STEMI Management in Belgium

Results of Belgian STEMI registry

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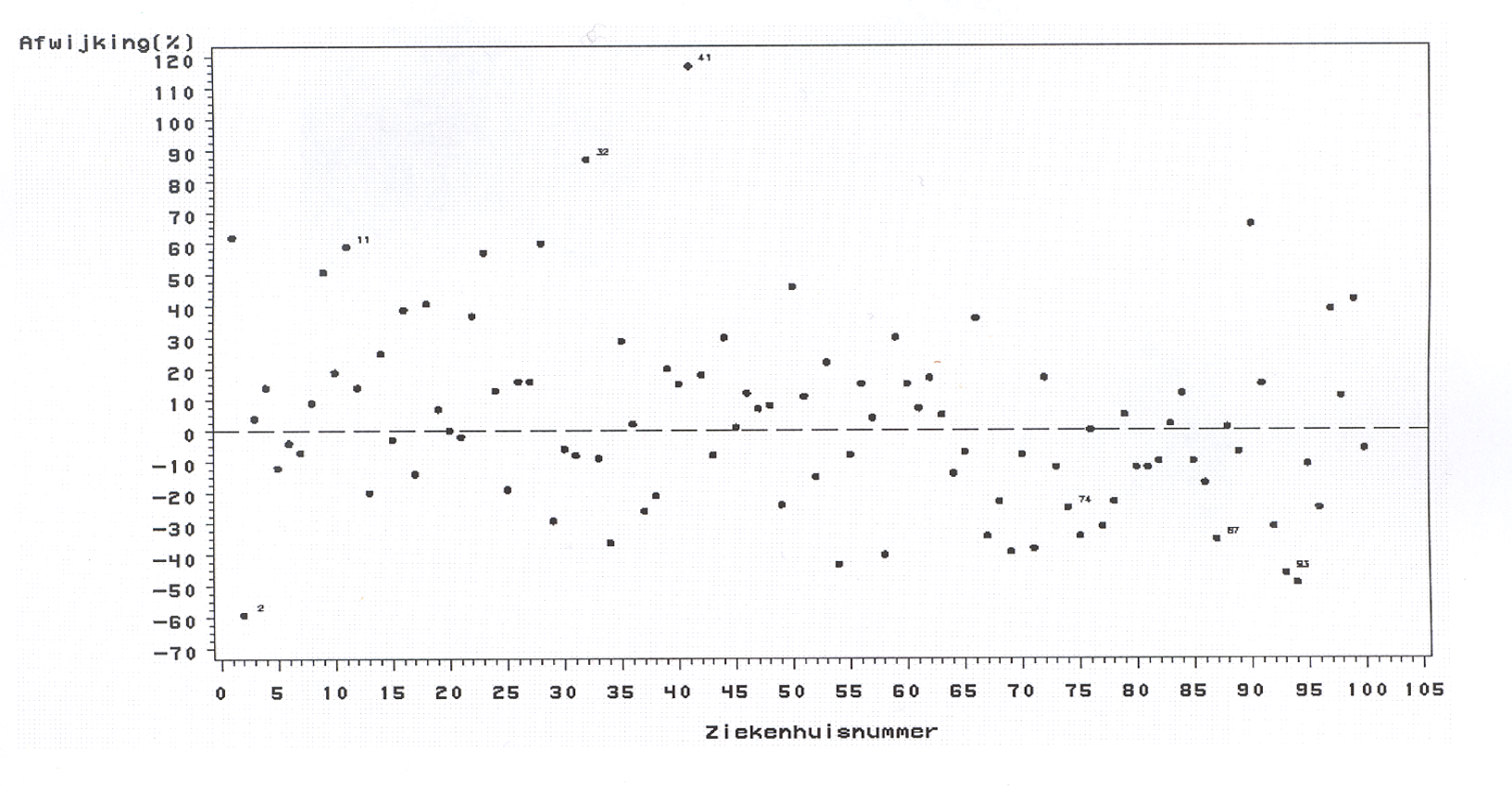
Lethality of AMI 2000-2003: MKG data



N= 44782 AMI in hospital lethality: 15.9%

From dr W Aelvoet, RIZIV/ENAMI

STEMI registry in Belgium: AIM

- Prospective registry of all ST elevation myocardial infarctions admitted in Belgian hospitals (critical care program A)
- Evaluation of predictors of in hospital mortality for STEMI in Belgium
- Quality assessment of critical care by means of on-line benchmark reports.

Minimal Data Base

Patient characteristics (TIMI risk score)

Reperfusion strategy

In Hospital Outcome

Electronic CRF

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

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

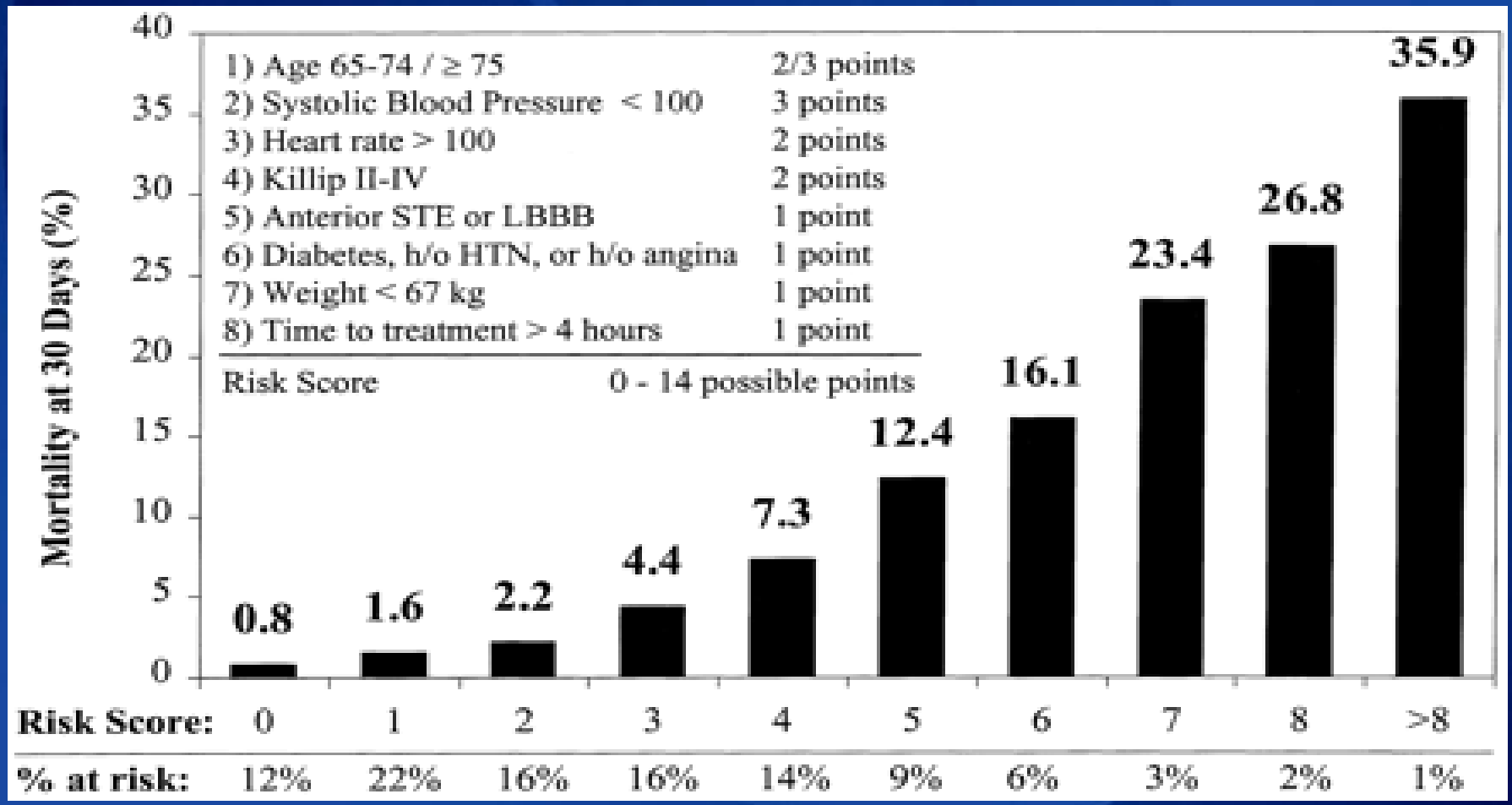
Totale ischemietijd: <4u / 4-8u / 8-12u / 12-24u
(tijd vanaf begin klachten tot behandeling)
"Door-to-balloon/needle" tijd: <30min / 30-60 min / 60-90 min / 90-120 min / >120min
(tijd vanaf eerste medische contact tot begin reperfusiebehandeling)
Reperfusiebehandeling:
Trombolyse Primaire PCI
Rescue PCI Gefaciliteerde PCI
Geen reperfusiebehandeling
Reden:
Prehospitale 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

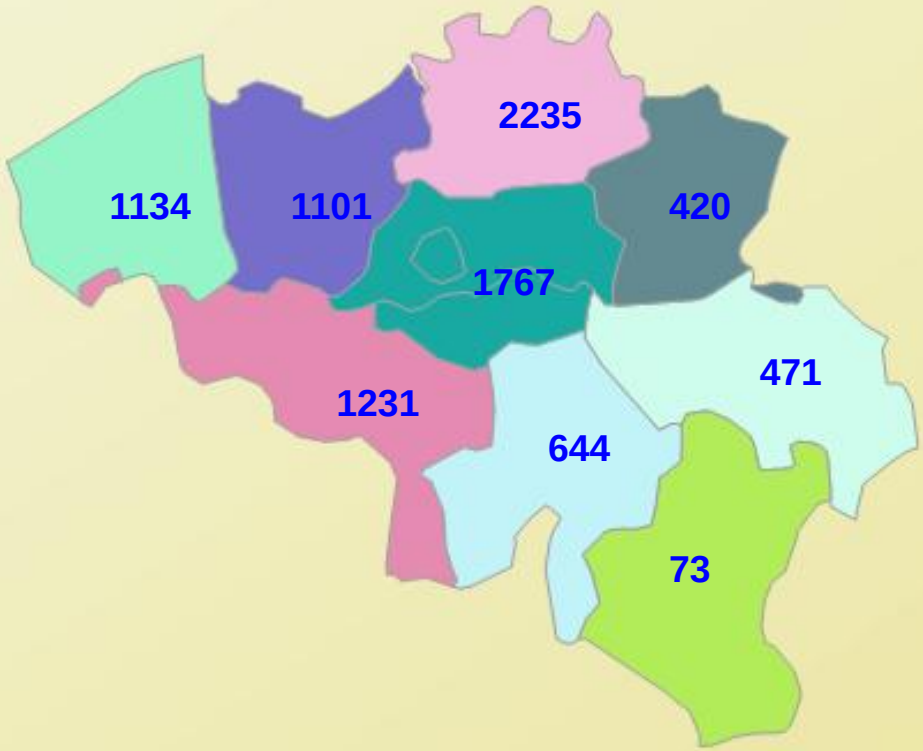
TIMI Risk score :

TIMI risk score (automatically calculated)



Circulation: 2000;102:2031

Enrolment STEMI patients 1/1/2007 – 31/12/2010

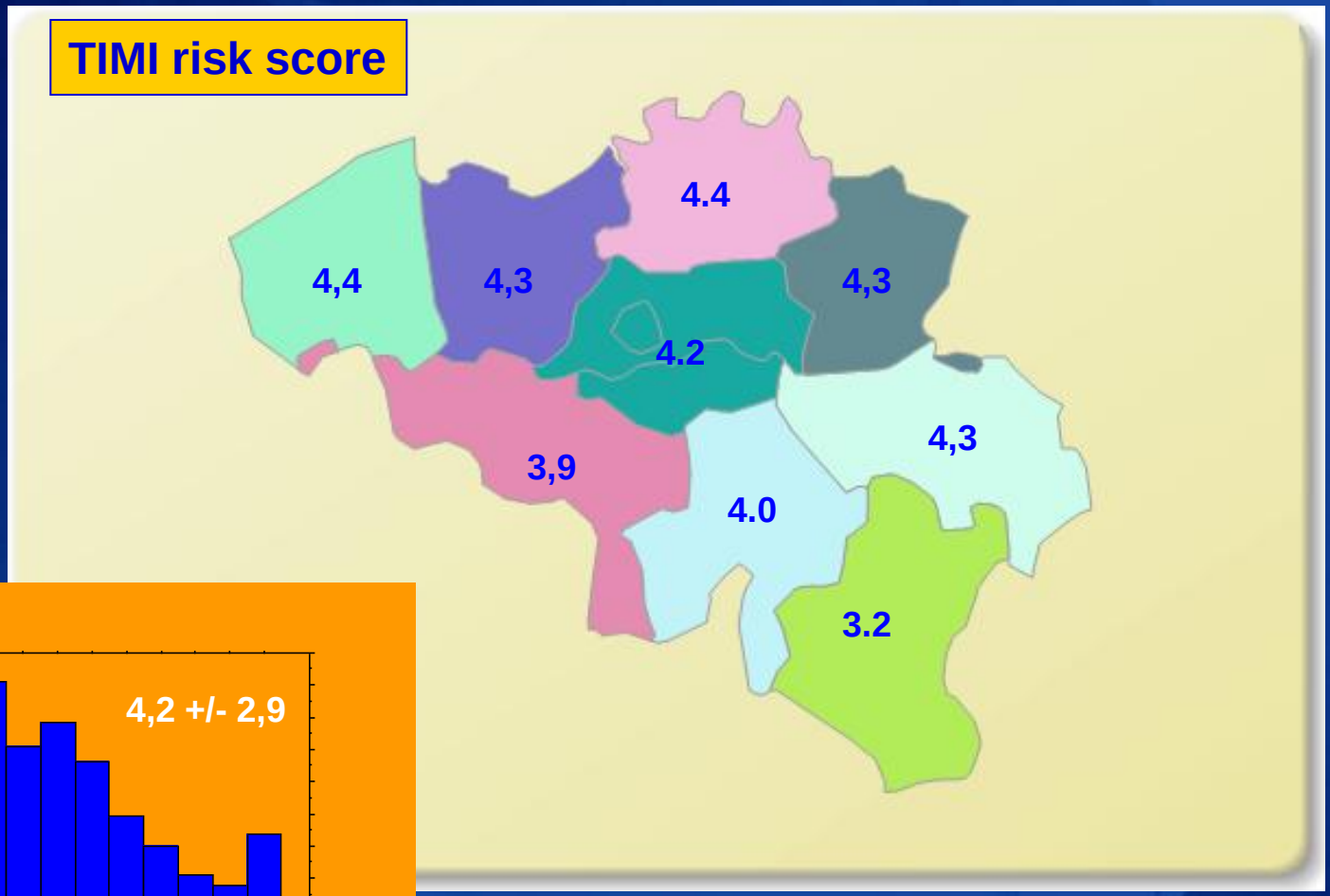


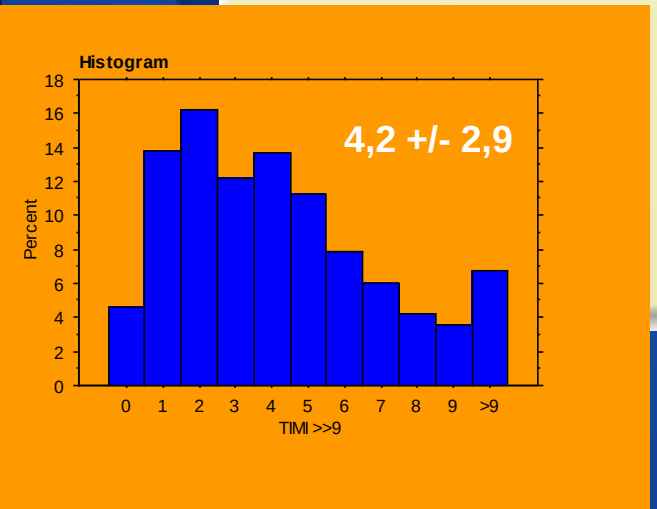
n= 9067

110 hospitals

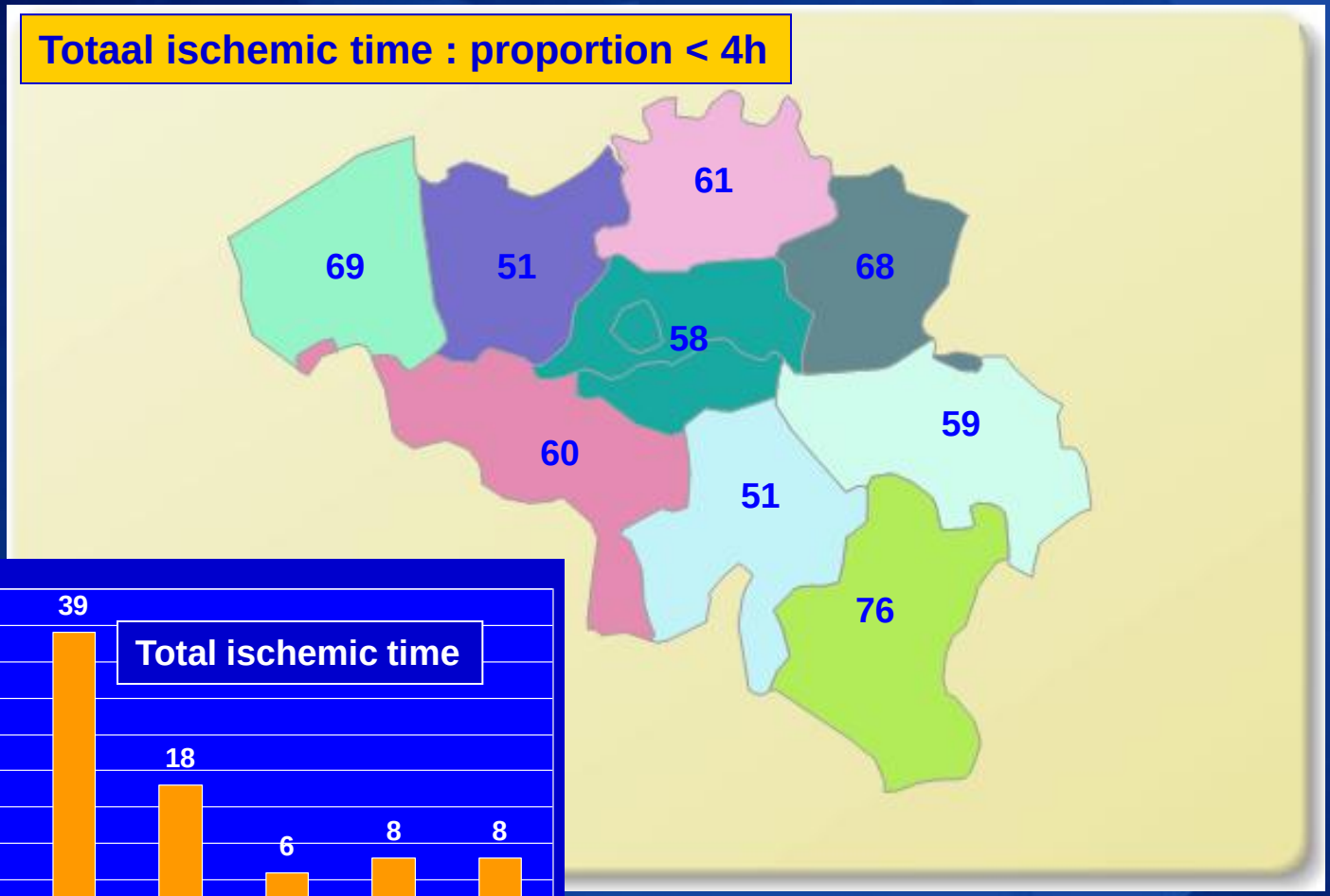
75 hospitals with >10 pts

Regional data on baseline characteristics

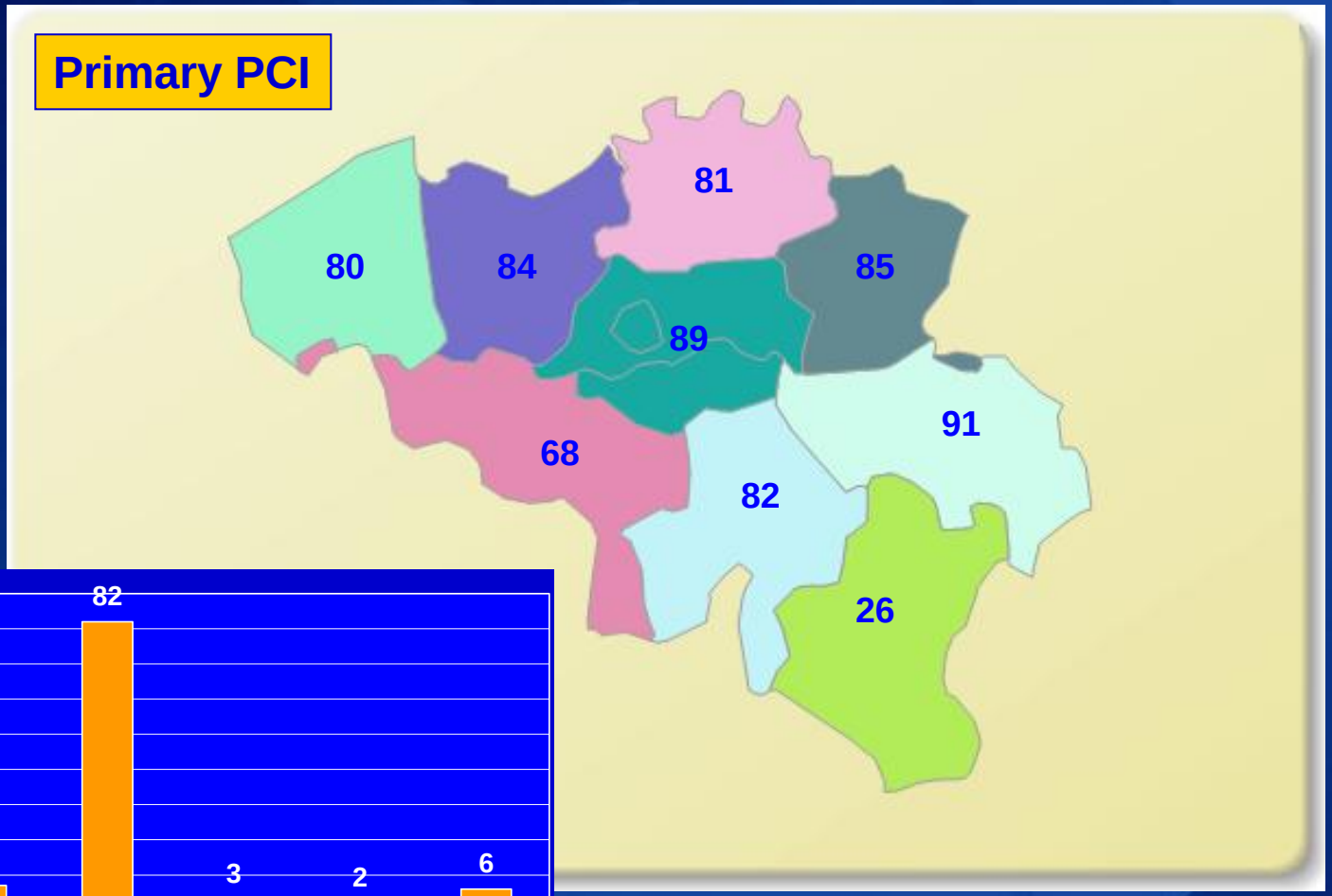




Regional data on baseline characteristics

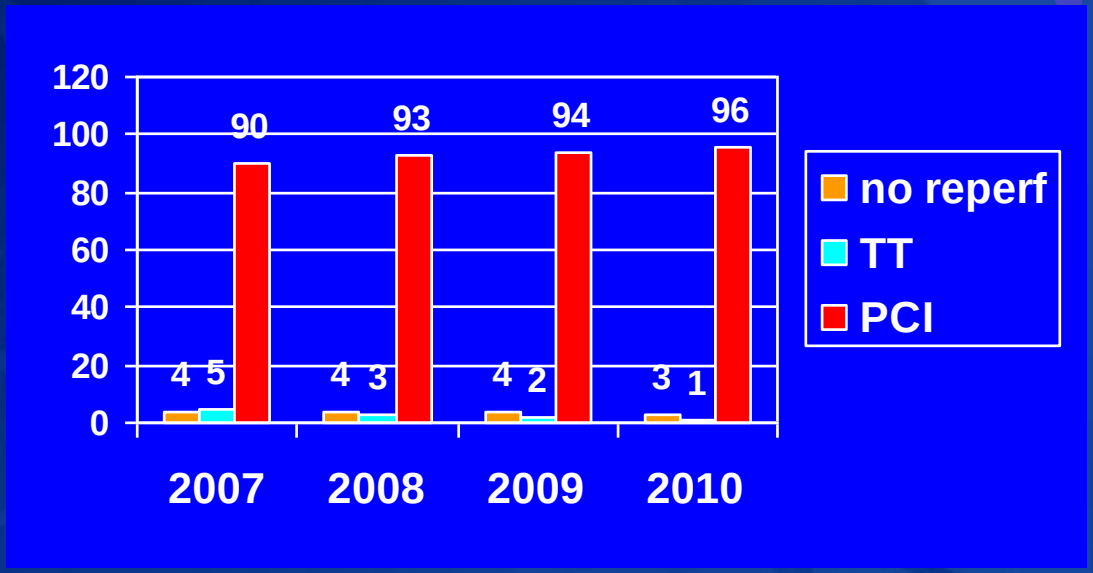


Regional data on Reperfusion therapy

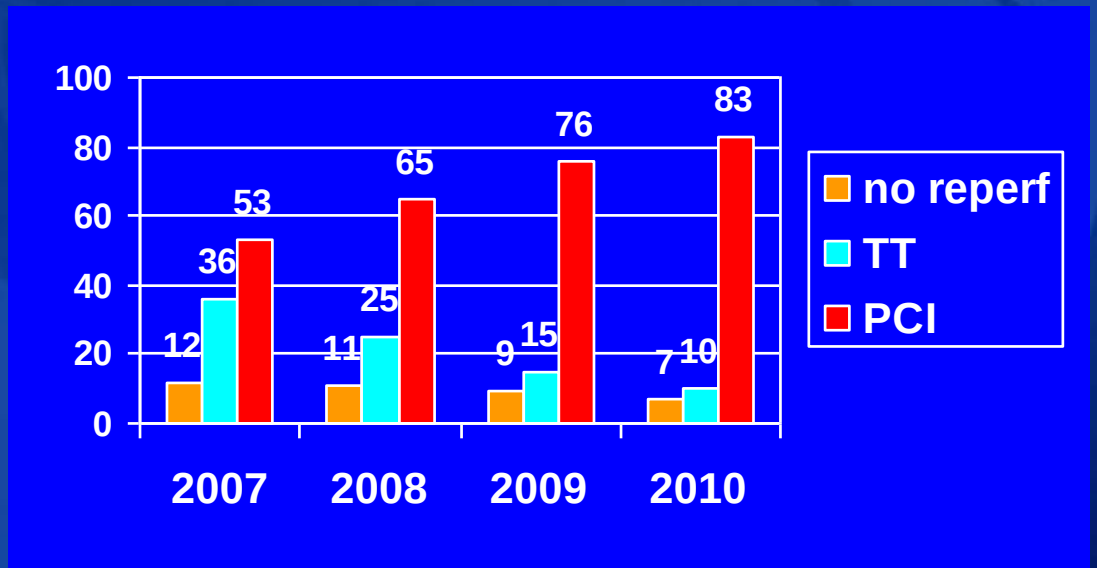


Evolution reperfusion therapy

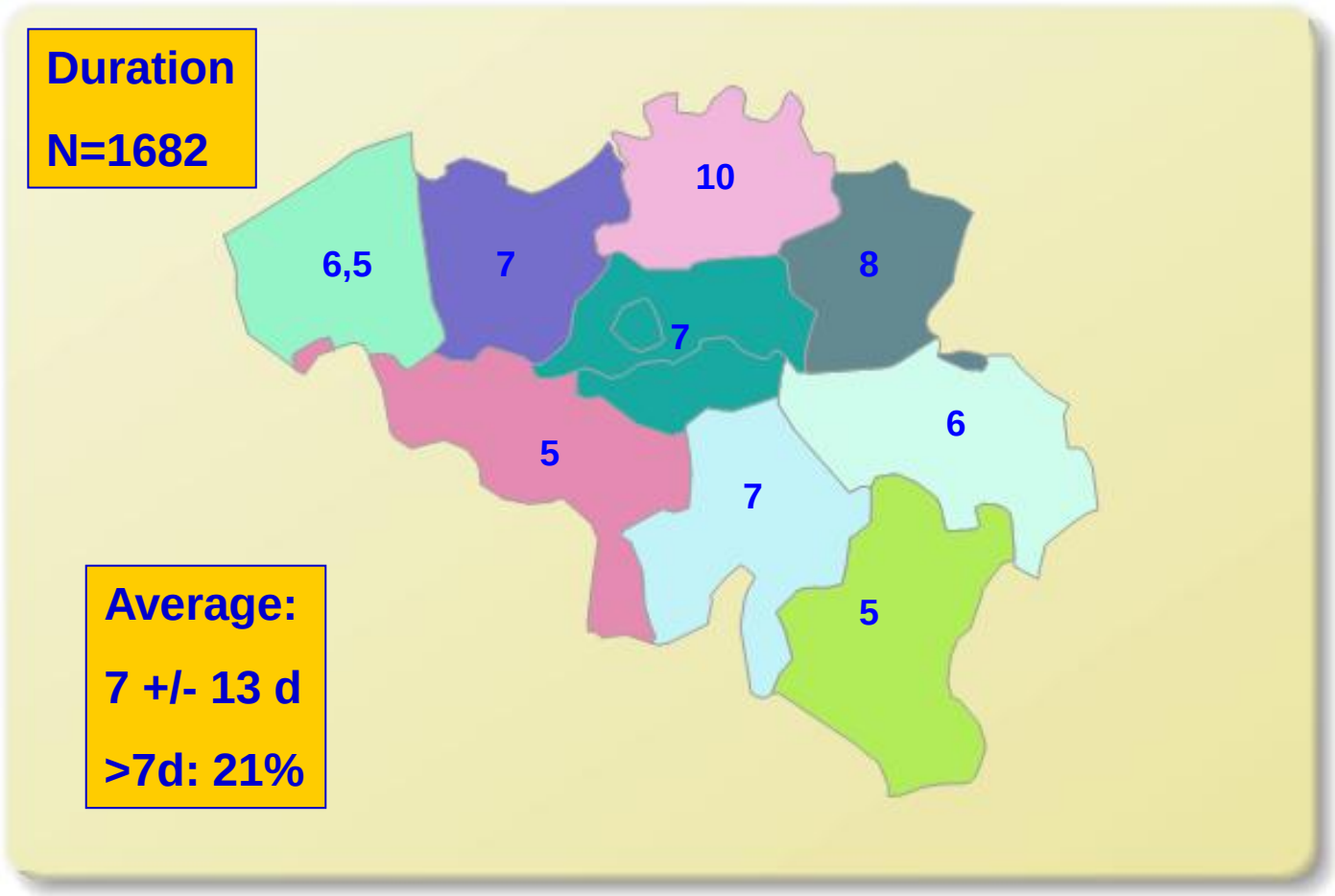
PCI center



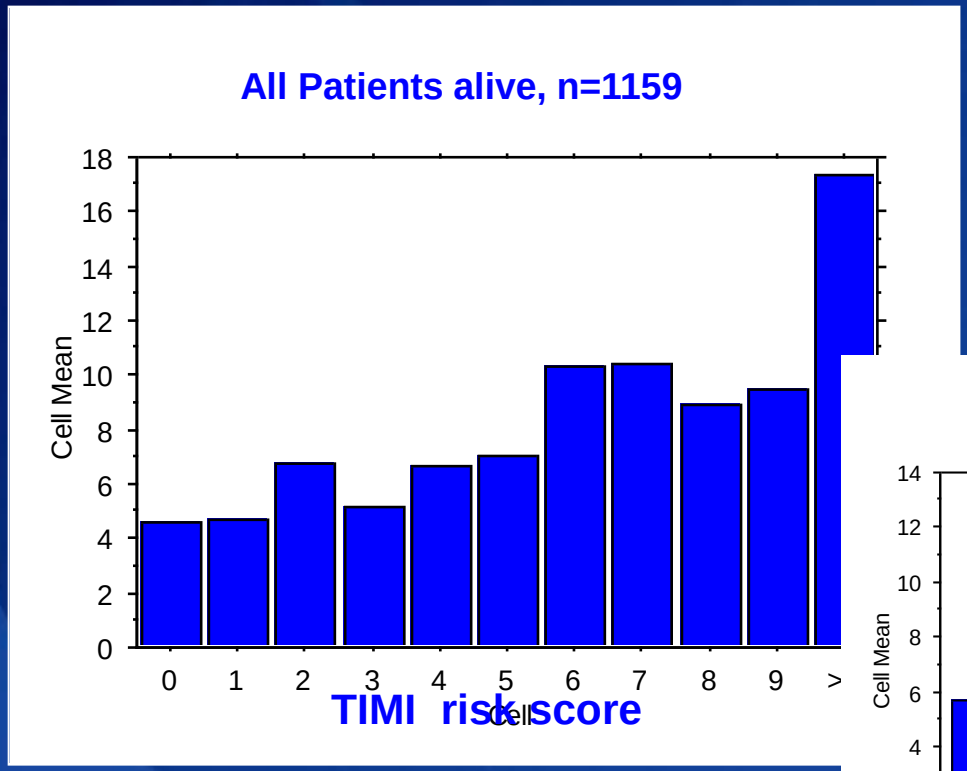
No-PCI center

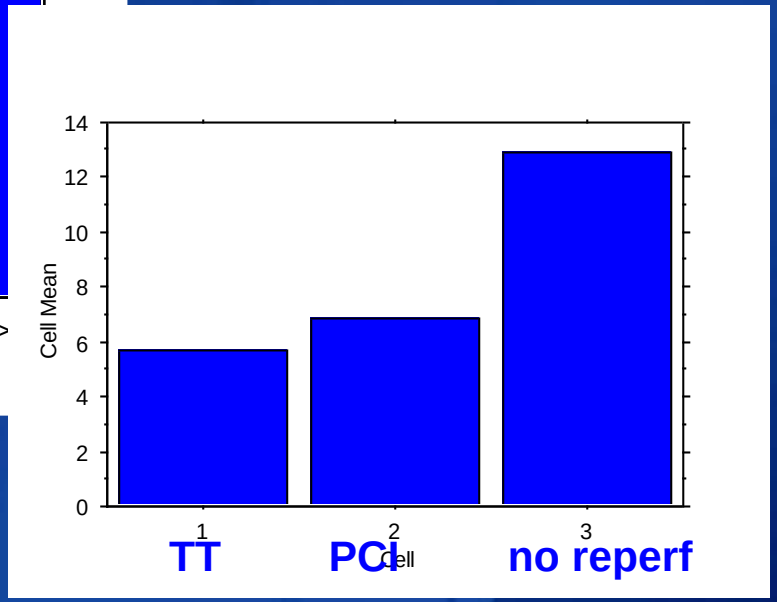


Regional data on duration of hospital stay

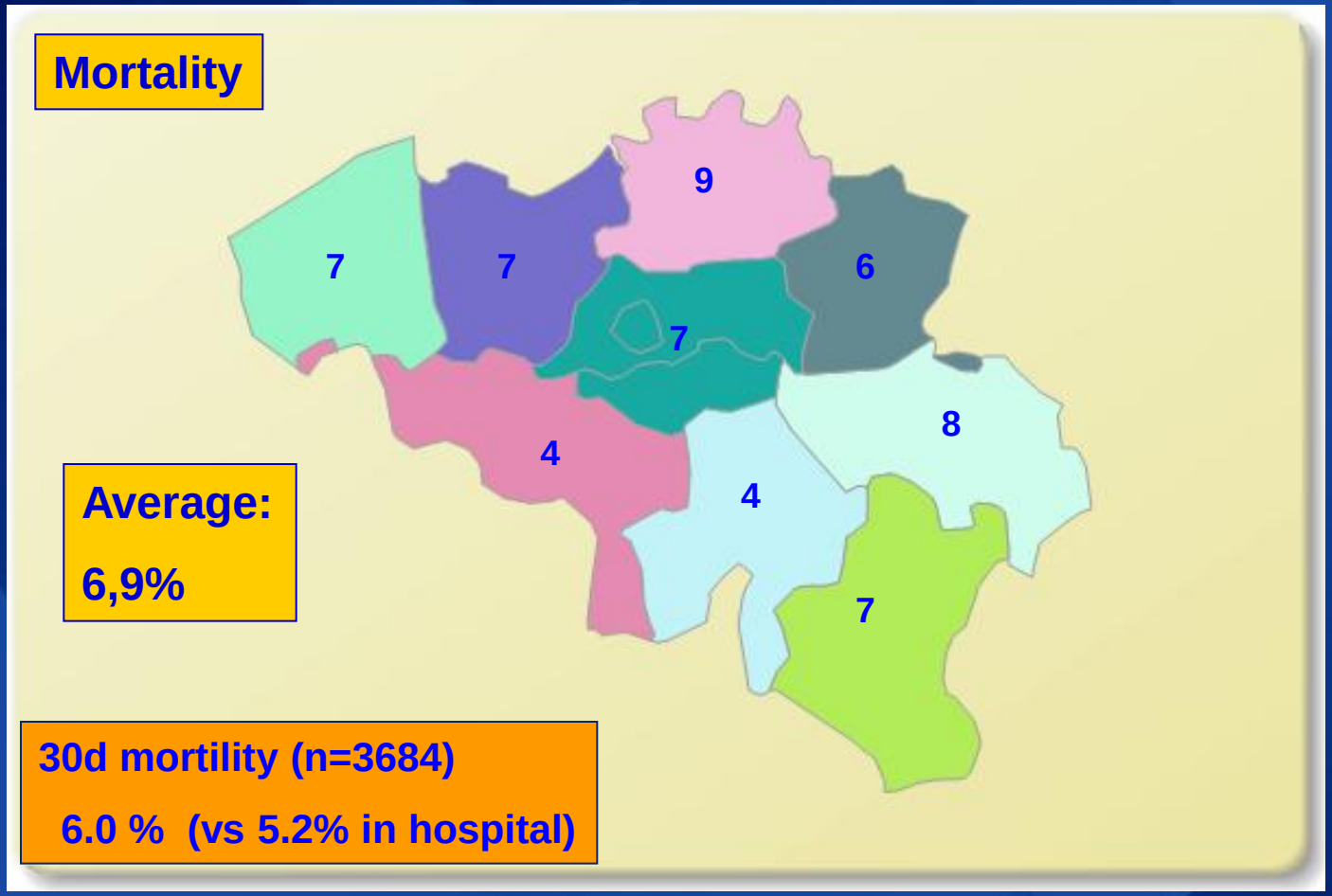


Determinants of Hospital stay





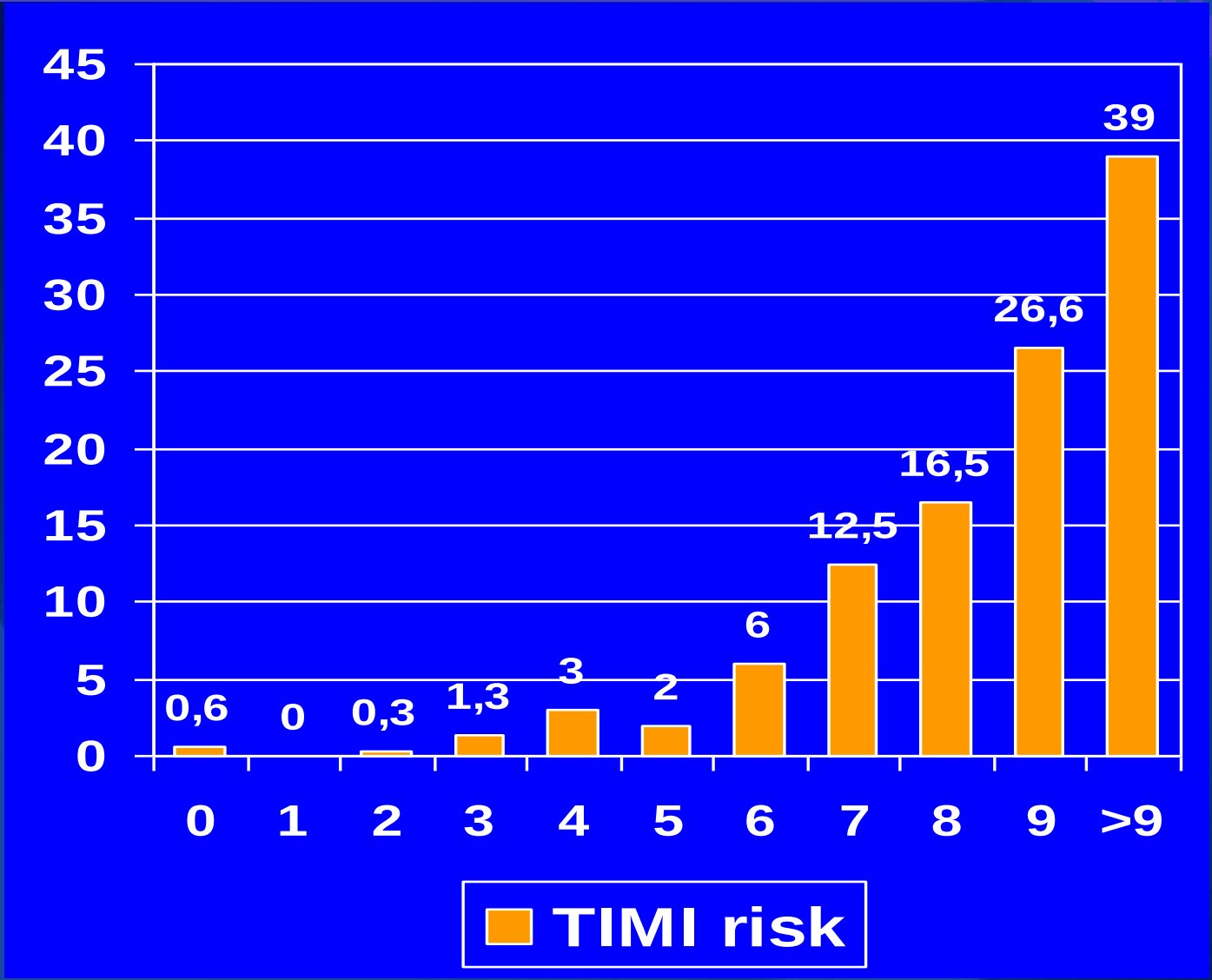
Regional data on in hospital mortality



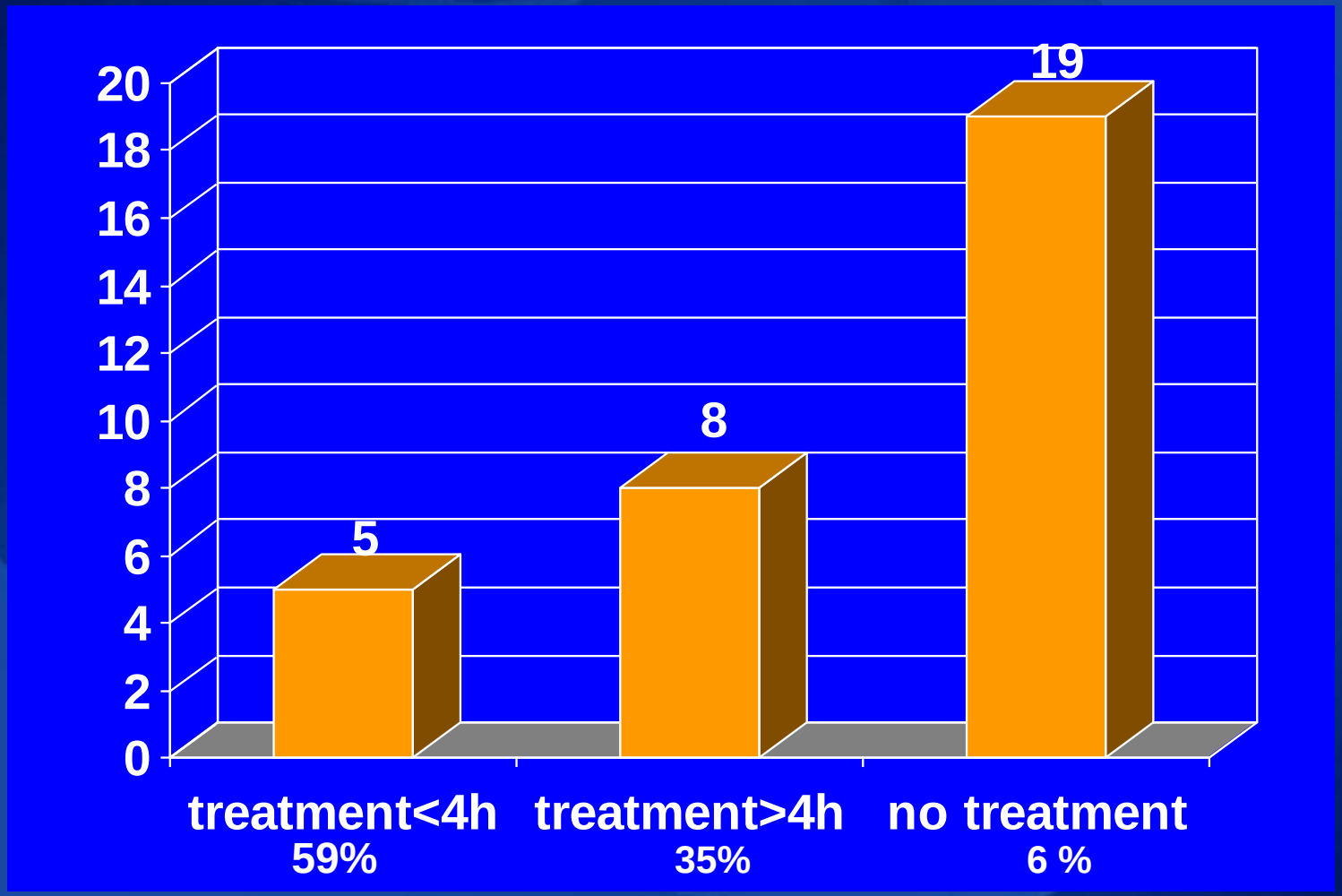
Global Analyis: mortality data

- Mortality versus TIMI risk score/ ischemic time
- Mortality versus reperfusion strategy
- Mortality versus door to balloon/needle time
- Mortality versus cardiac care program
- Mortality and gender
- Mortality: independent predictors

Mortality versus TIMI risk score



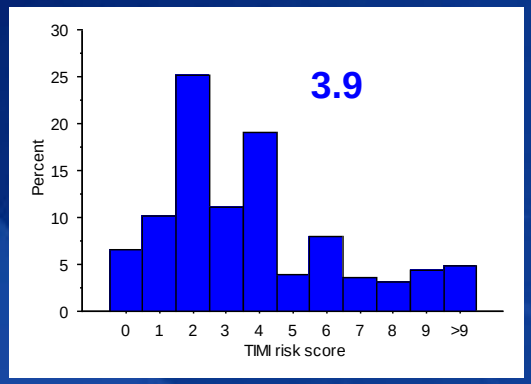
Mortality versus total ischaemic time

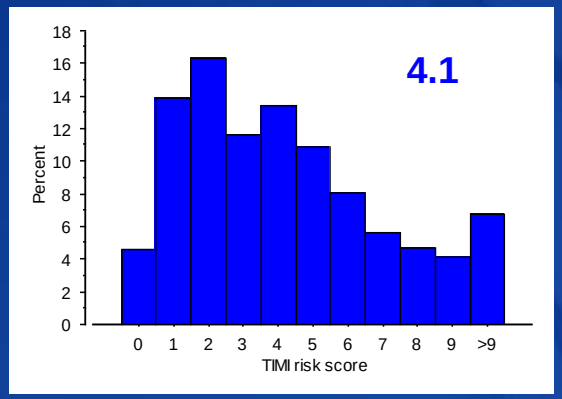


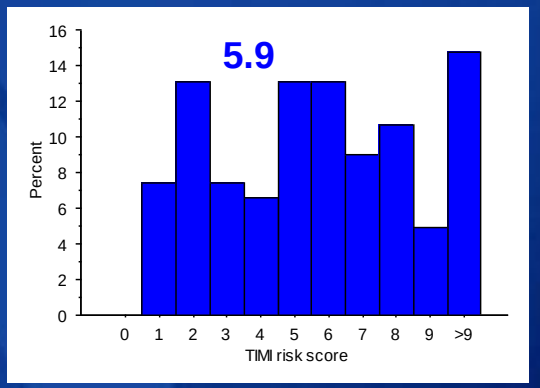
Mortality versus Reperfusion strategy

N= 9067

Trombolysis N=627	Rescue PCI N=265	PCI N= 7406	Faciliated PCI N=223	No Reperfus. 555
N = 892 (10%)*		N=7629(84%)		N= 555 (6%)





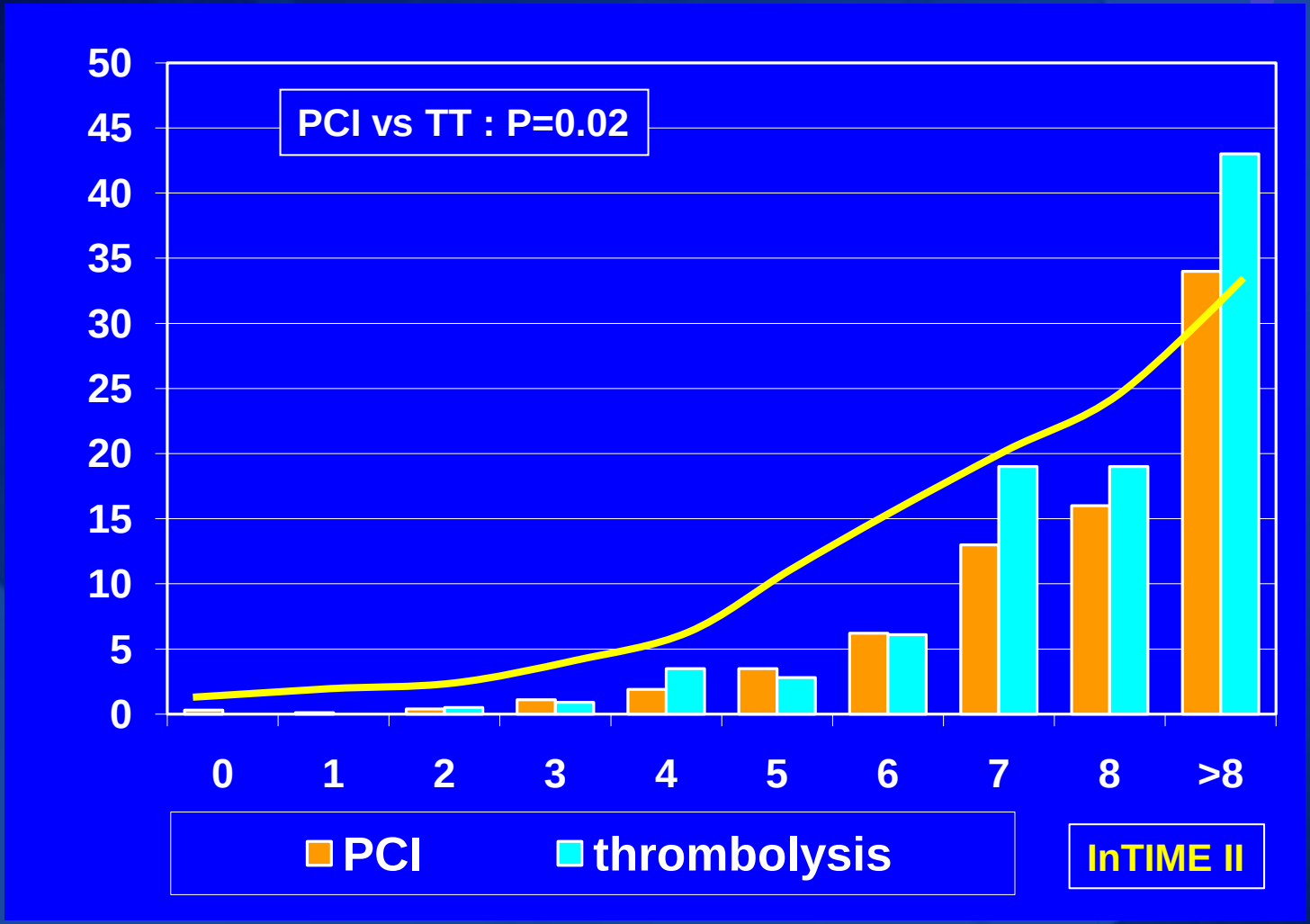


MORTALITY

6,7%	6.0 %	19%

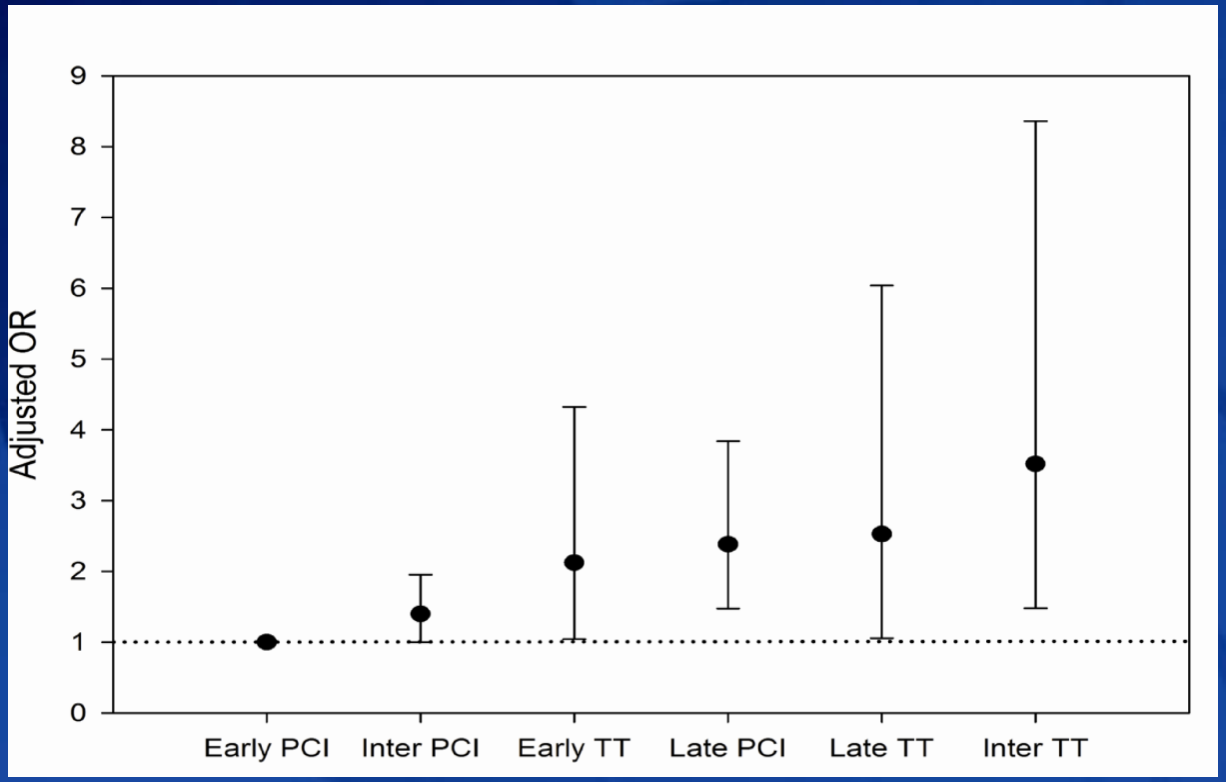
*Elective Invasive evaluation:477+265=742 (83%)

Mortality benefit PCI over TT is dependent on baseline risk profile



Claeys et al, Arch of Intern Med 2011

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

Door-t- balloon time should be less than 60 min to obtain lowest mortality rates !!

Claeys et al, Arch of Intern Med 2011

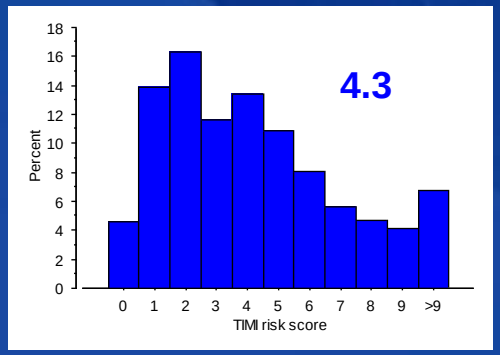
Mortality versus Acute cardiac care program

PCI centre
N=5471(60%)

- trombolysis: 2%
- Rescue PCI: 1%
- Prim –facilat PCI: 93%
- No reperfusion: 4 %

No-PCI centre
N=3605 (40%)

- trombolysis: 14%
- Rescue PCI: 6%
- Prim –facilat PCI:71%
- No reperfusion: 9 %



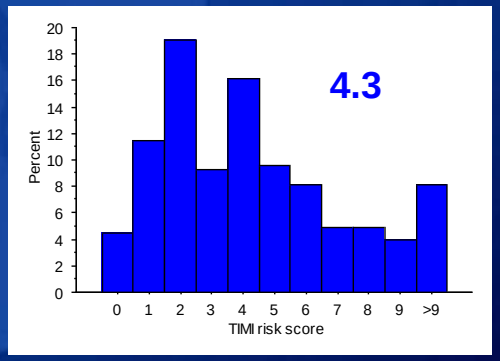
MORTALITY

6.7%

6.1%

7.3%

6.3%



Mortality versus gender

	Men N=6846	Female N=2230(25%)
age	61	69 *
DM	14%	19% *
Time to T<4h	62 %	51% *
shock	7%	11 % *
PCI/throm/no	85/10/5	80/10/10 *
Mortality	5.5%	11.2% *

*** p<0.0001**

Indepedent predictors of mortality

	P value	0R (95%CI)
Killip > 1	<.0001	5 (4 - 7)
CPR	<.0001	5 (4-6)
age	<.0001	1.04 (1.03-1.05)
PCI vs TT No reperf	0.02 <0,0001	1.5 (1.1 – 2.7) 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	0.01	1.3 (1. 1-2.0)

Conclusions

- The Belgian STEMI registry is the first prospective registry enroling patients from both PCI and no-PCI centres.
- The overall in hospital mortality is 6.9 % and compares well with current European ACS surveys.
- Mortality of patients who receives reperfusion therapy within 4 hours after onset of symptoms is on average 5%. Mortality increases almost two-fold if therapy is started after 4 hours and increases even four-fold if no reperfusion therapy was given

Conclusions

- Mortality benefit of PPCI over trombolysis (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 trombolytic 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.