



STEMI Management in Belgium

Belgian STEMI registry
2007-2011

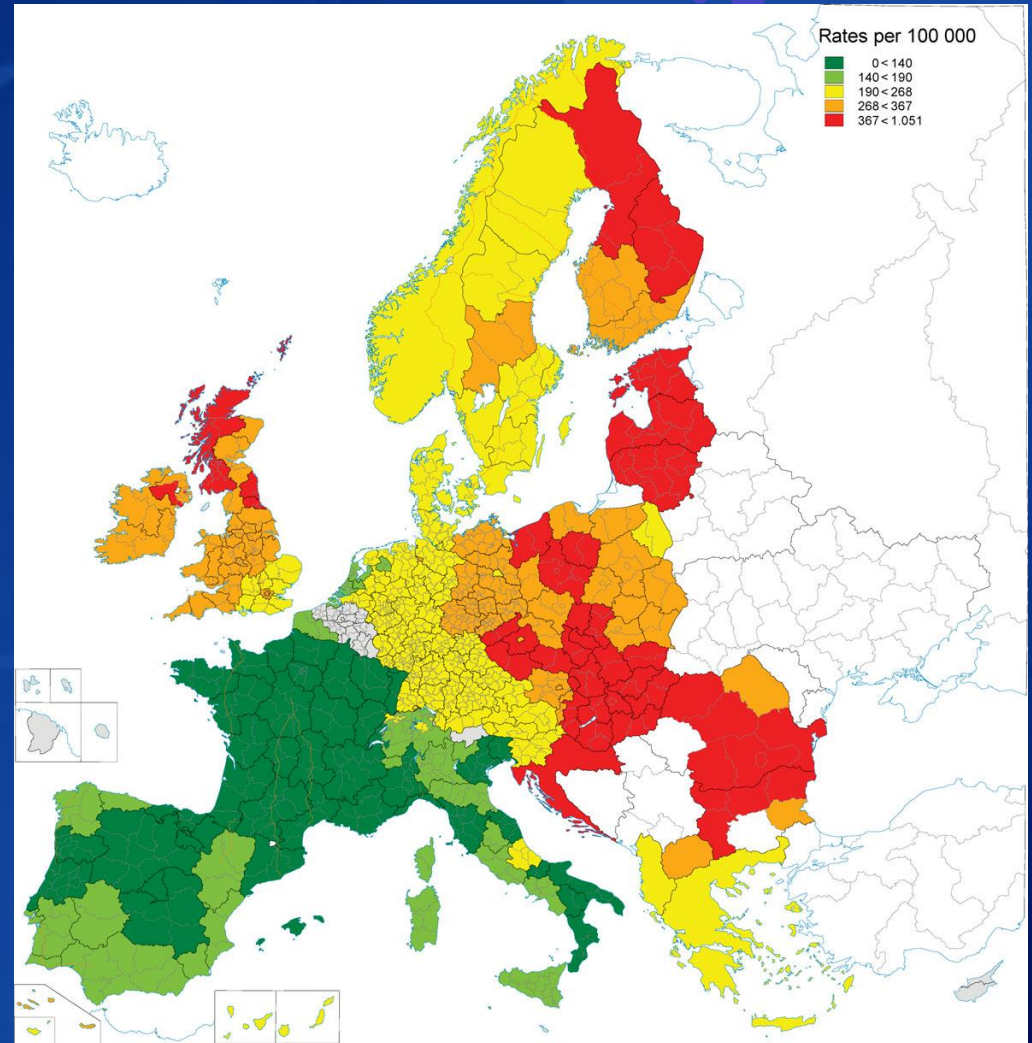
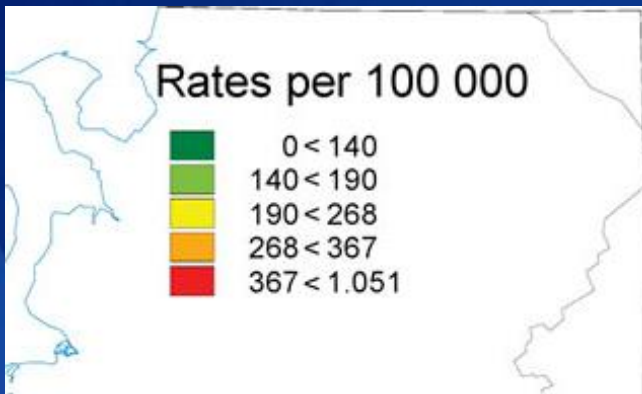


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University Hospital
Antwerp

Belgian Working Group of Acute cardiology

Age-standardized mortality from ischaemic heart disease in European regions

(men; 45–74 years;
year 2000)



Minimal Data Base

Patient characteristics
(TIMI risk score)

Reperfusion strategy

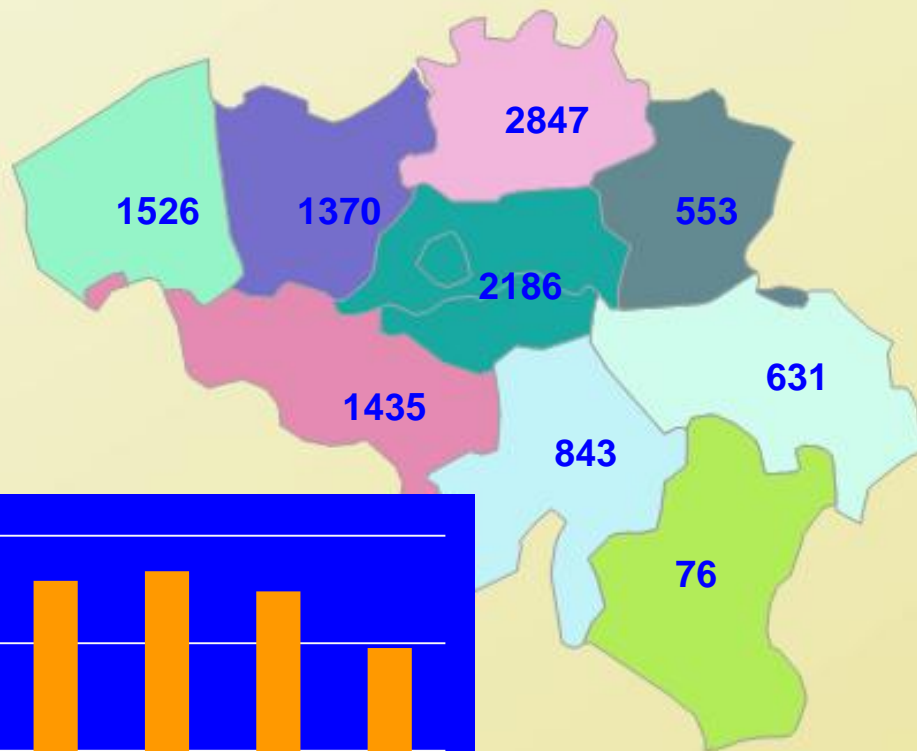
In Hospital Outcome

Electronic CRF

ST-Verheffing hartinfarct registratie	Crf nummer: Naam van de verantwoordelijke geneesheer:
Naam ziekenhuis:	

Patiëntenkarakteristieken bij opname	
Opnamedatum: (dd/mm/yyyy)	
De patiënt heeft zijn toestemming aan de gegevens behandeling gegeven:	Ja Nee
Geboortedatum:	Leeftijd:
Patiënt postcode:	Patiënt initialen:
Geslacht: Man Vrouw	Gewicht: <67 kg >=67 kg
Cardiovasculaire voorgeschiedenis:	
- Ischemisch hartlijden	Ja Nee
- Perifeer vaatlijden	Ja Nee
- Arteriele hypertensie	Ja Nee
- Diabetes mellitus	Ja Nee
Killip Klasse: 1 (geen hartfalen) - 2 - 3 - 4 (shock)	
Cardio-pulmonale reanimatie:	Ja Nee
Bloeddruk: <100 mmHg >=100 mmHg	
Hartritme: <100 hartslagen/minuut >=100 hartslagen/minuut	
ECG: anterior - non-anterior - linkerbundeltakblok	
Reperfusiebehandeling binnen de eerste 24 uur	
Totale ischemietijd: <4u / 4-8u / 8-12u / 12-24u (tijd vanaf begin klachten tot behandeling)	
"Door-to-balloon/needle" tijd: <30min / 30-60 min / 60-90 min / 90-120 min / >120min (tijd vanaf eerste medische contact tot begin reperfusiebehandeling)	
Reperfusiebehandeling:	
Trombolyse	Primaire PCI
Rescue PCI	Gefaciliteerde PCI
Geen reperfusiebehandeling	
Reden:	
Prehospital trombolyse:	Ja Nee
Transport naar PCI centrum:	Ja Nee
Klinisch Verloop tijdens hospitalisatie	
Electieve (>24u na opname) coronarografie: Ja Nee	
In-hospitaal mortaliteit: Ja Nee	
Indien JA, datum: (dd/mm/yyyy)	
Mortaliteit aan 30 dagen: Ja Nee	
TIMI Risk score :	

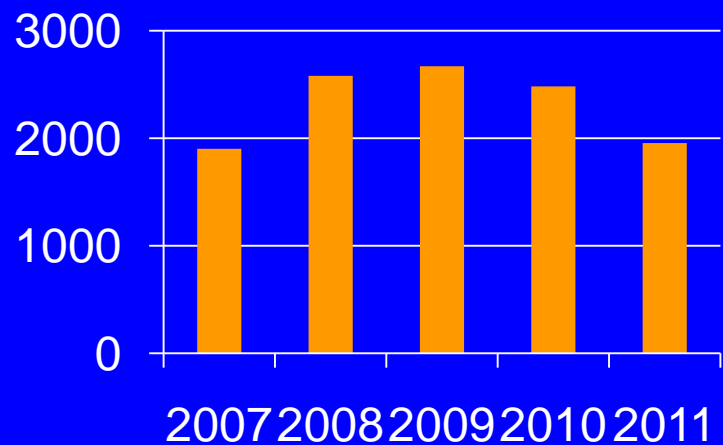
Enrolment STEMI patients 1/1/2007 – 31/12/2011



n= 11468

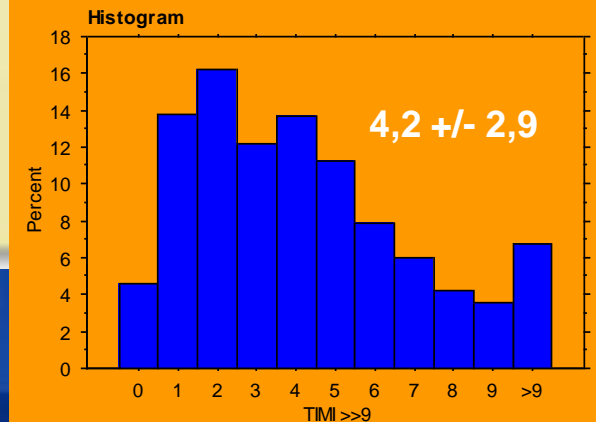
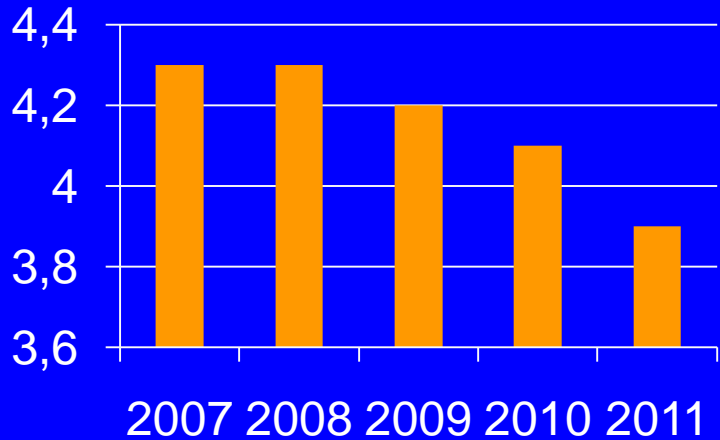
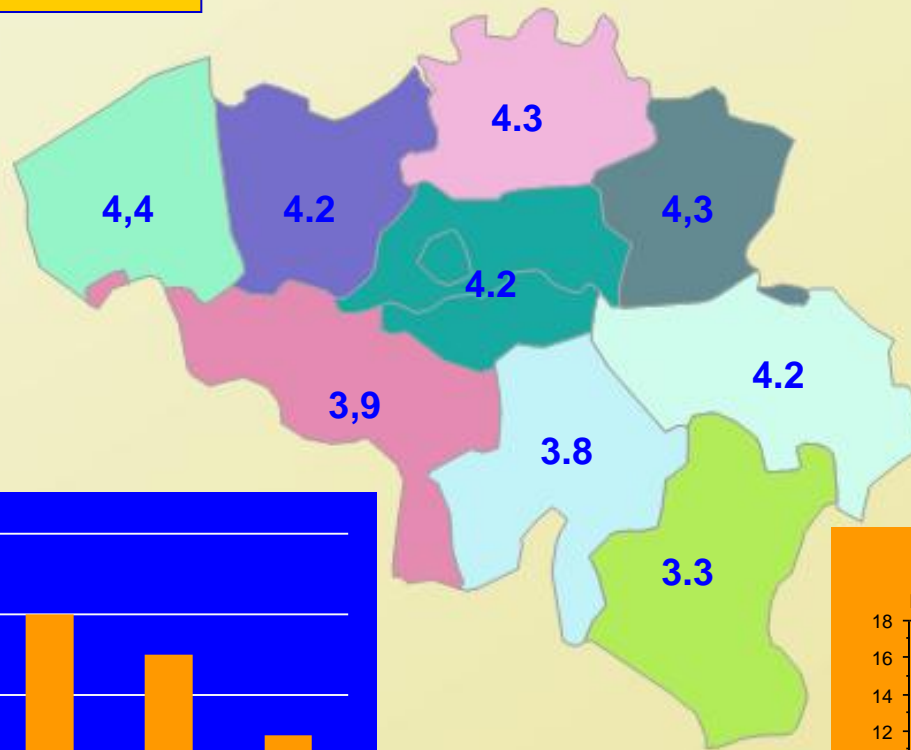
110 hospitals

**75 hospitals with
>10 pts/y**



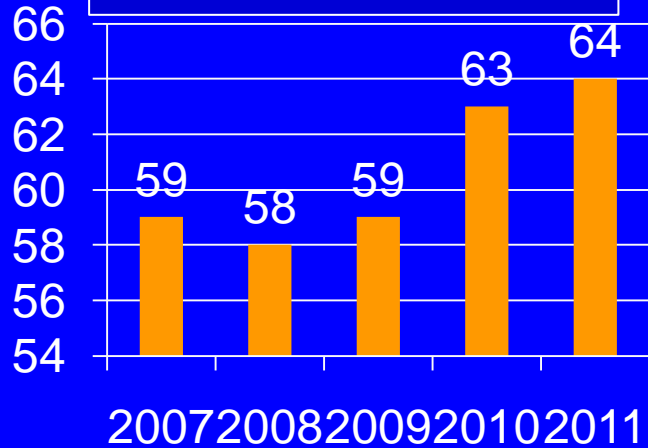
Regional data on baseline characteristics

TIMI risk score

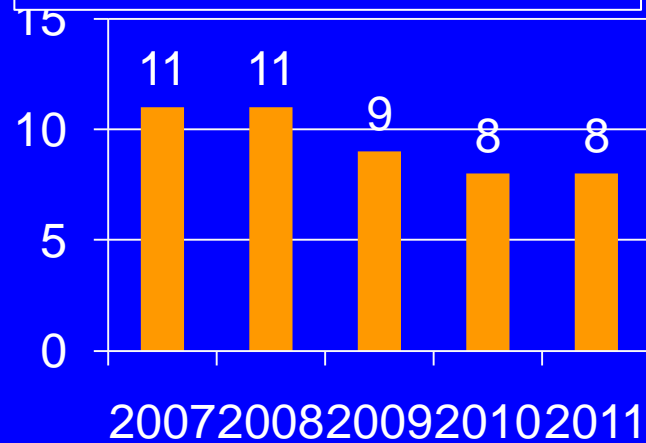


Time Evolution TIMI risk factors

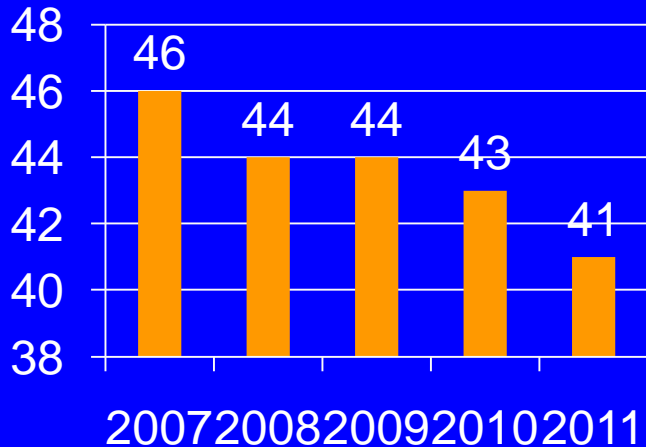
Tot ischemic time < 4h



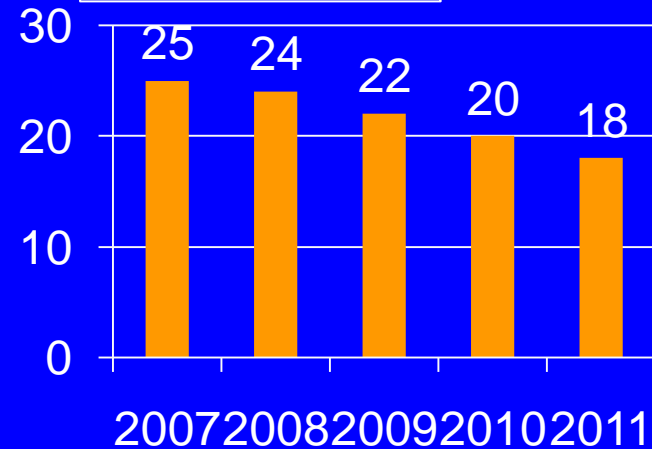
Peripheral Artery Disease



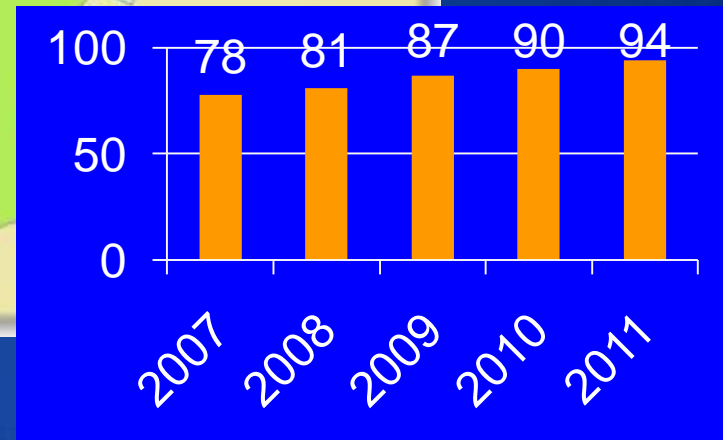
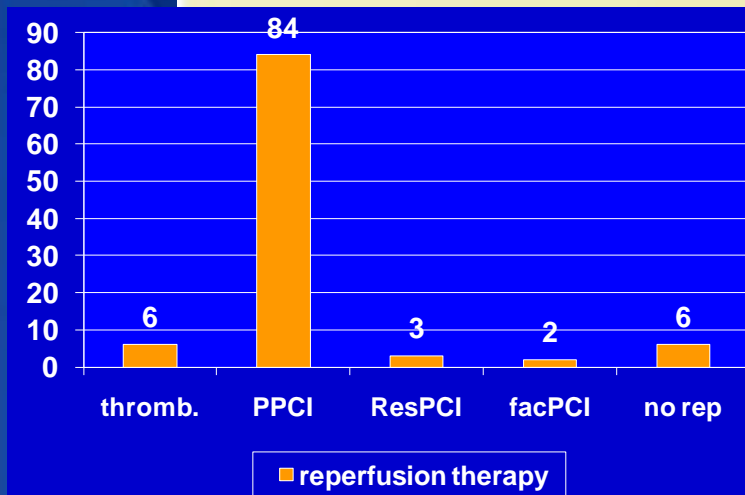
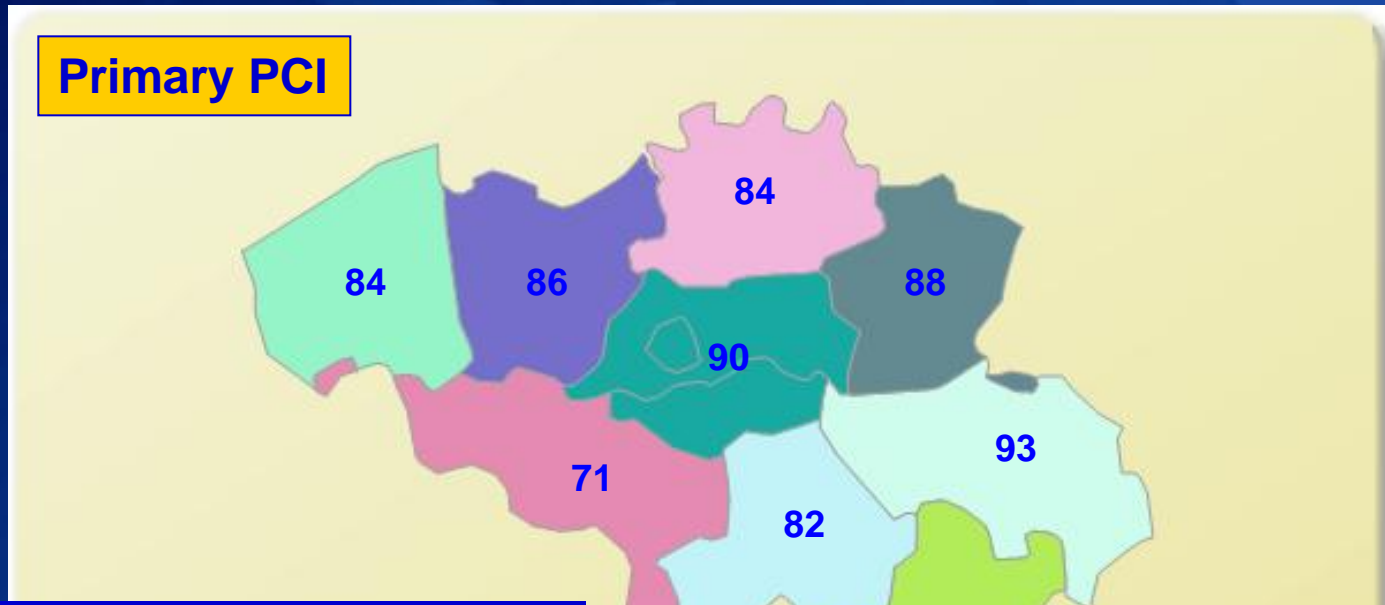
Arterial Hypertension



Killip class > 1

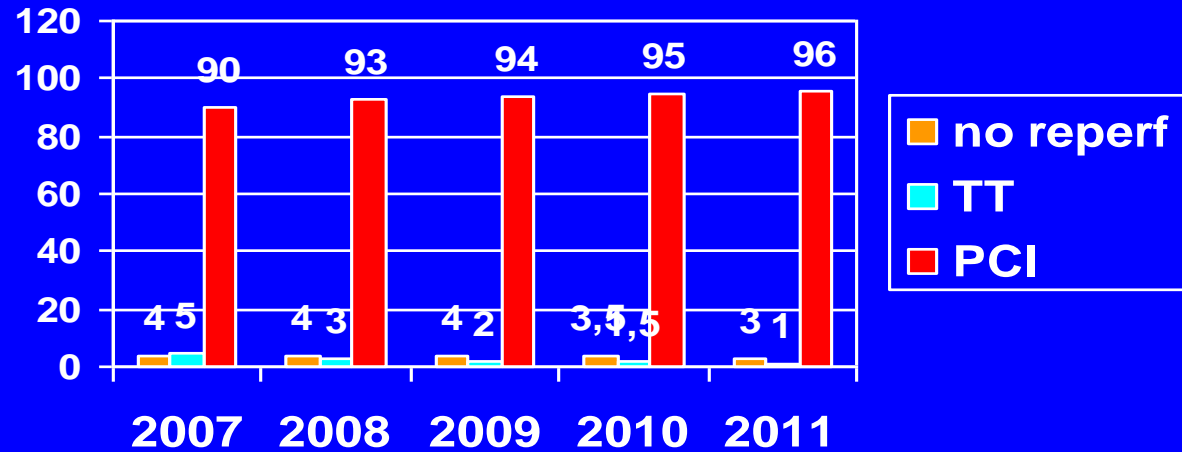


Regional data on Reperfusion therapy

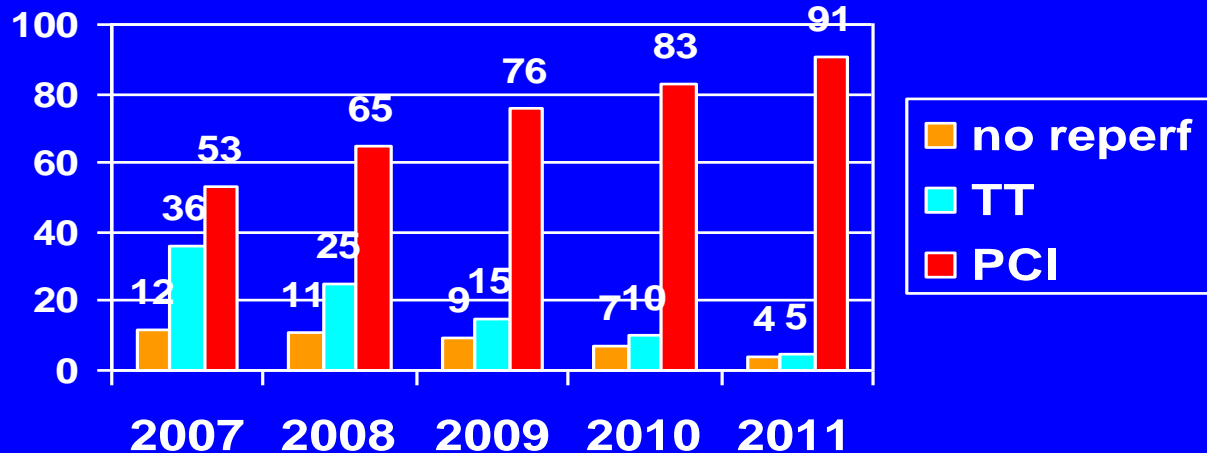


Evolution reperfusion therapy

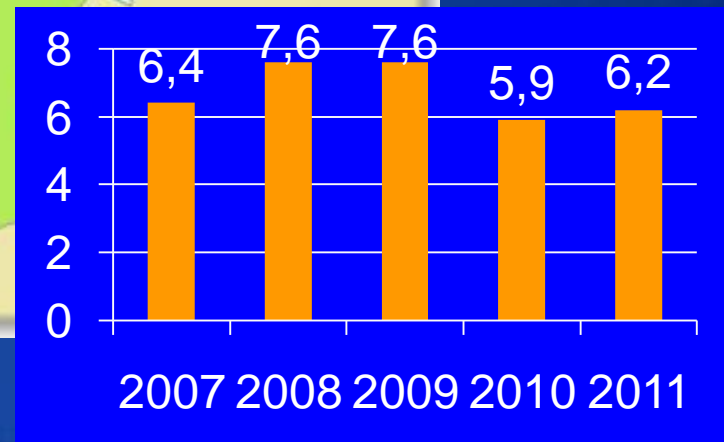
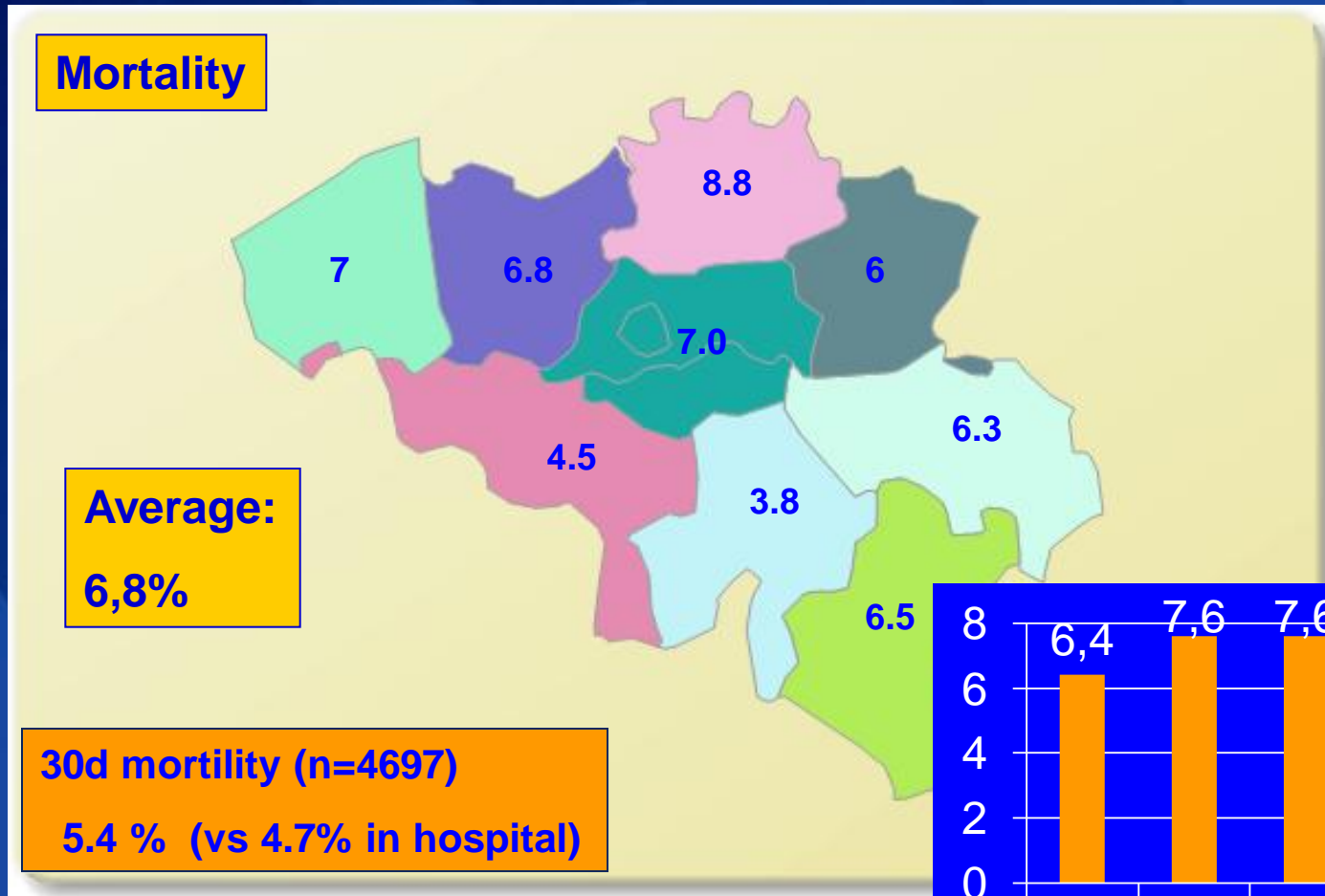
PCI center



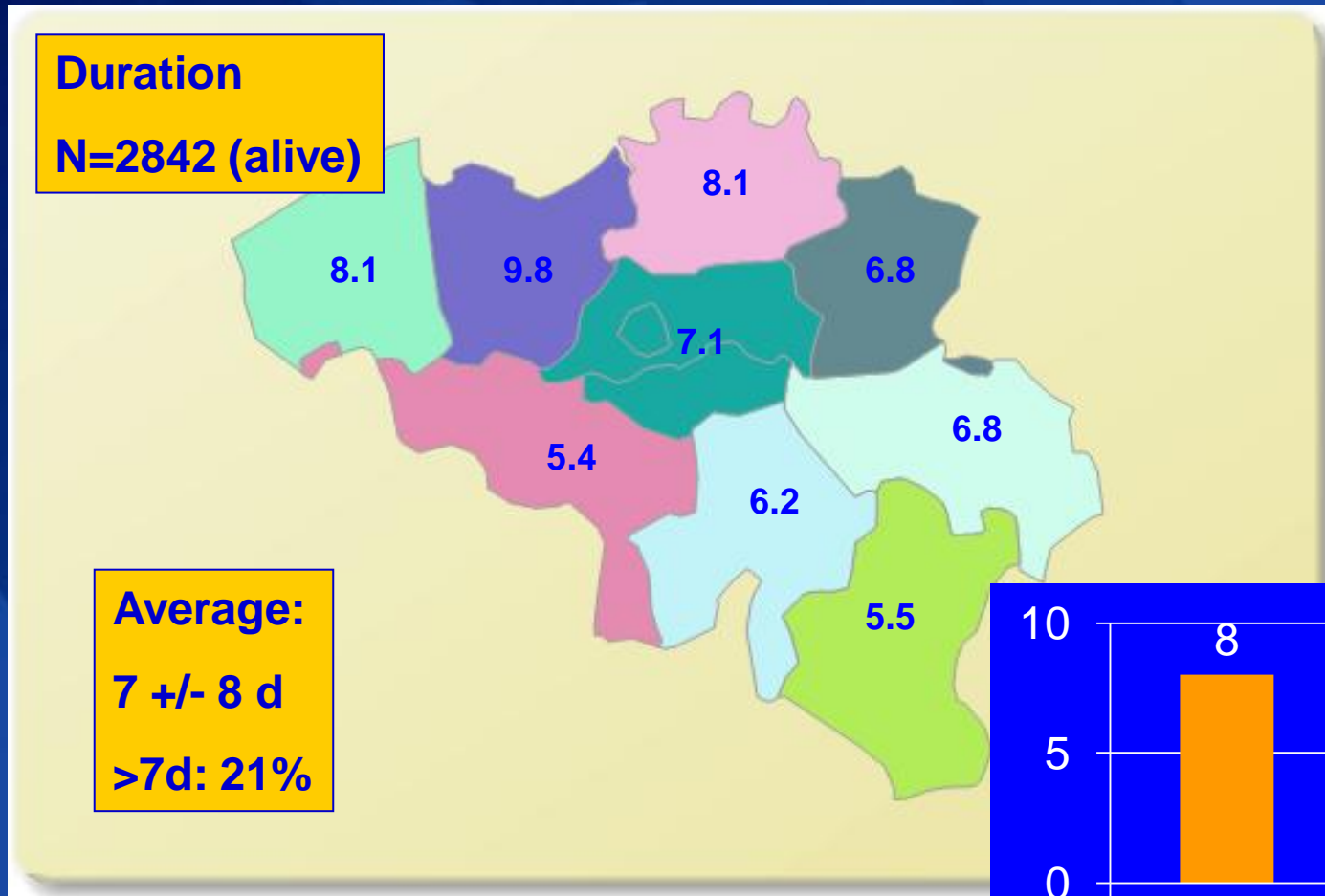
No-PCI center



Regional data on in hospital mortality

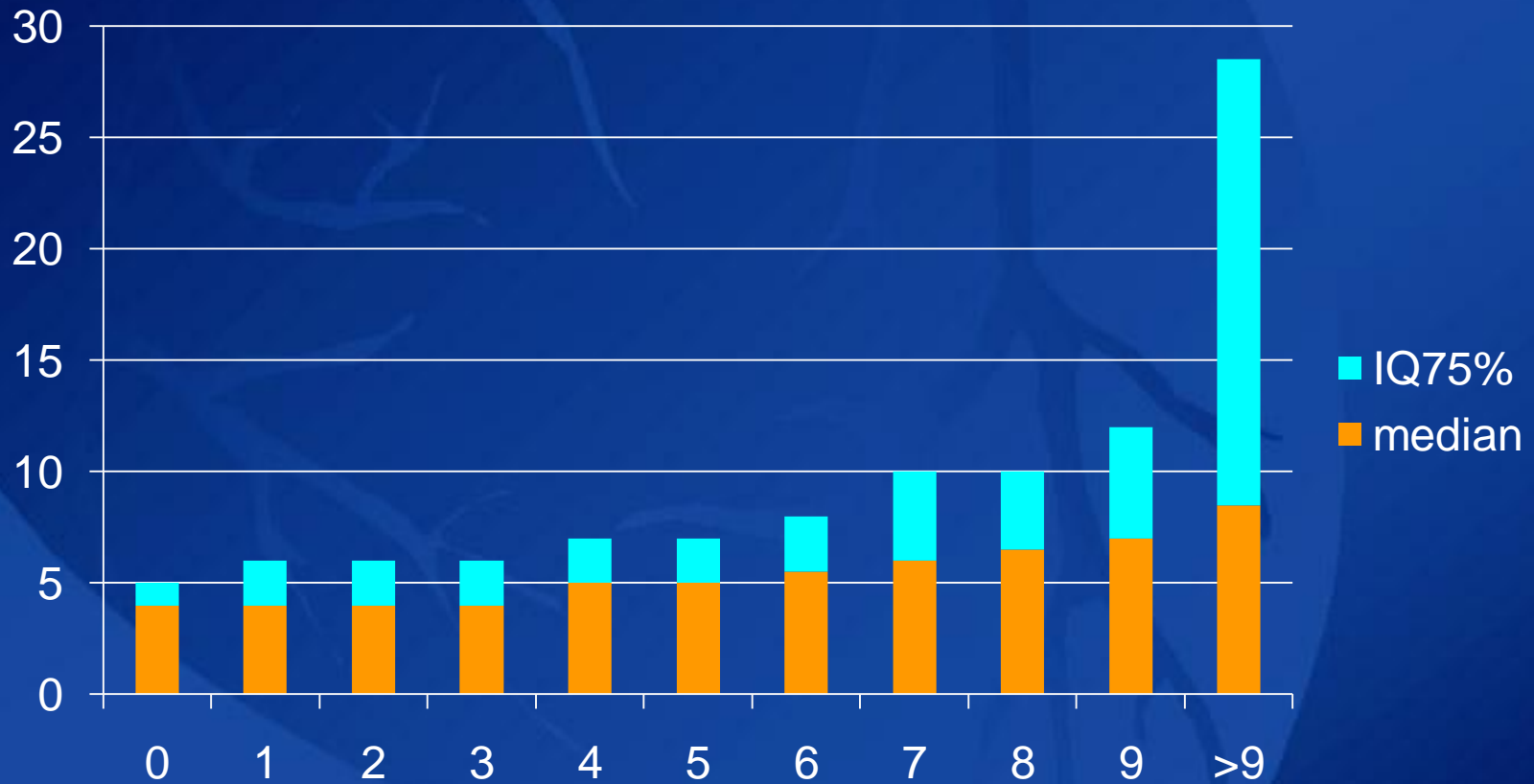


Regional data on duration of hospital stay



Hospital duration and TIMI risk score

N=2638 living patients (without CPR)



Risk factors for long hospital stay: age, female, PAD, Killip>1, no reperfusion, PCI center

Global Analysis: mortality data



- Mortality versus reperfusion strategy
- Mortality versus door to balloon/needle time
- Mortality versus cardiac care program
- Mortality and gender/age
- Mortality: independent predictors

Mortality versus Reperfusion strategy

N= 11467

Trombolysis
N=665

Rescue PCI
N=299

PCI
N= 9617

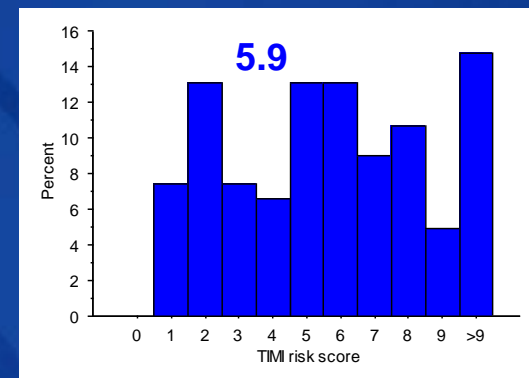
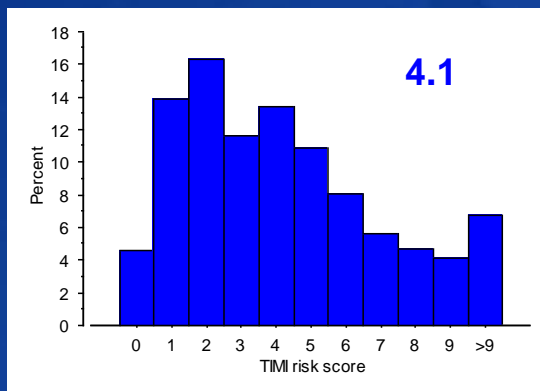
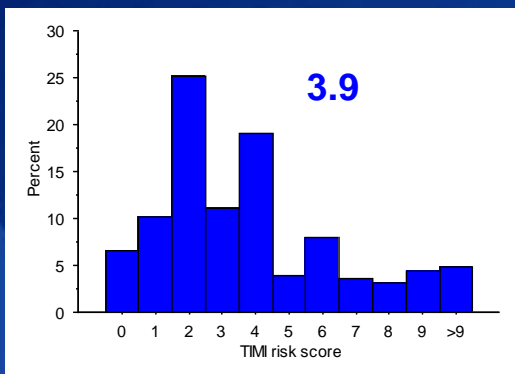
Facilitated PCI
N=250

No Reperfus.
636

N = 954 (8%)*

N=9867(86%)

N= 636 (6%)



MORTALITY

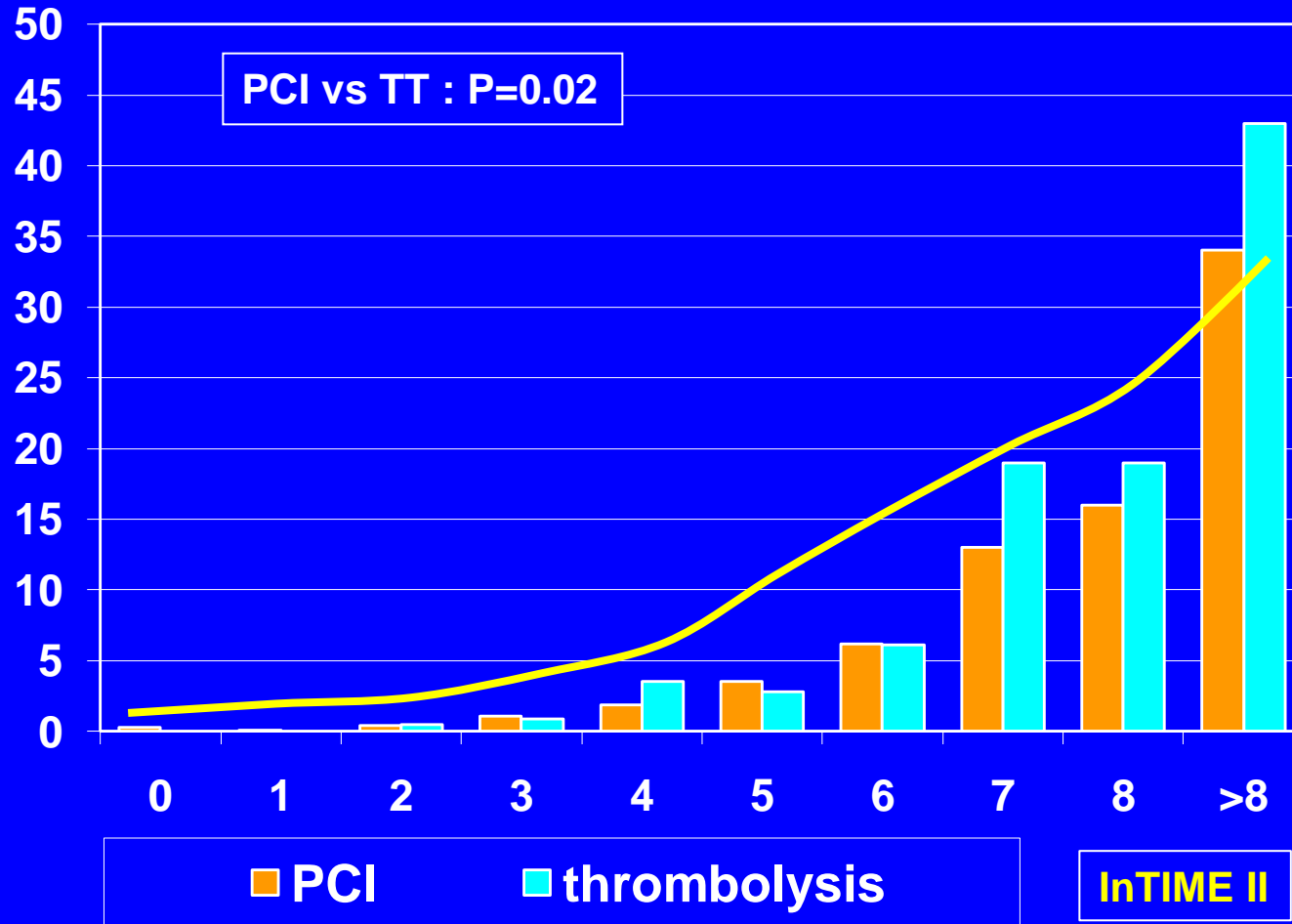
6,7%

6.0 %

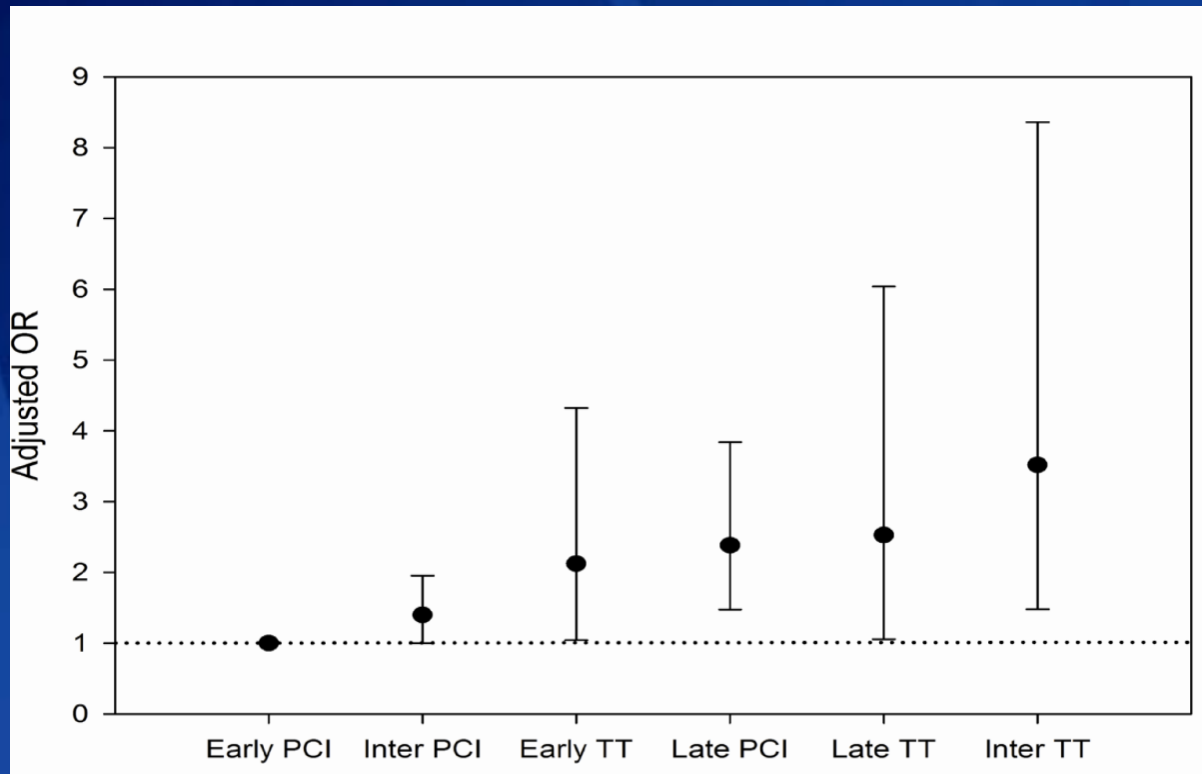
19%

*Elective Invasive evaluation:502+299=801(84%)

Mortality benefit PCI over TT is dependent on baseline risk profile



Mortality versus door to balloon/needle time



Early PCI: < 60 min

Interm PCI: 60-120

Late PCI: > 120 min

Early TT: <30 min

Interm T: 30-60 min

Late T: > 60 min

Mortality versus Acute cardiac care program

PCI centre
N=7024(60%)

trombolysis: 2%

Rescue PCI: 1%

Prim -facilat PCI: 93%

No reperfusion: 4 %

No-PCI centre
N=4443 (40%)

trombolysis: 15%

Rescue PCI: 5%

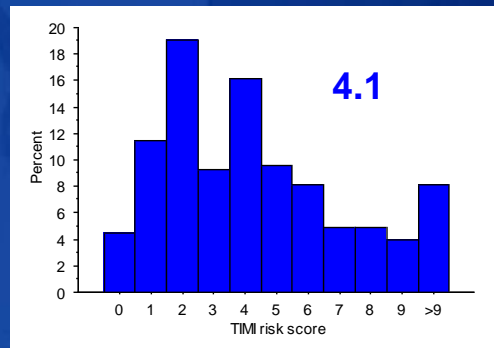
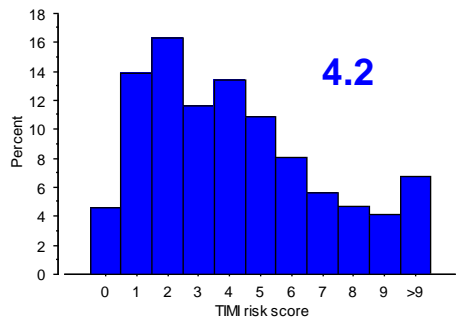
Prim -facilat PCI:75%

No reperfusion: 8 %

MORTALITY

6.7%

6.9%



Mortality versus gender

	Men N=8594	Female N=2873(25%)
age	61	68 *
DM	14%	19% *
Time to T<4h	63 %	53% *
shock	7%	11 % *
PCI/throm/no	87/9/5	83/8/9 *
Mortality	6%	11 % *

* p<0.0001

Independent predictors of mortality

	P value	OR (95%CI)
Killip > 1	<.0001	5 (4 - 7)
CPR	<.0001	5 (4-6)
age	<.0001	1.04 (1.03-1.05)
PCI vs TT	0.01	1.5 (1.1 – 2.7)
No reperf	<0,0001	2,3 (1,7-3,1)
Ischemia>4h	0.0001	1.5 (1.3-2.0)
PAD	<0.0001	1,8 (1.4-2.4)
Female	0.04	1.3 (1. 1-2.0)
Anterior infarct	0.001	1.4 (1.1-1.6)

Conclusions



- The Belgian STEMI registry is the first prospective registry enrolling patients from both PCI and no-PCI centres.
- The overall in hospital mortality is 6.9 % and compares well with current European ACS surveys.
- In the setting of STEMI networking with low threshold for invasive evaluation , the mortality of STEMI in PCI and no-PCI centers is identical.
- Participation to the STEMI registry increases adherence to guidelines as was evidenced by a significant gradual increase in primary PCI particularly in non-PCI centers.

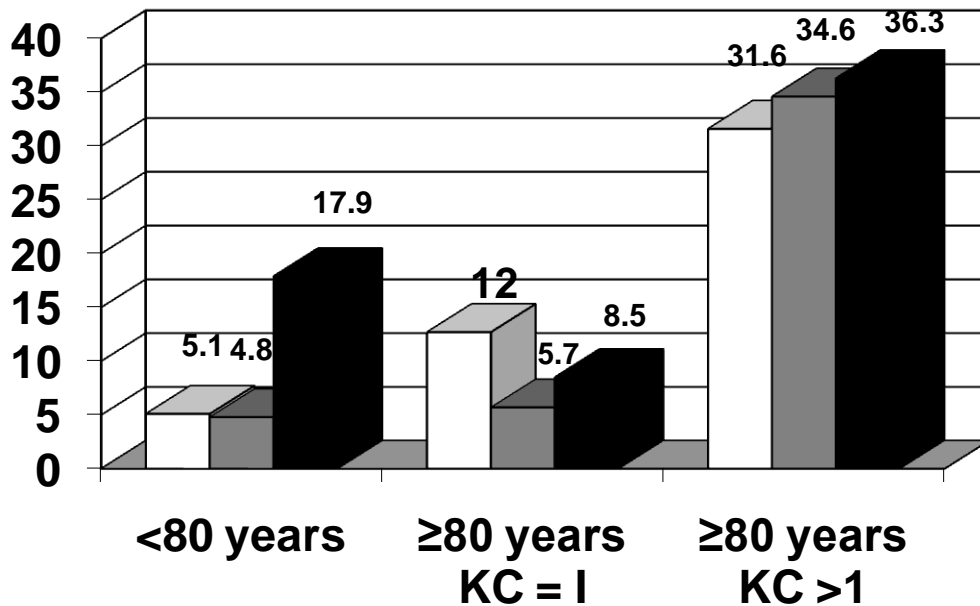
Steering committee of STEMI database

- Prof dr P Sinnaeve, UZ Leuven
- Prof dr P Evrard , UCL Mont-Godinne
- Dr C Convens, ZNA Antwerpen
- Dr P Dubois, CHU Charleroi
- Dr J Boland, CHR Citadelle Liège
- Dr P Vranckx, Virga Jesse Hasselt
- Dr S Gevaert, UZ Gent
- Dr A de Meester, Hôpital Jolimont
- Dr P Coussement , AZ Brugge
- Dr De Raedt, OLV Ziekenhuis Aalst
- Prof C Beauloye, UCL Louvain
- Prof M Renard, ULB Brussels

Conclusions

- Mortality benefit of PPCI over thrombolysis (6.0 versus 6.7) is smaller than in previously reported randomised clinical trials. This is related, at least partly, to the selective use of thrombolytic therapy mainly in low risk patients and to better outcome of thrombolytic therapy (related the high rate of subsequent invasive evaluation in Belgium.)
- In the setting of STEMI networking with low threshold for invasive evaluation , the mortality of STEMI in PCI and no-PCI centers is identical.
- Participation to the STEMI registry increases adherence to guidelines as was evidenced by a significant gradual increase in primary PCI particularly in non-PCI centers.

STEMI in octogenarians (12%)



□ in-hosp mort TL (%) ▒ in-hosp mort PCI (%) ■ in-hosp mort no-reperfusion (%)

Killip class >1 :
40% vs 20%

Shock: 12% vs 7%

Ischemic time >4h
53% vs 38%

PCI : 76% vs 84

Conservative
14% vs 5%

AUDIT STEMI REGISTRY:2007-2010



Centre	Source doc.	Correct item
2007-2008 (16)	2468/3255= 76%	2356/2468=95%
2008-2009 (15)	2541/2877= 88%	2460/2541=97%
2009-2010 (14)	2445/2793= 88%	2349/2445=96%
2007-2010 (45)	7454/8925= 84%	7165/7454=96%

TIMI risk score (automatically calculated)

