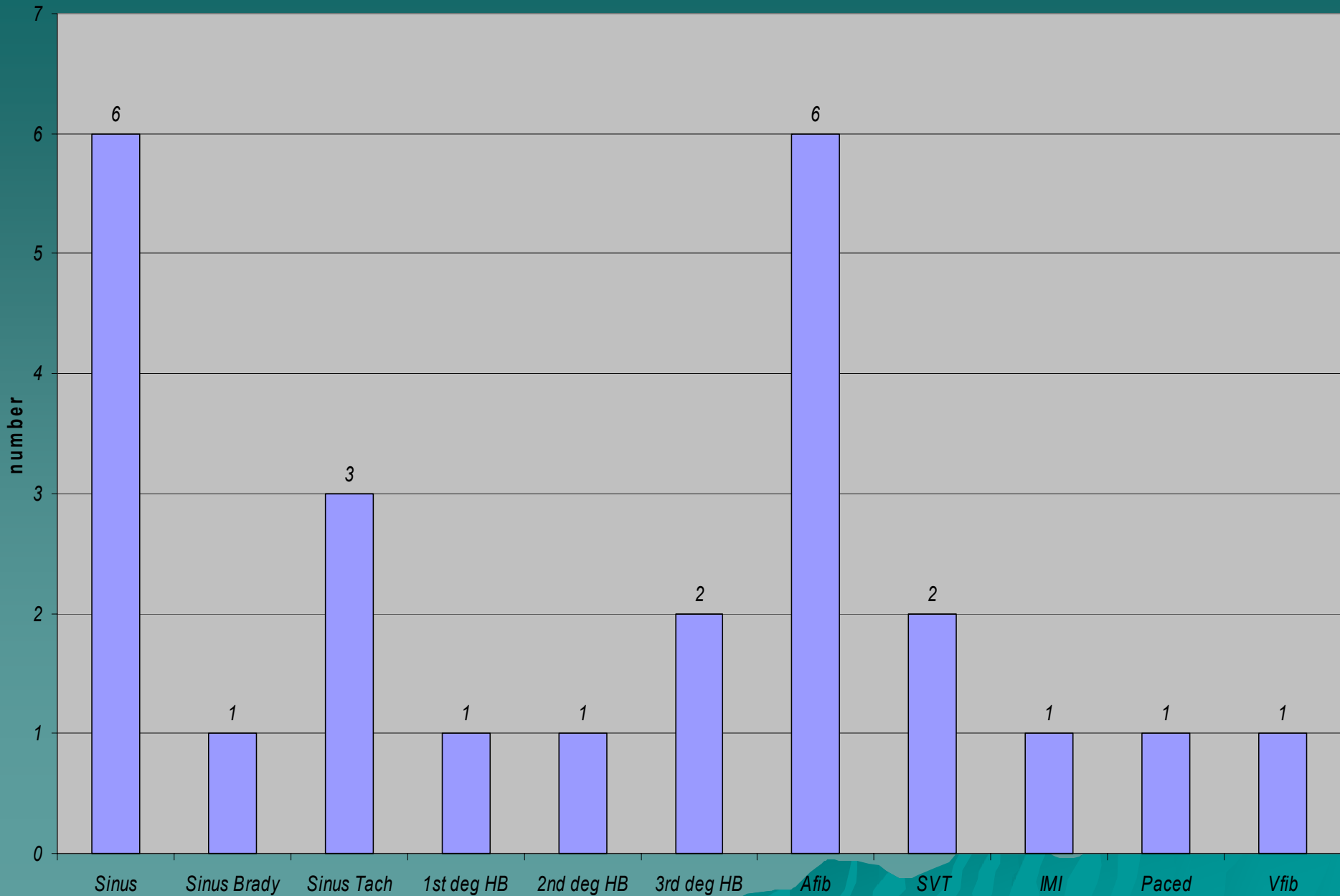
# Cardiac related , Narcotics for Pain , January to August 2003



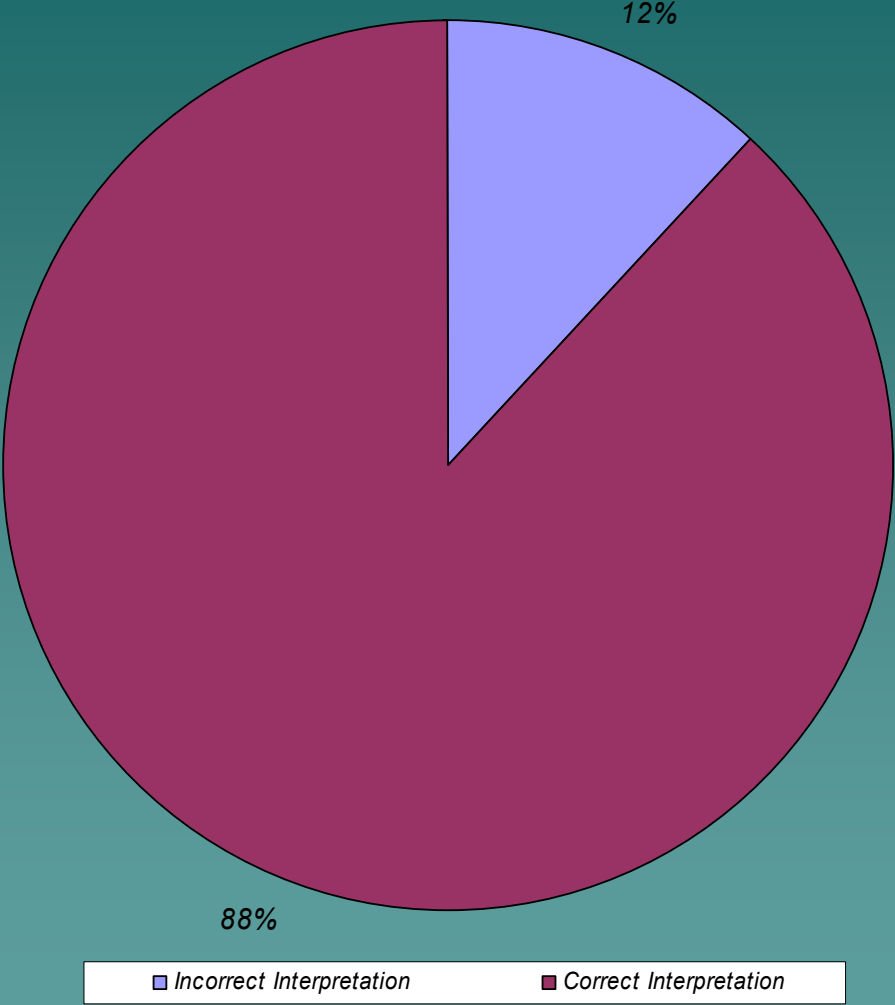
**LOLO cardiac medications , cardiac monitor , 1 - 7 / 2003 , n = 28**



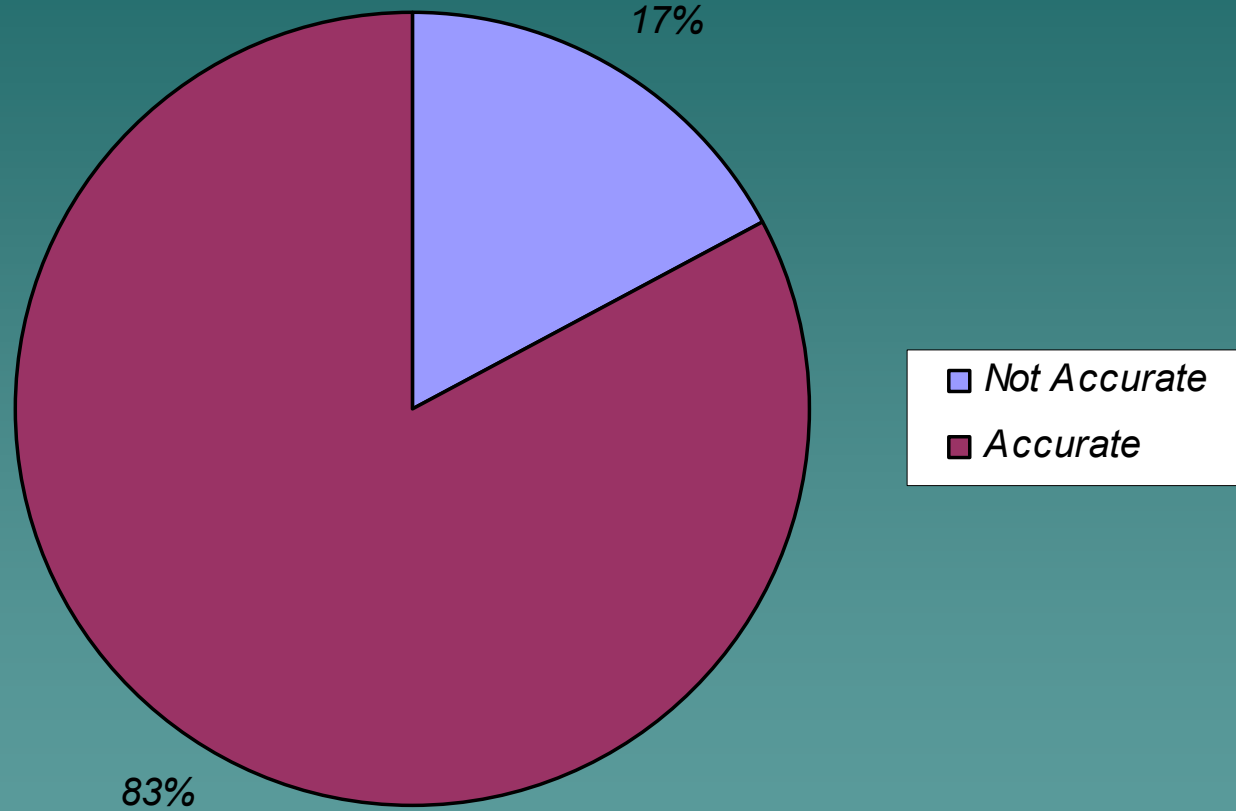
# OLOL inpatient / ems , prehospital rhythms, January 2003 - June 2003



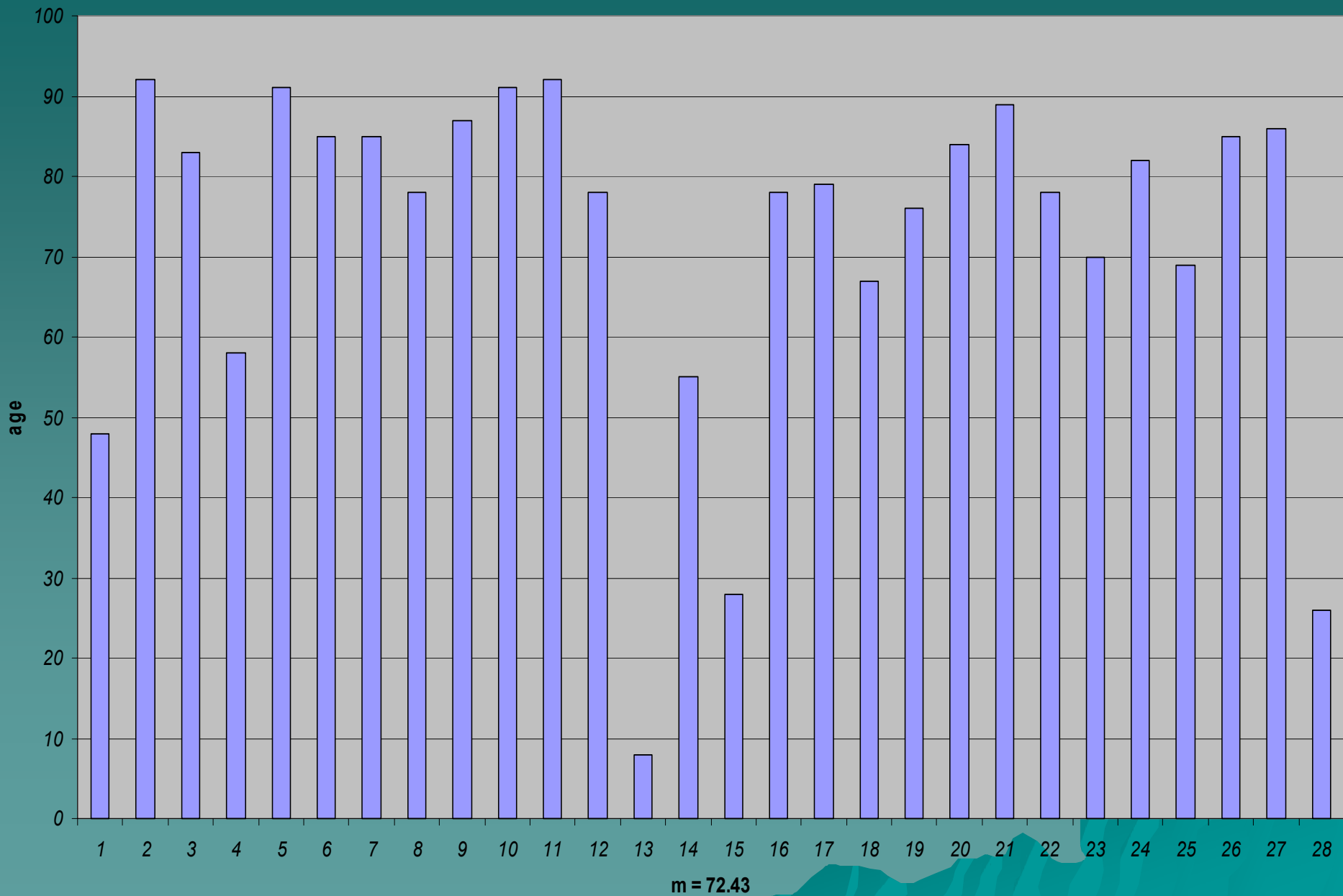
OLOL inpatient / ems , Prehospital monitor interpretation , January 2003 - June 2003



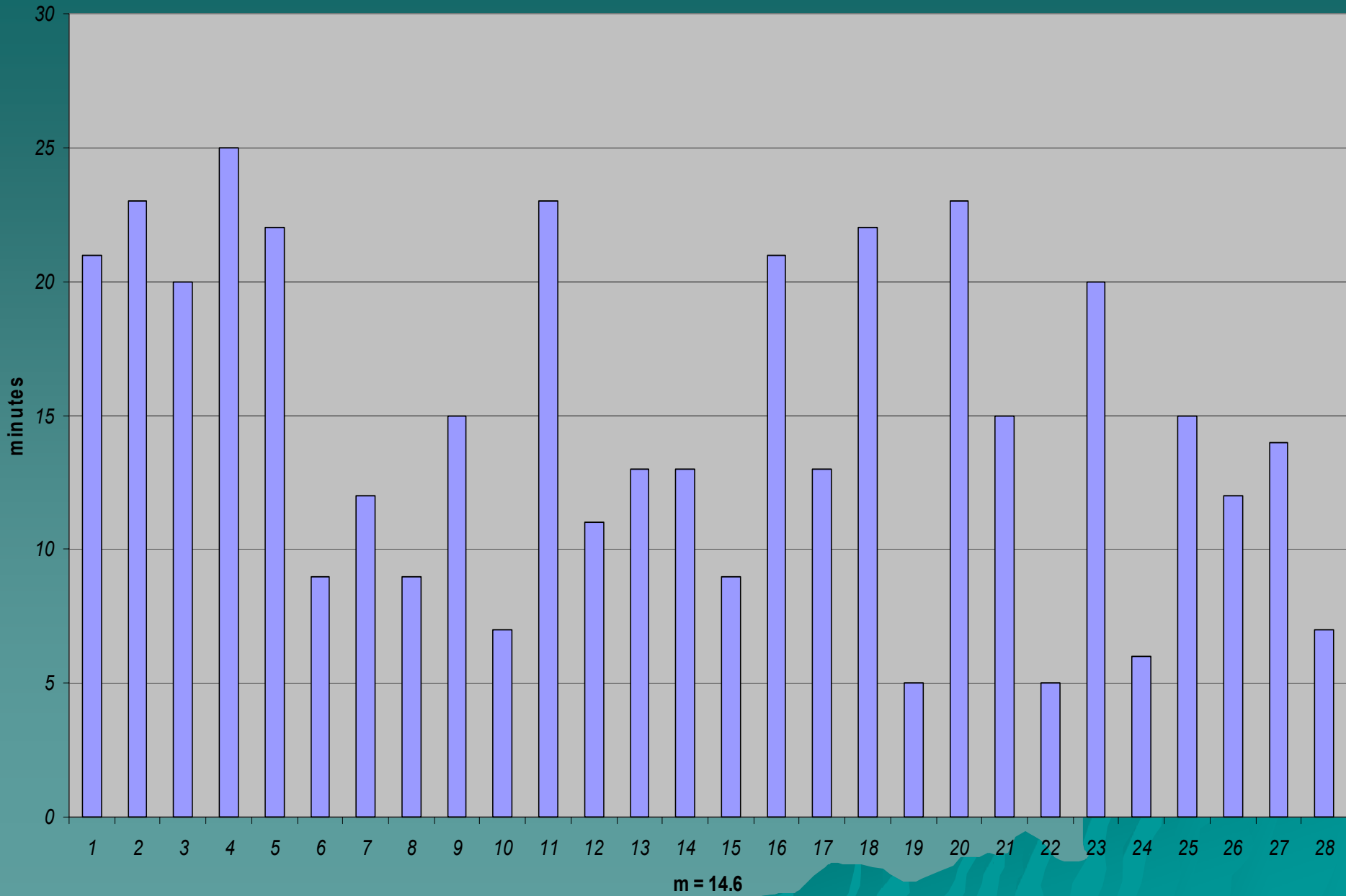
*Computer Interpretation , n = 81*



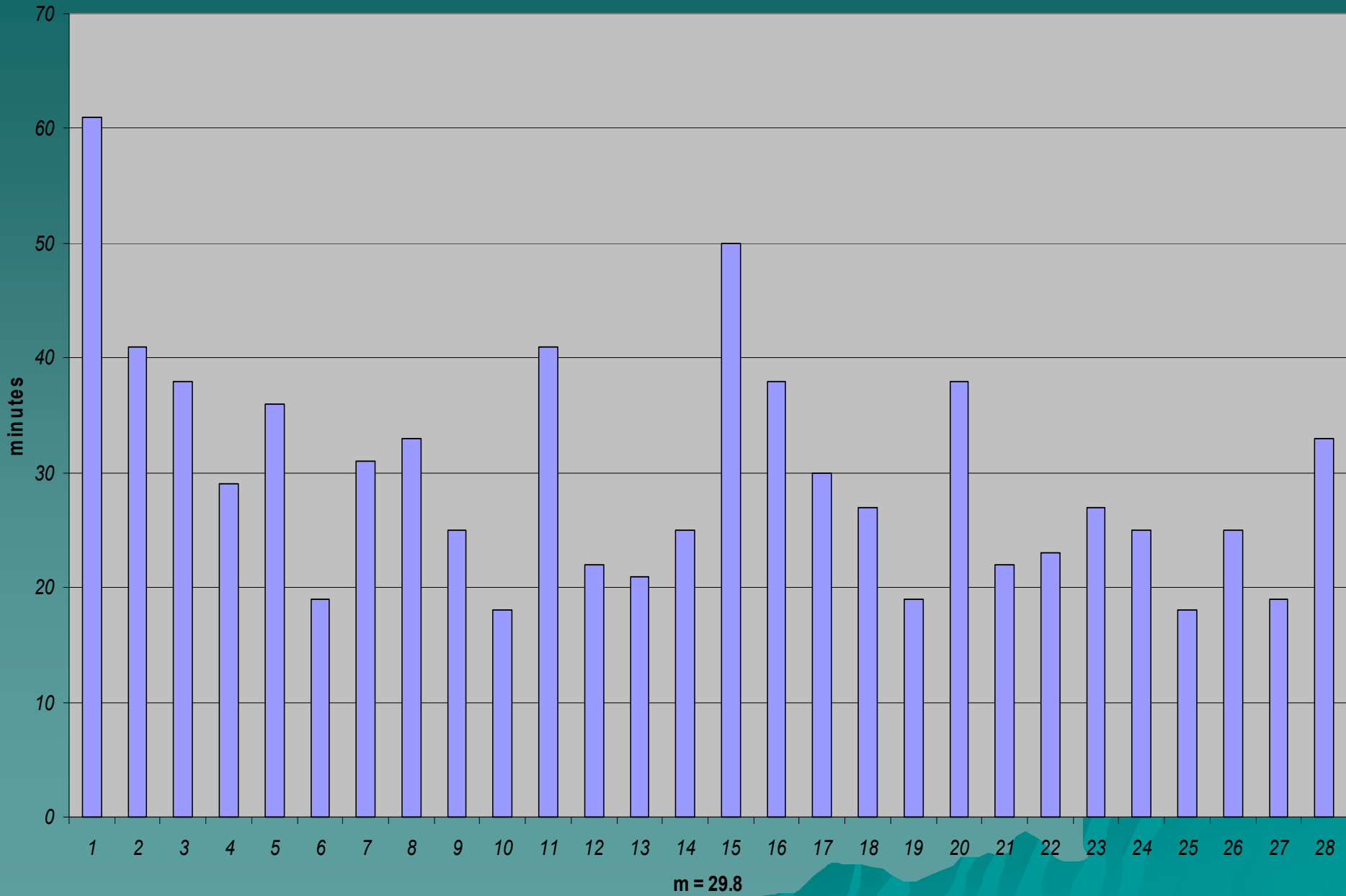
# OLOL cardiac medication study , age , 1 - 7 / 2003 n = 28



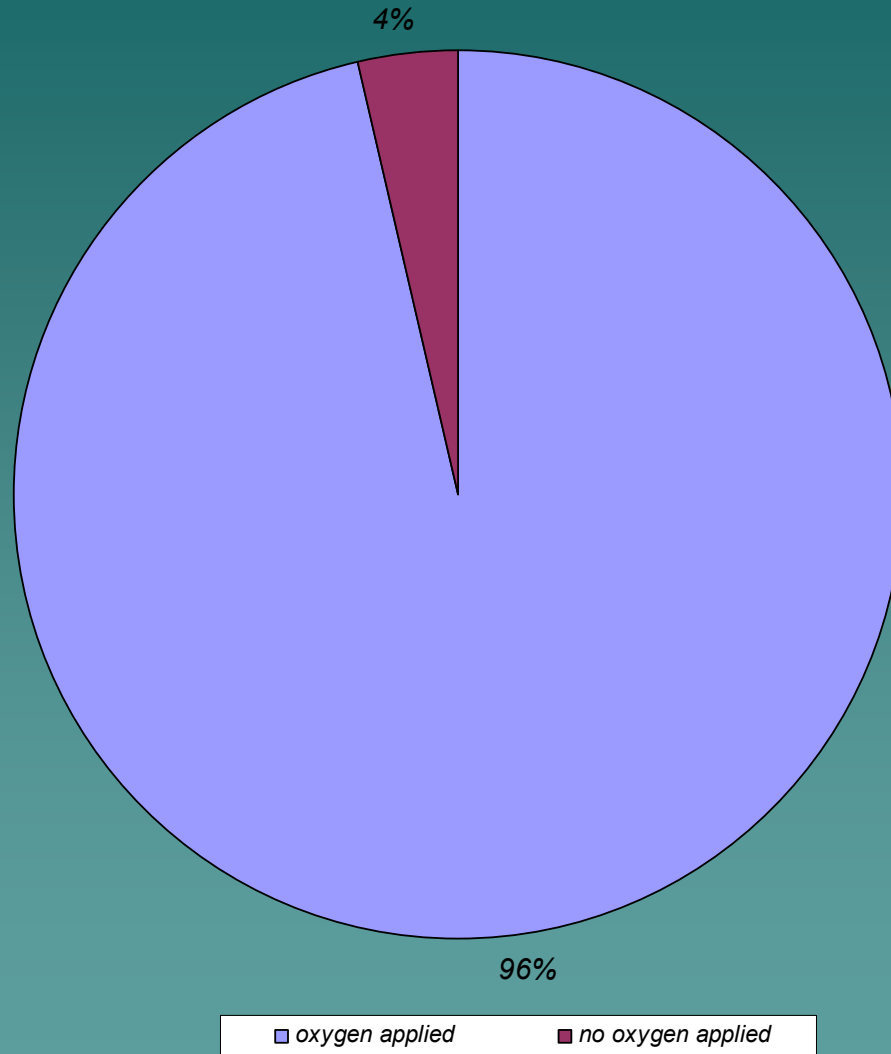
# OLOL cardiac medication study , scene time , 1 - 7 / 2003 , n = 28



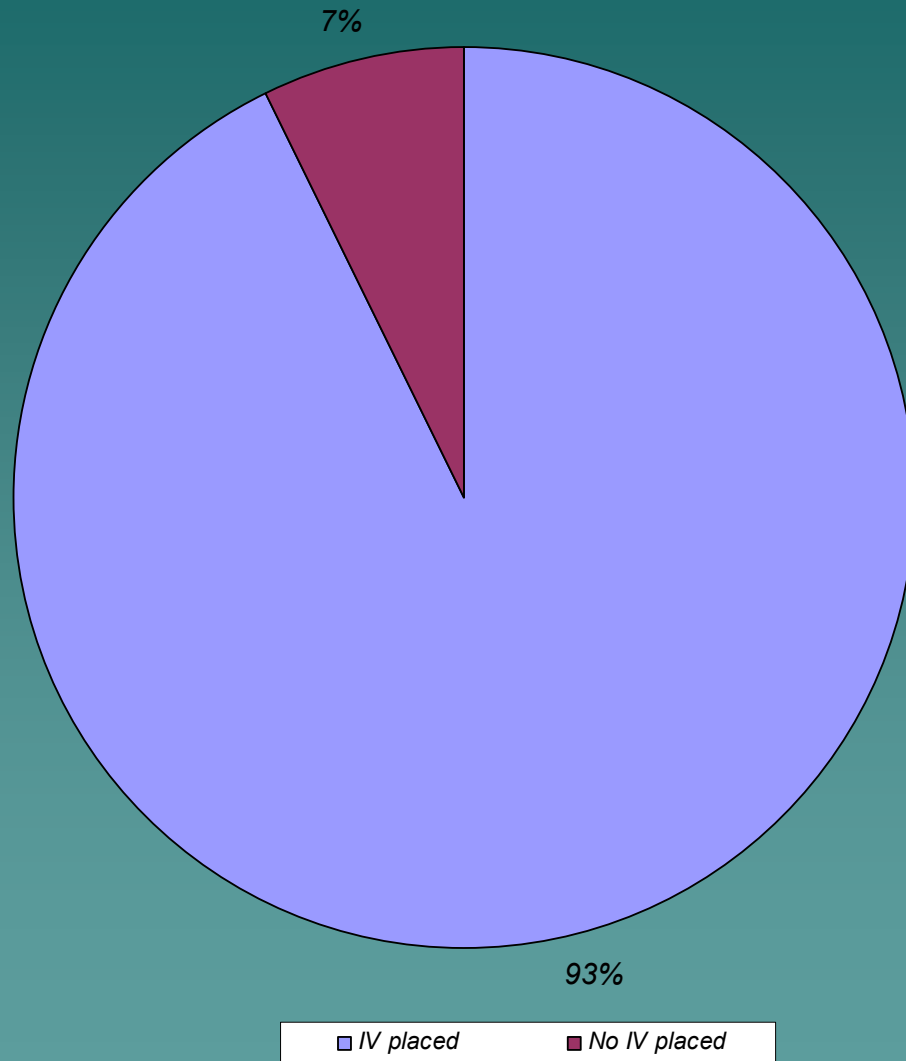
# OLOL cardiac medications , total care time , 1 - 7 / 2003 , n = 28



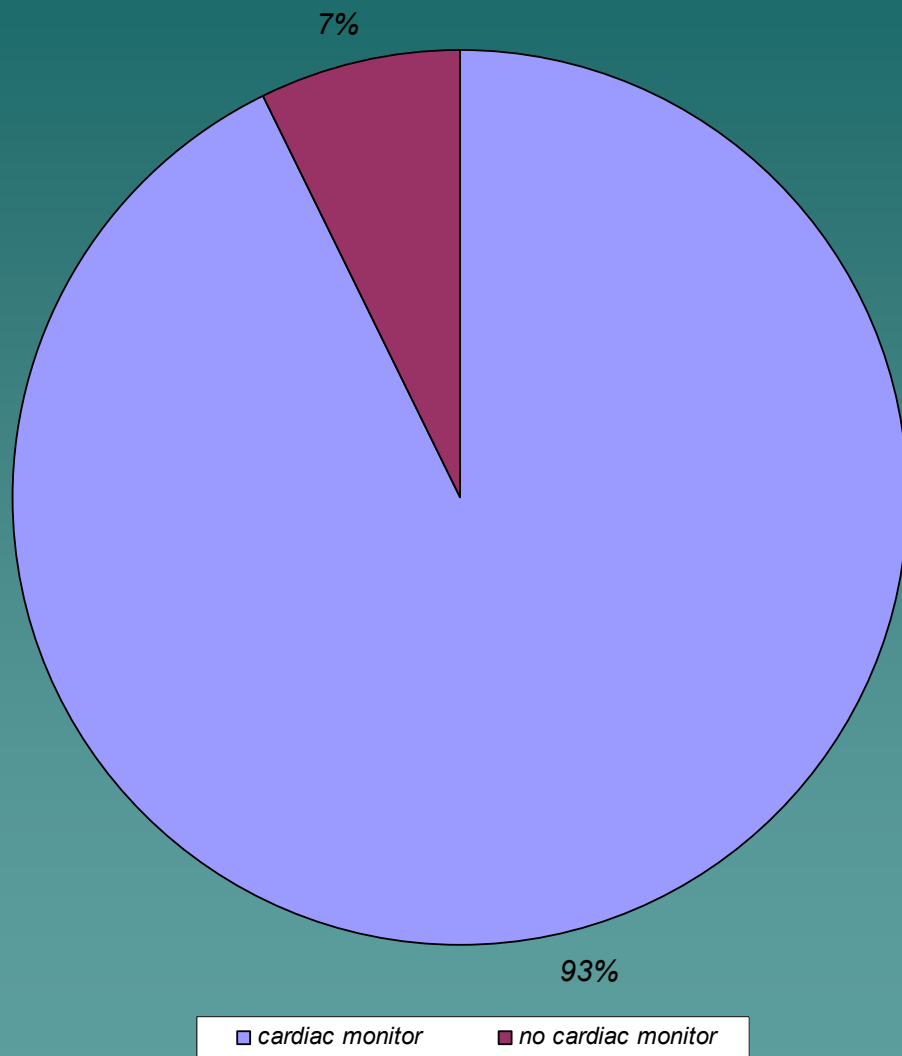
**LOLO cardiac medications , Oxygen , 1 - 7 / 2003 , n = 28**



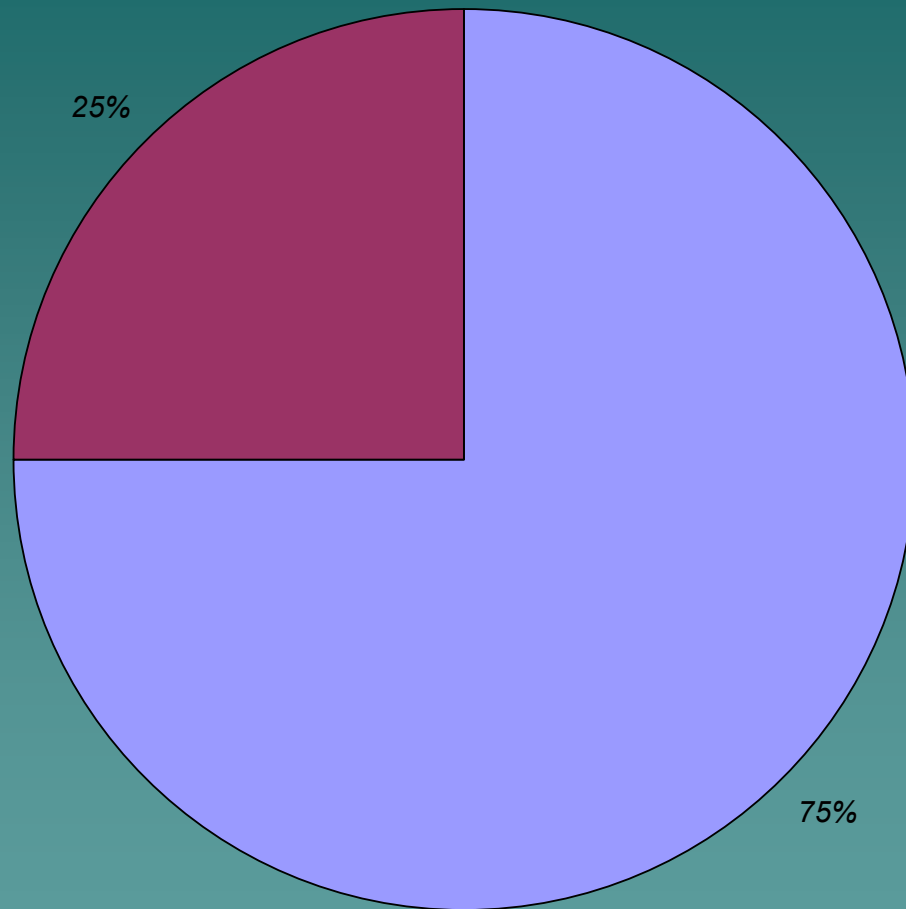
OLOL cardiac medications , IV , 1 - 7 / 2003 , n = 28



**LOL cardiac medications , cardiac monitor , 1 - 7 / 2003 , n = 28**

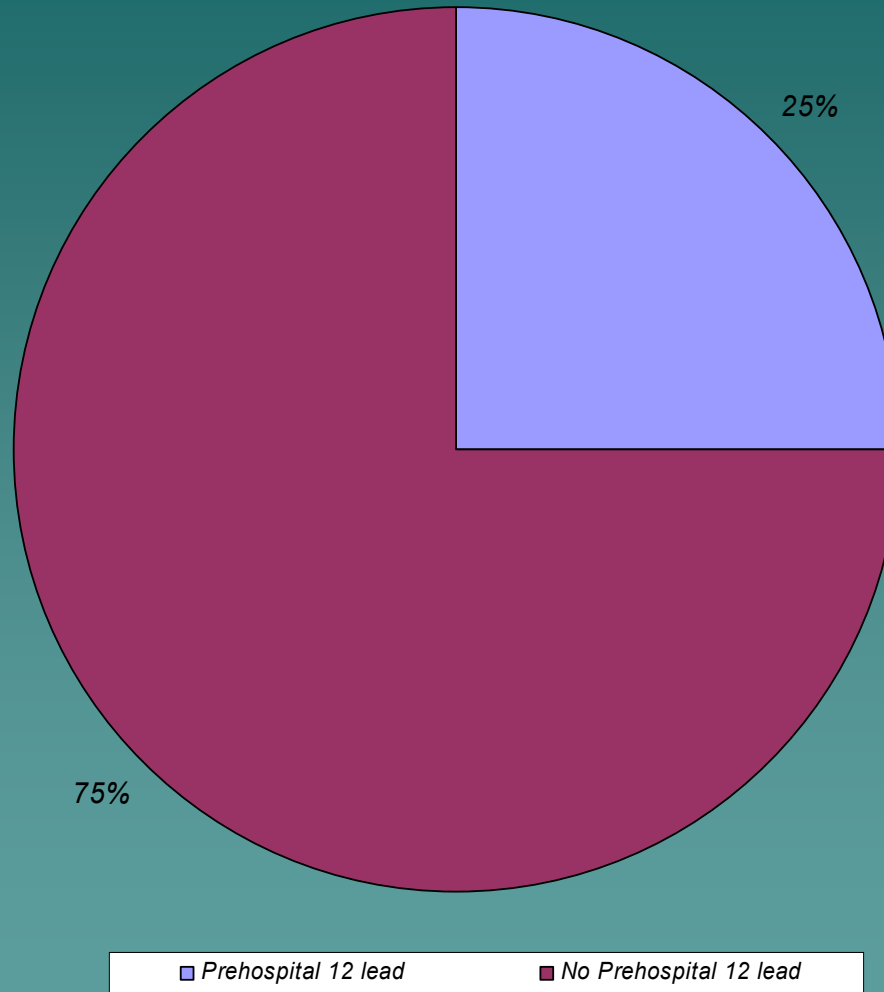


**OLOL cardiac medications , 12 Lead EKG , 1 - 7 / 2003 , n = 28**

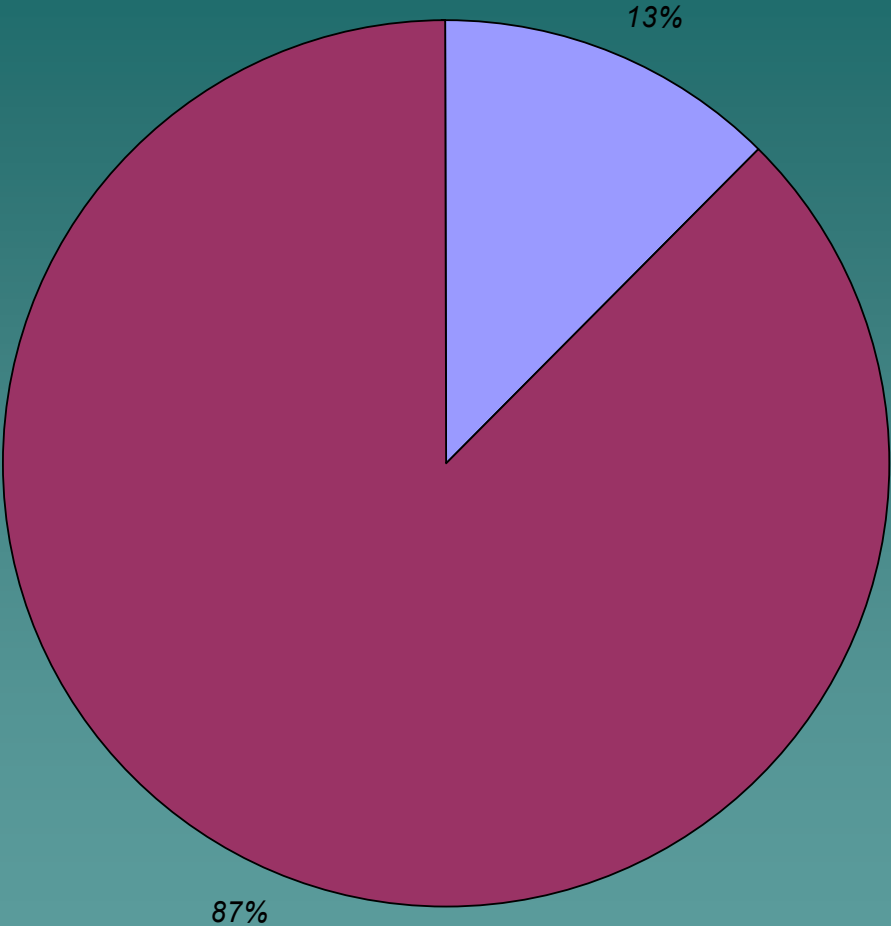


no 12 lead      12 lead

**LOL inpatient / ems , cardiac discharge diagnosis , 12 lead acquisition , January 2003 - June 2003**



OLOL inpatient / ems , ems transported , cardiac discharge diagnosis , January 2003 - June 2003 .



■ Admitted Cardiac      ■ Not Admitted Cardiac

# **OLOL Discharge Diagnosis Data**

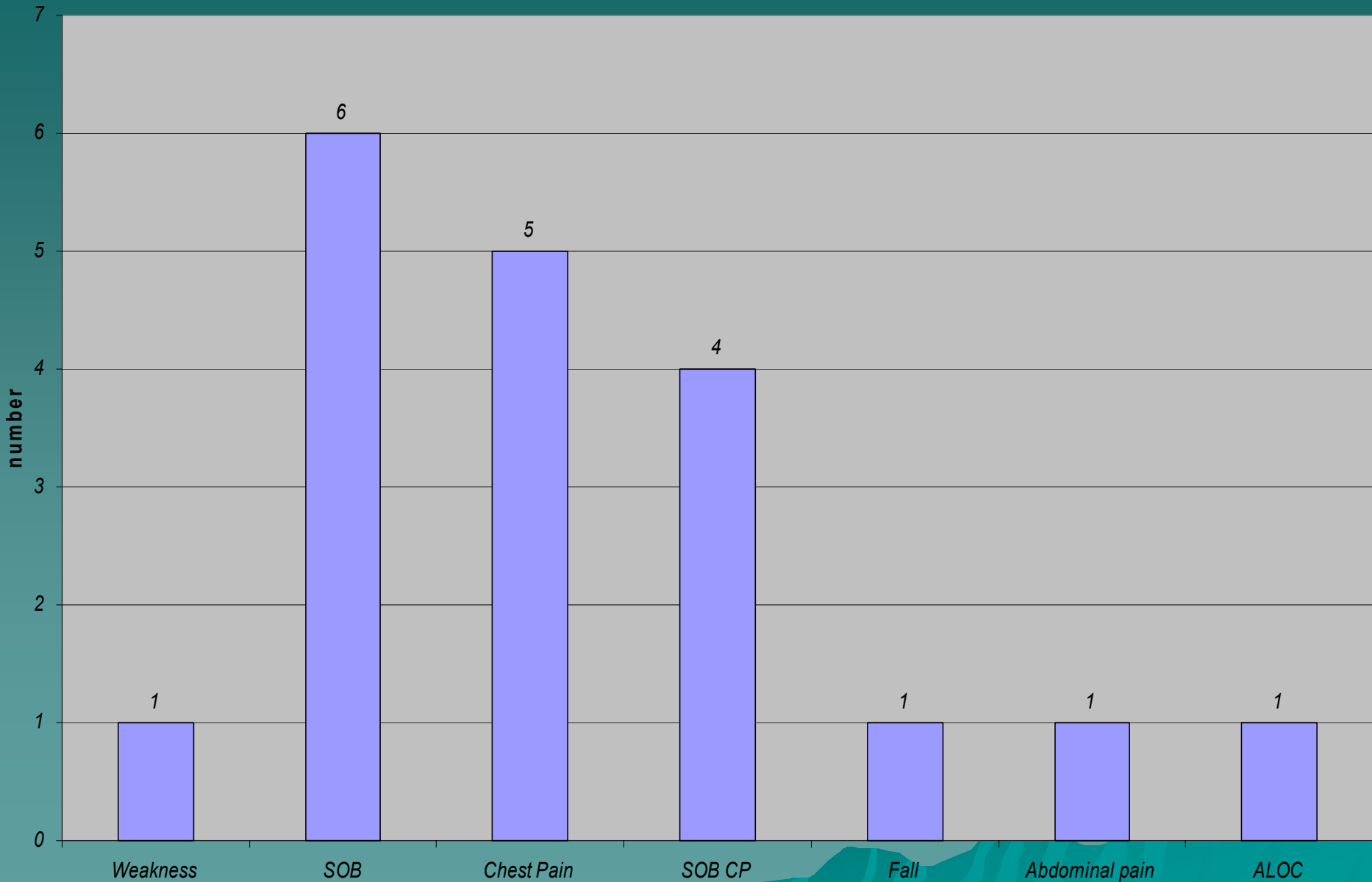
**January 2003 – June 2003**

A stylized, teal-colored silhouette of a mountain range is located in the bottom right corner of the slide. The mountains are rendered with simple, blocky shapes and varying shades of teal to create a sense of depth and texture.

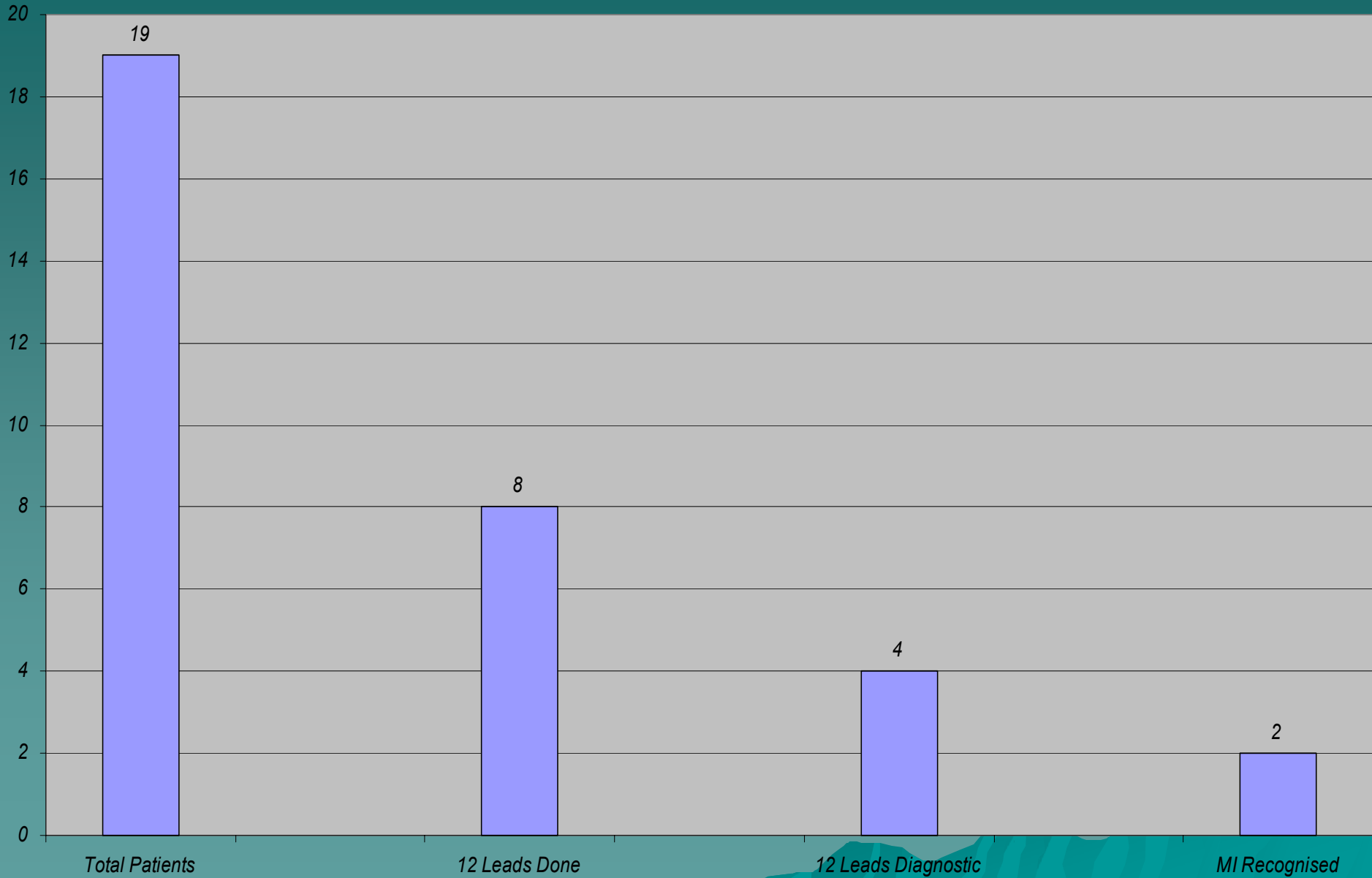
# OLOL Overview

- ◆ OLOL had 1766 cardiac related EMS calls from January 2003 through June 2003
- ◆ About 5 % of these calls were an acute MI
- ◆ Only 30 % were transferred for catheterization ( 5 or so patients / month ) 27 % diagnostic EKG rate , I suspect these numbers with time will be the same .
- ◆ The vast majority were transferred within 60 minutes of arrival at triage ( of the 5 / month )

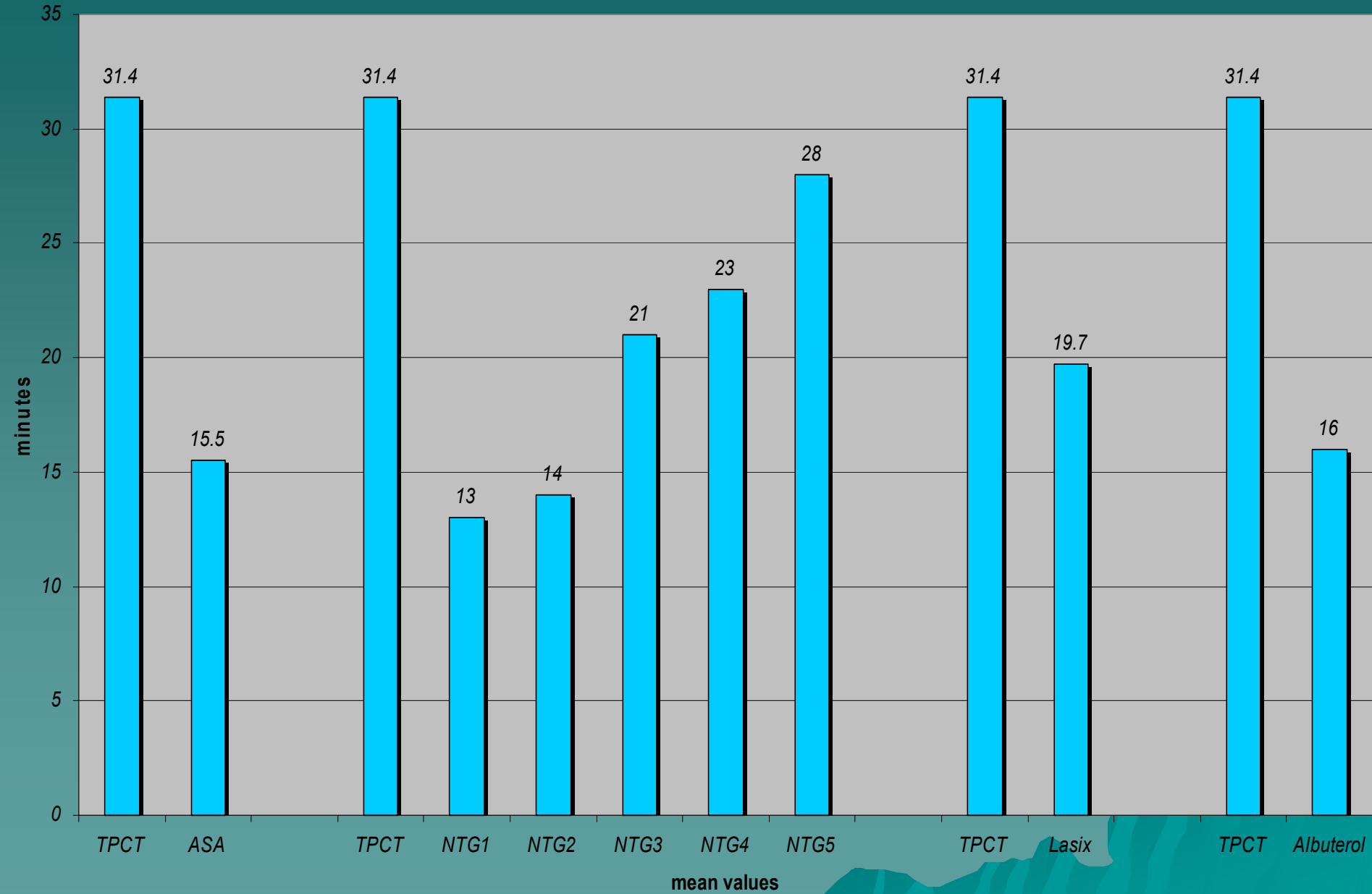
OLOL pre-hospital hospital , presenting complaints on patients with discharge diagnosis of MI ,  
January 2003 - June 2003



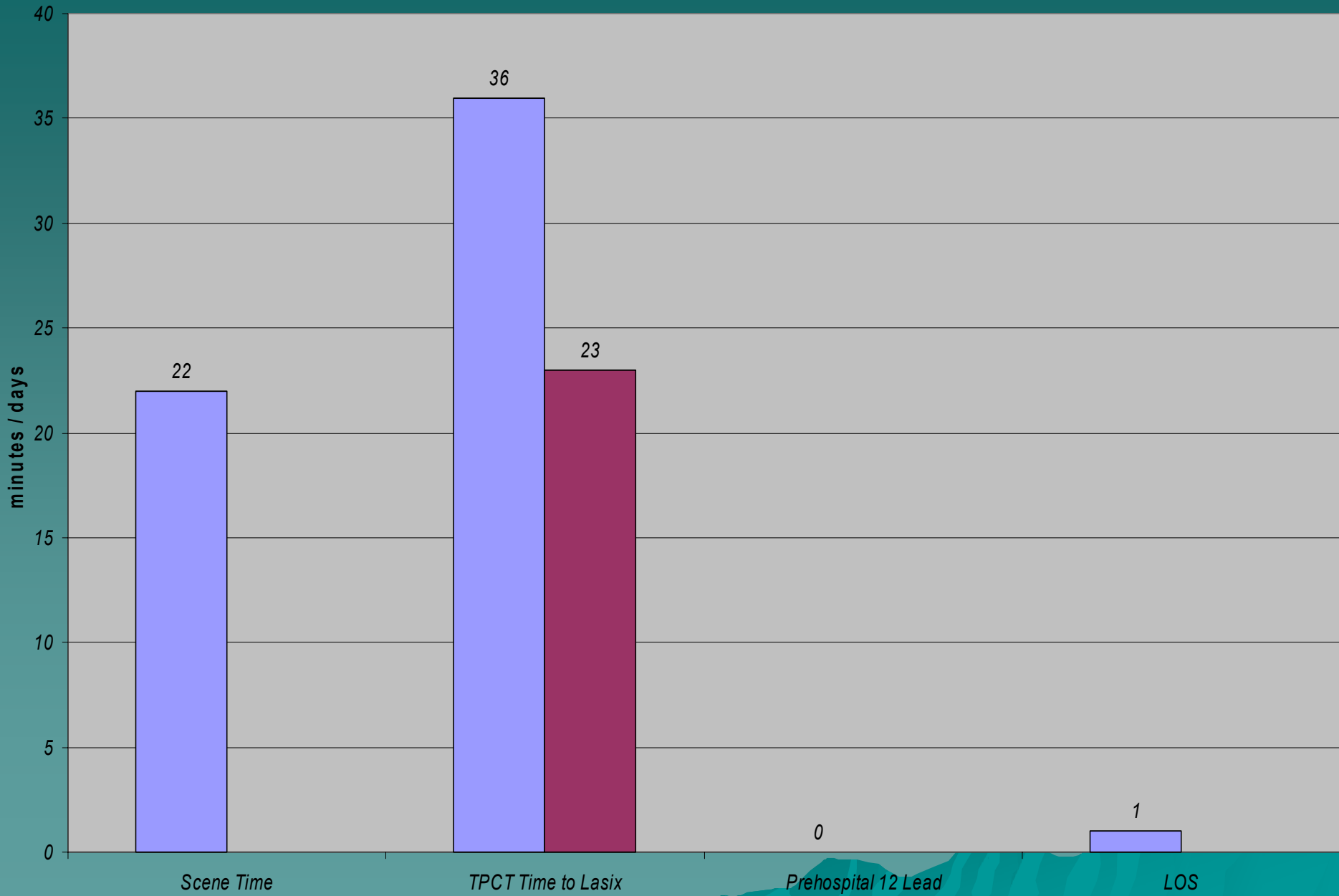
**OLOL pr4e-hospital / hospital Patients with discharge Diagnosis of MI , 12 lead EKG Acquisition ,  
January 2003 - June 2003**



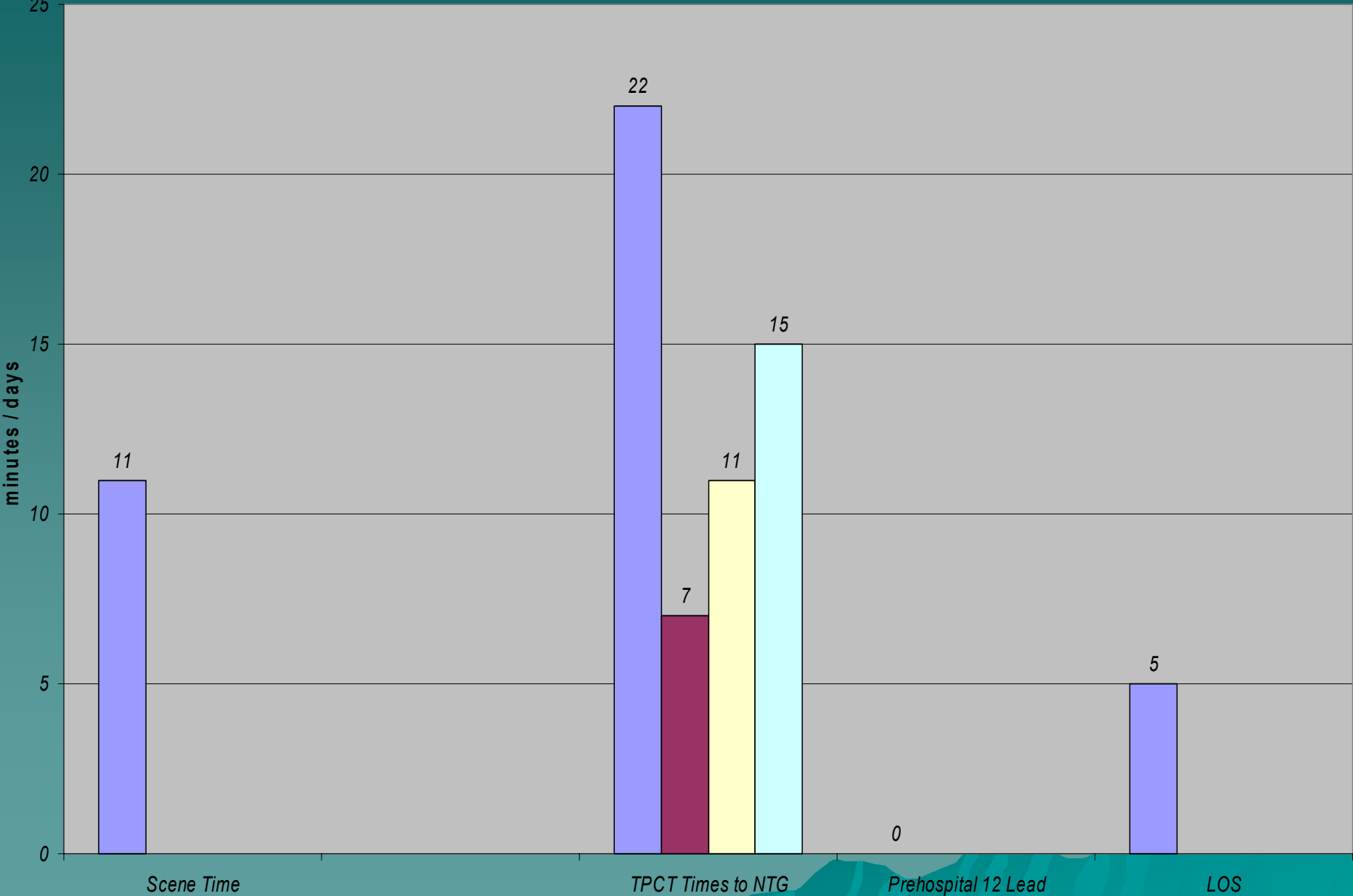
# OLOL cardiac pre-hospital medication times , January 2003 - June 2003 , n = 19



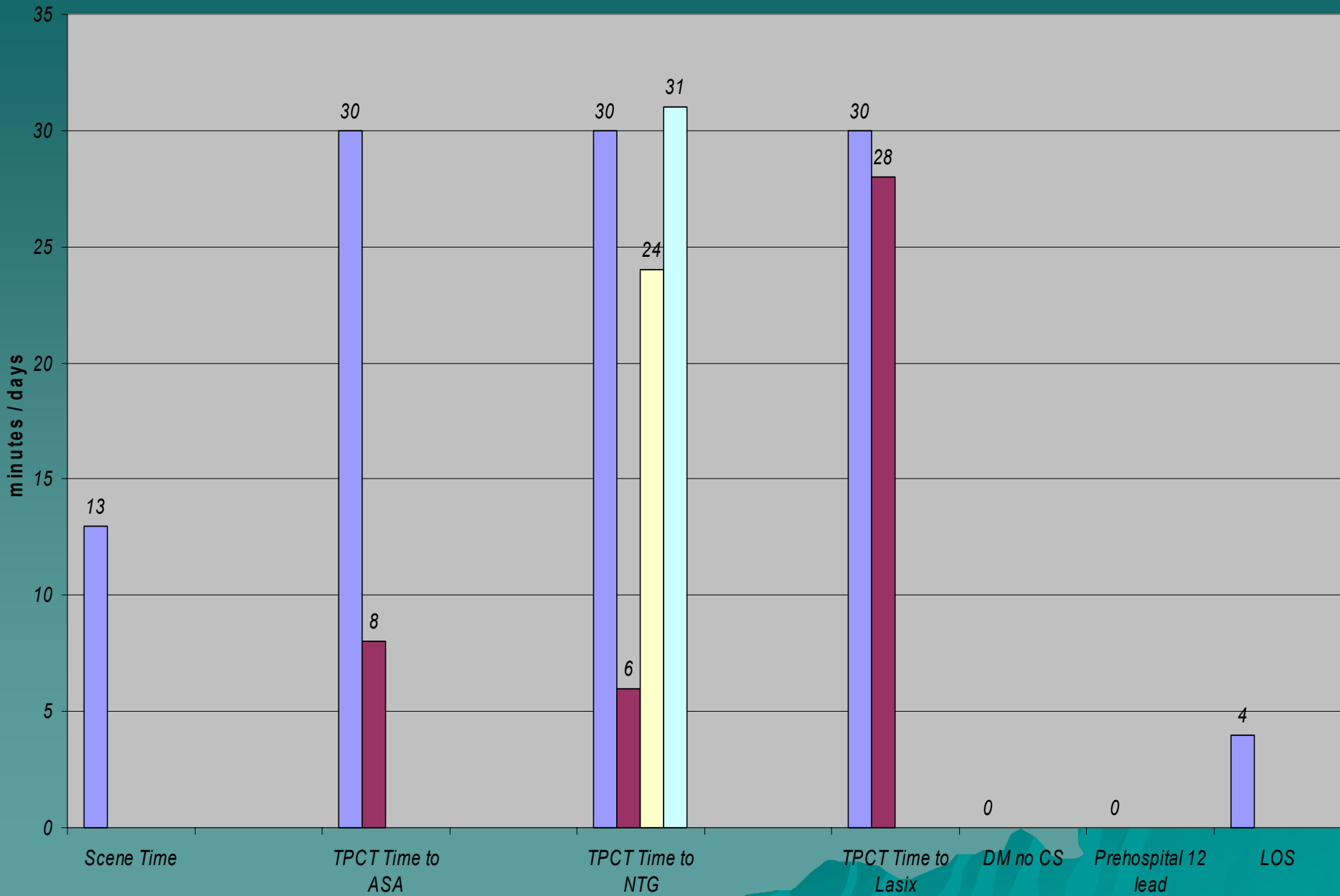
LOL inpatient / ems , CHF discharge diagnosis , Pt # 1 , January 2003 - June 2003



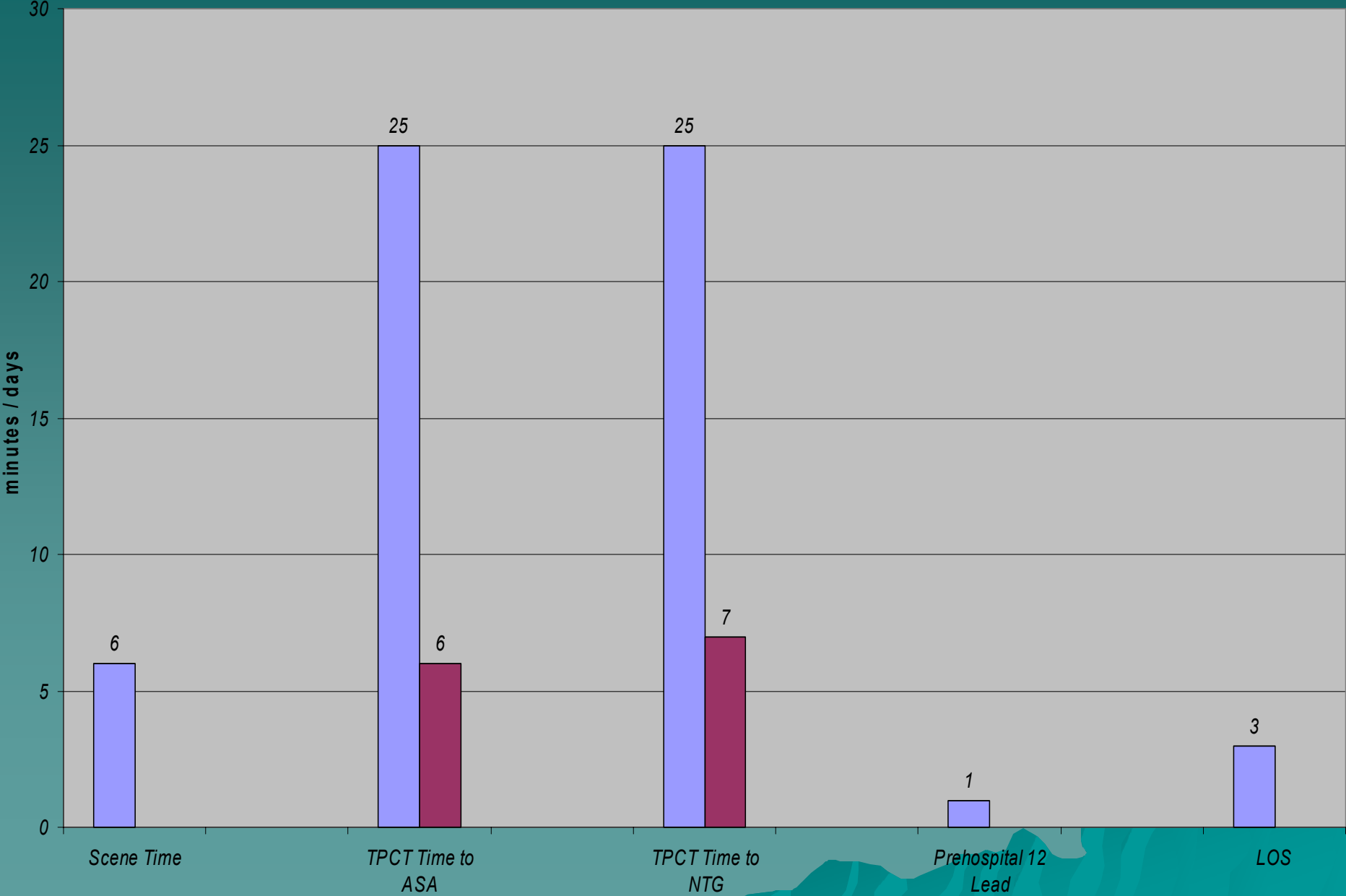
LOL inpatient / ems , CHF Discharge Diagnosis , Pt #2 , January 2003 - June 2003



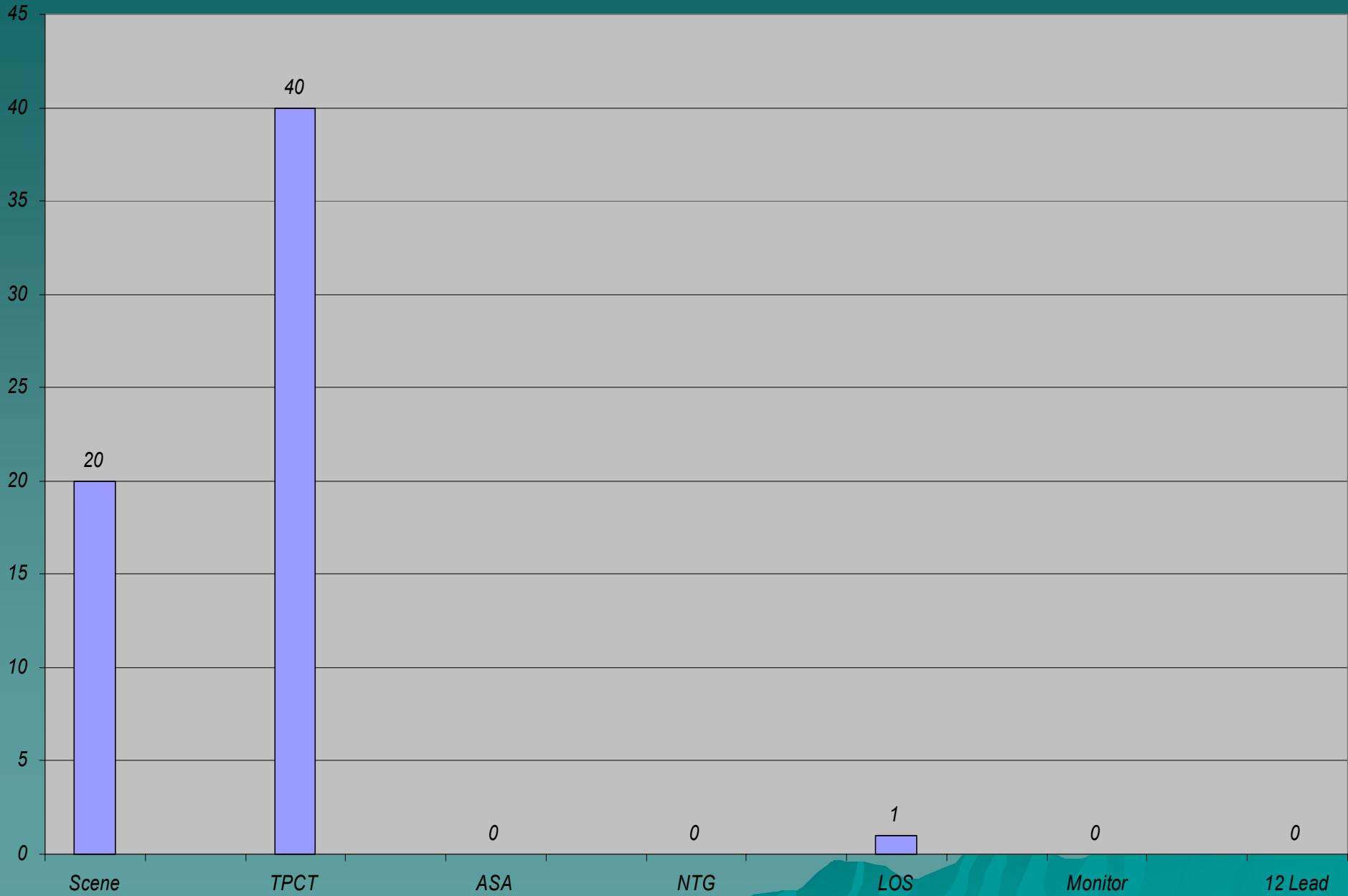
# OLOL inpatient / ems , Subendocardial MI Discharge Diagnosis , Pt # 3 , January 2003 - June 2003



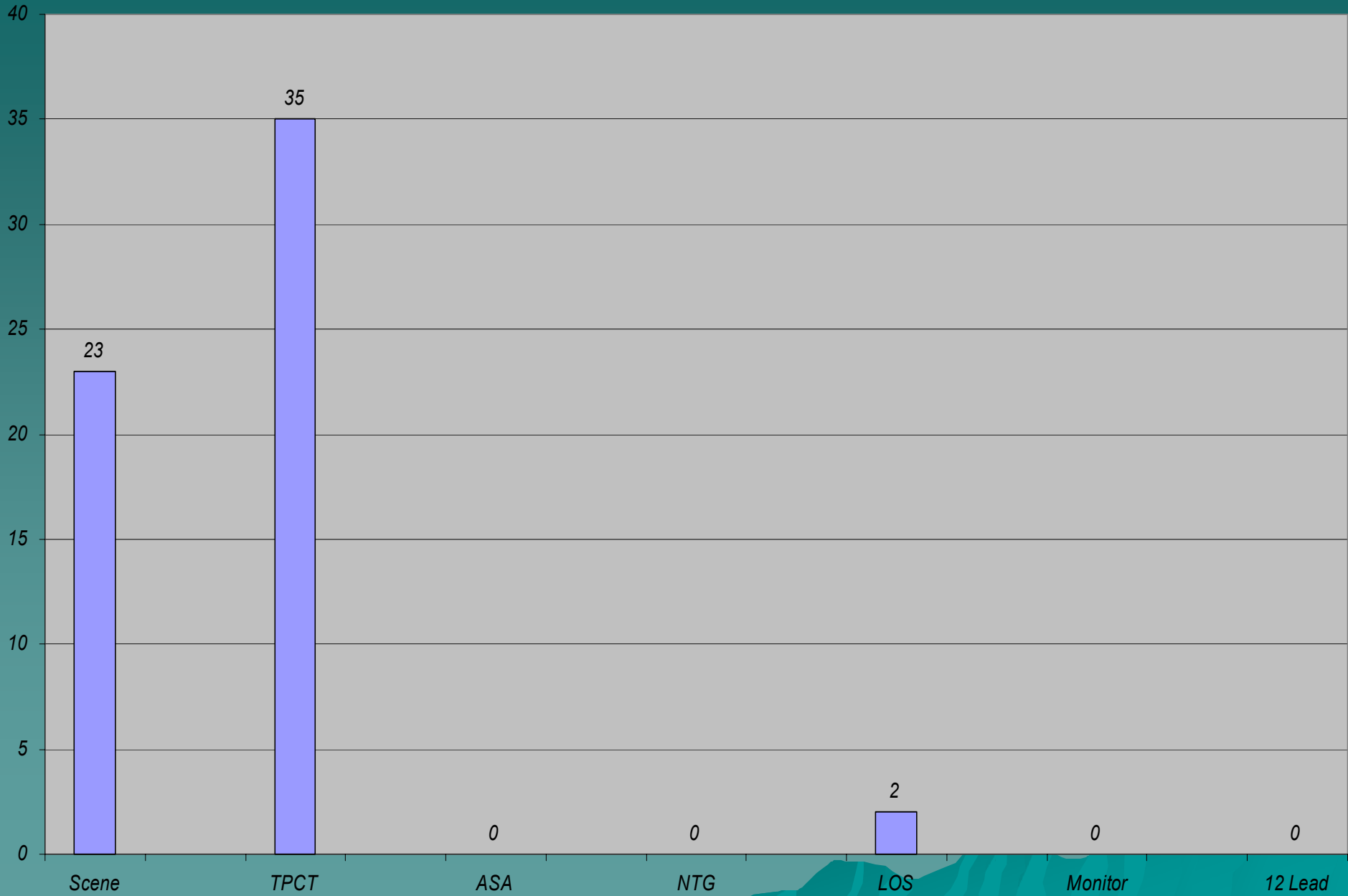
LOL inpatient / ems , CAD Discharge Diagnosis , Pt #4 , January 2003 - June 2003



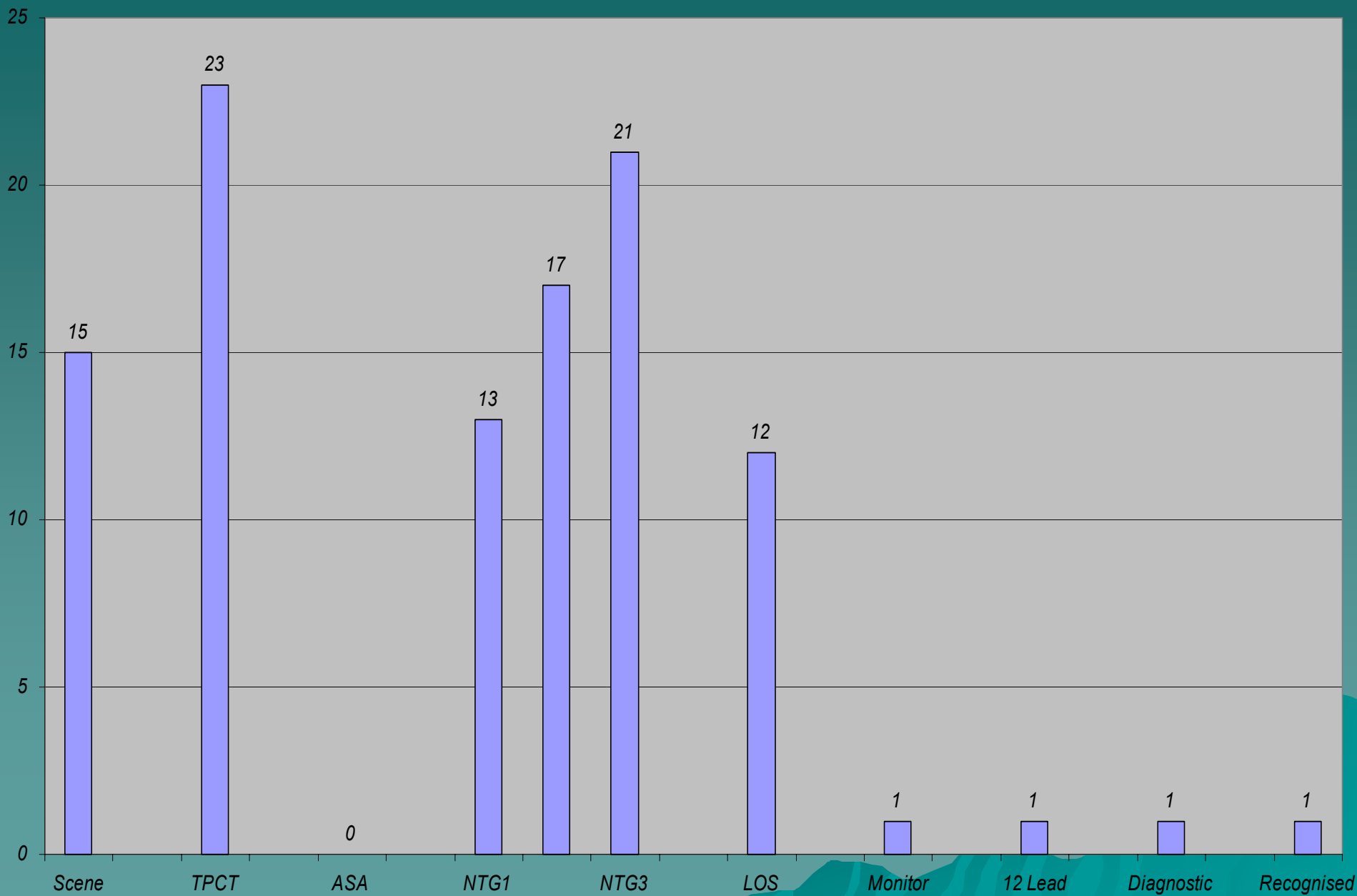
# Patient 5 , AMI , Weakness



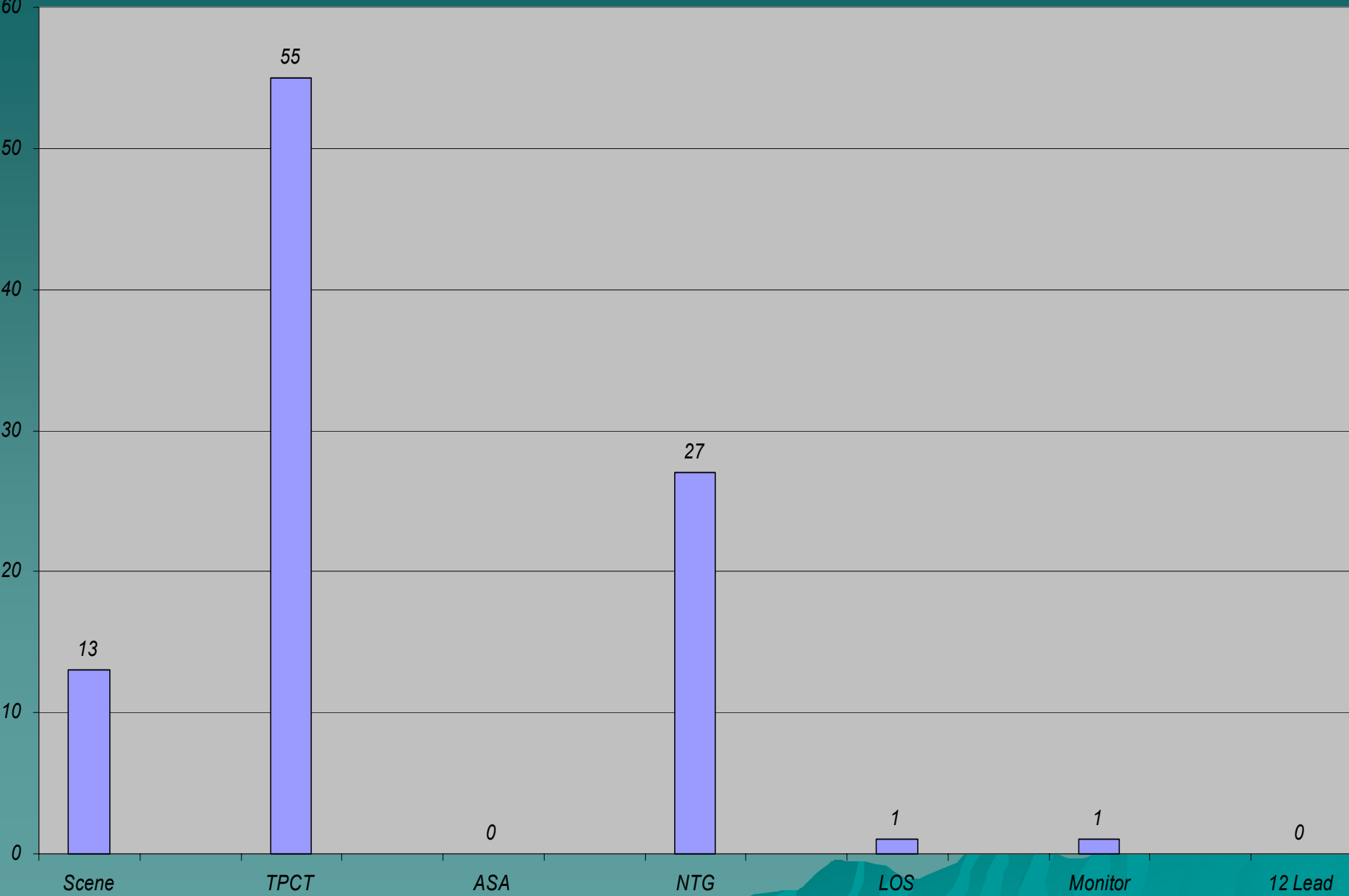
# Patient 6 , AMI , SOB



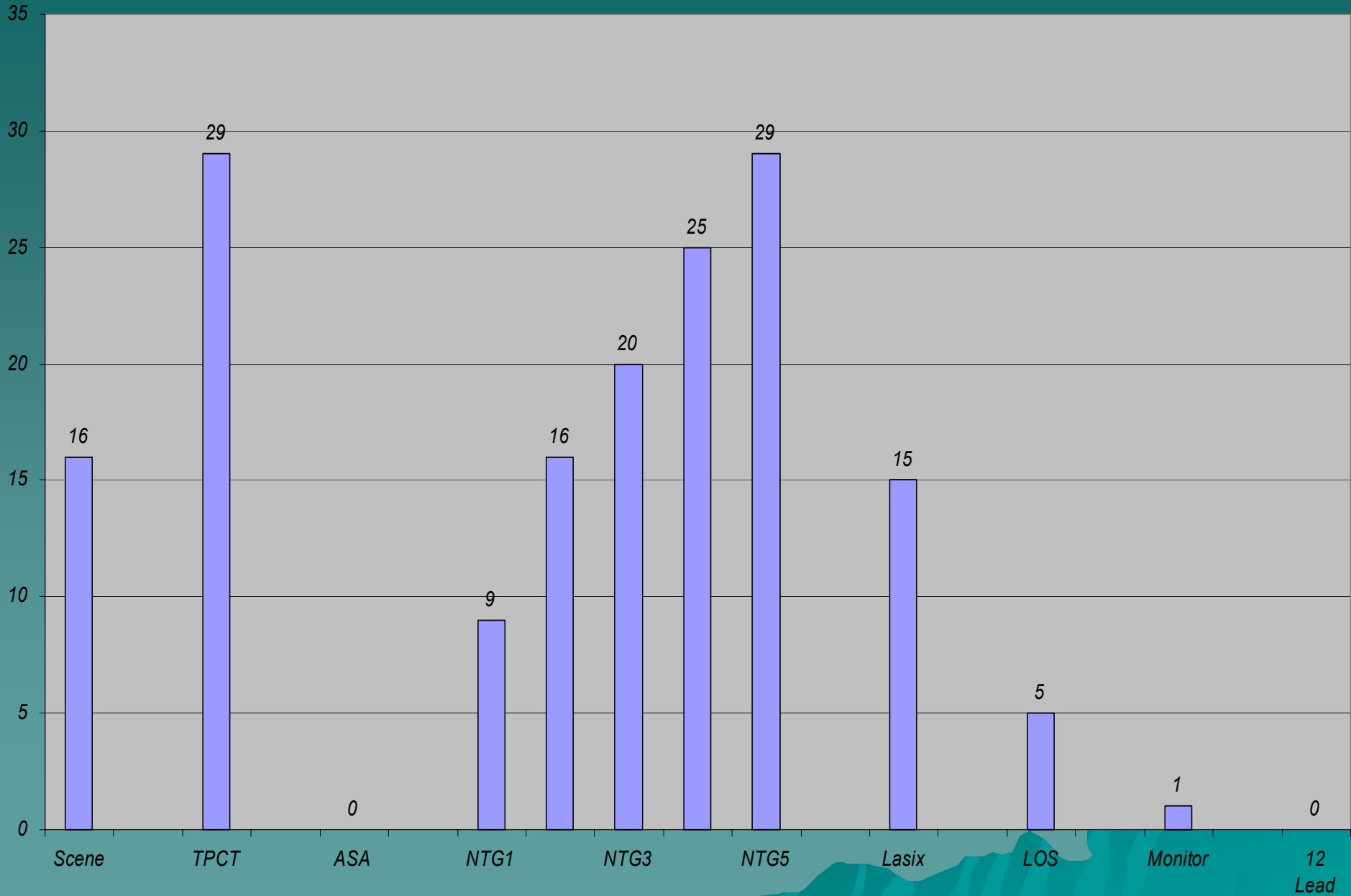
# Patient 7 , IMI , CP



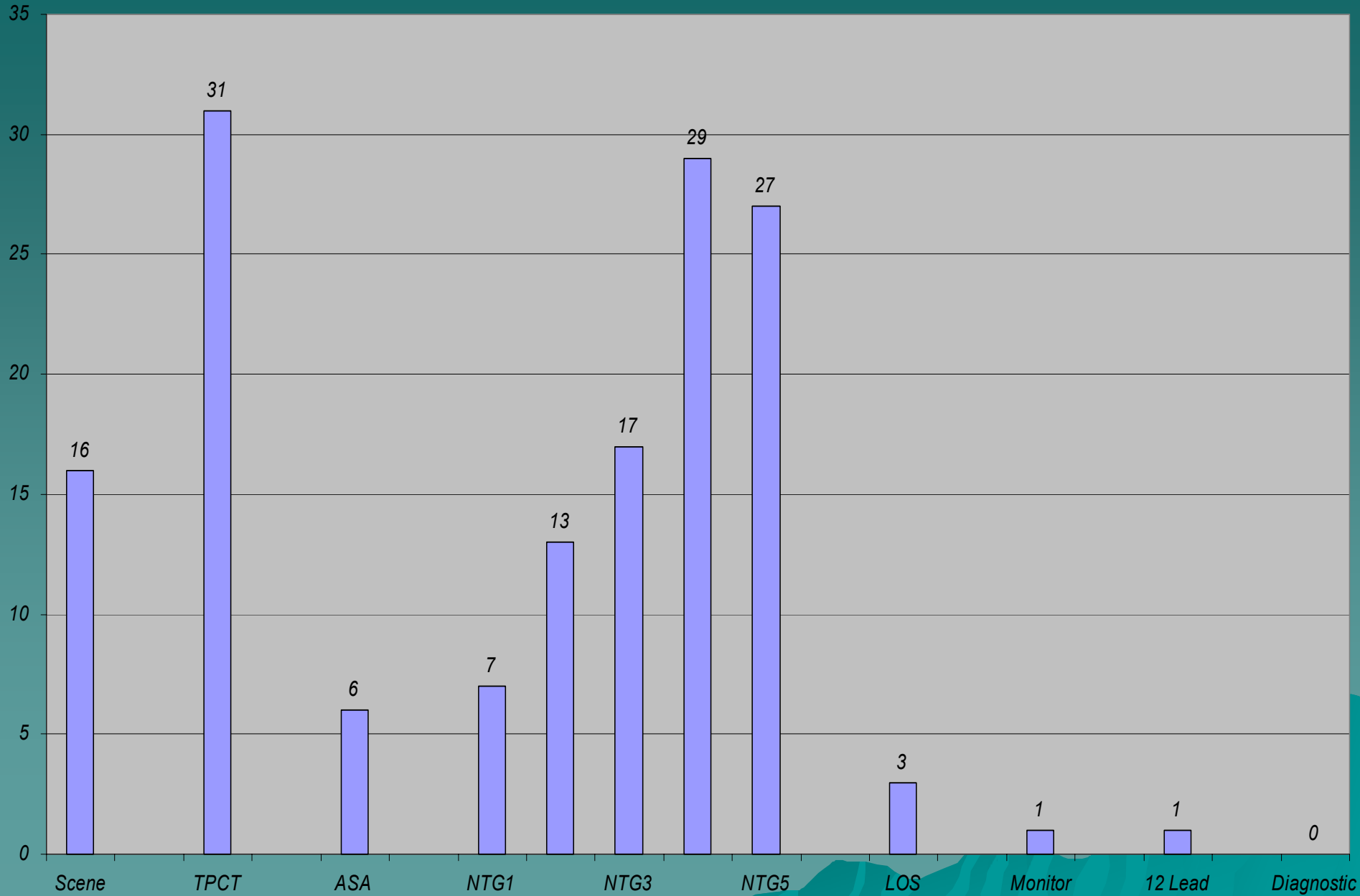
Patient 8 , IMI , SOB / CP



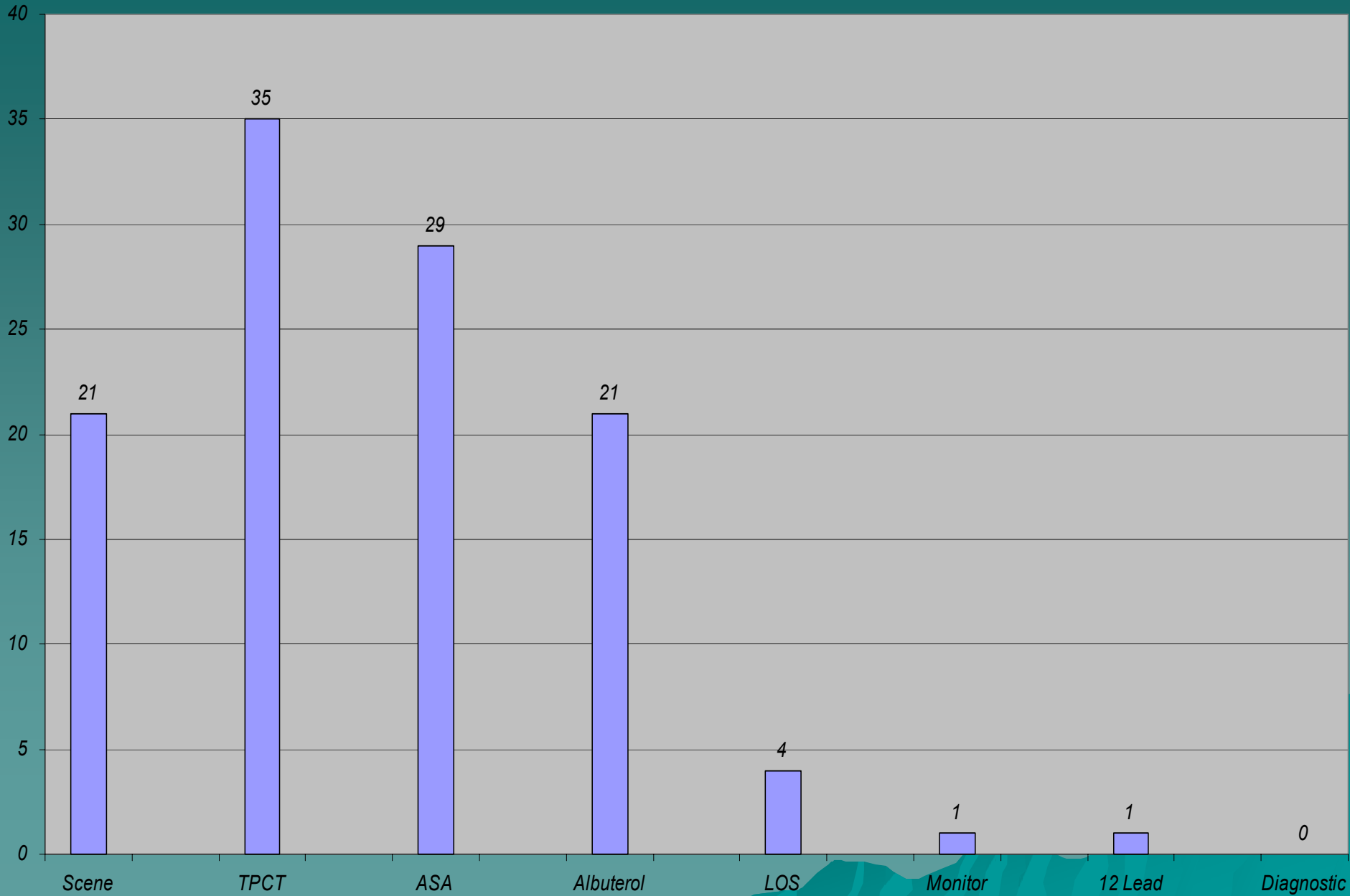
# Patient 9 , Subendo MI , SOB



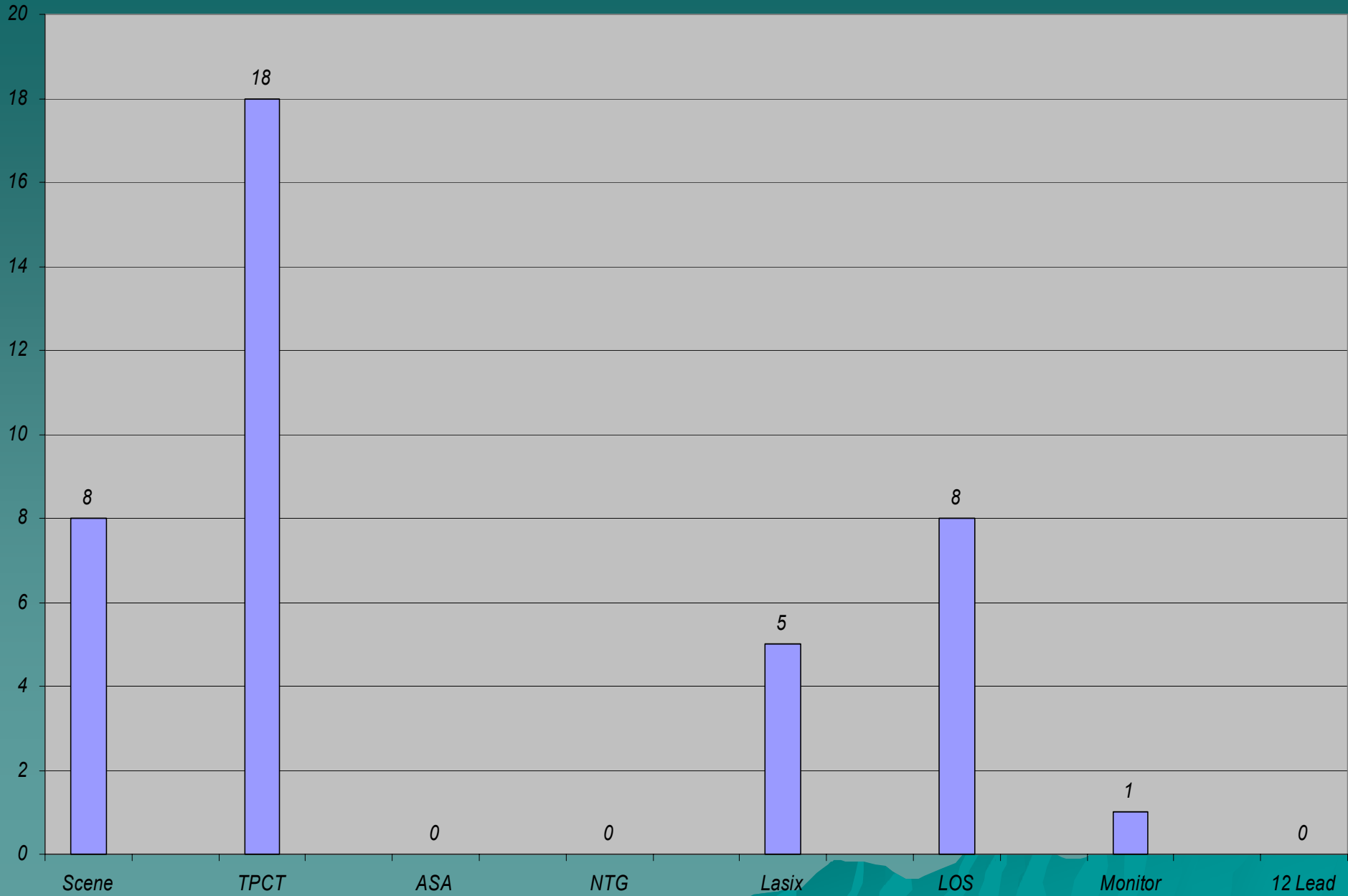
# Patient 10 , Subendo MI , CP



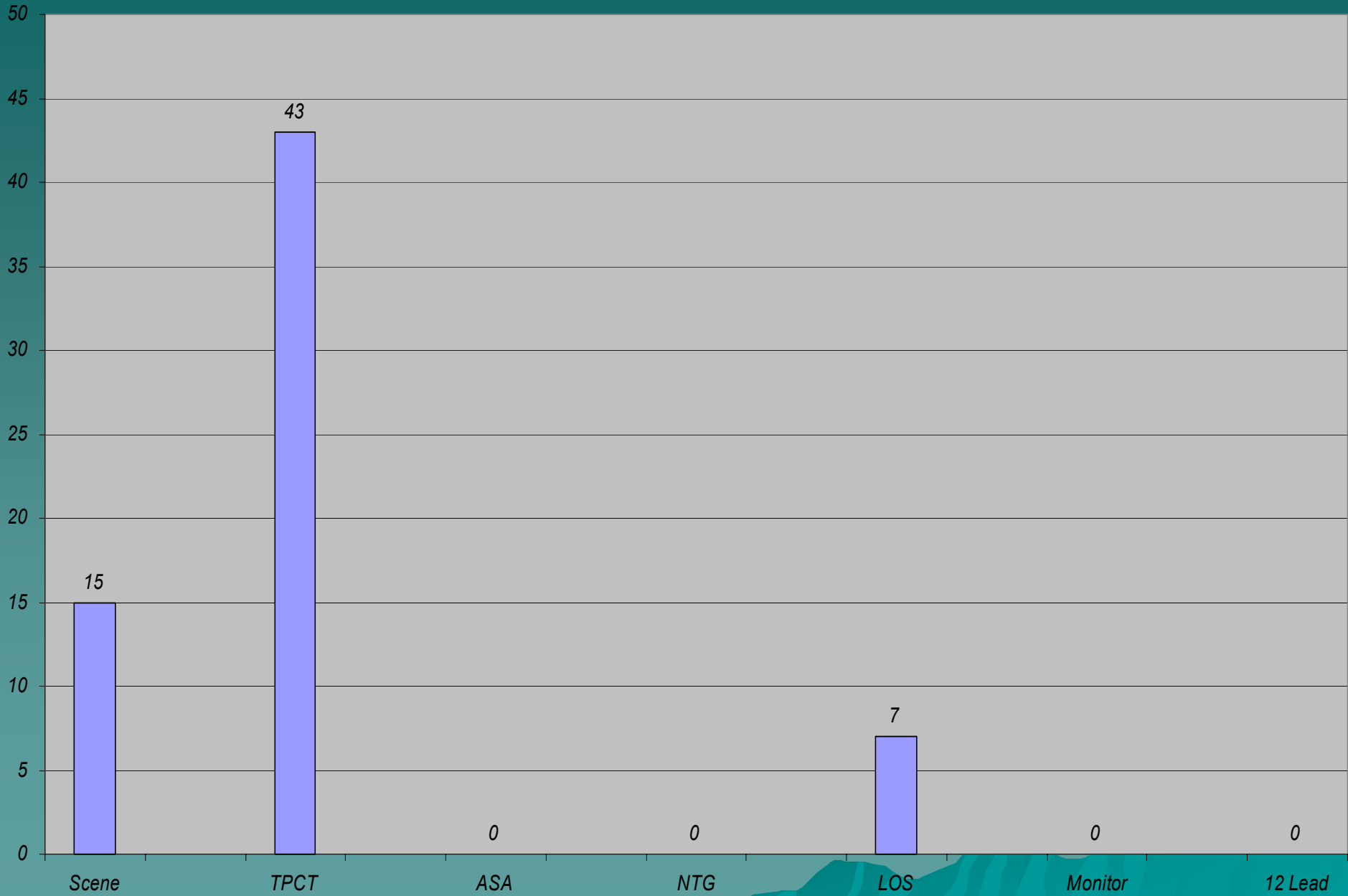
# Patient 11 , Subendo MI , SOB / CP



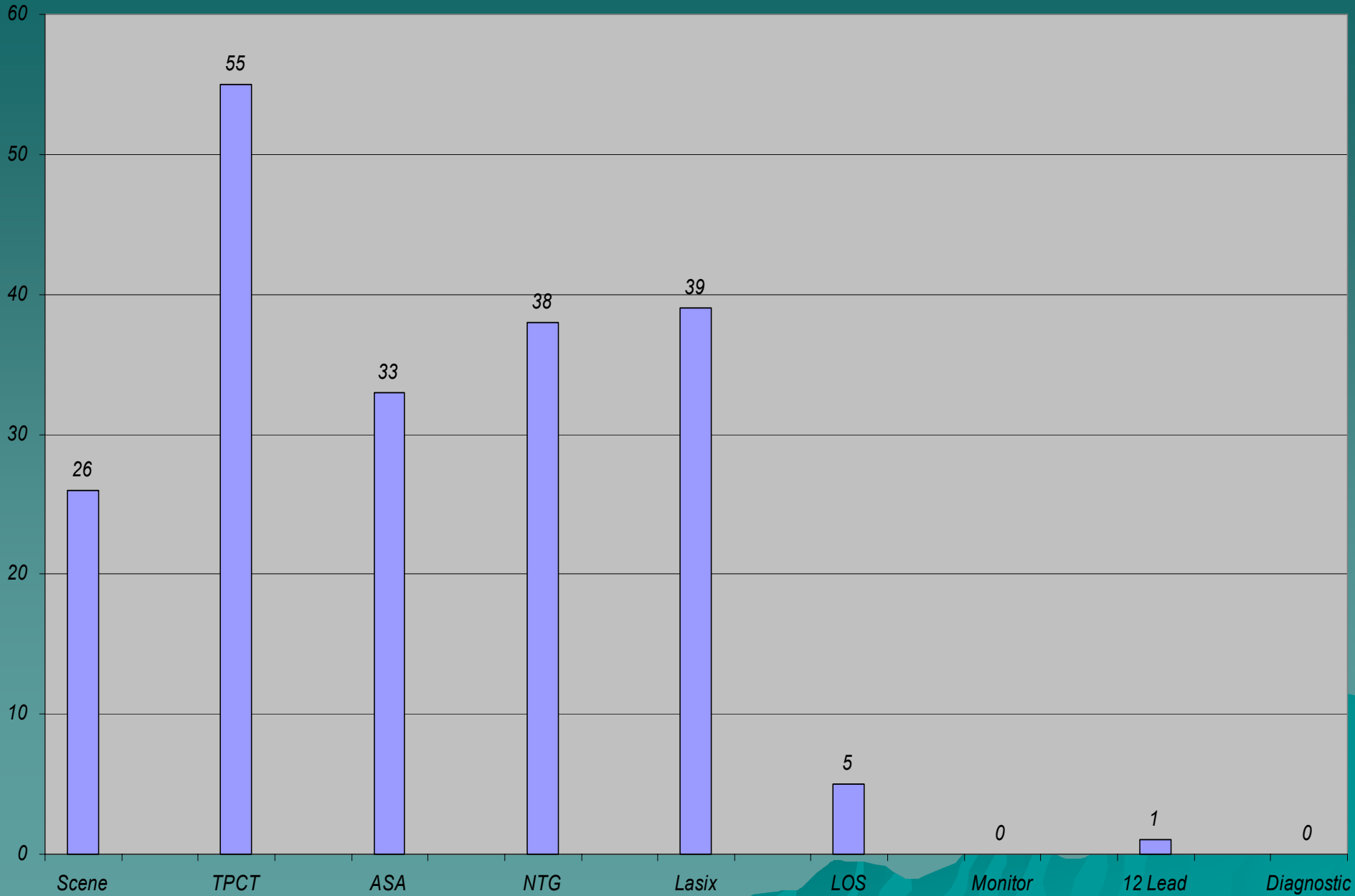
Patient 12 , Subendo MI , SOB



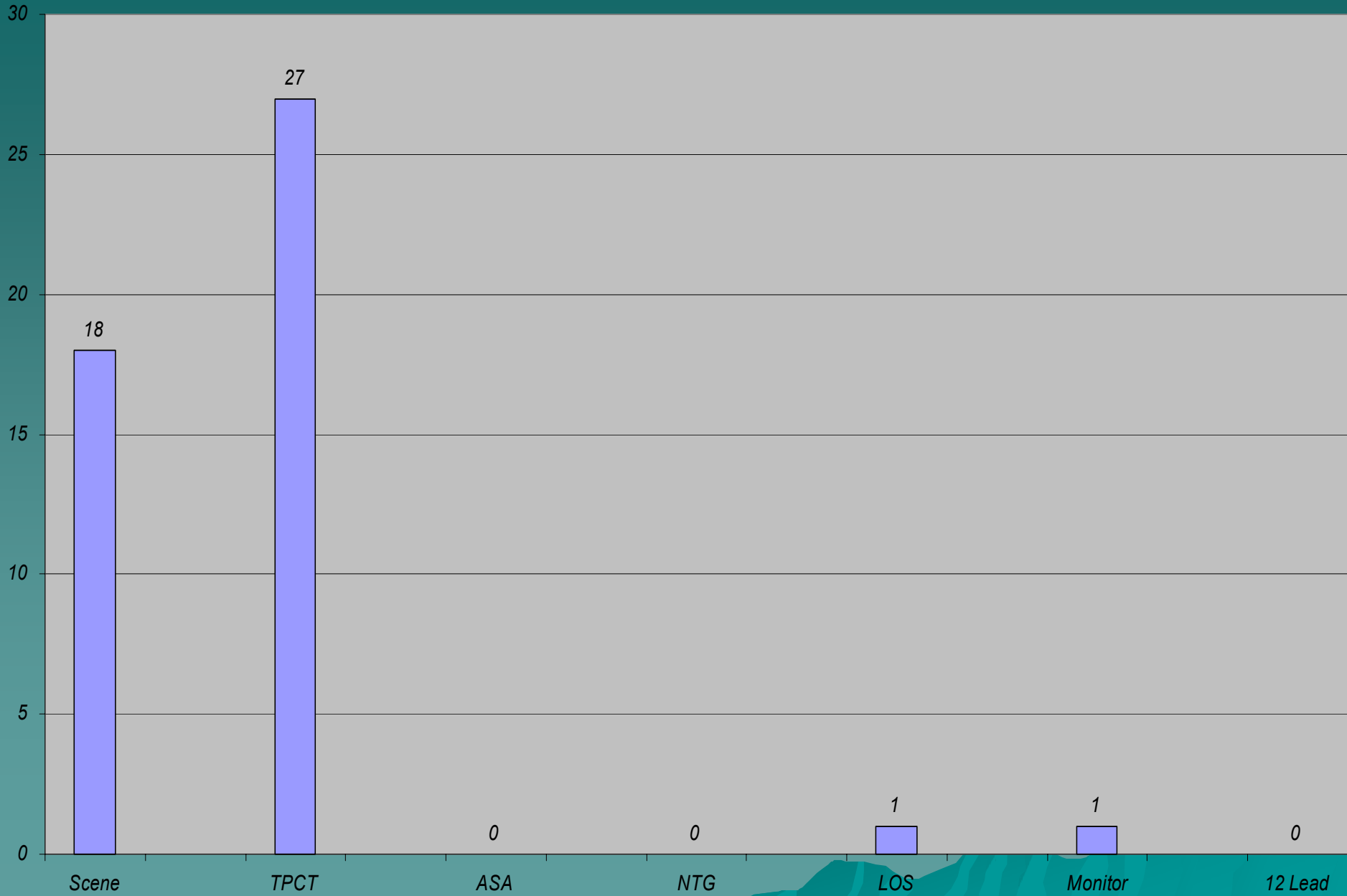
# Patient 13 , Subendo MI , Fall



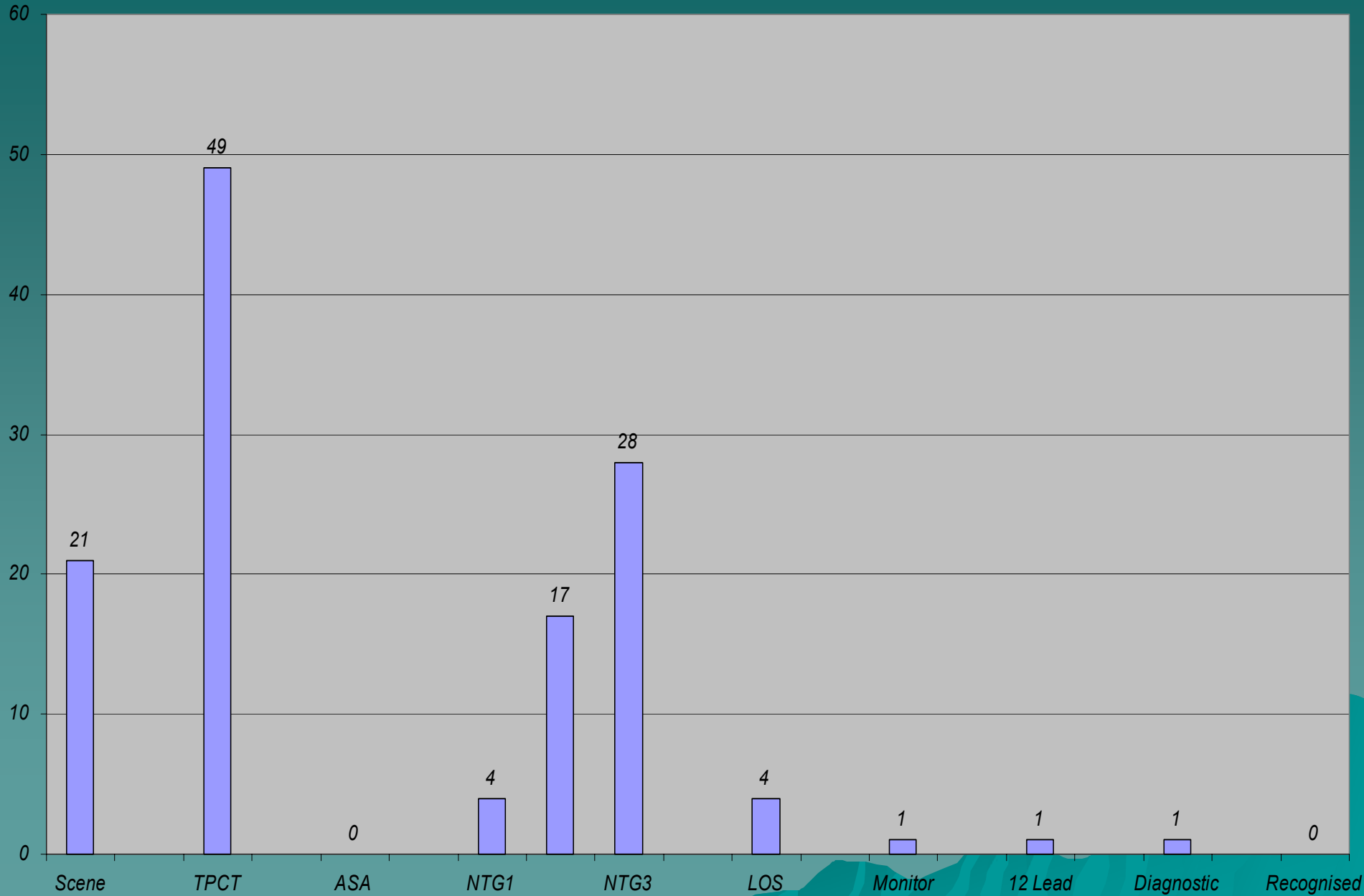
# Patient 14 , Subendo MI , SOB / CP



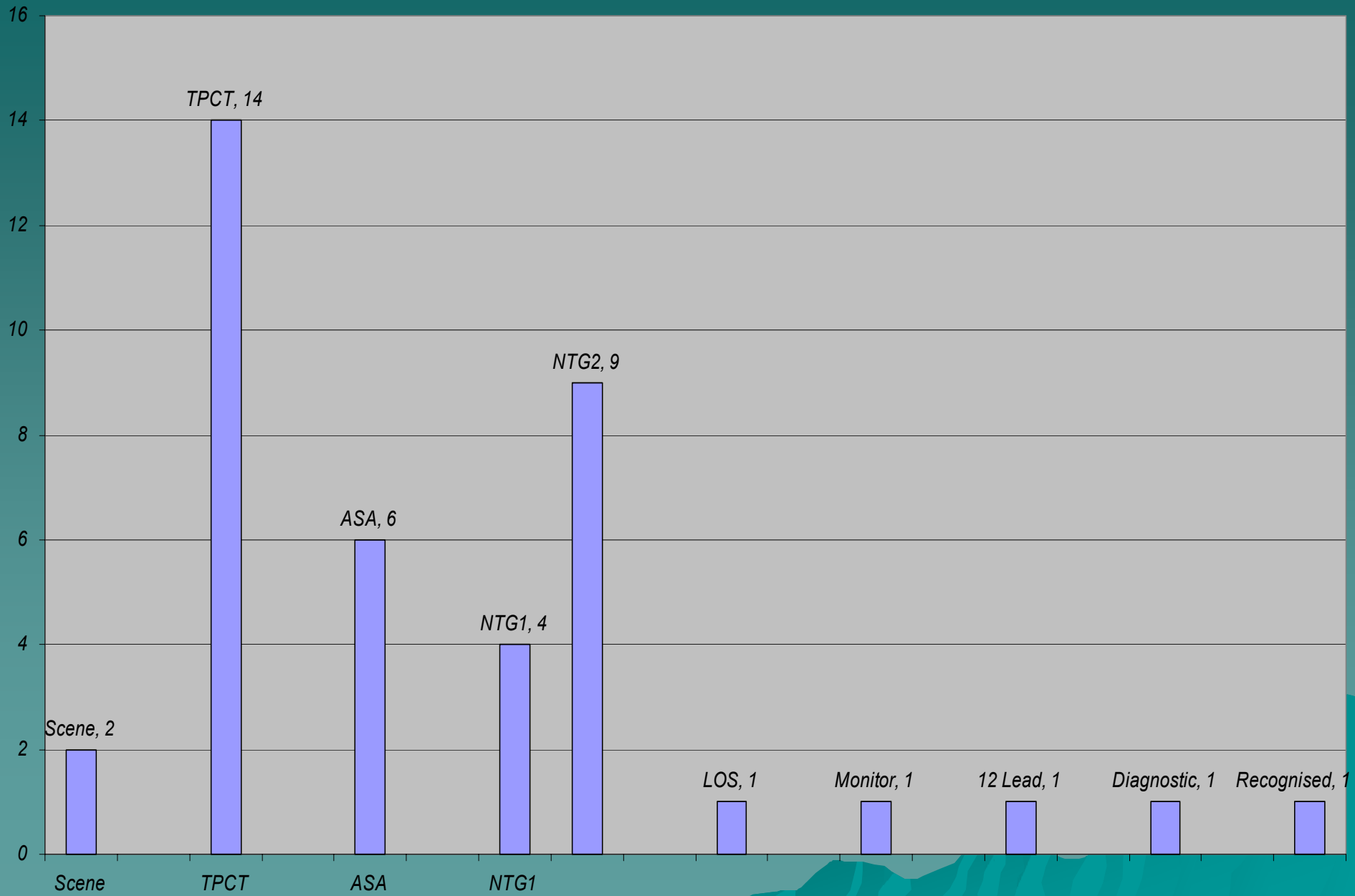
# Patient 15 , Subendo MI , CP



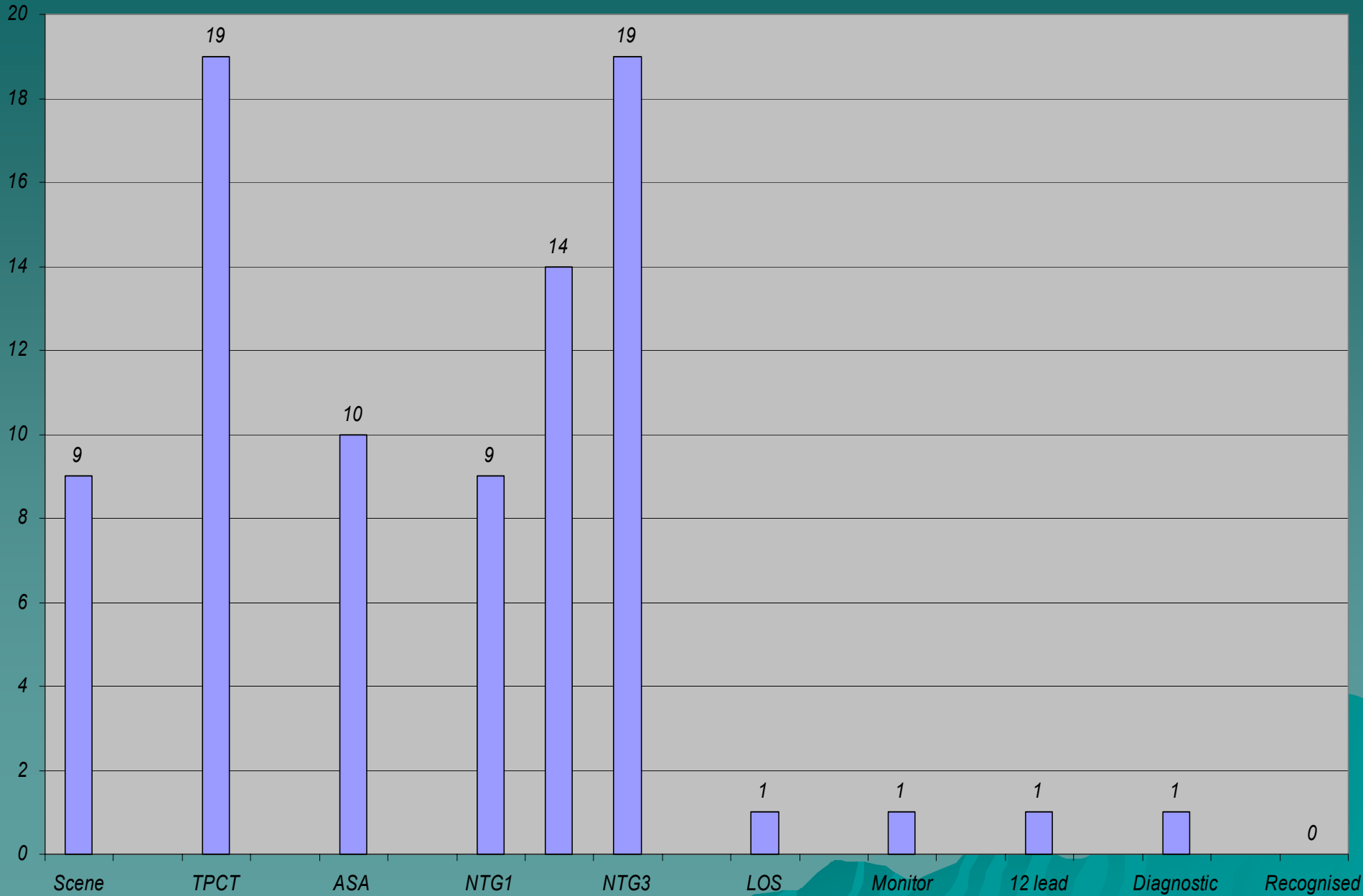
# Patient 16 , AMI , midepigastric pain



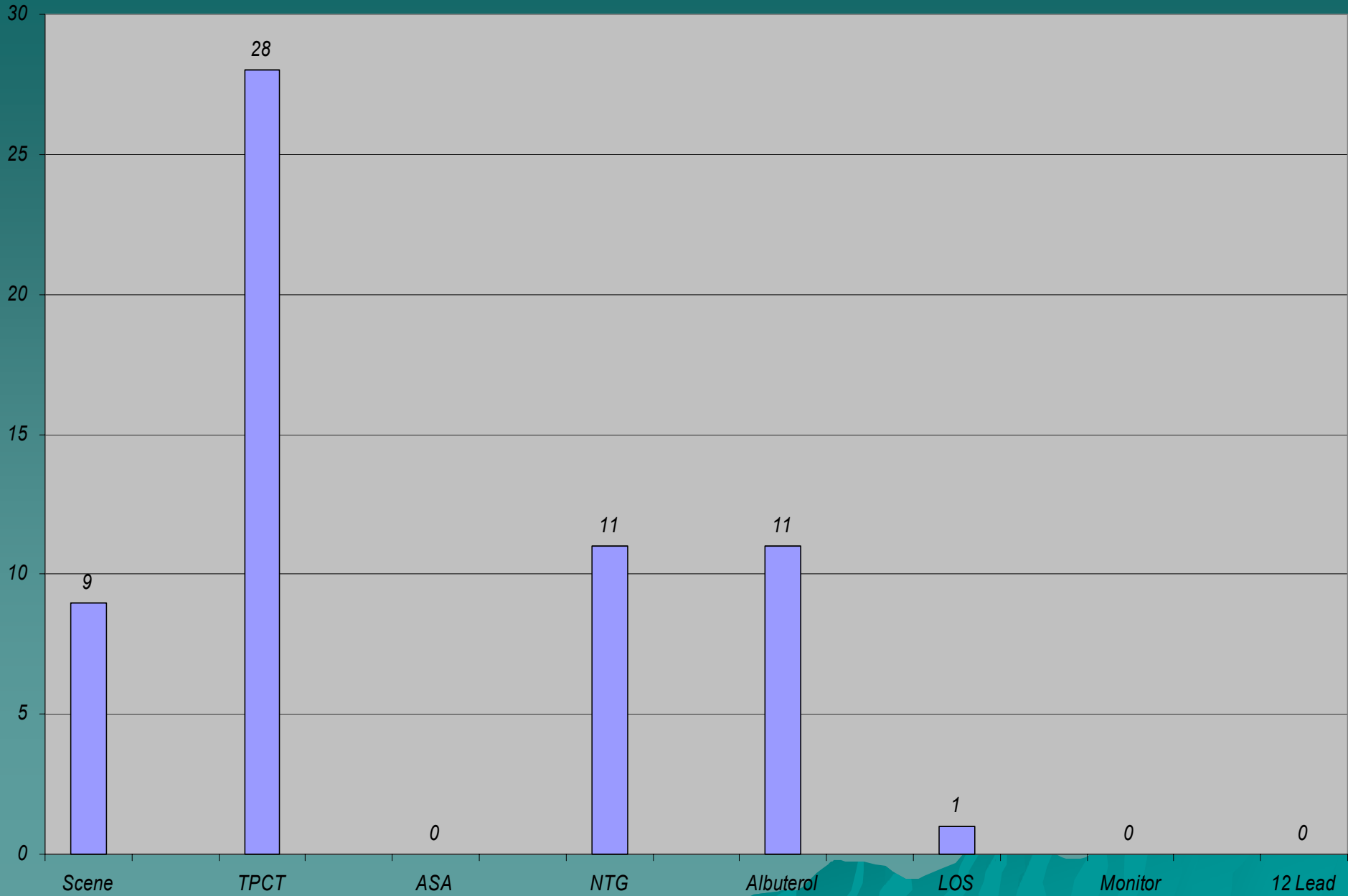
# Patient 17 , IMI , CP



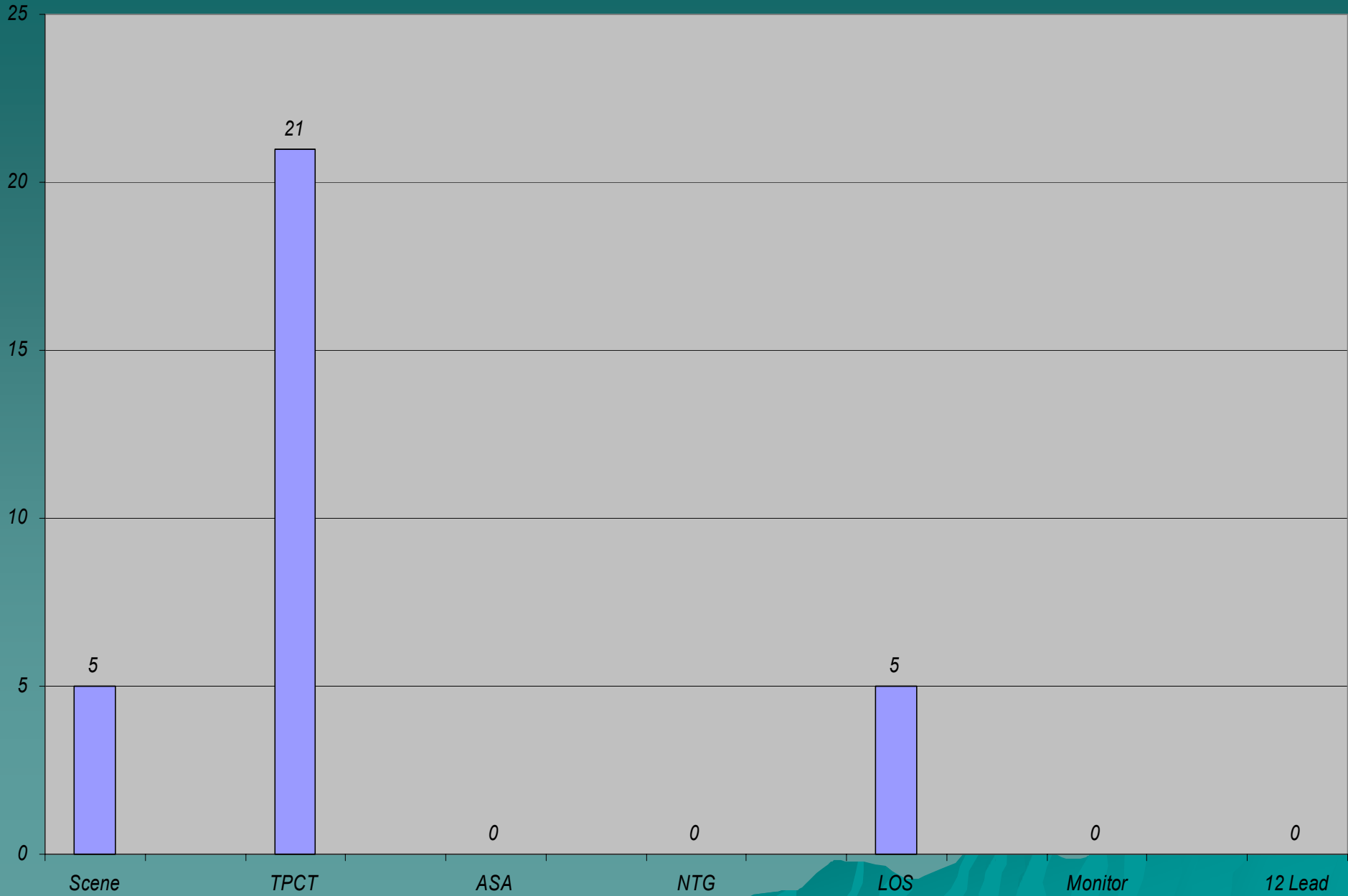
# Patient 18 , IPMI , CP



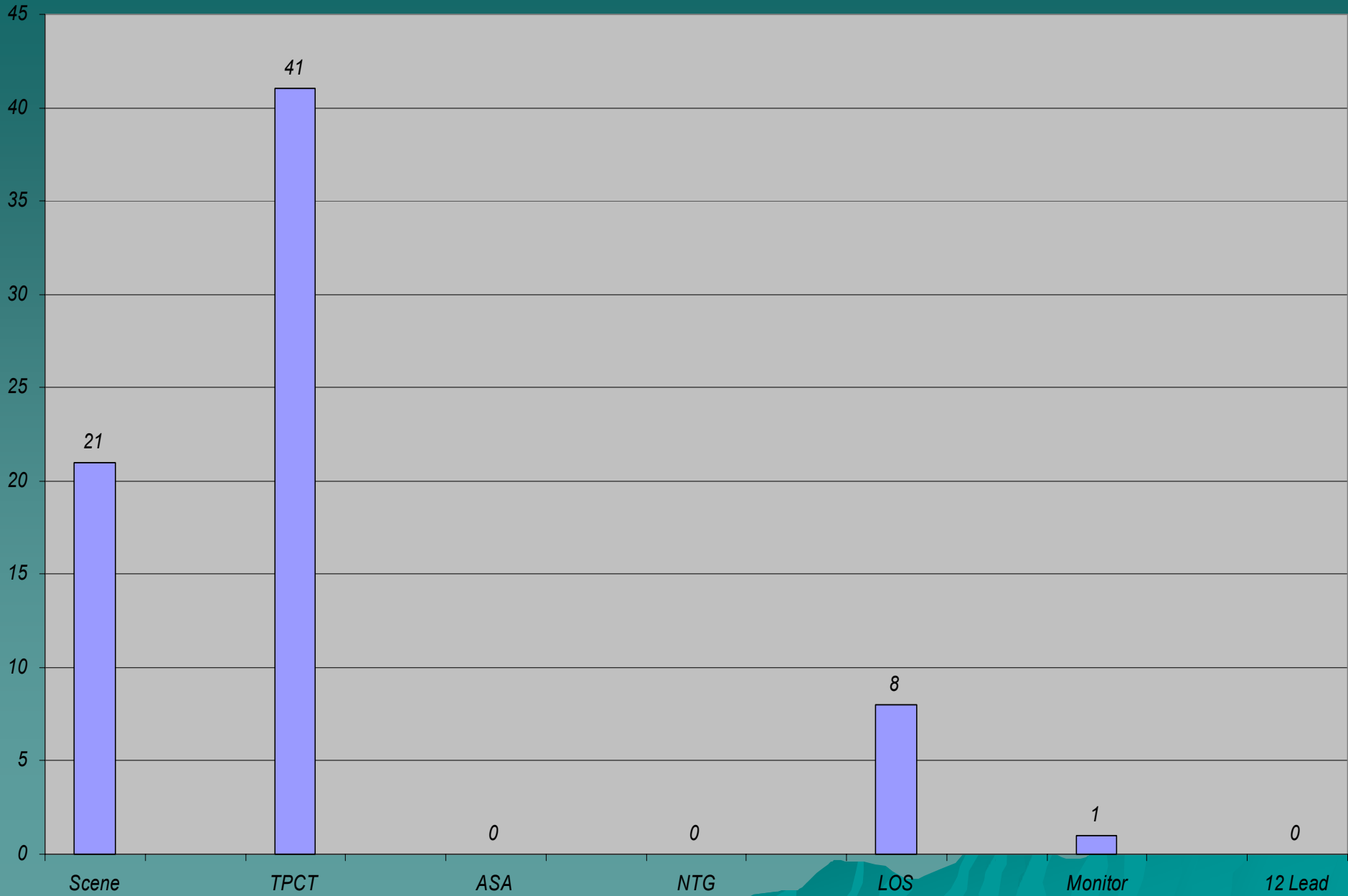
Patient 19 , Subendo MI , SOB



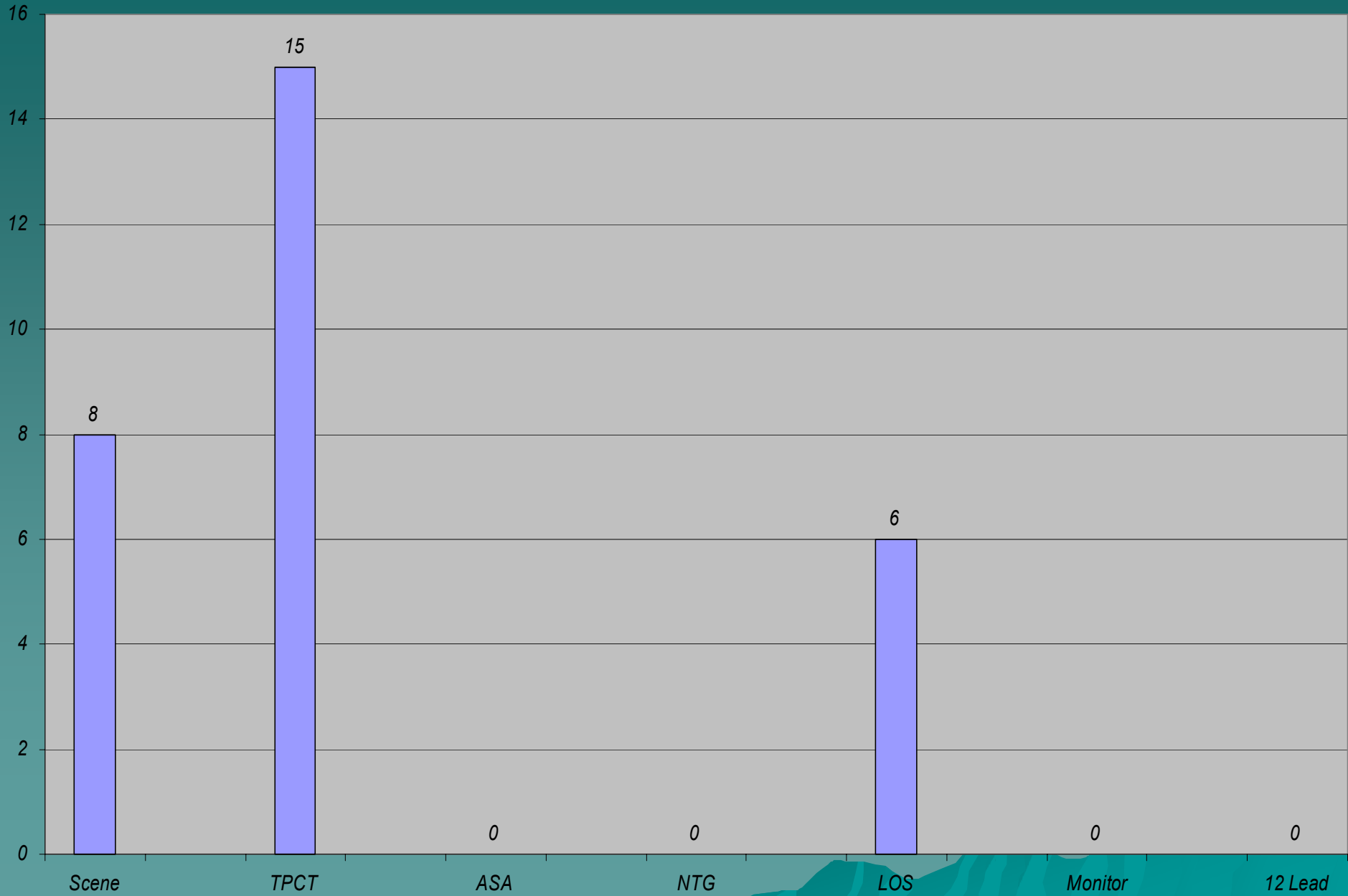
Patient 20 , Subendo MI , SOB



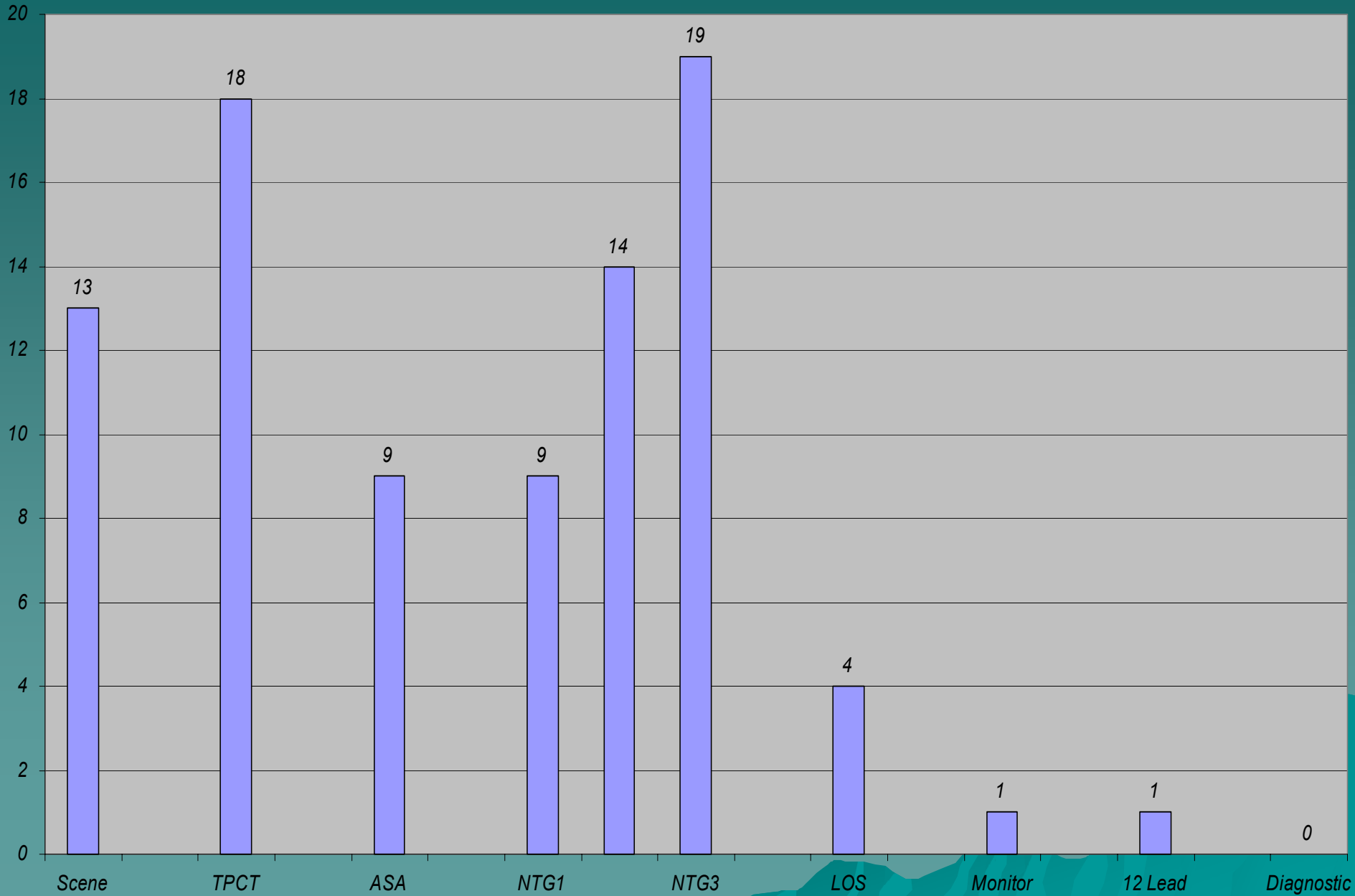
# Patient 21 , Subendo MI , ALOC



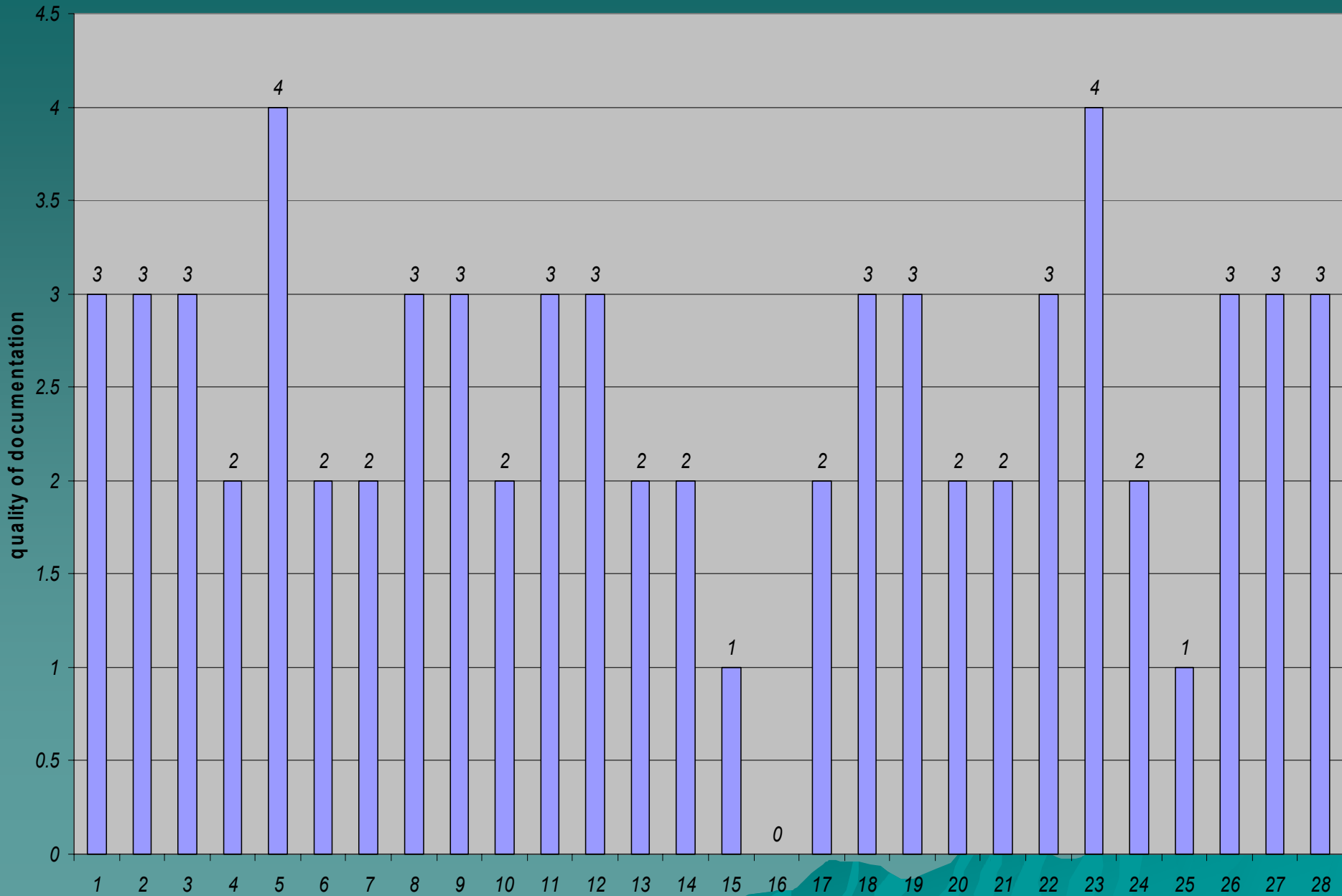
Patient 22 , Subendo MI , SOB



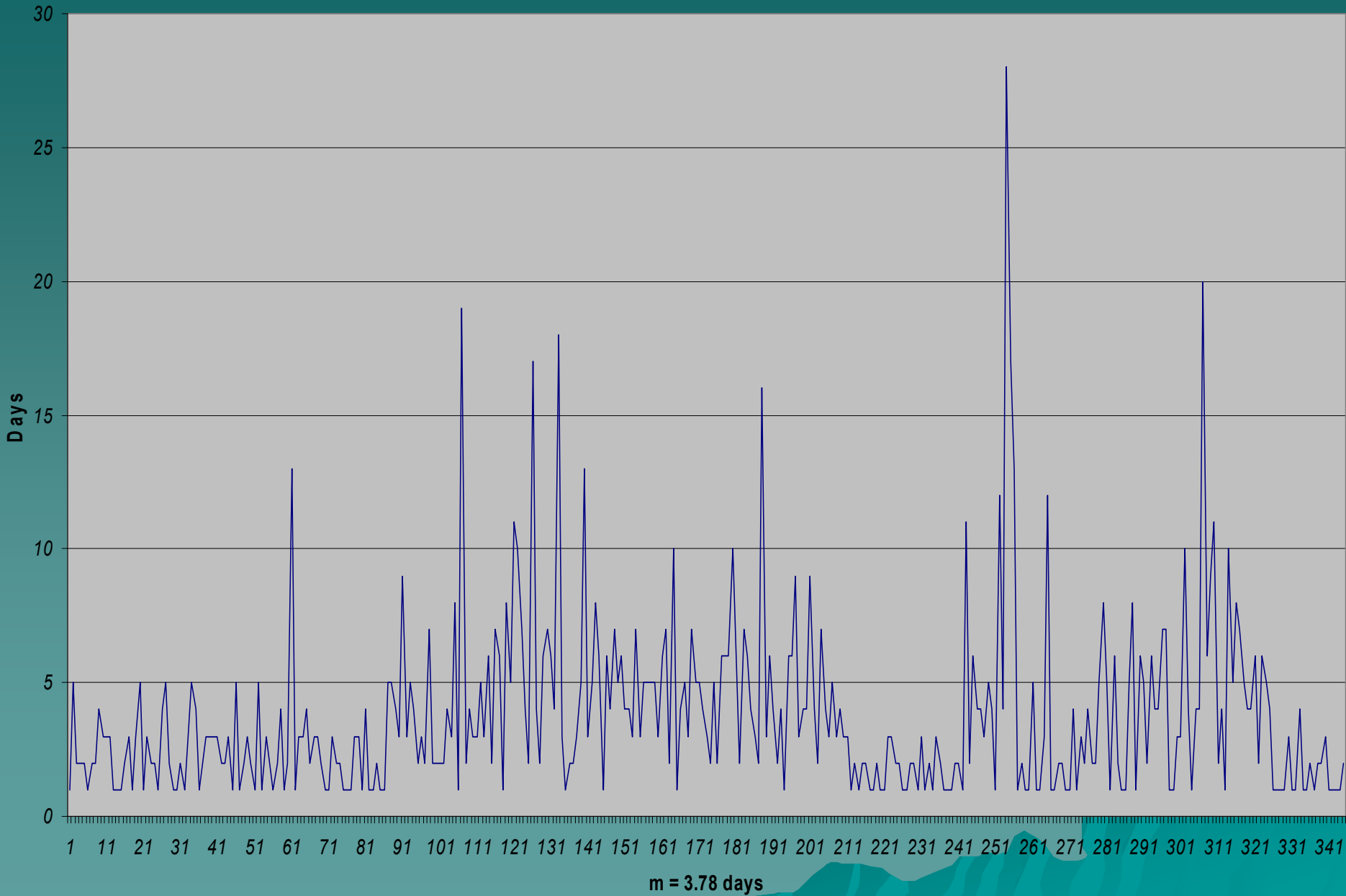
# Patient 23 , Subendo MI , SOB / CP



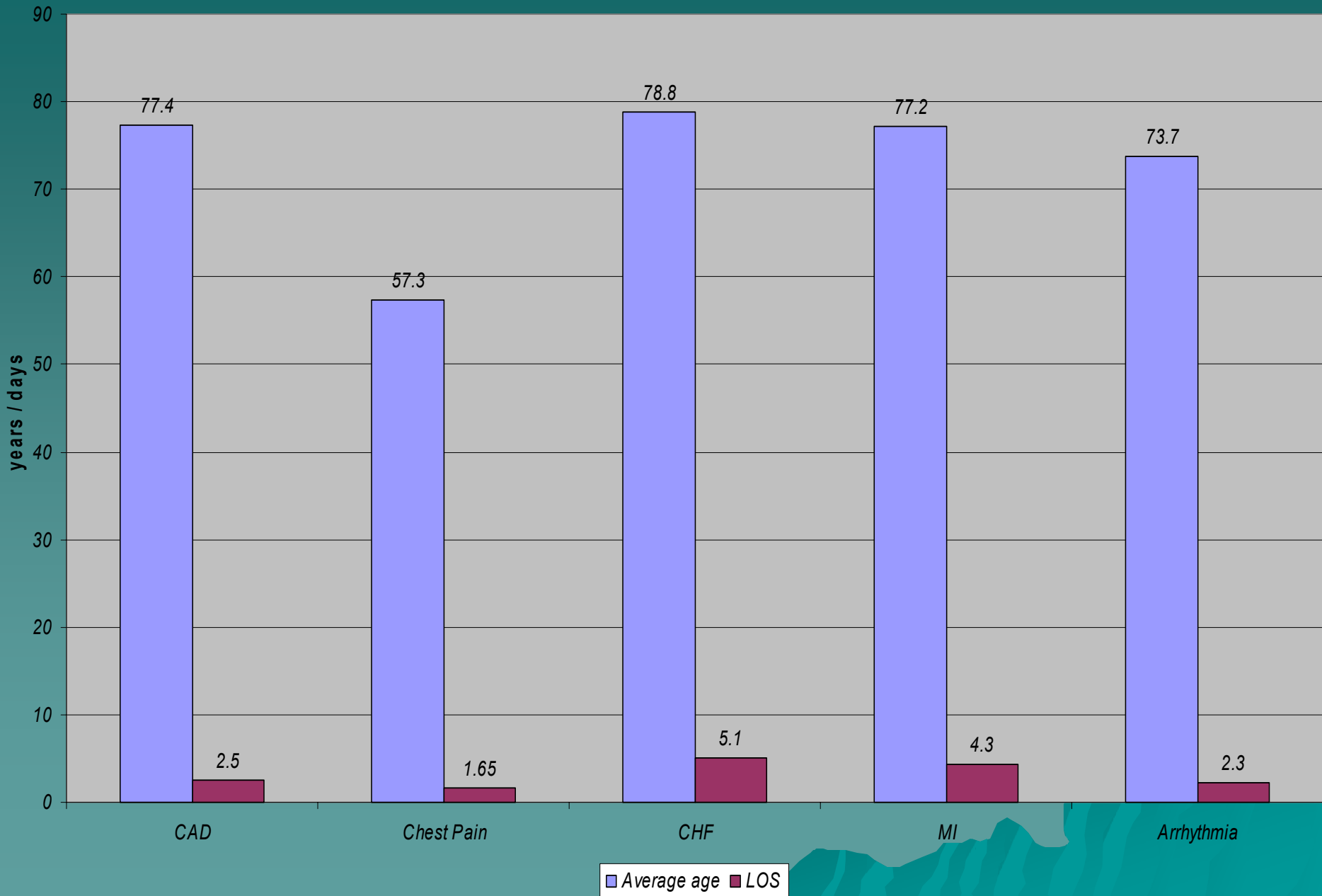
# OLOL cardiac medications , Documentation , 1 - 7 / 2003 , n = 28



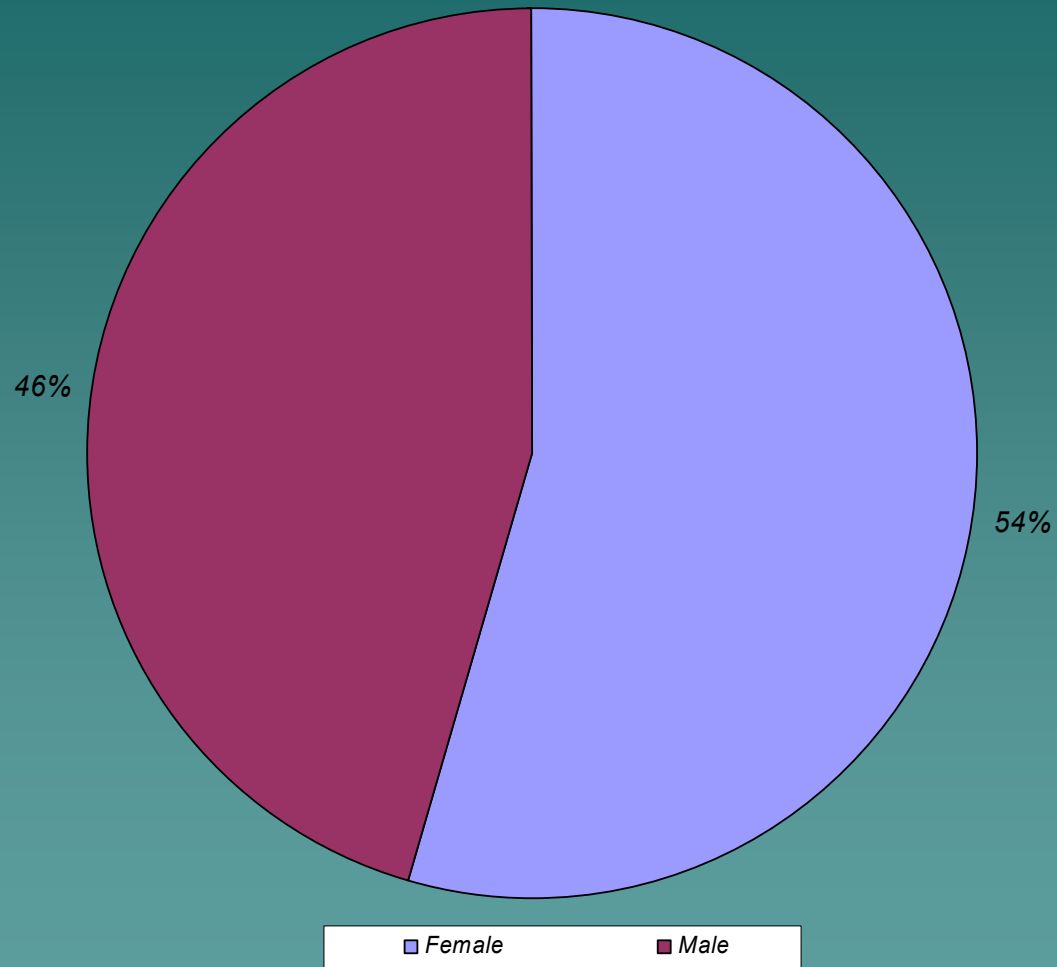
# OLOL inpatient / ems LOS , January 2003 - June 2003



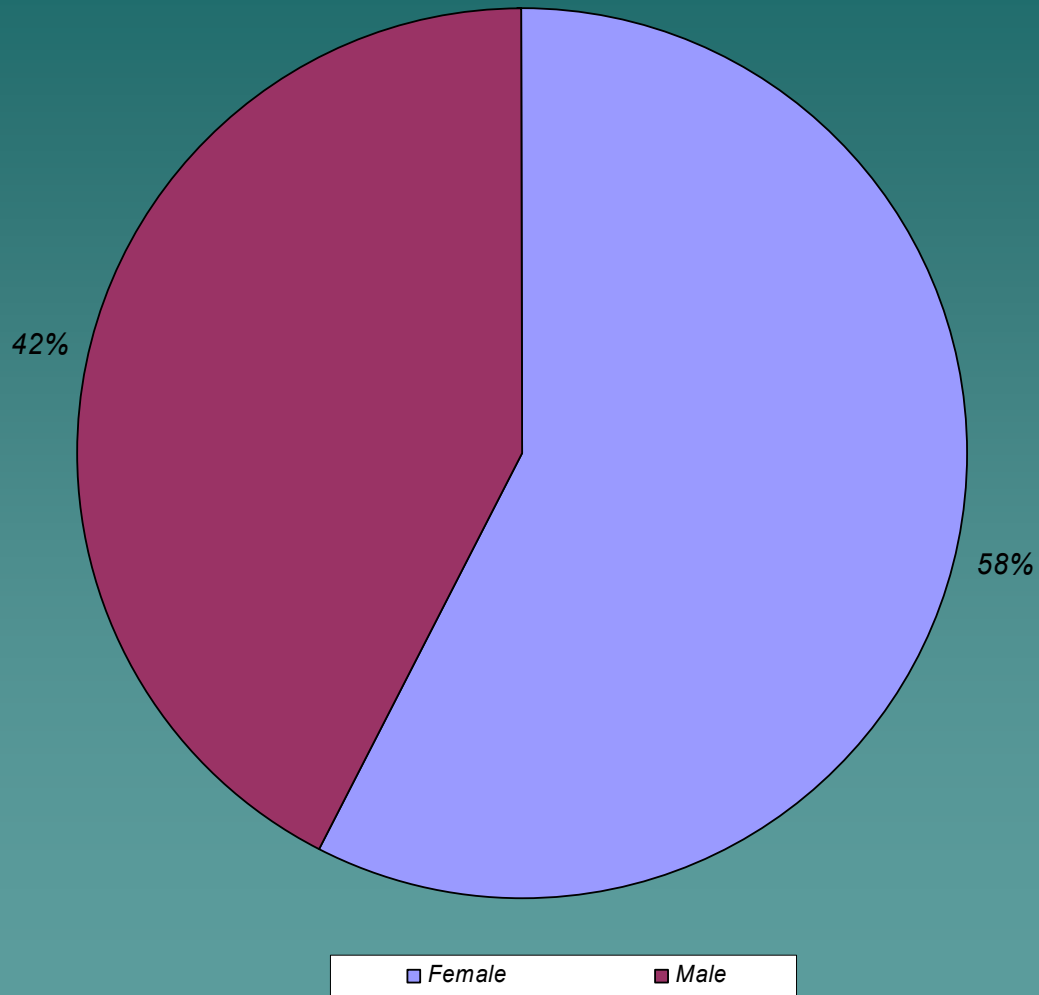
# OLOL inpatient / ems , Discharge diagnosis , age / LOS , January 2003 - June 2003



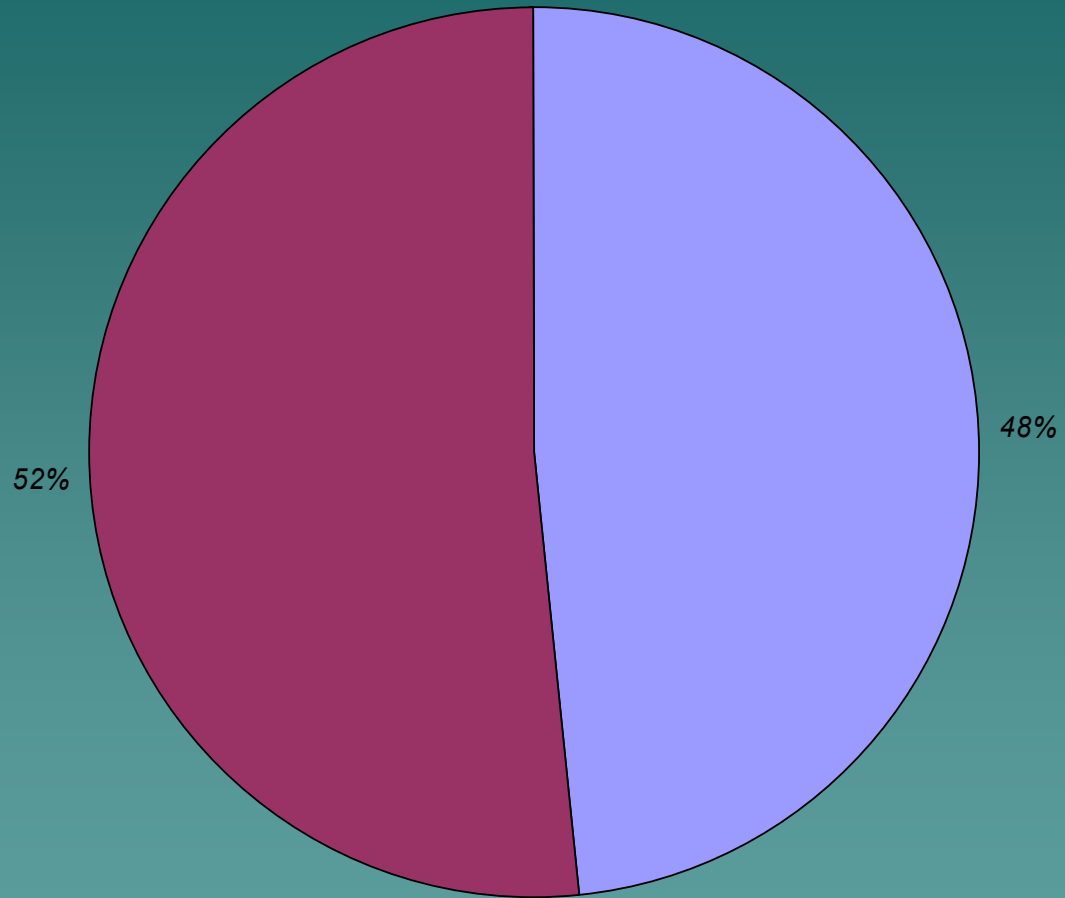
**LOL inpatient / ems sex distribution , January 2003 - June 2003 , n = 345**



**OLOL inpatient / ems , CAD sex distribution , January 2003 - June 2003**

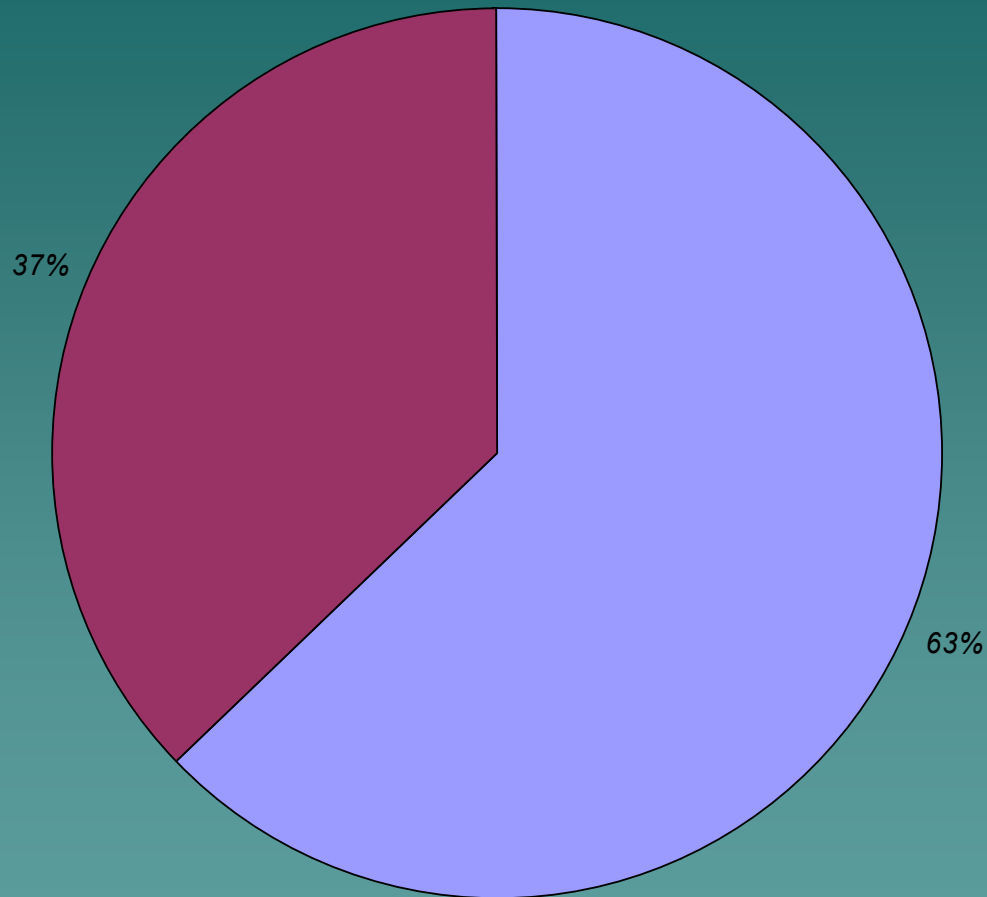


**OLOL inpatient / ems , Chest Pain sex distribution , January 2003 - June 2003**



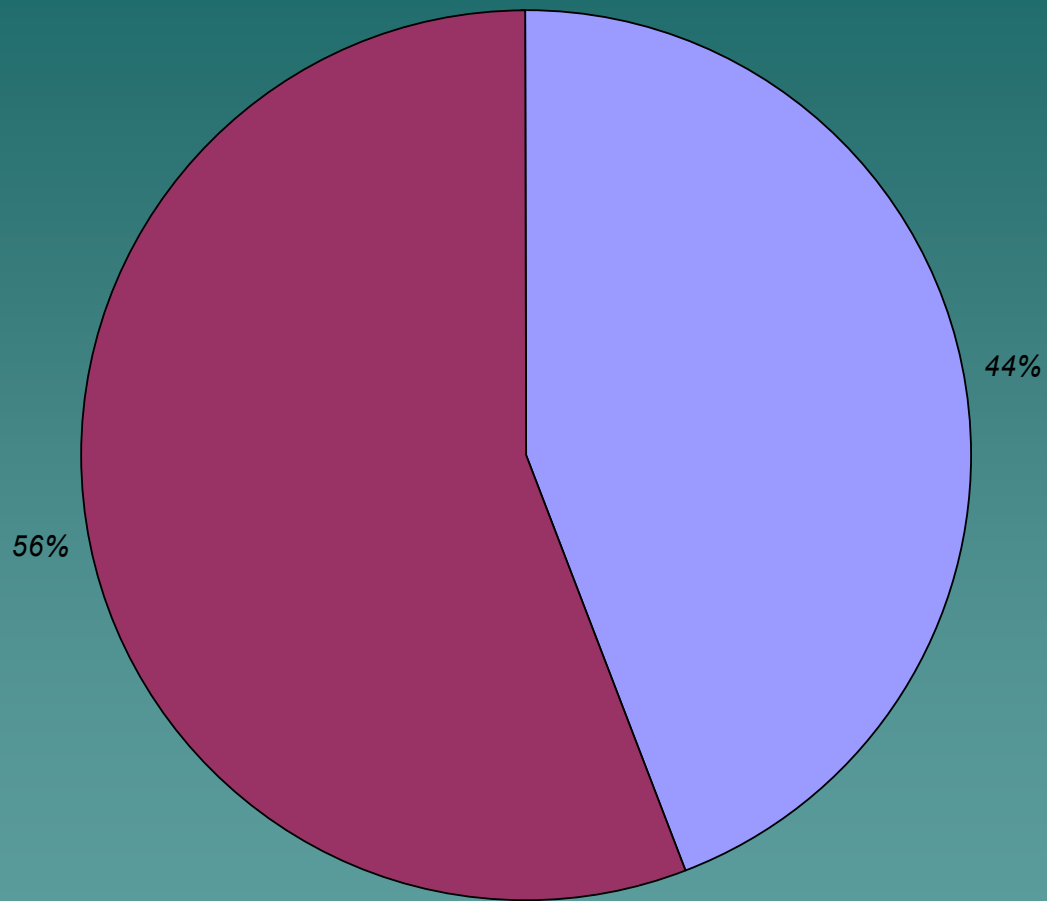
Female Male

**OLOL inpatient / ems , CHF sex distribution , January 2003 - June 2003**



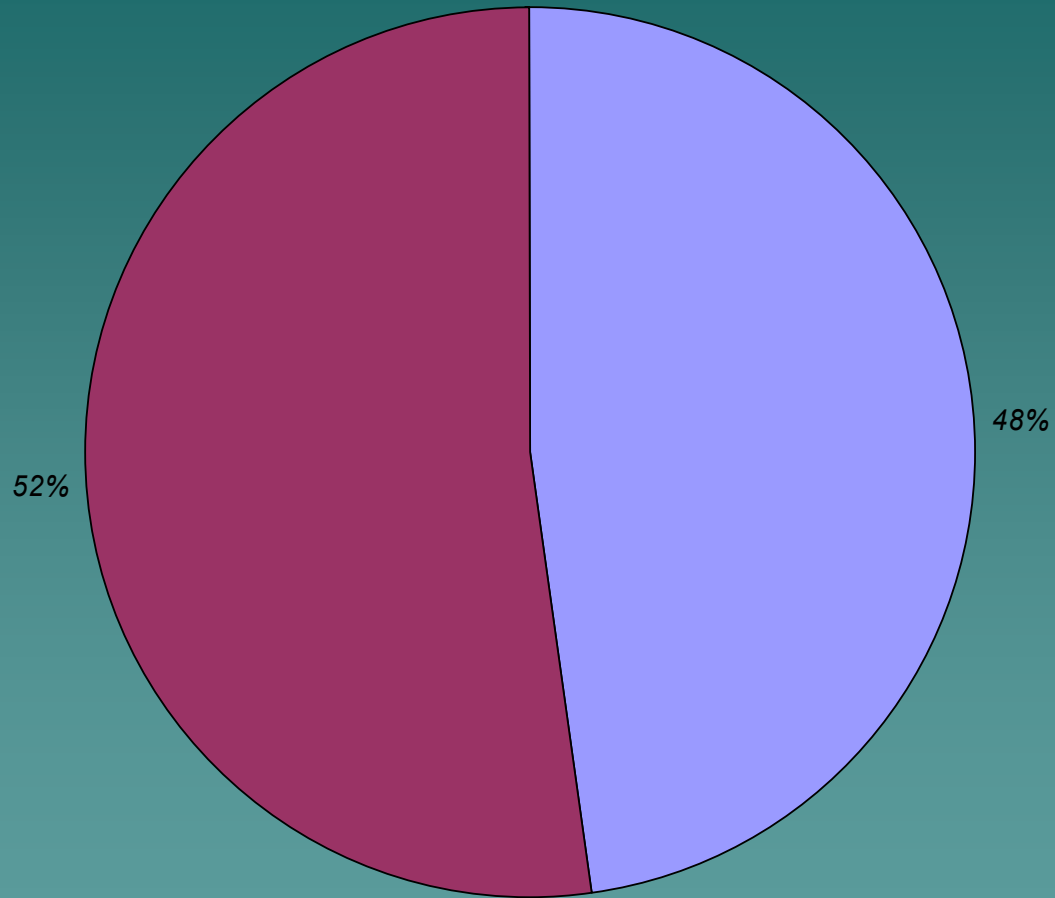
Female Male

OLOL inpatient / ems , MI sex distribution , January 2003 - June 2003



Female Male

**OLOL inpatient / ems , Arrythmia sex distribution , January 2003 - June 2003**



Female Male

# Summary

- ◆ OLOL received 1766 cardiac related patients via EMS from January 2003 through June 2003
- ◆ This represents 294 / month of which about 5 % ( 15 patients / month ) have a discharge diagnosis of MI ( these numbers are a little variable and do not include walk in )
- ◆ Of the 5 % , only 30 % of these were transferred for catheterization
- ◆ Of the 5 % , Only 50 % complained of CP . The others were weakness , SOB , falls , ALOC , and abdominal pain .

# Summary

- ◆ Very few of the EMS transported patients with the cardiac related complaint actually had a discharge diagnosis of MI . Approximately 5 % .
- ◆ Only 27 % of the patients with MI had a diagnostic 12 lead in the ED. ( that is 27 % of the 5 % )
- ◆ Of the patients with a discharge diagnosis of MI , only 39 % had pre – hospital 12 Leads . ( ditto )
- ◆ Of the patients with a discharge diagnosis of MI , only 17 % had a diagnostic pre – hospital 12 Lead and only half of these were recognized . ( ditto )

# Summary

- ◆ Overall data looks good , but the times could improve
- ◆ Documentation was 3 + out of 4 + for the majority of cases ; and PMH , medications , and allergies were recorded most of the time
- ◆ There was a trend that suggested that the patients that received more aggressive Pre-Hospital treatment had shorter length of stay in OLOL
- ◆ One bothersome trend ; you were more likely to have a glucose checked if you were not diabetic , than if you were diabetic .

# Summary

- ◆ Time from on – scene to first NTG averaged 13 minutes . ( 14 , 21 minutes for the second and third )
- ◆ Scene times were about the same as in prior studies 14 minutes , the TPCT did seem longer than on prior studies 29 minutes
- ◆ One agency did have a patient with GI Bleed and signs of shock that received Adenosine and Diltiazem for the compensatory tachycardia . Medical command did deny an order for amiodarone but did allow diltiazem , outcome unknown as yet
- ◆ One agency seemed to have problems with documentation , inclusion of monitor strips , and glucose analysis more often than the other agencies .

# Summary

- ◆ **Currently there are 4500 EMS cardiac related calls / year ( 10 % of the calls or so )**
- ◆ **Only 5 % - 10 % of these calls actually have a patient with an MI ( 450 patients / year or 37 patients / month in our region as a whole )**
- ◆ **Only 27 % of the 450 have a diagnostic EKG ( 121 patients / year or about 10 patients / month )**
- ◆ **Only half of the Pre-Hospital EKGs that showed an acute MI were recognized in the field**

# Summary

- ◆ Remember that only about 50 % of the patients with a discharge diagnosis of MI came via EMS .
- ◆ This access of EMS for cardiac related complaints does not reflect the degree of illness in the patient , you are as likely to have a critical patient walk-in as utilize EMS
- ◆ One must bear in mind that while we can promote patient education etc. , a 50 % increase in EMS volume let alone a 100 % increase in cardiac related calls alone , would represent an increase from 4500 calls / year to 8000 calls / year . This would increase our overall call volume to 40 , 000 + and your yield of acute MI would only increase to 10 % of those calls or about **20 patients / month** .

# Summary

- ◆ Overall inpatient discharge diagnosis carried a varied average age and LOS after presenting as cardiac related via EMS
- ◆ CAD discharge diagnosis carried an average age of 77.4 years and an average LOS of 2.5 days
- ◆ Chest pain discharge diagnosis carried an average age of 57.3 years and an average LOS of 1.65 days
- ◆ CHF discharge diagnosis carried an average age of 78.8 years and an average LOS of 5.1 days
- ◆ Acute MI discharge diagnosis carried an average age of 77.2 years and an average LOS of 4.3 days

# Summary

- ◆ Arrhythmia discharge diagnosis carried an average age of 73.7 years and an average LOS of 2.3 days
- ◆ The sex distribution was about equal except in CHF , where there was a female preponderance of 63 % and longer length of stay .