



Acute Coronary Syndrome Israeli Survey 2018

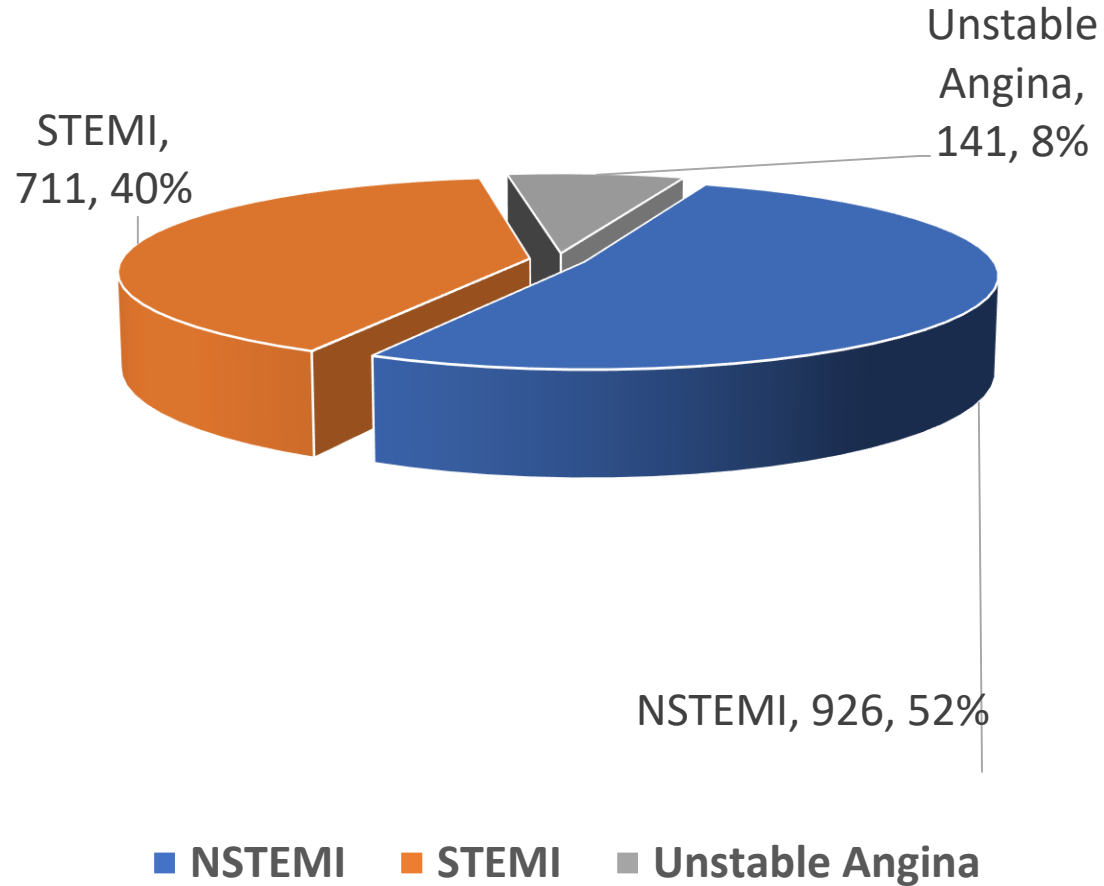
NSTE-ACS Management and 30-day outcomes

Zaza Iakobishvili, MD, PhD

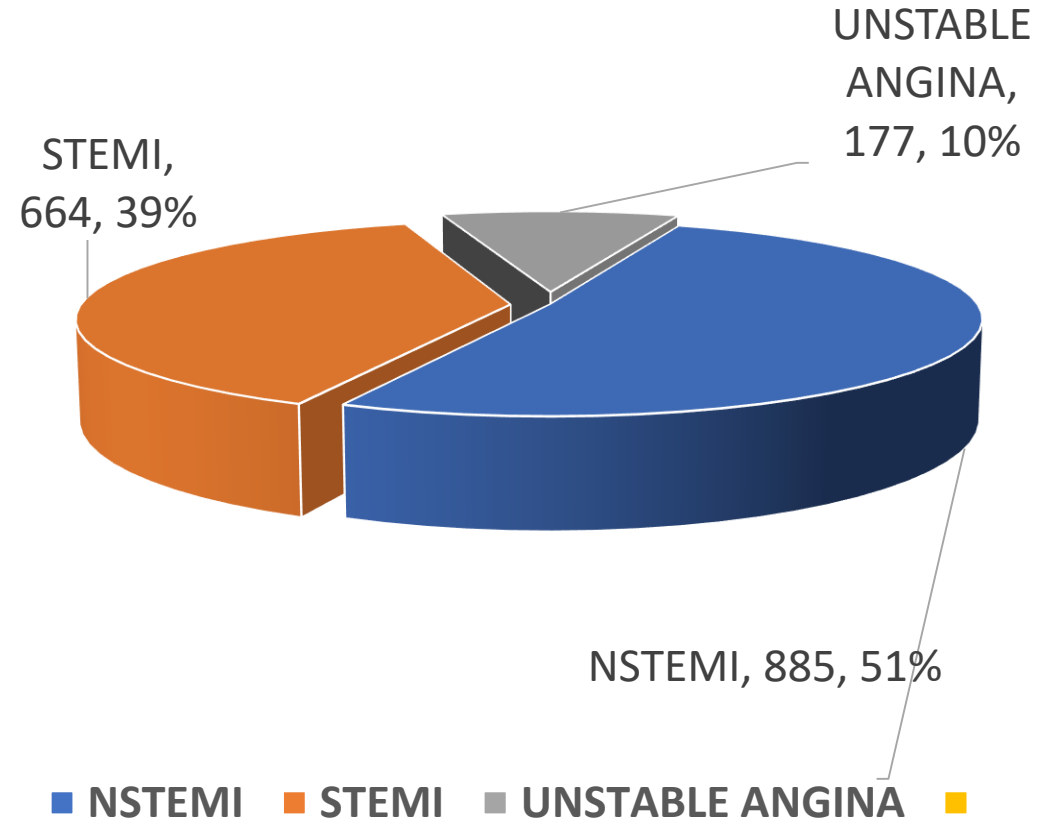
Acute Cardiac Care Working Group

Israel Heart Society

ACSIS -2018

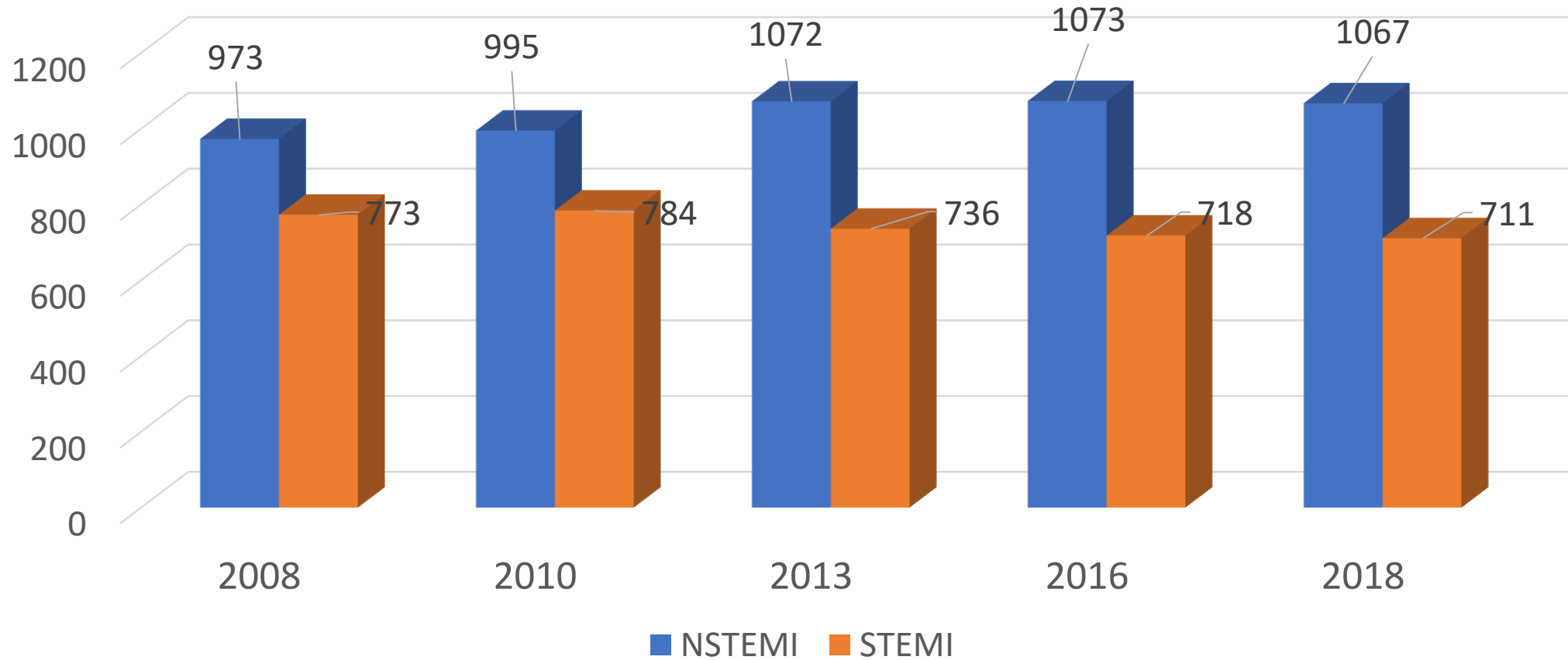


ADMISSION DIAGNOSIS

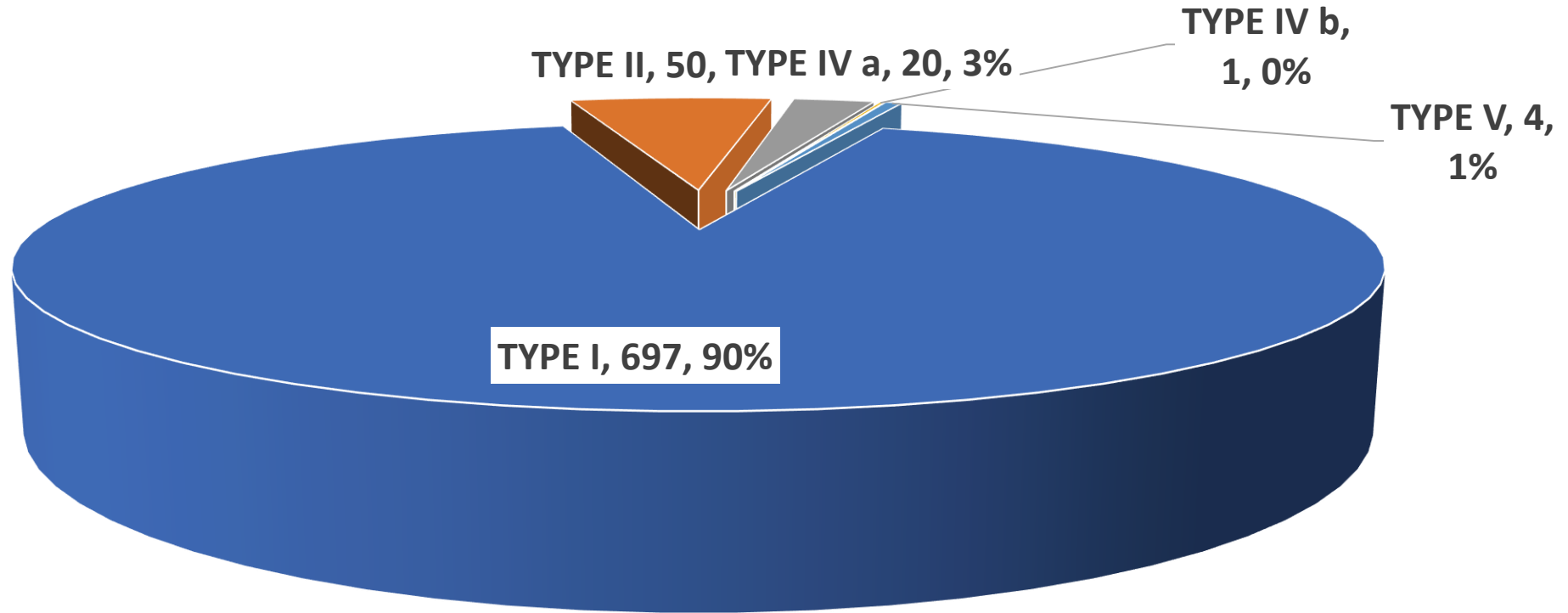


DISCHARGE DIAGNOSIS

ARRIVAL DIAGNOSIS TRENDS 2008-2018



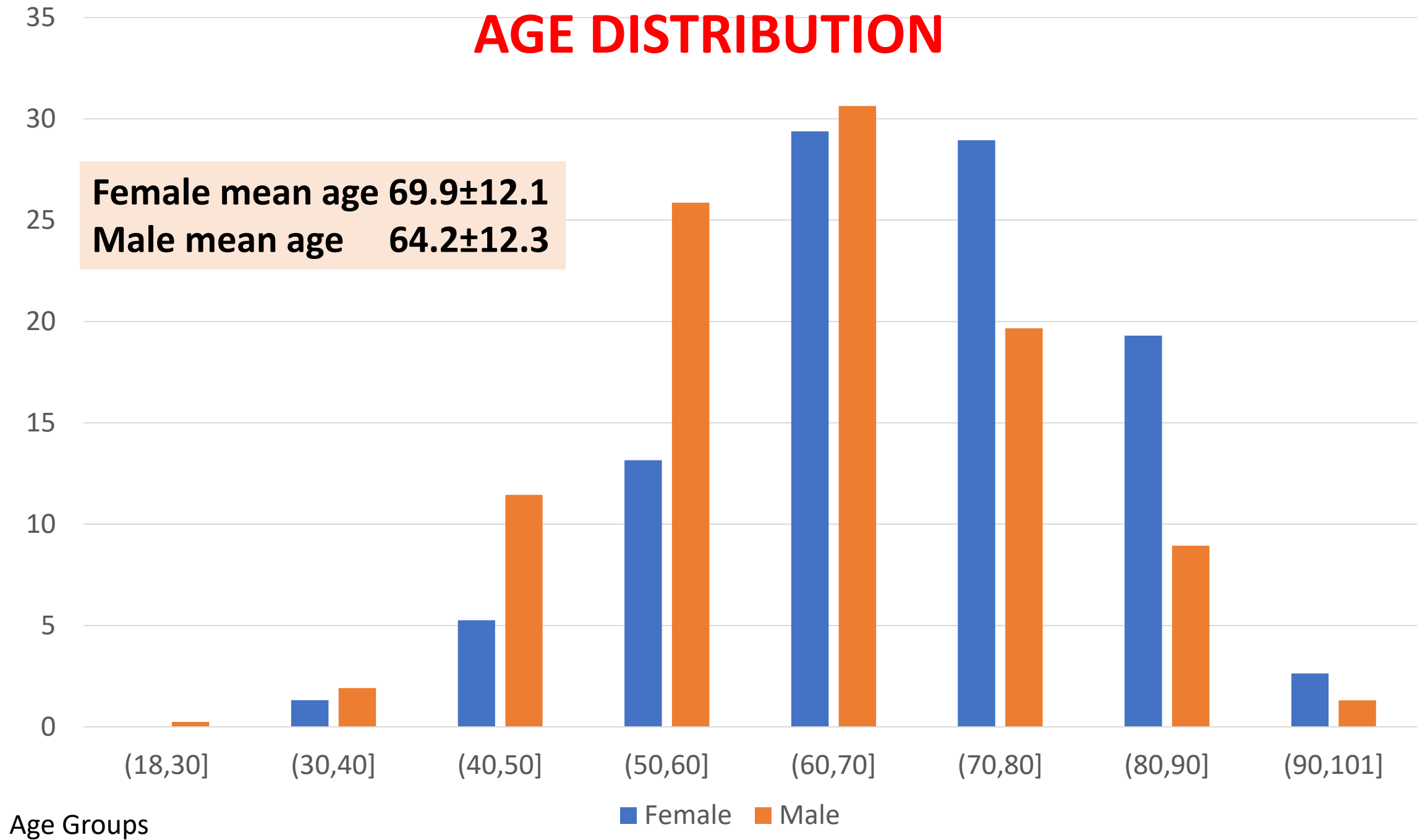
TYPES OF MYOCARDIAL INFARCTION



■ TYPE I ■ TYPE II ■ TYPE IV a ■ TYPE IV b ■ TYPE V

AGE DISTRIBUTION

Female mean age 69.9 ± 12.1
Male mean age 64.2 ± 12.3



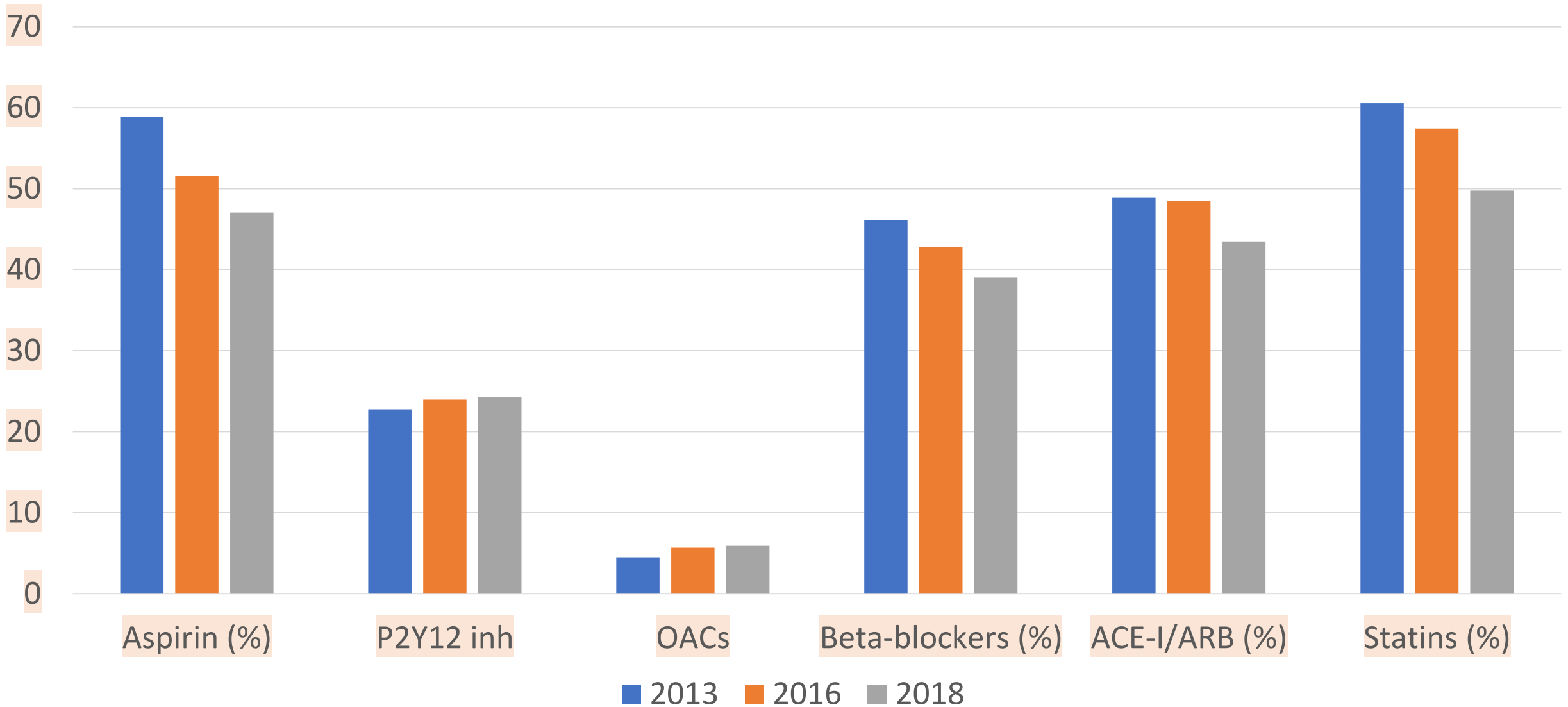
BASELINE CHARACTERISTICS

	2013	2016	2018
n	1072	1073	1067
Age (mean (sd))	65.42 (12.66)	66.25 (12.19)	65.46 (12.44)
Gender (Male) (%)	795 (74.2)	833 (77.6)	839 (78.6)
Diabetes Mellitus (%)	470 (43.9)	502 (46.9)	490 (46.0)
Hypertension (%)	774 (72.3)	761 (71.1)	783 (73.5)
Hyperlipidemia (%)	870 (81.5)	822 (76.8)	801 (75.2)
Family history of CAD (%)	258 (27.7)	278 (33.5)	300 (33.9)
Prior PVD (%)	89 (8.3)	80 (7.5)	105 (9.9)
Smoker (past/current) (%)	607 (56.6)	595 (55.5)	632 (59.2)
Prior CAD	545 (50.9)	529 (49.5)	523 (49.1)
Prior chronic renal failure (%)	175 (16.3)	145 (13.5)	148 (13.9)
Prior CHF (%)	124 (11.6)	101 (9.4)	140 (13.2)
Atrial fibrillation (%)	97 (9.1)	83 (7.7)	97 (9.1)
Past CVA/TIA (%)	96 (9.0)	104 (9.7)	100 (9.4)

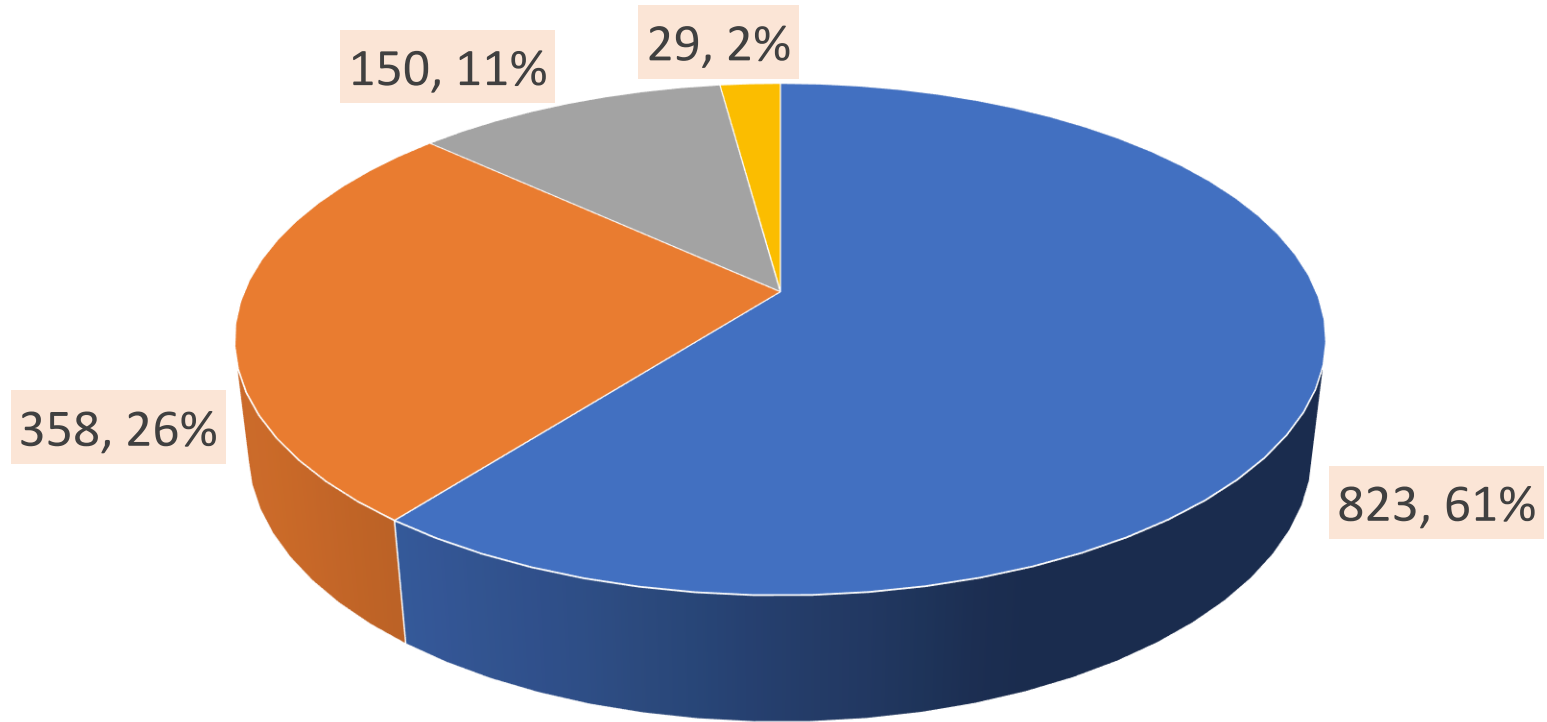
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PRIOR MEDICATIONS



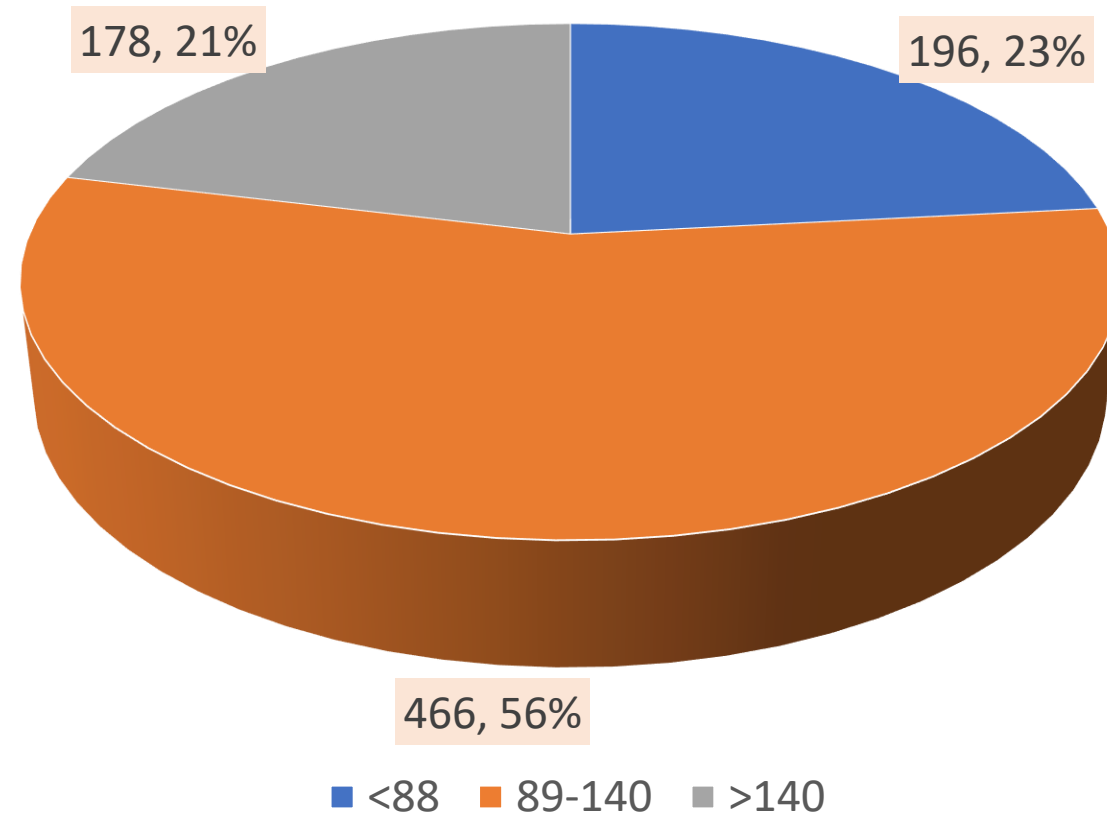
PRESENTING SYMPTOMS - 2018



■ TYPICAL ANGINA ■ DYSPNEA ■ ATYPICAL CHEST PAIN ■ SYNCOPE/ABORTED SCD

Sum is more than 1067 NSTEMI, some patients had dyspnea and atypical chest pain/dyspnea and typical chest pain or other combinations

GRACE SCORE



missing data for 227

TRANSPORTATION TO HOSPITAL

	2013	2016	2018
n	1072	1073	1067
Mode of transportation (%)			
Mobile ICCU	246 (22.9)	308 (28.7)	325 (30.5)
Not relevant (e.g. in-patient)	64 (6.0)	48 (4.5)	79 (7.4)
Private car / independently	618 (57.6)	540 (50.3)	520 (48.7)
Regular ambulance	144 (13.4)	177 (16.5)	143 (13.4)

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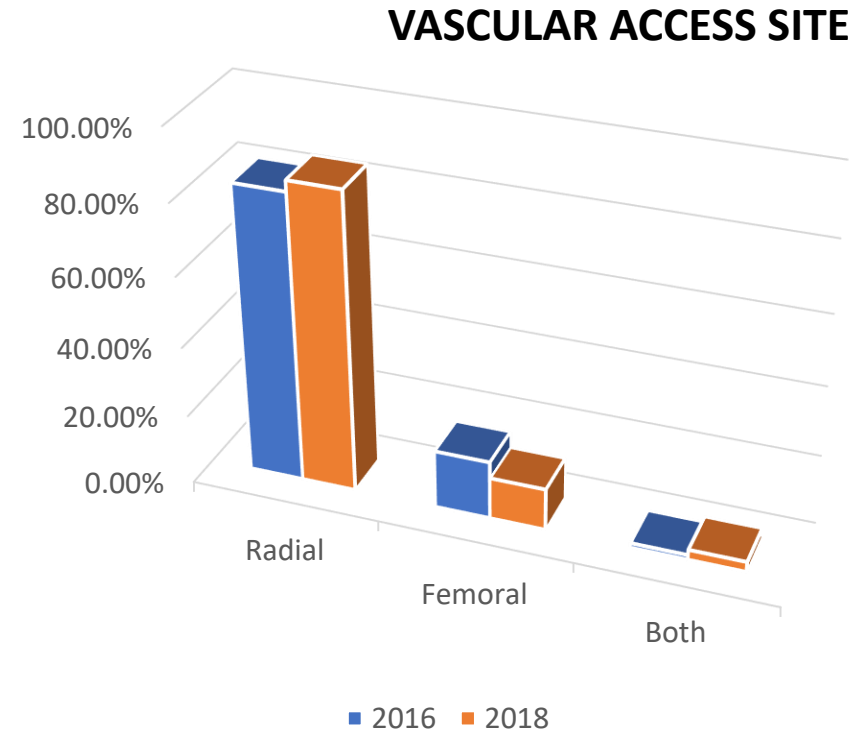
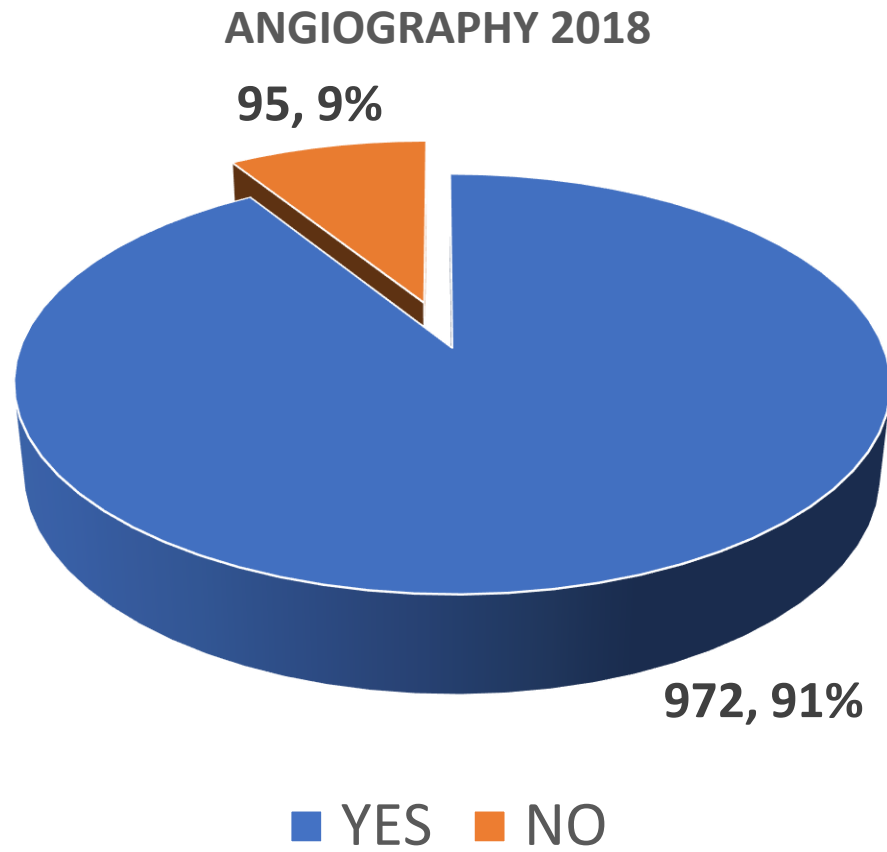
NSTE-ACS 2018

- First place of arrival 1027 (96.3%) to ER and 30(2.8%) directly to CCU or cath lab
- First place of hospitalization: 846(79.3%) cardiology and **209 (19.6%) internal medicine**

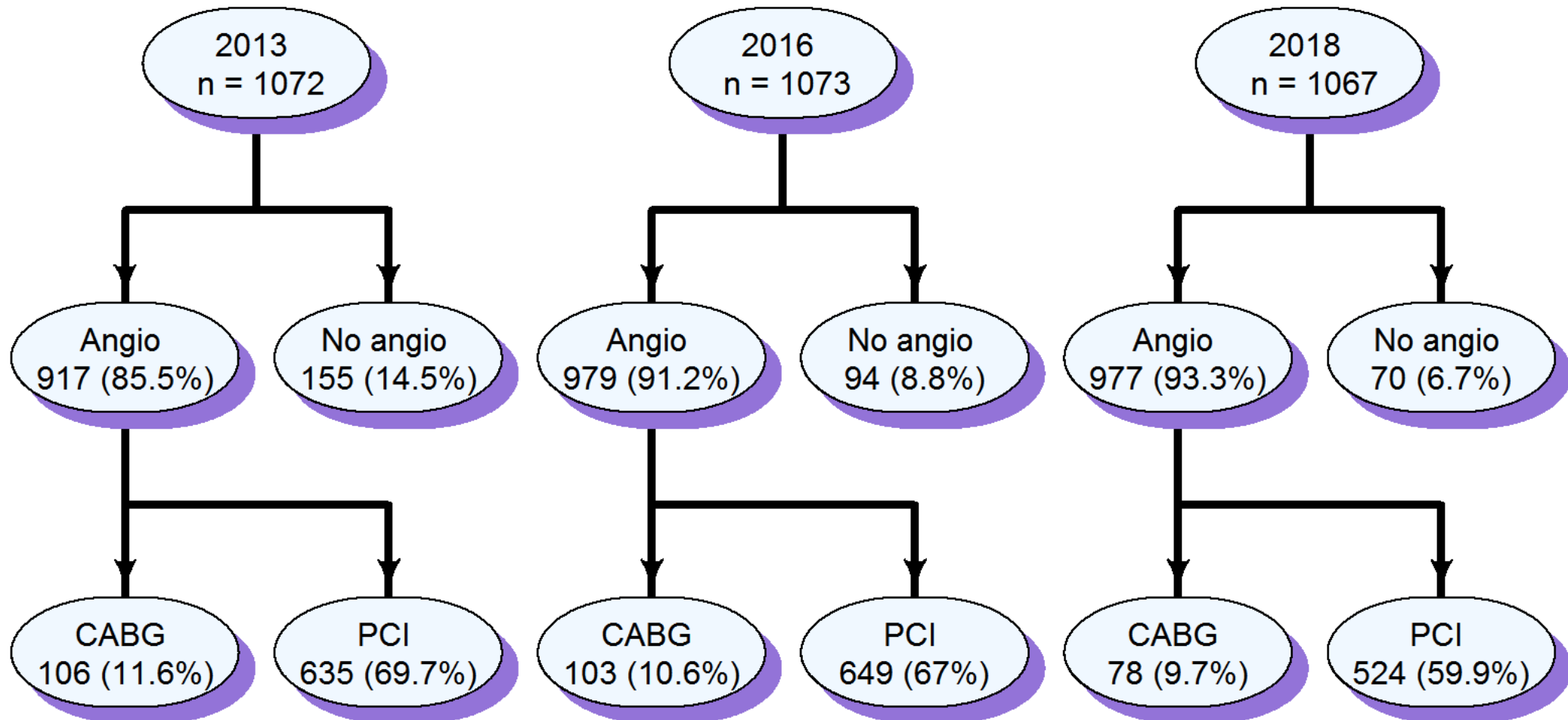
Time to first ECG of NSTE-ACS patients

	2013	2016	2018
n	1072	1073	1067
Onset of symptoms to ECG (median [IQR])	210.00 [79.00, 716.50]	192.00 [85.25, 540.75]	192.00 [80.75, 545.00]
First medical contact to ECG (median [IQR])	14.00 [5.00, 45.00]	23.00 [7.00, 68.25]	15.00 [5.00, 56.75]

ANGIOGRAPHY FOR NSTEACS

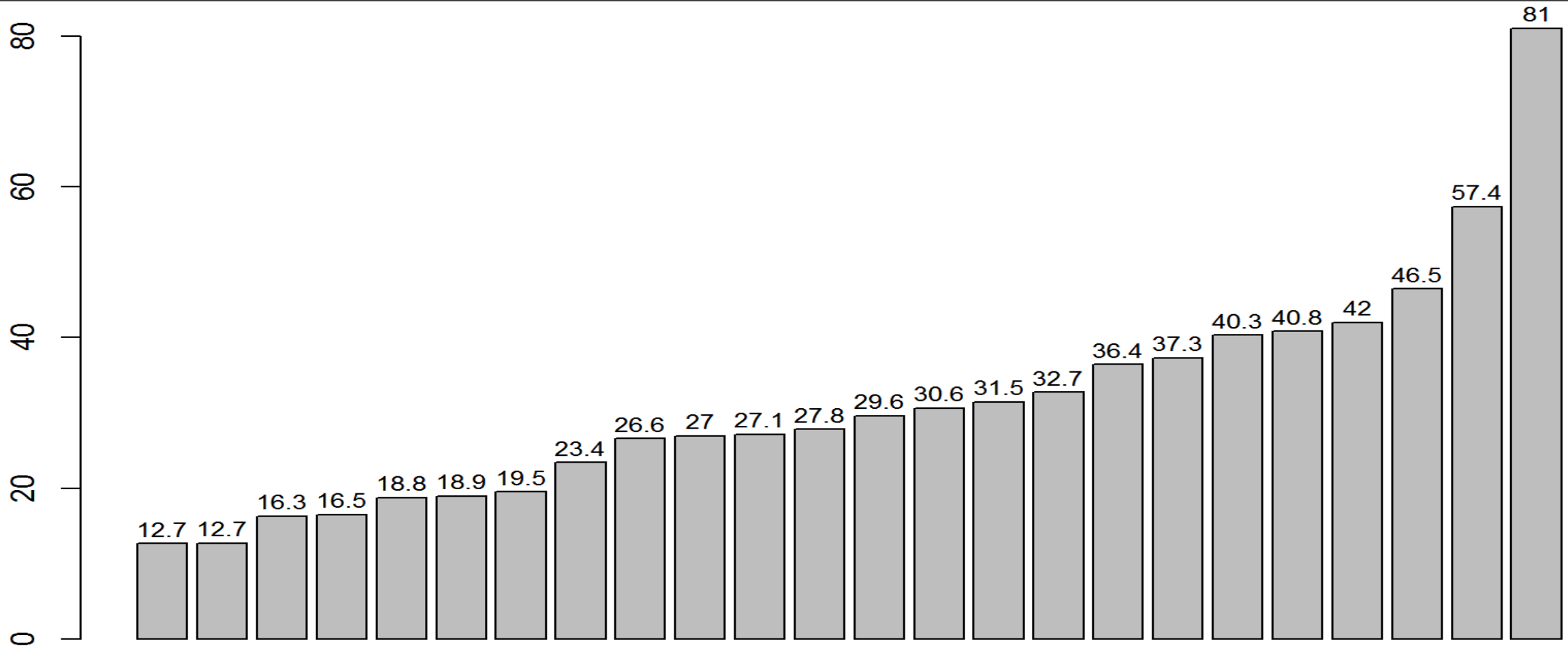


Distribution by 30-day Angiography/Revasc Type



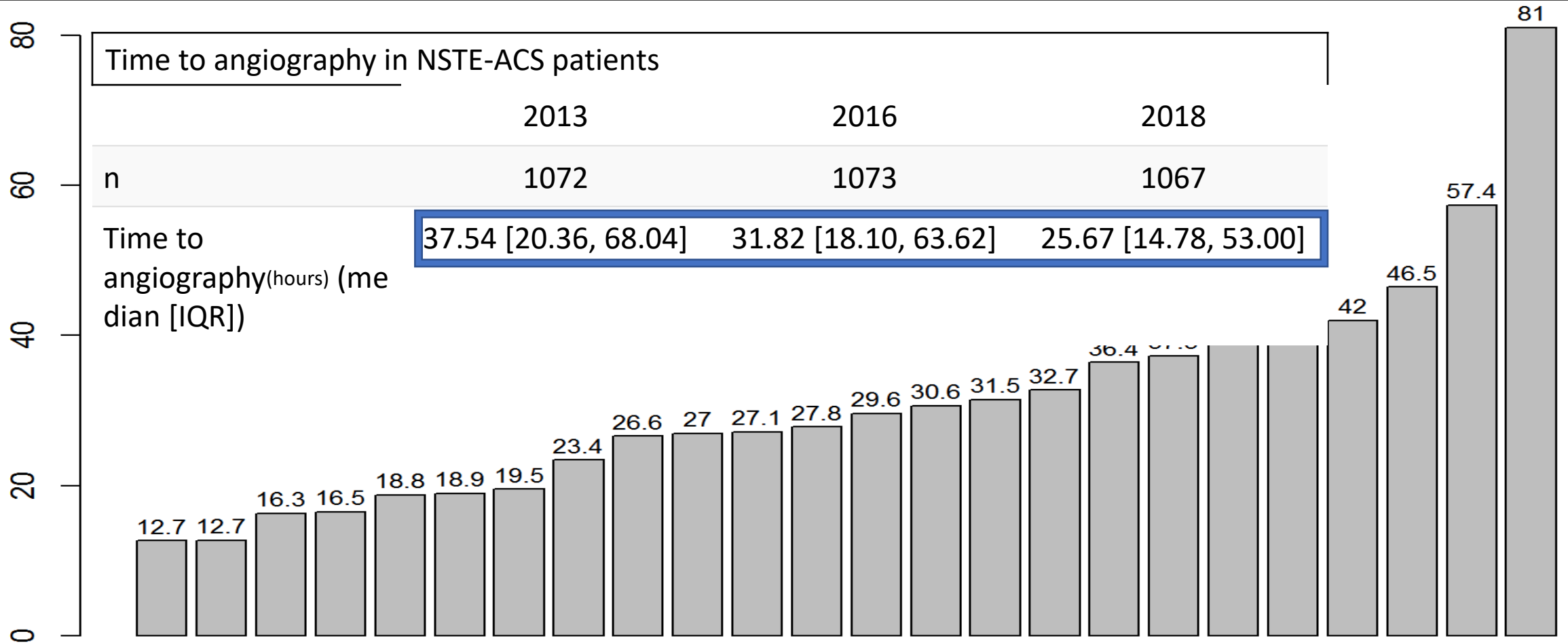
TIME TO ANGIOGRAPHY PER CENTER

In Israel median time to angio in 2018 is 25.67 [14.78, 53.00]h



TIME TO ANGIOGRAPHY PER CENTER

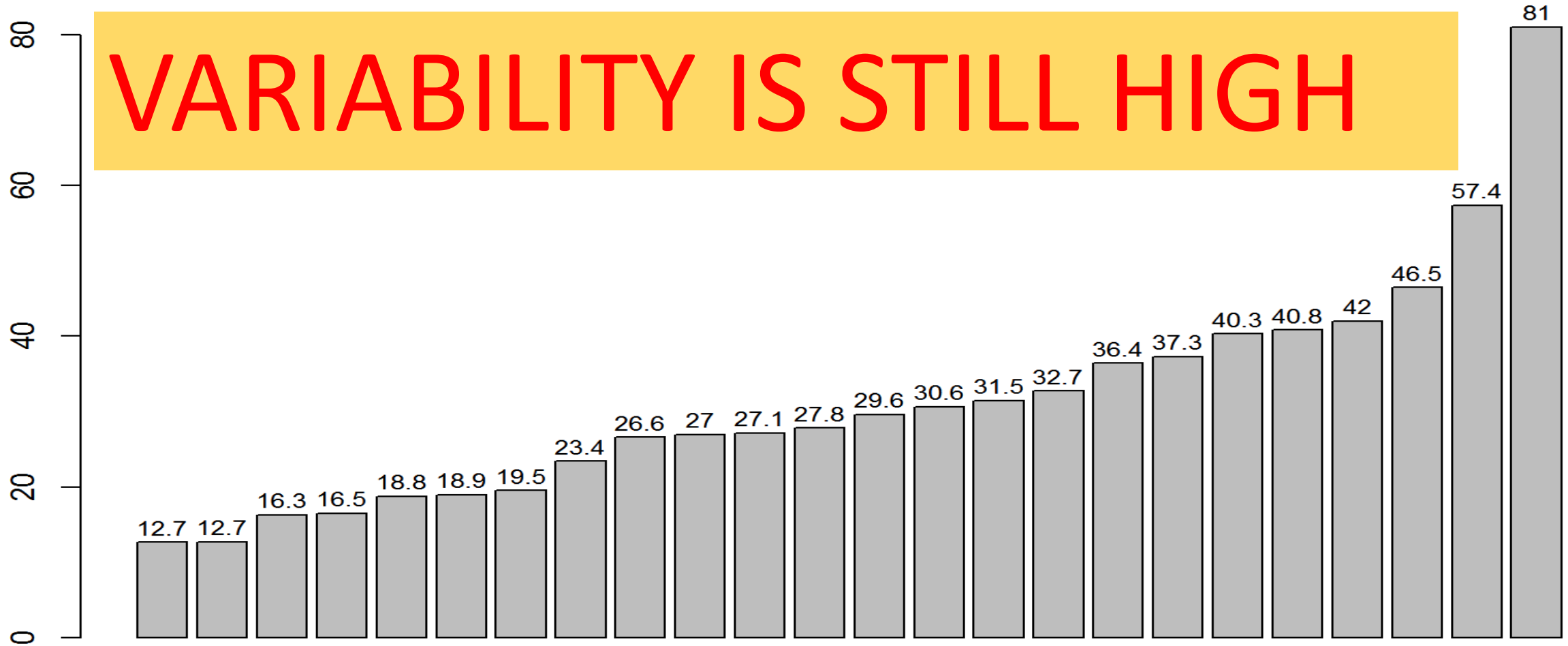
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TIME TO ANGIOGRAPHY PER CENTER

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VARIABILITY IS STILL HIGH



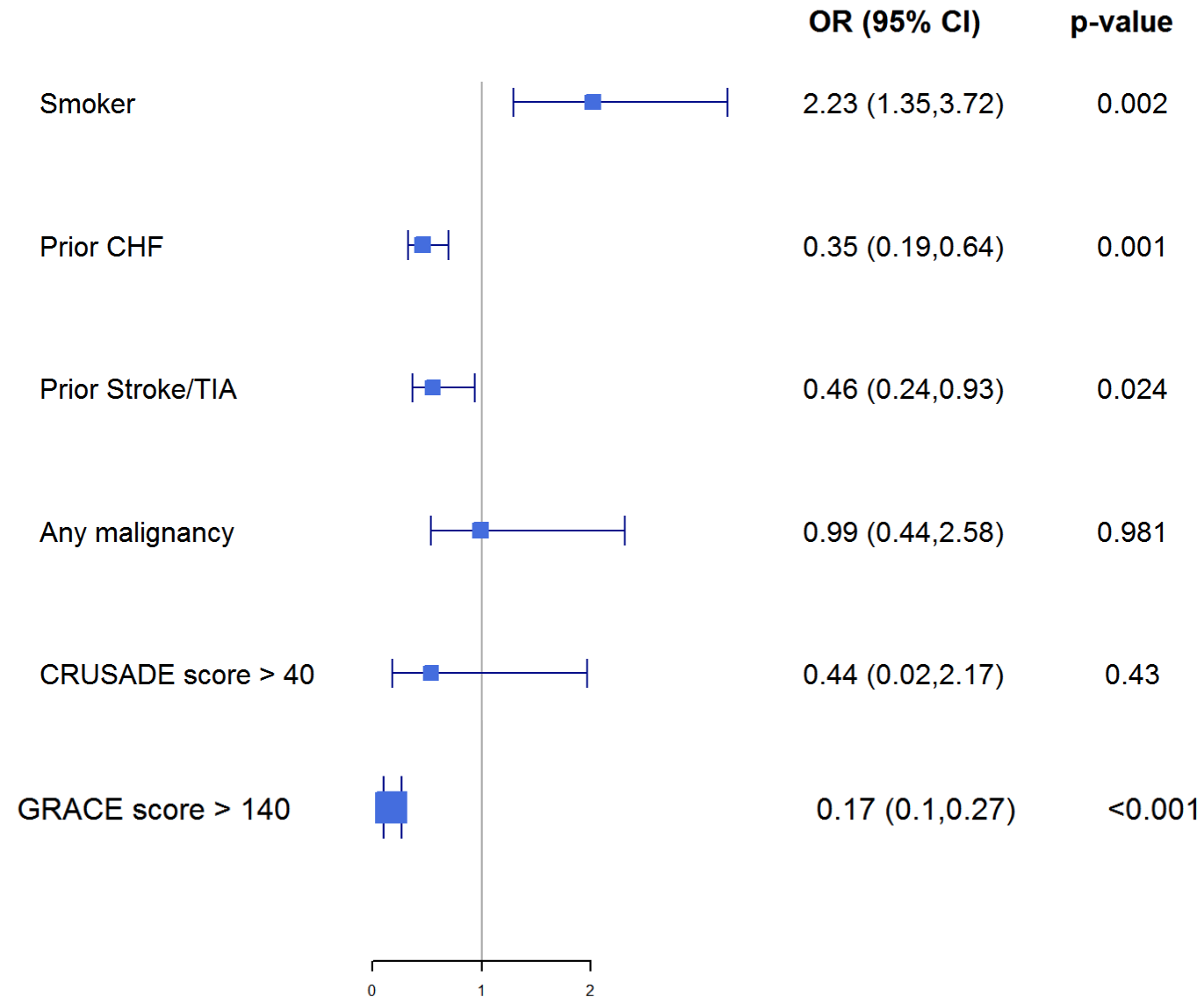
BASELINE CHARACTERISTICS OF NSTEACS

n	95	972	
Age (mean (sd))	72.85 (13.85)	64.74 (12.06)	<0.001
Gender (Male) (%)	69 (72.6)	770 (79.2)	0.173
Diabetes Mellitus (%)	48 (50.5)	442 (45.5)	0.408
Hypertension (%)	78 (83.0)	705 (72.5)	0.039
Hyperlipidemia (%)	68 (72.3)	733 (75.5)	0.582
Family history of CAD (%)	23 (29.5)	277 (34.4)	0.457
Prior PVD (%)	17 (17.9)	88 (9.1)	0.010
Smoker (past/current) (%)	39 (41.1)	593 (61.0)	<0.001
Prior CAD	54 (56.8)	469 (48.3)	0.138
Prior chronic renal failure (%)	40 (42.1)	108 (11.1)	<0.001
Prior CHF (%)	26 (27.4)	114 (11.8)	<0.001
Atrial fibrillation (%)	17 (17.9)	80 (8.2)	0.003
Past CVA/TIA (%)	16 (16.8)	84 (8.7)	0.015
Any malignancy (%)	9 (9.7)	66 (7.0)	0.448

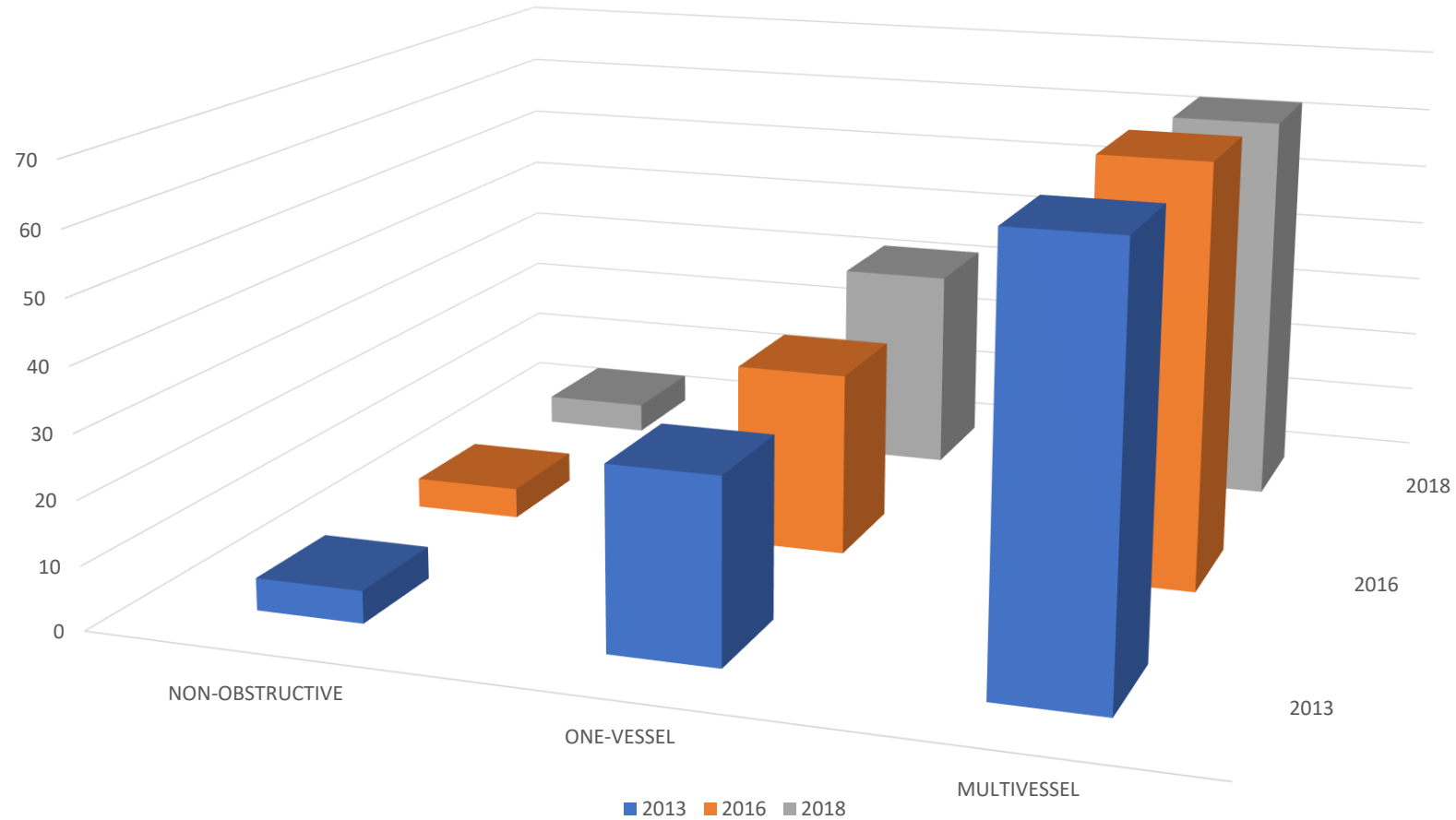
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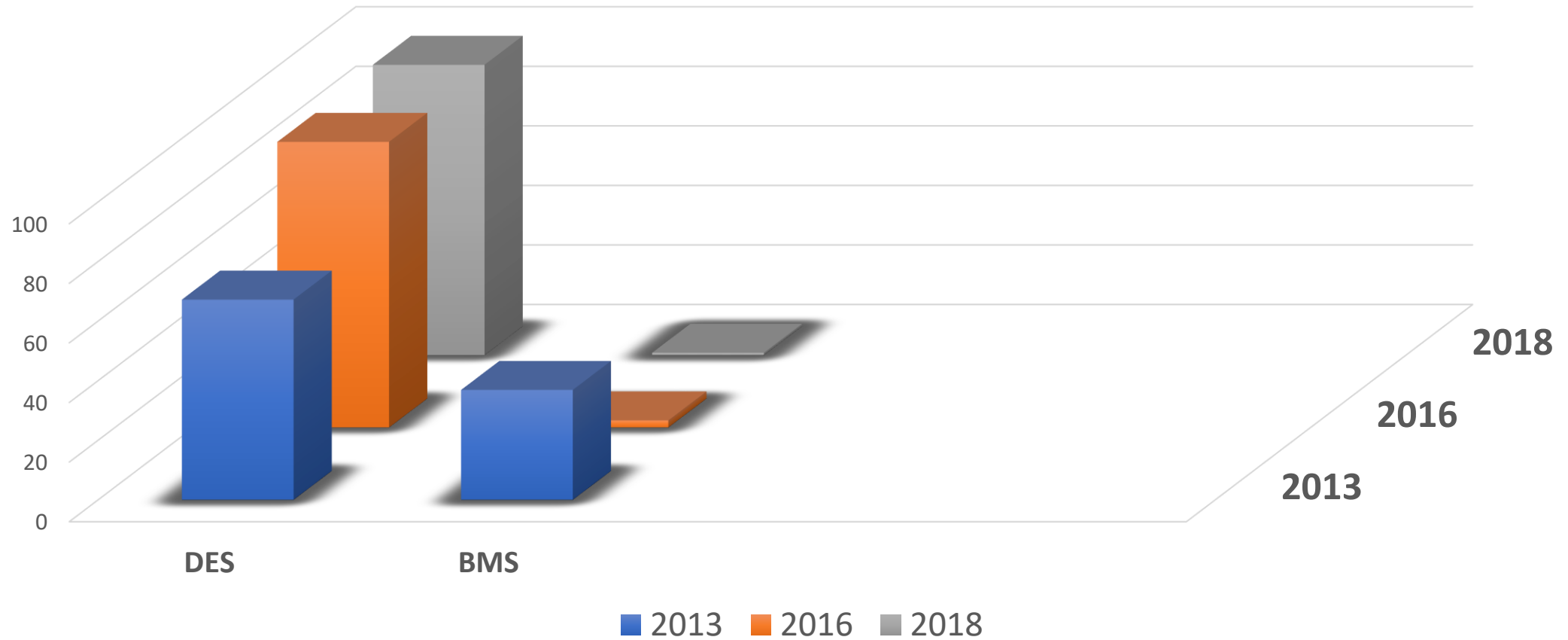
PREDICTORS FOR ANGIOGRAPHY



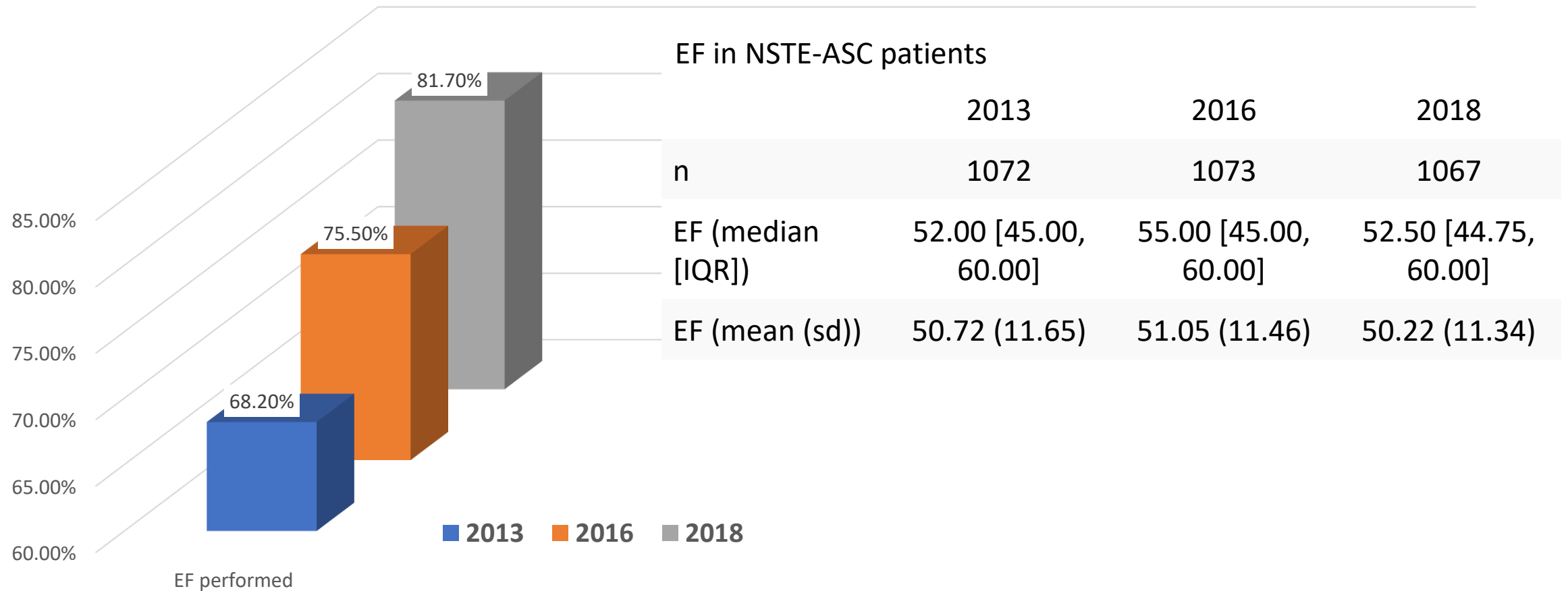
CORONARY ARTERY DISEASE EXTENT



DES vs BMS 2013-2016



Left Ventricular Ejection Fraction

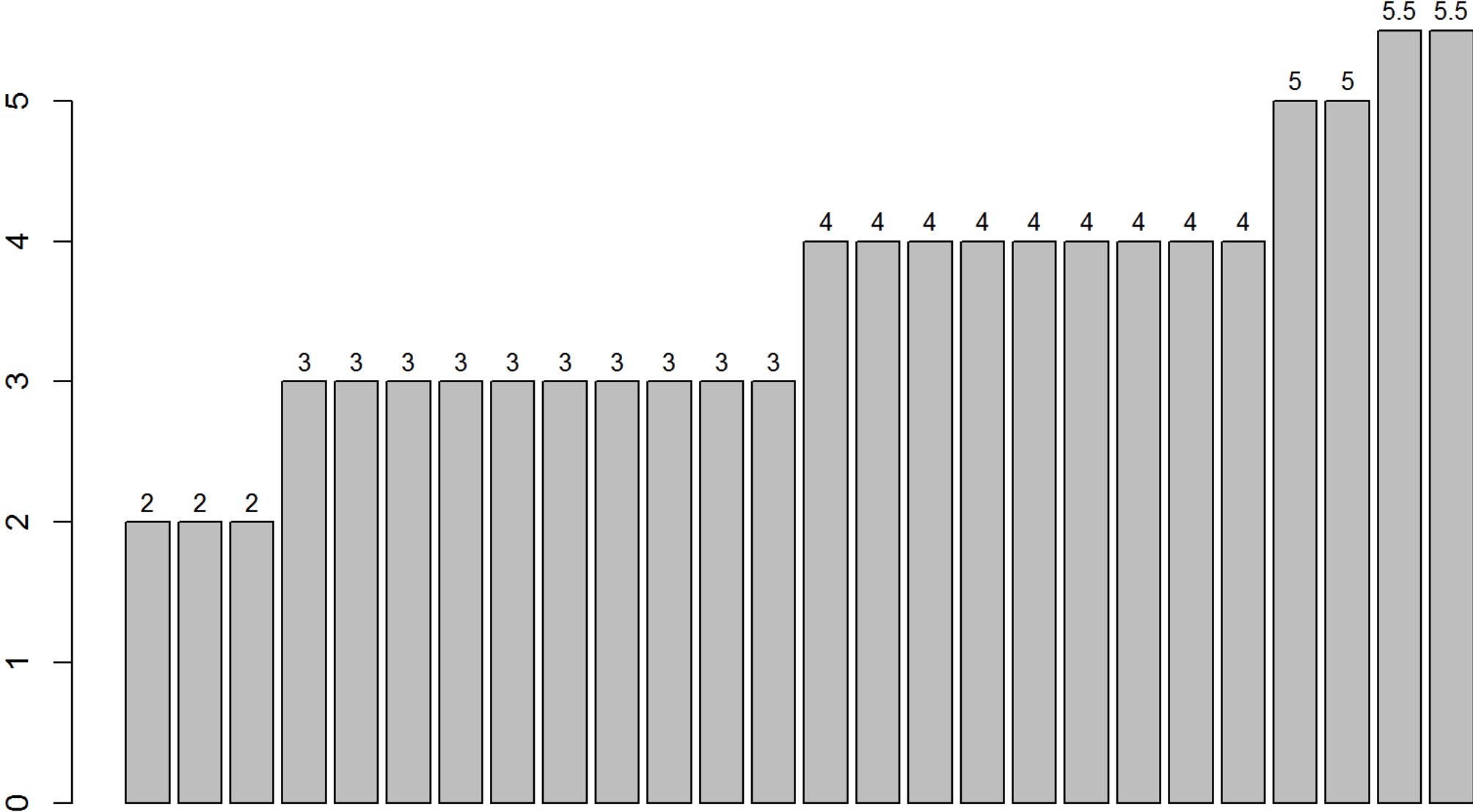


LENGTH OF STAY AFTER NSTEACS

Length of hospital stay(days) in NSTE-ACS patients 2013-2018

	2013	2016	2018
n	1072	1073	1067
Length of hospital stay(days) (median [IQR])	4.00 [3.00, 6.00]	4.00 [2.00, 6.00]	4.00 [2.00, 5.00]

LENGTH OF STAY BY CENTERS



DISCHARGE MEDICATIONS

Discharge medications trends in NSTEMI-ACS patients 2013-2018

	2013	2016	2018
n	1061	1065	1041
Aspirin (%)	1011 (95.3)	999 (94.5)	955 (97.0)
P2Y12 (%)	886 (83.5)	889 (83.5)	891 (85.6)
Beta blockers (%)	818 (77.2)	785 (80.6)	753 (88.1)
ACEi/ARB (%)	780 (73.5)	761 (71.5)	732 (70.3)
Statins (%)	1000 (94.3)	985 (97.5)	973 (98.7)

IN 2018 MORE THAN 87% OF PRESCRIBED STATINS ARE HIGH -DOSE

Selected laboratory tests

Test	N=1067
LDL (mean (sd))	93.93 (40.44)
Earliest Hb (mean (sd))	13.77 (1.98)
Patients with diagnosed diabetes only NSTE-ACS 2018	
n	491
HBA1C (mean (sd))	7.38 (1.69)

OUTCOMES

IN-HOSPITAL COMPLICATIONS

	2016	2018
n	1073	1067
Pulmonary edema (%)	36 (3.4)	36 (3.4)
Mild heart failure (%)	56 (5.2)	77 (7.2)
Cardiogenic shock (%)	11 (1.0)	22 (2.1)
Recurrent MI (%)	6 (0.6)	5 (0.5)
Mechanical complications* (%)	15 (1.4)	7 (0.7)
High degree AV block (%)	10 (0.9)	8 (0.8)
Pericarditis (%)	0 (0.0)	3 (0.3)
Atrial fibrillation (%)	32 (3.0)	37 (3.5)
CVA/Stroke (%)	6 (0.6)	0 (NaN)
Acute renal failure (%)	48 (4.5)	47(4.4)
Blood transfusion (%)	21 (2.0)	20 (1.9)

* Mechanical complications: rupture, VSD, acute mitral regurgitation

IN-HOSPITAL COMPLICATIONS BY GENDER

In-hospital complications in NSTEMI-ACS patients by gender 2016-2018

	2016		2018	
	Female	Male	Female	Male
n	240	833	228	839
Pulmonary edema (%)	11 (4.6)	25 (3.0)	16 (7.0)	20 (2.4)
Mild heart failure (%)	15 (6.3)	41 (4.9)	19 (8.3)	58 (6.9)
Cardiogenic shock (%)	4 (1.7)	7 (0.8)	8 (3.5)	14 (1.7)
Recurrent MI (%)	0 (0.0)	6 (0.7)	1 (0.4)	4 (0.5)
Mechanical complications* (%)	6 (2.5)	9 (1.1)	3 (1.3)	4 (0.5)
High degree AV block (%)	3 (1.2)	7 (0.8)	4 (1.8)	4 (0.5)
Pericarditis (%)	0 (0.0)	0 (0.0)	0 (0.0)	3 (0.4)
Atrial fibrillation (%)	11 (4.6)	21 (2.5)	17 (7.5)	20 (2.4)
CVA/Stroke (%)	2 (0.8)	4 (0.5)	0 (NaN)	0 (NaN)
Acute renal failure (%)	14 (5.8)	34 (4.1)	15 (6.6)	32 (3.8)
Blood transfusion (%)	7 (2.9)	14 (1.7)	8 (3.5)	12 (1.4)

* Mechanical complications: rupture, VSD, acute mitral regurgitation

IN-HOSPITAL CRUDE MORTALITY 2013-2018

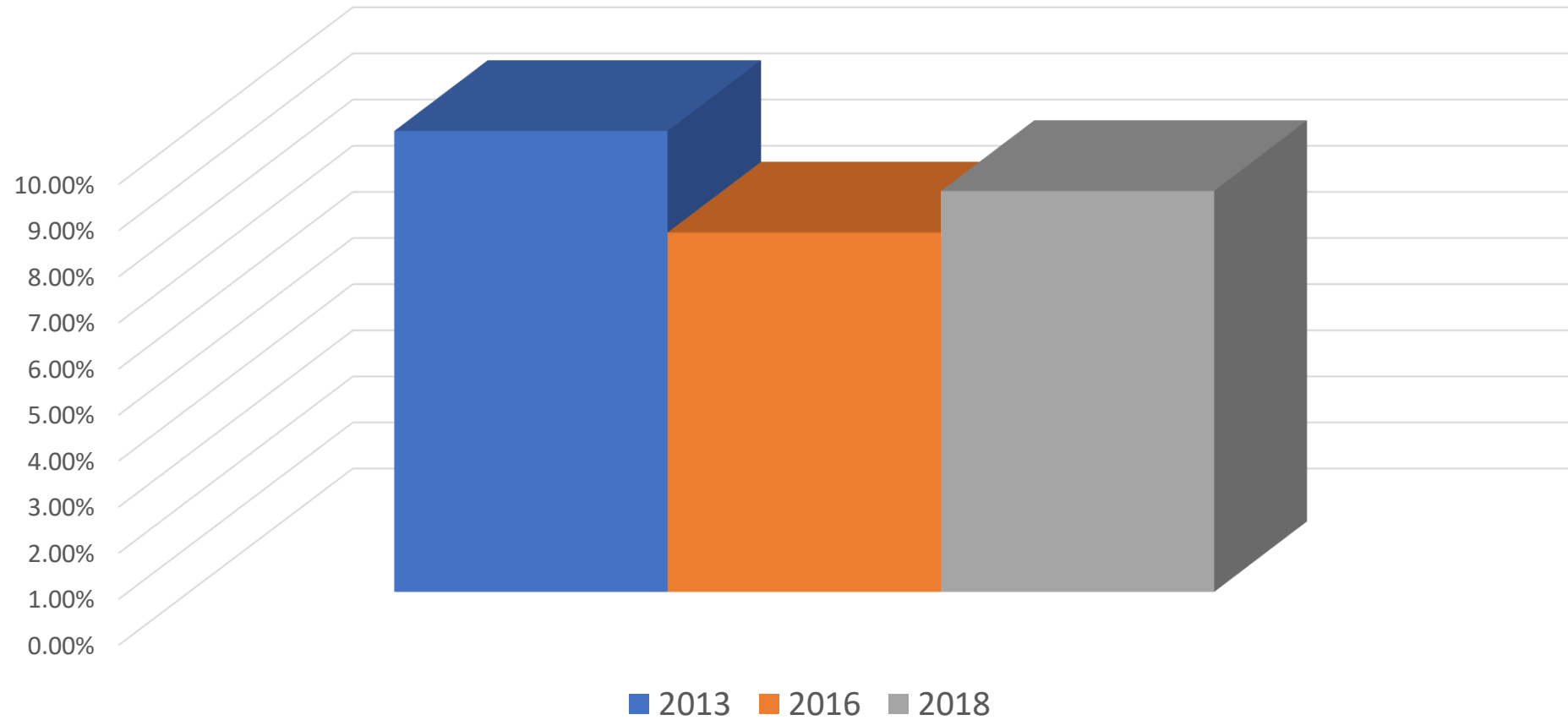
	2013	2016	2018
	N- 1072	N- 1073	N- 1067
In-hospital mortality (%)	20 (1.9)	13 (1.2)	31 (2.9)

30-DAY MORTALITY 2013-2018

(ADJUSTED FOR BASELINE GRACE SCORE)

	2013	2016	2018
30-day mortality rate	1.7	1.1	1.8

30-DAY MACE TRENDS 2013-2016

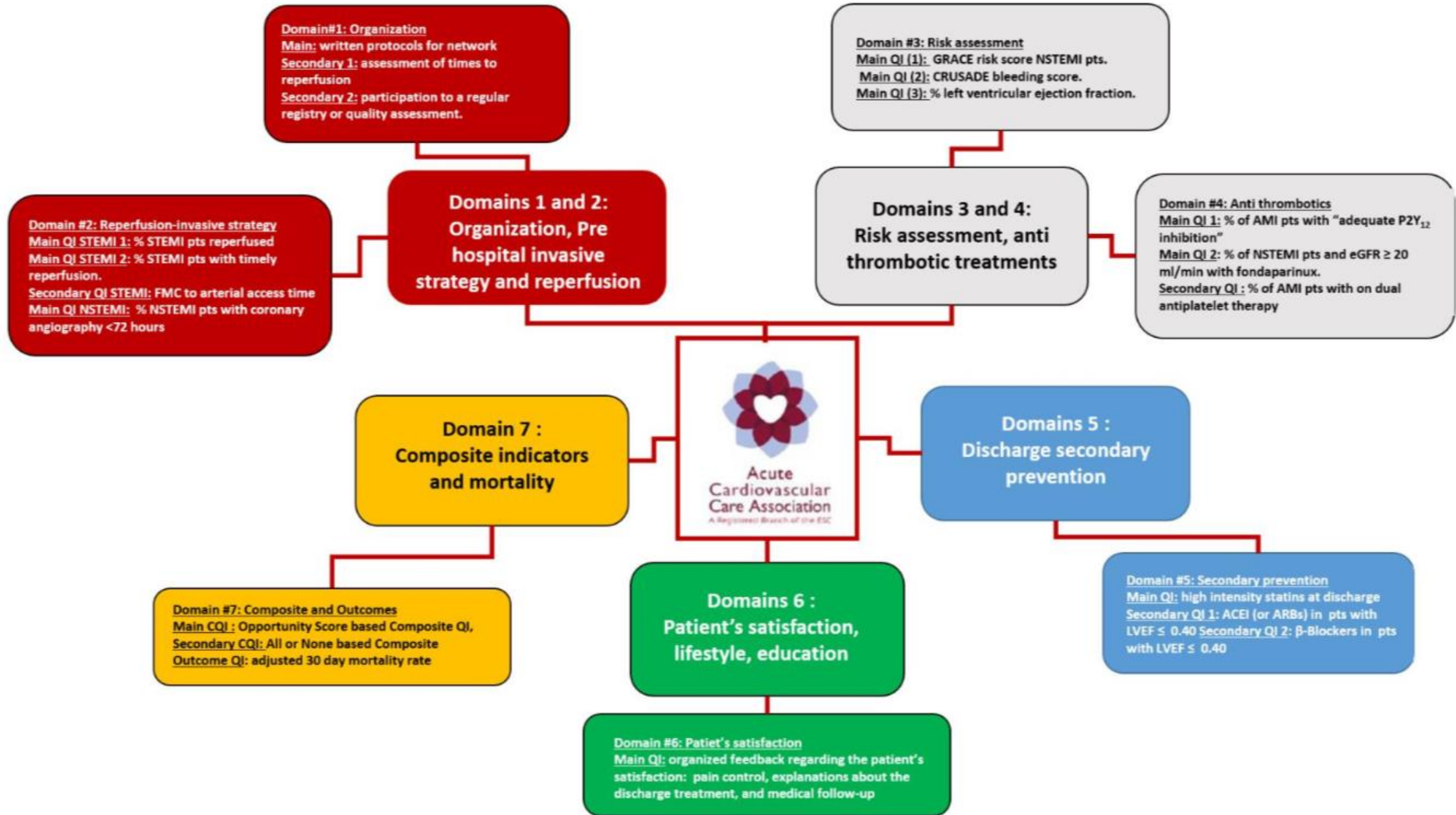


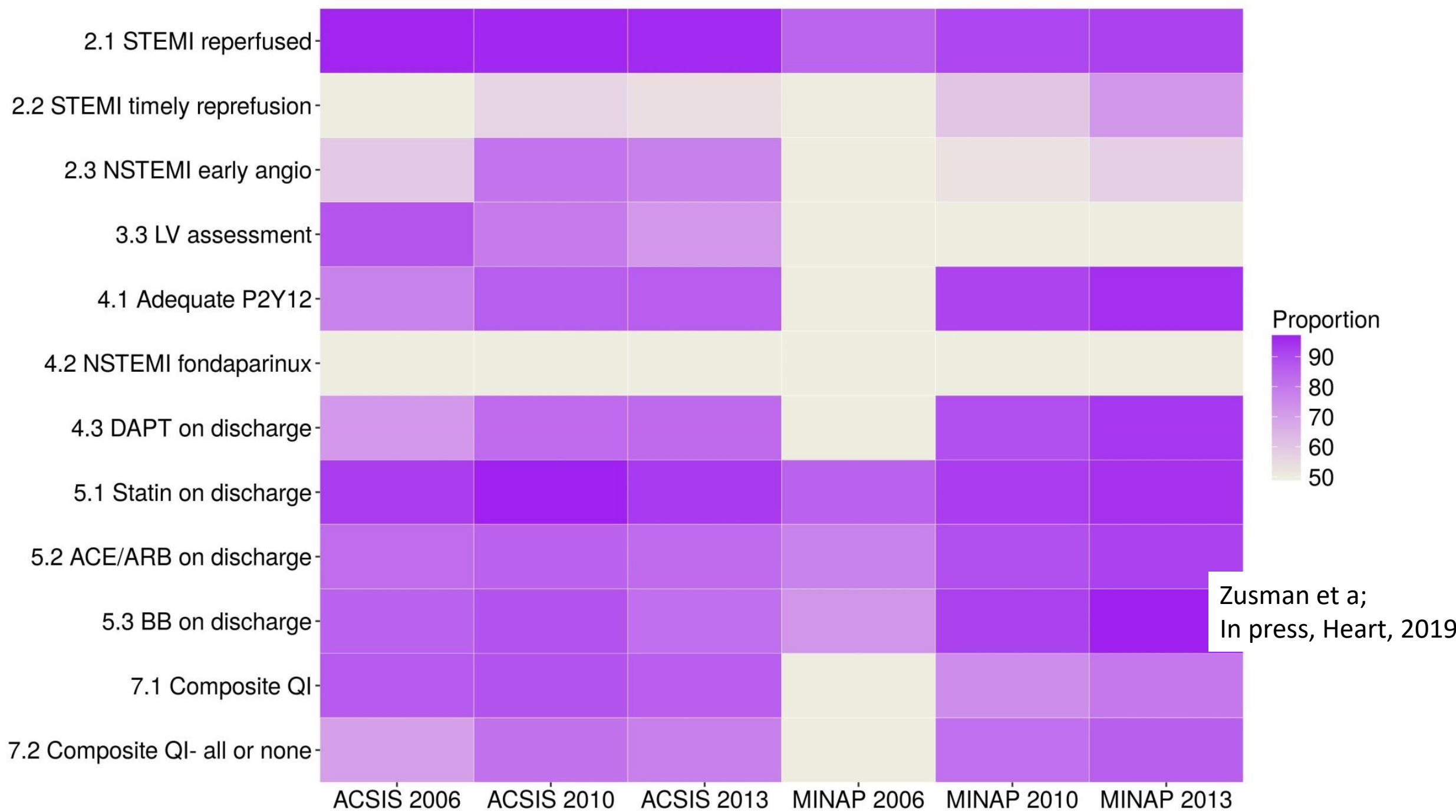
DISCHARGE

Discharge destination in NSTEMI-ACS patients 2018

	Overall
n	1067
Discharged to: (%)	
Cardiothoracic surgery	53 (5.1)
Convalescence facility/unit (hotel)	29 (2.8)
Home	815 (78.3)
Internal medicine	105 (10.1)
Nursing home	4 (0.4)
Other hospital	23 (2.2)
Other ward	12 (1.2)

ESC-ACCA QI for AMI: 7 domains of care and 20 Quality Indicators





SUMMARY

- NSTEMI-ACS represents majority of ACSIS cohort in last three surveys
- Ninety percent of all NSTEMI admitted to ICCU/Cardiology are type I
- Still for 20% of NSTEMIACS first place of hospitalization is internal ward
- Time to angio in NSTEMI-ACS is improving
- Most of the patients are accepting guideline recommended therapy
- High –risk patients (GRACE>140) are less referred to angio

FURTHER PLANS

- IMPELEMENT ESC QUALITY INDICATORS AND PERFORMANCE MEASURES IN ACSIS
- Establish ongoing ACSIS