

האיגוד הקרדיולוגי בישראל
ISRAEL HEART SOCIETY



אנחנו כאן בשבילכם

החוג הישראלי
לטפול נמרץ לב



THE ISRAEL WORKING GROUP
ON INTENSIVE CARDIAC CARE

PREHOSPITAL CARE

ACSIS 2013

ZAZA IAKOBISHVILI

ON BEHALF OF ACSIS 2013 INVESTIGATORS

ACSIS 2013 MEETING, RAMAT GAN, JANUARY 3, 2014

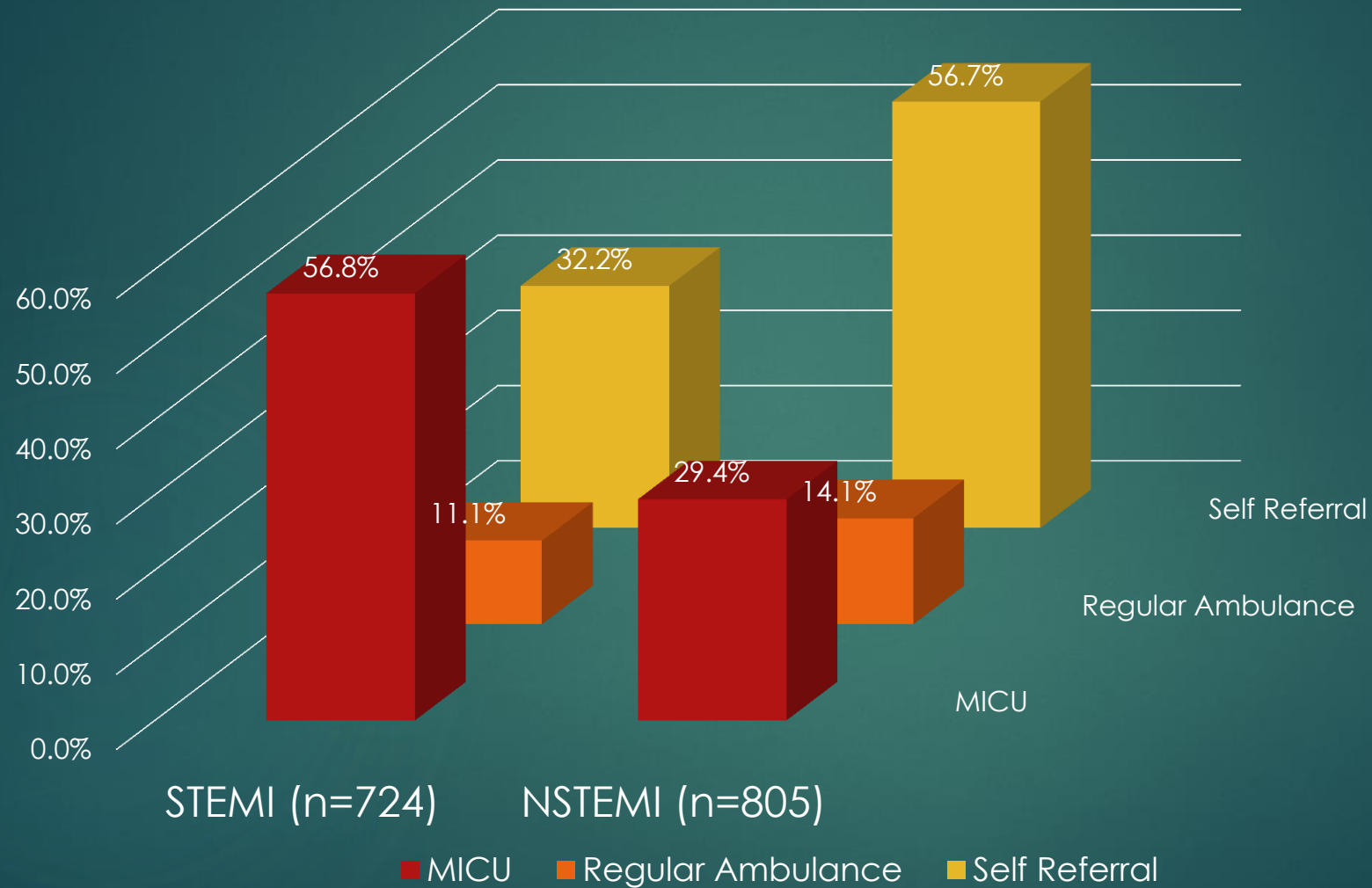
BACKGROUND

- ▶ Guidelines recommend early triage and initiation of treatments in acute myocardial infarction (AMI) patients.
- ▶ Little is known about real world pre-hospital management and therapies in AMI.

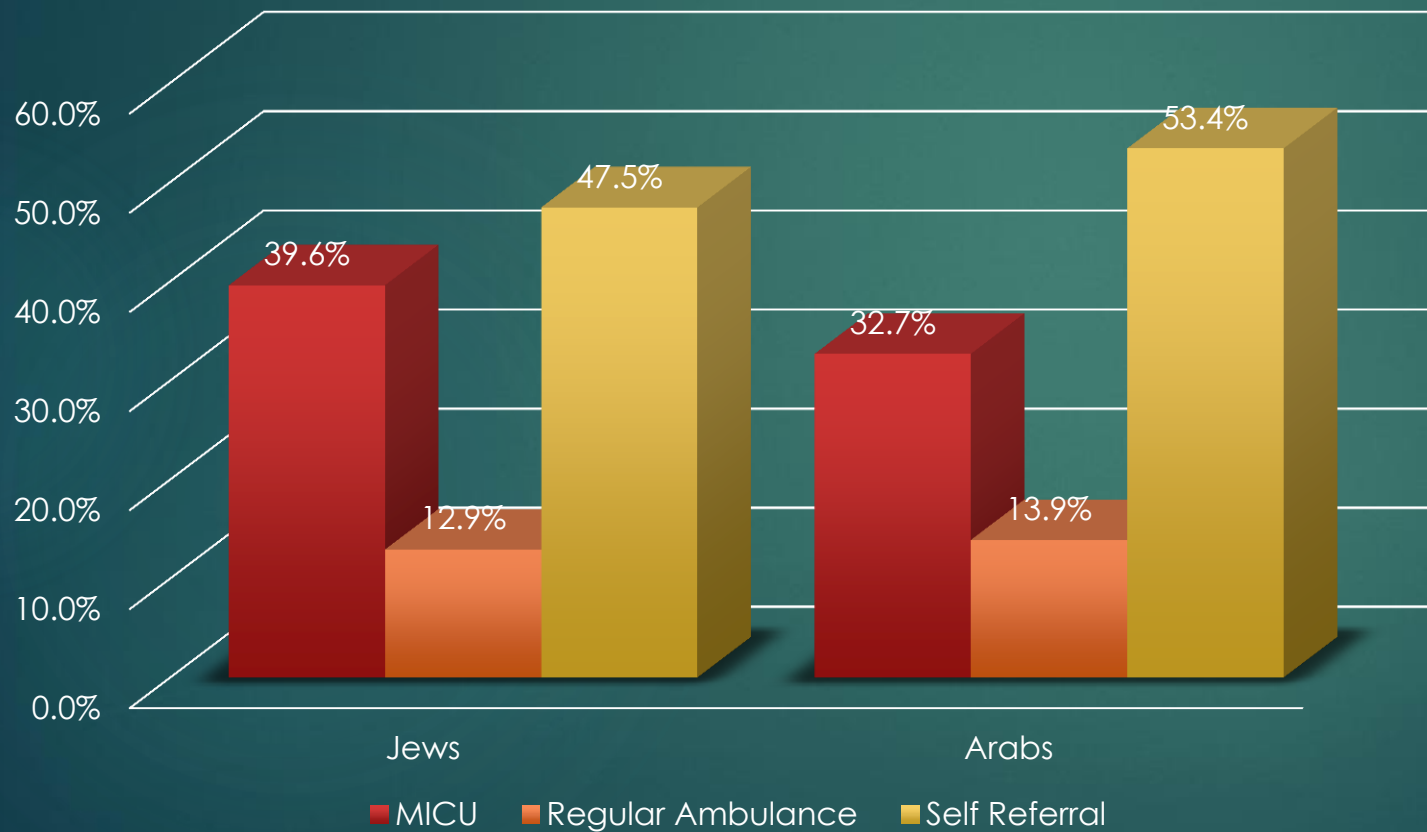
METHODS

- ▶ We analyzed pre-hospital management patterns in AMI patients in the Acute Coronary Syndrome Israeli Survey (ACSIS) 2013 according to the mode of transportation to hospital.
- ▶ The patients with unstable angina and in-hospital acute myocardial infarction cases were excluded from this analysis.

DISTRIBUTION OF MYOCARDIAL INFARCTION PATIENTS BY THE MODE OF TRANSPORTATION



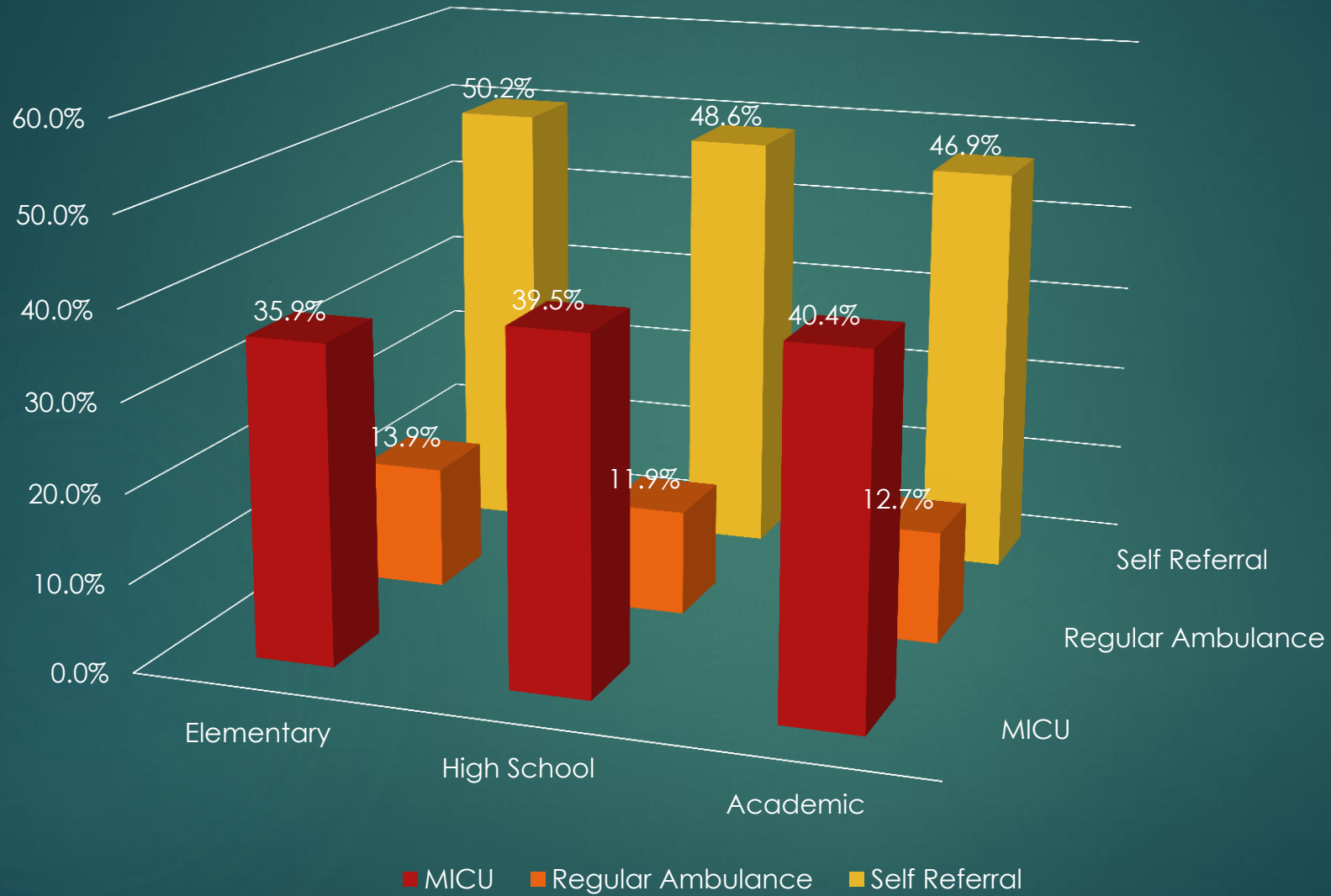
MODE OF TRANSPORTATION



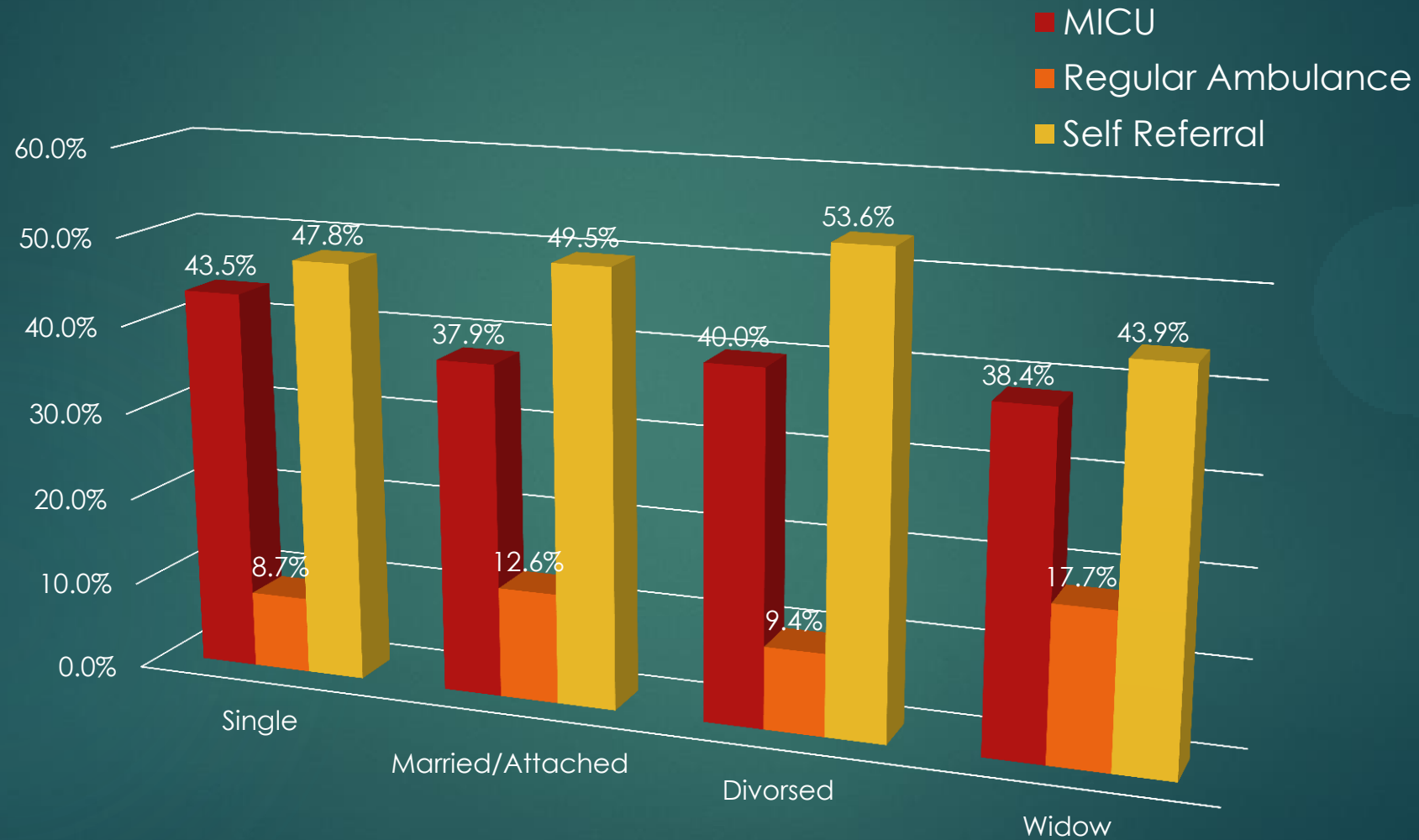
DISTRIBUTION OF ACSIS 2013 PARTICIPANTS ACCORDING TO ETHNIC ORIGIN



EDUCATION LEVEL



MARITAL STATUS



Demographics

ALL	MICU (n=687)	Regular Ambulance (n=233)	Self Referral (n=882)	P
Age, Median (25 th -75 th percentile)	63.0 (53.0- 74.0)	67.0 (58.0- 76.0)	62.0 (54.0- 72.0)	0.002
Male, %	79.5	70.8	77.1	0.025

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STEMI	MICU (n=411)	Regular Ambulance (n=81)	Self Referral (n=232)	P
Age, Median (25 th -75 th percentile)	61.0 (53.0- 70.0)	65.0(58.0- 76.0)	59.5 (52.0- 69.0)	0.005
Male,%	82.5	81.5	82.8	0.966

		ALL				P
		MICU (n=687)	Regular Ambulance (n=233)	Self Referral (n=882)	P	
Age, Median (25 th -75 th percentile)		63.0 (53.0- 74.0)	67.0 (58.0- 76.0)	62.0 (54.0- 72.0)	0.002	
Male, %		79.5	70.8	77.1	0.025	
STEMI		NSTEMI				P
		MICU (n=411)	MICU (n=234)	Regular Ambulance (n=233)	Self Referral (n=457)	
		Age, Median (25 th -75 th percentile)	68.0(57.0-79.0)	69.5(60.0-77.0)	64.0(56.0-74.0)	
Male, %		79.5	60.5	74.6	0.008	
Age, Median (25 th -75 th percentile)	61.0 (53.0- 70.0)	65.0(58.0- 76.0)	59.5 (52.0- 69.0)	0.005		
Male,%	82.5	81.5	82.8	0.966		

RISK FACTORS FOR CAD AND PRIOR MEDICAL HISTORY

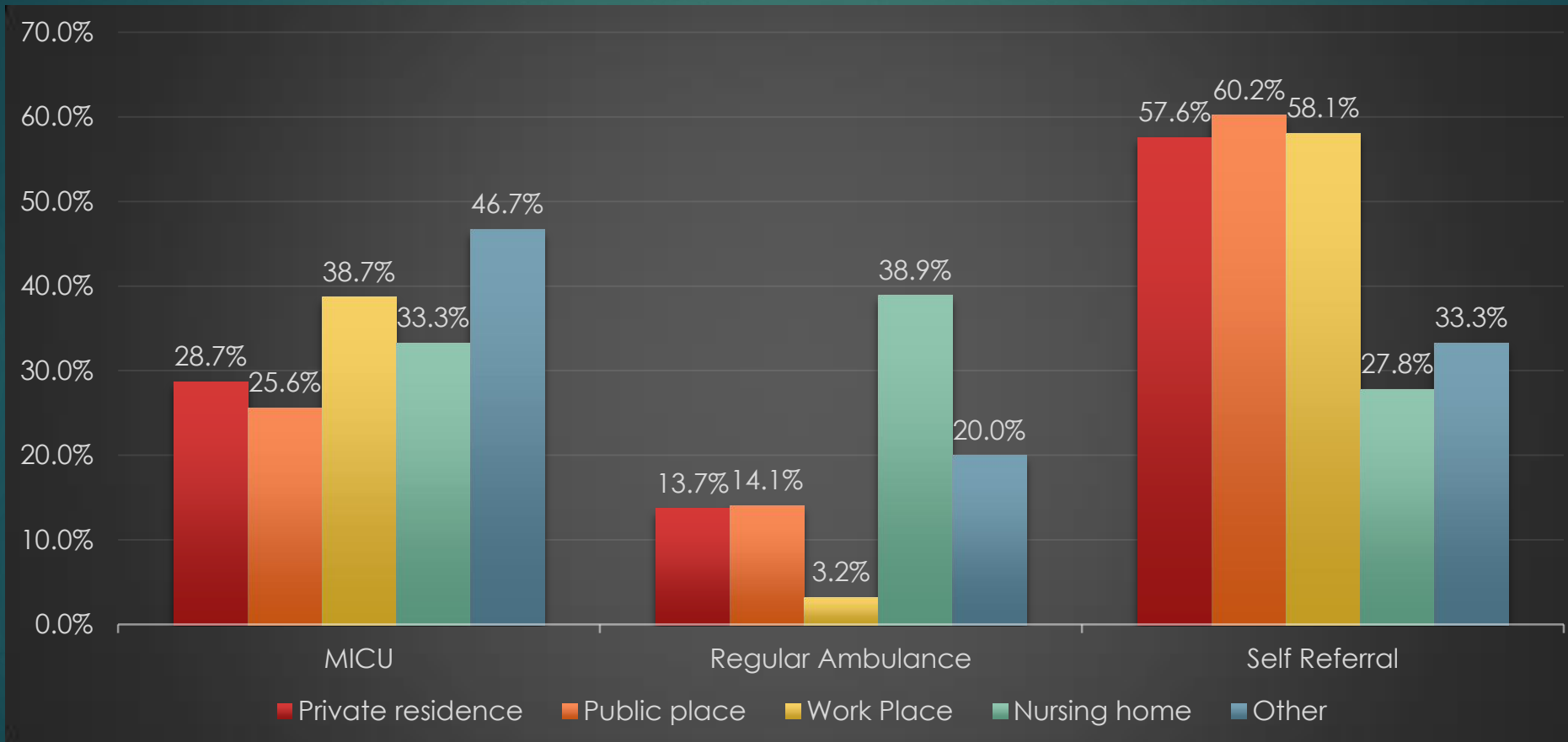
	MICU (n=687)	Regular ambulance (n=233)	Self Referral (n=882)	P
Prior CAD, %	73.1	72.5	74.0	0.503
Prior renal failure, %	11.5	17.6	11.0	0.020
Prior PVD,%	6.1	12.1	6.0	0.003
Prior CVA/TIA, %	7.1	12.4	7.9	0.036
Prior Atrial fib, %	7.4	11.2	5.0	0.003
Smoker, %	41.8	30.9	40.8	0.008
Dyslipidemia,%	74.3	78.5	76.9	0.310
Hypertension,%	63.6	72.5	65.6	0.050
Diabetes Mellitus,%	34.2	40.3	41.5	0.011

Prior CAD – prior MI, prior angina pectoris, prior PCI, prior CABG
PVD – peripheral vascular disease

PRESENTING SYMPTOMS

	MICU (n=687)	Regular Ambulance (n=233)	Self Referral (n=882)	P
Typical angina,%	88.5	89.3	92.0	0.062
Dyspnea,%	25.2	26.6	25.1	0.885
Arrhythmia,%	6.7	1.7	2.4	<0.001
Syncope,%	5.2	4.7	2.3	0.006
CHF,%	3.5	4.7	2.6	0.233
Aborted SCD,%	4.7	0.3	0	<0.001

LOCATION AT THE ONSET OF SYMPTOMS

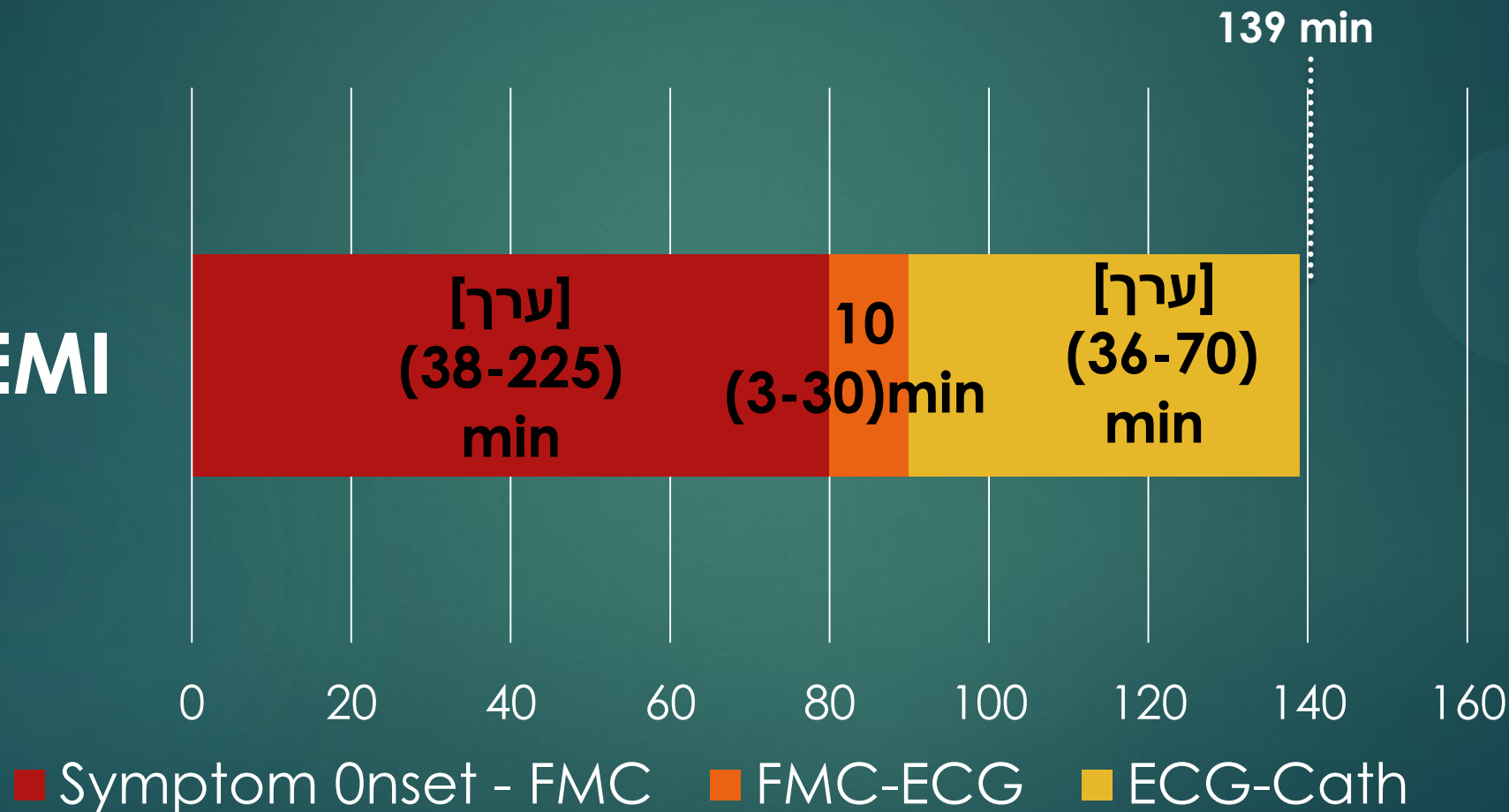


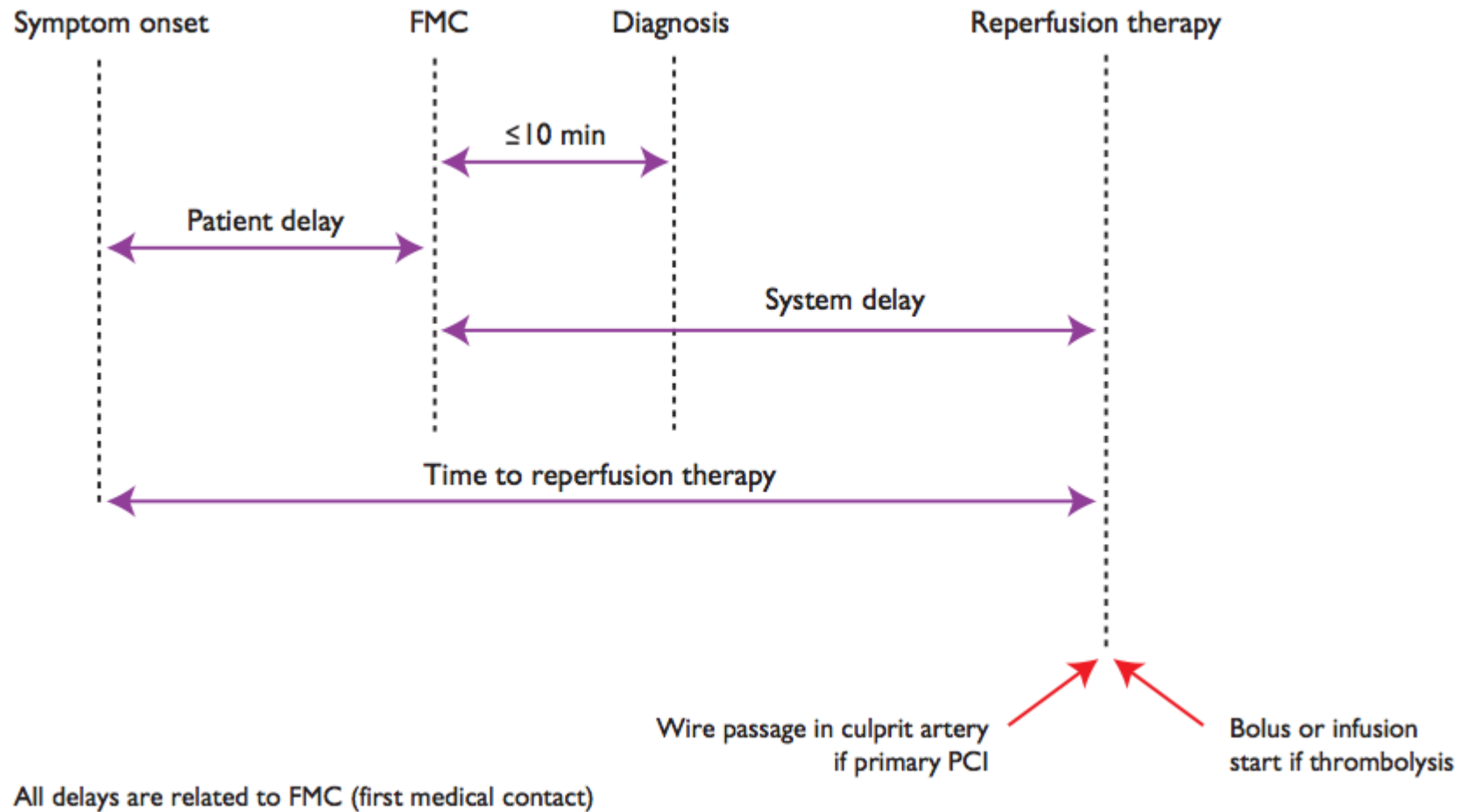
PREHOSPITAL TIME INTERVALS



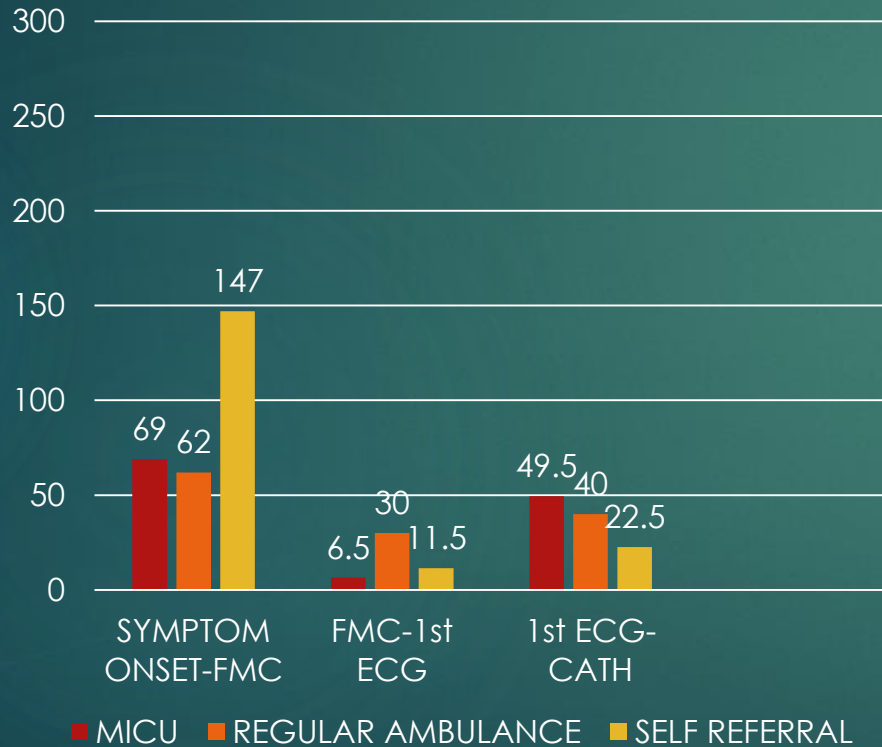
PREHOSPITAL TIME INTERVALS FOR STEMI - ACSIS 2013

STEMI

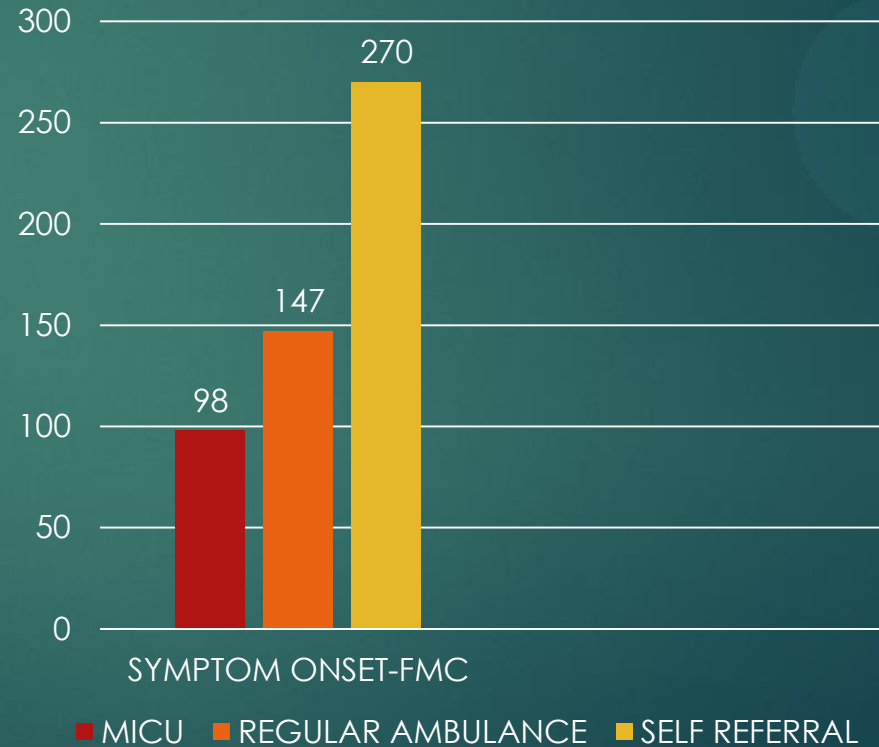




PREHOSPITAL TIME INTERVALS ACCORDING TO THE MODE OF TRANSPORTATION



STEMI (n=724)

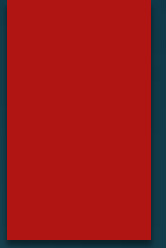


NSTEMI (n=805)

PREHOSPITAL ECG AND SELECTED ANTITHROMBOTIC MANAGEMENT

	All (n=1753)	STEMI (n=709)	NSTEMI (n=782)
ECG,%	56.1	65.6	49.6
Aspirin,%	34.9	52.7	23.9
Clopidogrel, %	1.4	2.2	0.9
Heparins,%	17.9	37.7	4.5

PREHOSPITAL PROCEDURES



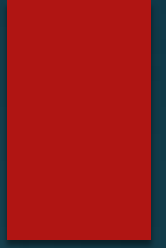
STEMI

NSTEMI

	MICU (n=667)	Regular Ambulance (n=225)	Self Referral (n=851)	P		MICU (n=230)	Regular Ambulance (n=112)	Self Referral (n=440)	P
ECG, %	94.2	53.8	26.6	<0.001	ECG, %	91.3	54.5	26.6	<0.001
CPR,%	7.3	0	0.1	<0.001	CPR,%	9.6	0	0.2	<0.001
AED,%	3.0	0	0	<0.001	AED,%	3.1	0	0	<0.001
DC-shock,%	6.5	0	0	<0.001	DC-shock,%	6.5	0	0	<0.001
External pacing, %	0	0	0	NS	External pacing, %	0.9	0	0	11
Intubati on/ventil ation, %	6.6	0	0	<0.001	Intubati on/ventil ation, %	11.8	0	0	<0.001

CPR – cardiopulmonary resuscitation;
AED – automatic external defibrillator;
DC -- direct current shock

EMERGENCY ROOM PHARMACOLOGIC MANAGEMENT



STEMI

NSTEMI

	MICU (n=411)	Regular Ambulan ce (n=81)	Self Referral (n=232)	P		MICU (n=234)	Regular Ambulan ce (n=114)	Self Referral (n=457)	P
Aspirin, %	10.0	51.9	84.9	<0.001	Aspirin, %	32.9	43.9	62.6	<0.001
Clopidogr el, %	8.0	22.2	24.6	<0.001	Clopidogr el, %	29.1	31.6	28.2	0.779
Prasugrel, %	11.4	18.5	32.8	<0.001	Prasugrel, %	5.6	0.9	3.3	0.076
Ticagrelor, %	1.0	3.7	3.4	0.059	Ticagrelor, %	3.0	0.9	4.8	0.109
Heparins, %	16.7	50.6	71.9	0.001	Heparins, %	44.4	38.5	46.6	0.049
Beta- blockers,%	1.2	2.5	2.2	0.558	Beta- blockers,%	9.4	11.4	8.5	0.632
Narcotic analgesics ,%	6.1	19.8	21.1	<0.001	Narcotic analgesics ,%	6.8	3.5	3.1	0.060
Nitrates,%	3.6	21.0	13.8	<0.001	Nitrates,%	9.8	6.1	9.6	0.475
Diuretics,%	1.7	2.5	2.2	0.861	Diuretics,%	9.4	9.6	5.9	0.160

CONCLUSIONS

- ▶ DESPITE GUIDELINE RECOMMENDATIONS, ONLY 56.8% OF STEMI PATIENTS AND LESS THAN 30% OF NSTEMI ARE TRANSPORTED BY MICU IN ISRAEL IN 2013.
- ▶ TIME FROM SYMPTOM ONSET TO FIRST MEDICAL CONTACT IS STILL HIGH AND SHOULD BE IMPROVED.
- ▶ THE GUIDELINE GOAL OF ECG PERFORMANCE IN THE LESS THAN 10 MINUTES AFTER FMC - IS ACHIEVED IN ISRAEL REAL LIFE SURVEY.
- ▶ ONLY SLIGHTLY ABOVE THE HALF OF ACUTE MYOCARDIAL INFARCTION PATIENTS HAVE AN ECG TAKEN DURING PRE-HOSPITAL CARE.
- ▶ ONLY ABOUT THIRD OF ACUTE MYOCARDIAL INFARCTION PATIENTS ARE RECEIVING INTENSIVE ANTITHROMBOTIC REGIMEN ON PREHOSPITAL STAGE OF CARE.

CONCLUSIONS

- ▶ THERE IS A SIGNIFICANT ROOM FOR IMPROVEMENT, MAINLY BY PUBLIC AND PROFESSIONAL EDUCATION AND DEVELOPMENT OF ADVANCED TECHNOLOGIES FOR ECG TRIAGE AT EACH POTENTIAL PATIENT LEVEL.