

MINAP: National Audit Improving Practice Locally

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HQIP Annual Conference 2011

“Quality Improvement in a time of change”

Purpose of workshop

- An introduction to MINAP
- Consider these questions:
 - Can *national* audit be of *local* relevance?
 - Is national audit a *recorder* or *driver* of improved quality of care?
 - Can participating in National audit improve quality of care?

Quality Assurance vs. Quality Improvement



“The tragedies of life are largely arterial”

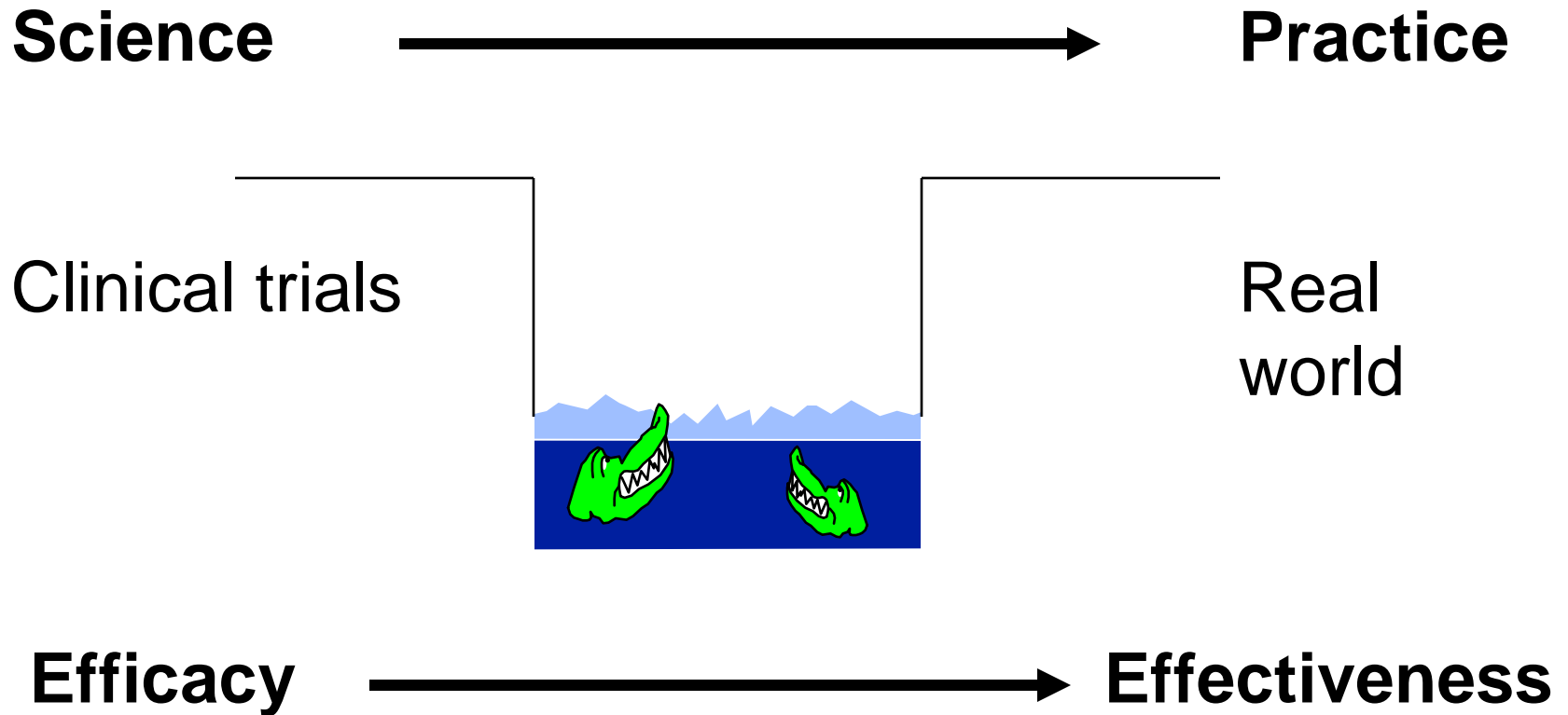
William Osler. Diseases of the circulatory system

In: Modern Medicine: Its theory and Practice

Philadelphia, Lea & Febiger 1908,431

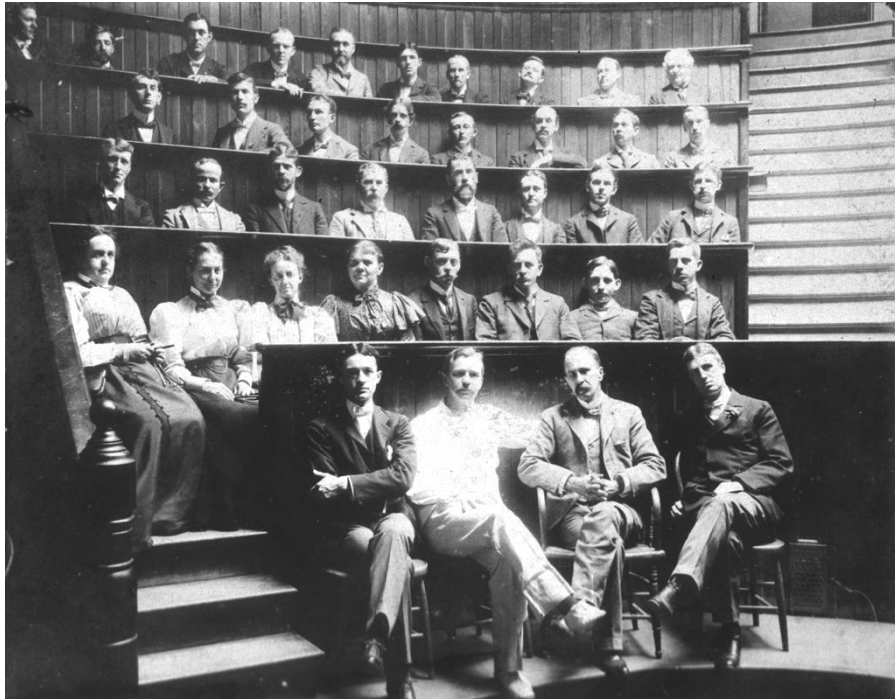
How do we make efficacious interventions effective in our populations?

How do we bridge the gap between science & practice?



After Dr Gray Elrod

Science and practice

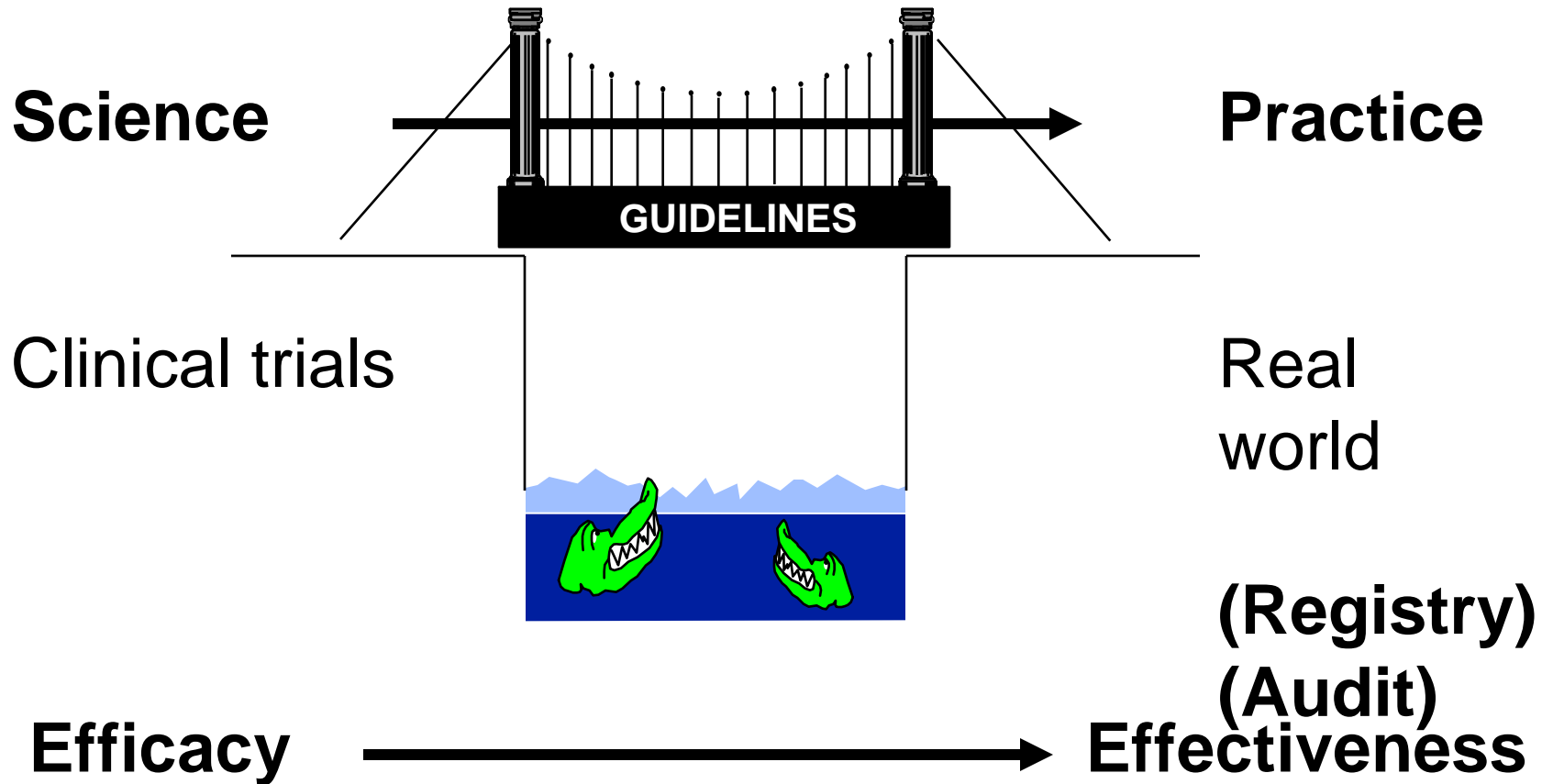


**“The hospital units
mint, for current use
in the community, the
gold wrought by the
miners of science”**

William Osler: Johns Hopkins Hosp Bull 1913;24:167-71

develop disseminate implement

Bridging the gap between science & practice



After Dr Gray Elrod

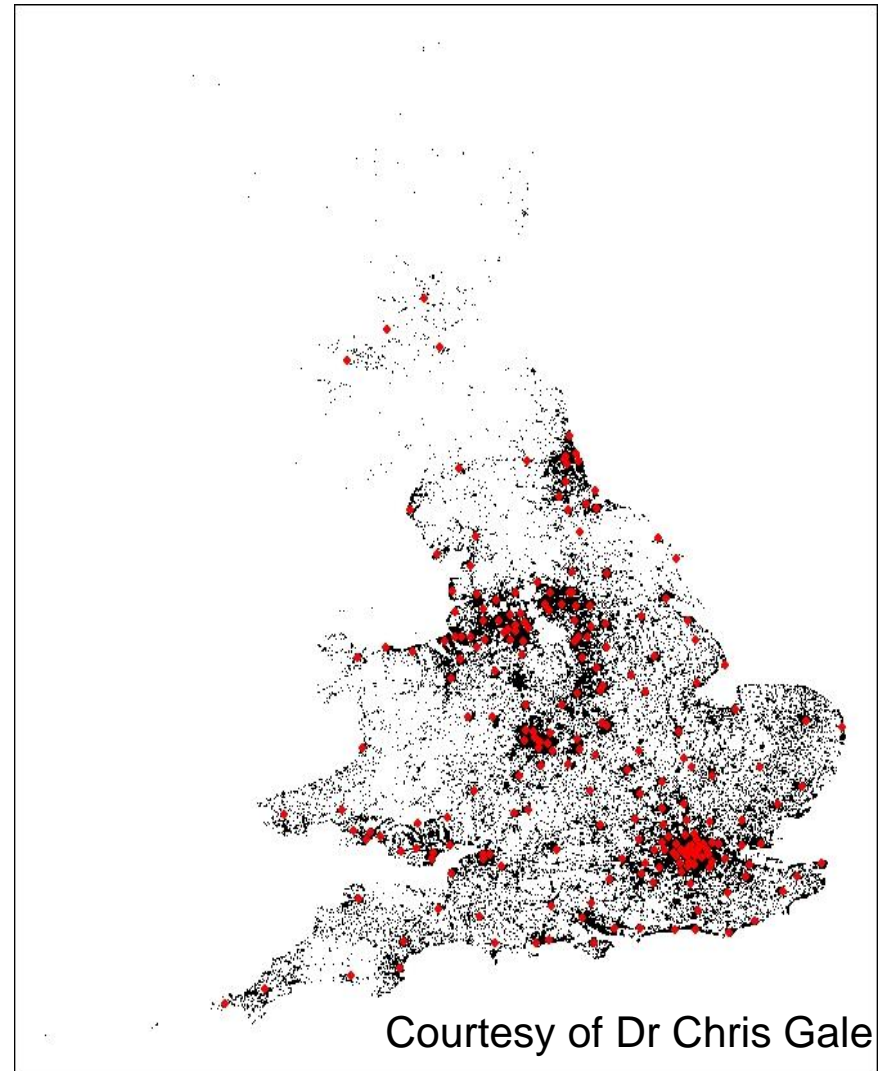
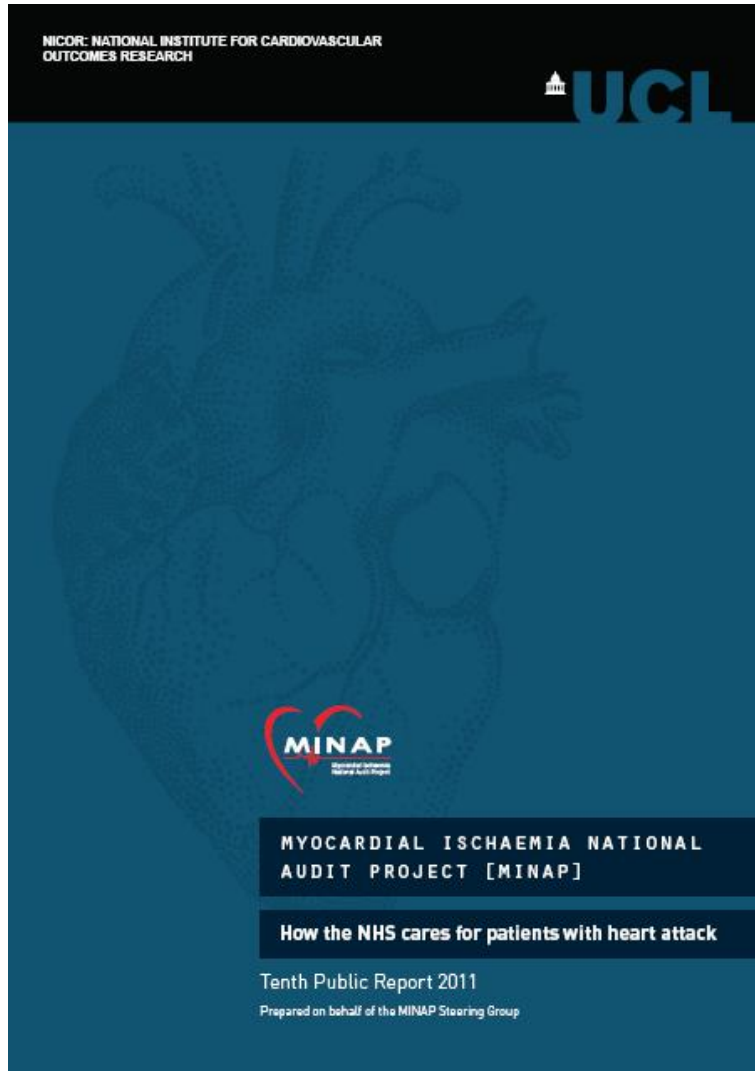
<i>Science*</i>	tells us what we <i>can</i> do
<i>Guidelines</i>	tell us what we <i>should</i> do
<i>Registries*</i>	tell us what we <i>are</i> doing
<i>Audit</i>	tells us <i>how close</i> we are to doing what we should

after William Weintraub

* Science & Registries are 'value free'

[other than in the choice of what research to pursue and what data to collect]

Myocardial Ischaemia National Audit Project



Founding propositions - 1999

- Complete record (not a snapshot)
- Prospective (rapid early data collection)
- Agree clinical definitions/common standards
- Standards are measurable, with proven link to improved outcomes

Founding propositions

- Each hospital audits against standards and can compare with national (aggregate) performance
- Sufficient data to adjust for case-mix
- Planned periodic dataset review
- Maintain professional credibility
- Publicly-accessible annual report of hospital performance

The result

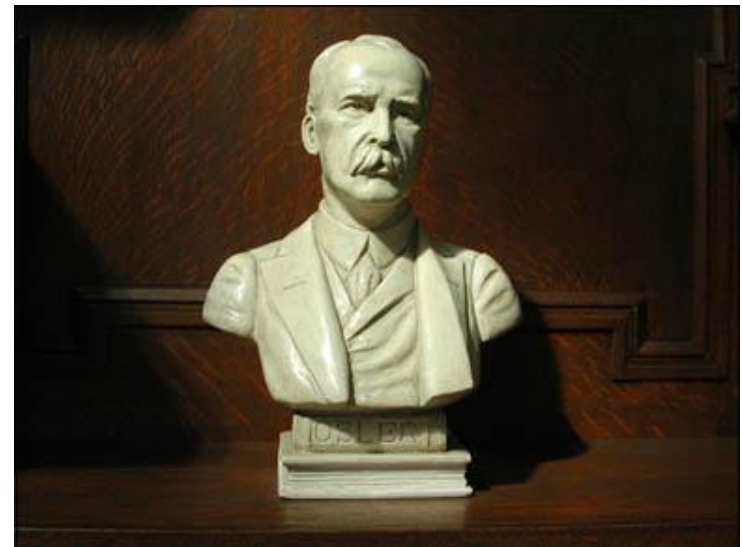
- Largest national clinical audit (c800,000 events)
- Continuous prospective collection
- Supported by a variety of stakeholders
- Central coordination: network of contacts
- Secure on-line data entry and transmission
- Data held and serviced by CCAD
- Available to Hospitals/Networks/governments
- Annual public reports
- Used by DoH to assess hospital performance
- Linkage to ONS via NHS number & potential for observational research
- Availability of 'empty' data-fields for local research/audit

Dealings with the press

“It is time that honorable physicians set their faces against this ever-increasing habit of furnishing representatives of the press with details which satisfy no public purpose, but which simply minister to the morbid longings of a prurient and gossip-loving public.”

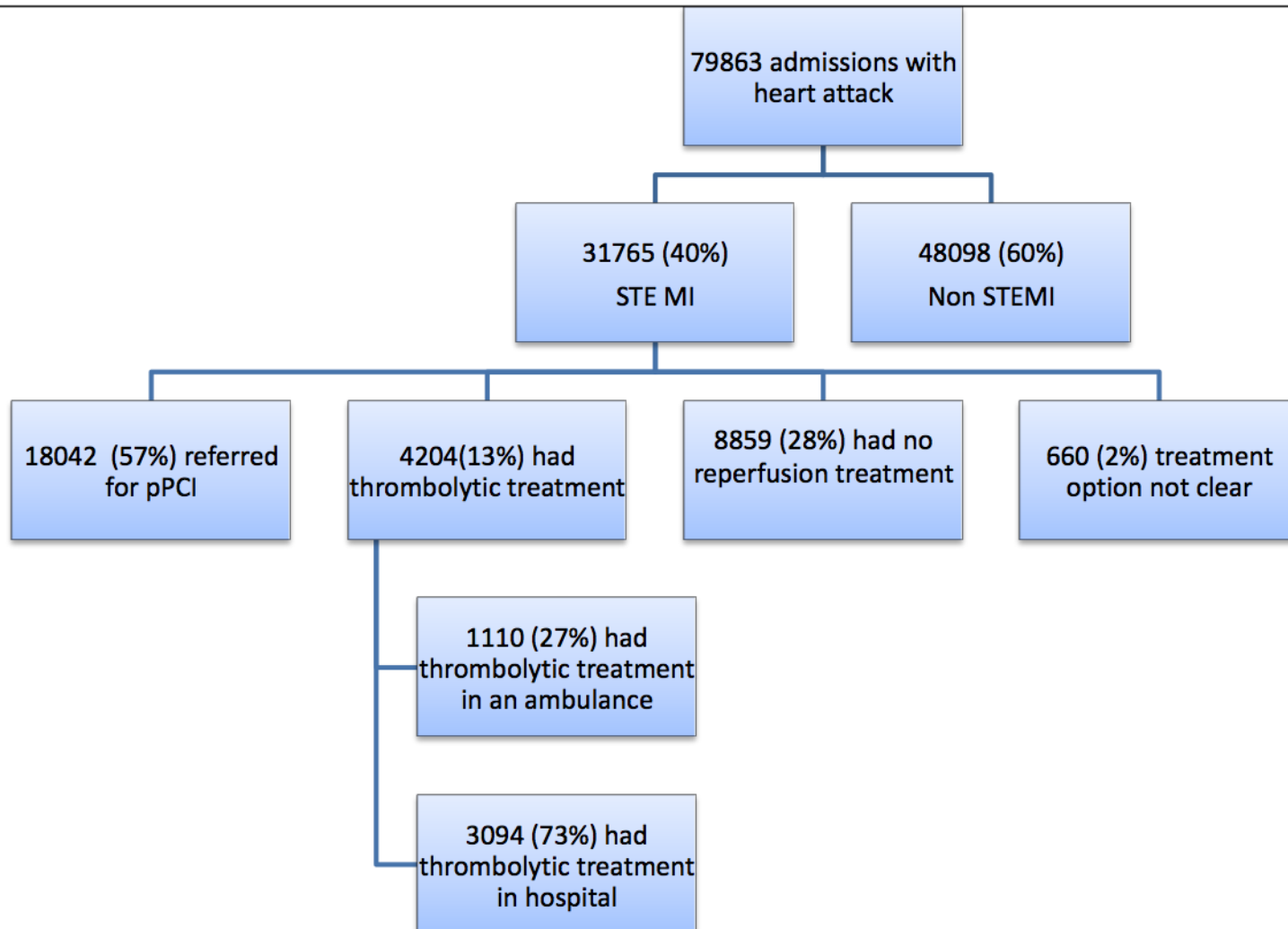
William Osler.

Med News (Philadelphia) 1886;48:40-1.

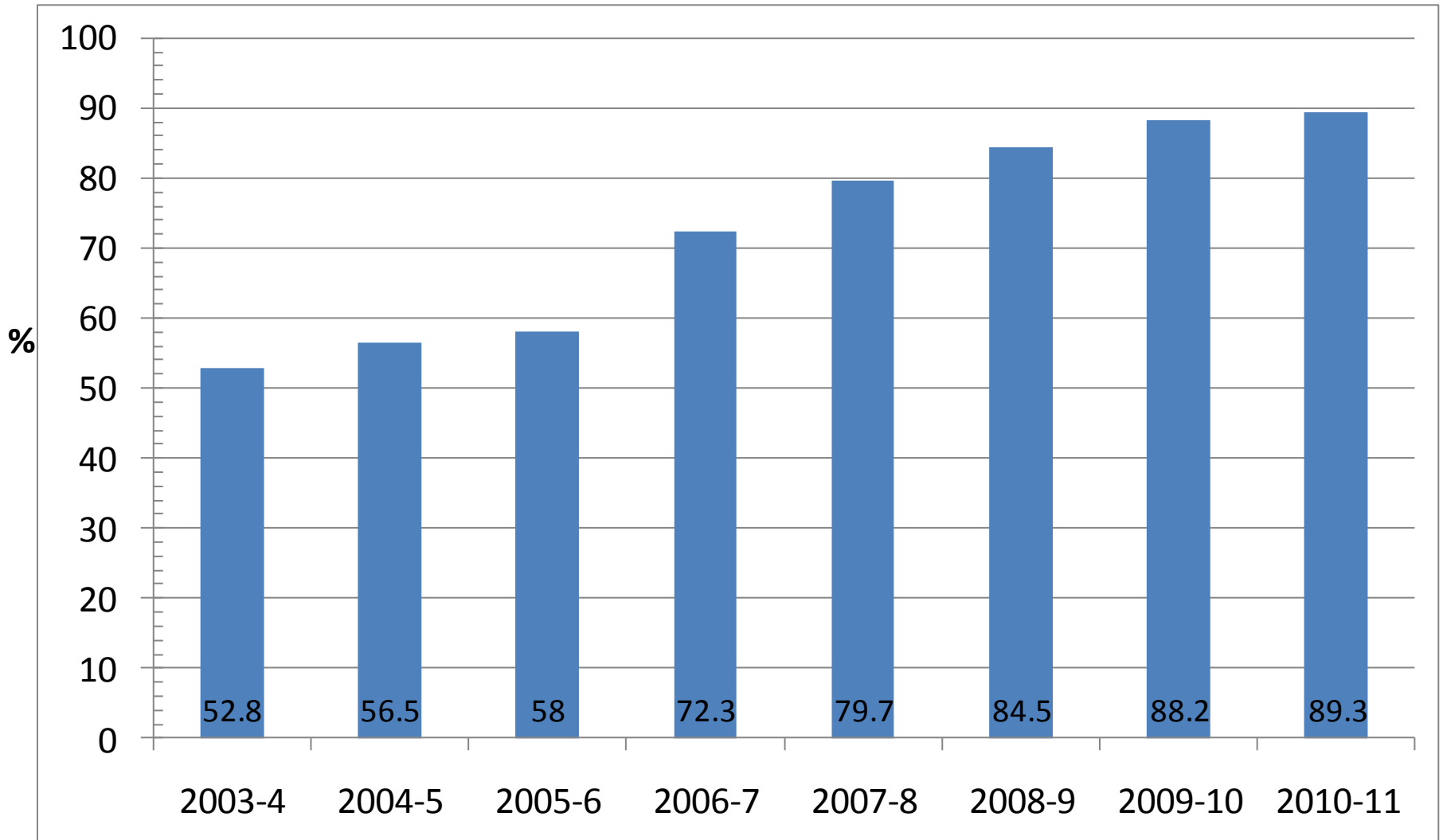


As a National Audit, the results are often expressed nationally

Heart attacks recorded in MINAP in the financial year 2010-11

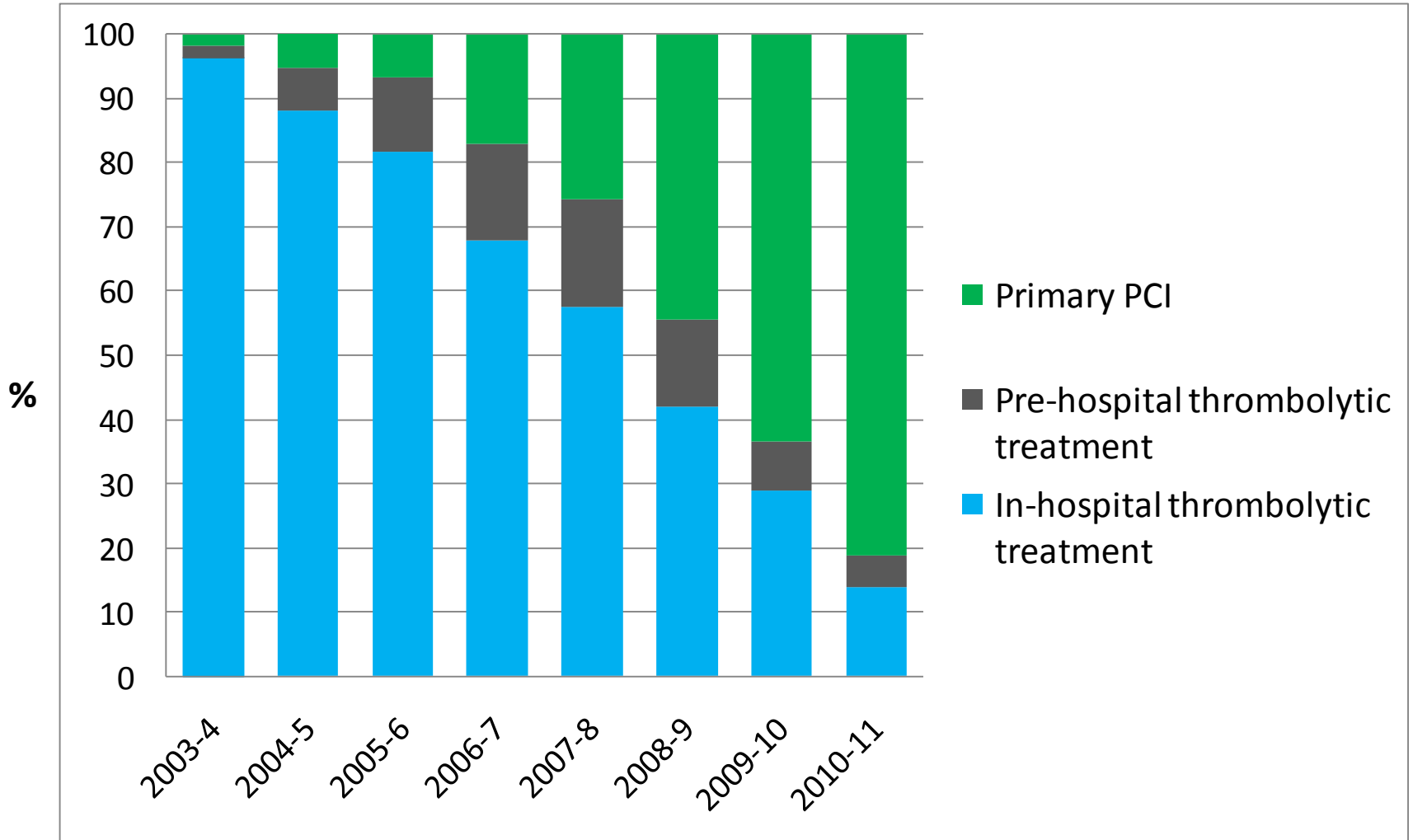


Percentage of patients with an admission diagnosis of STE MI having primary angioplasty within 90 minutes of arrival in hospital in E&W

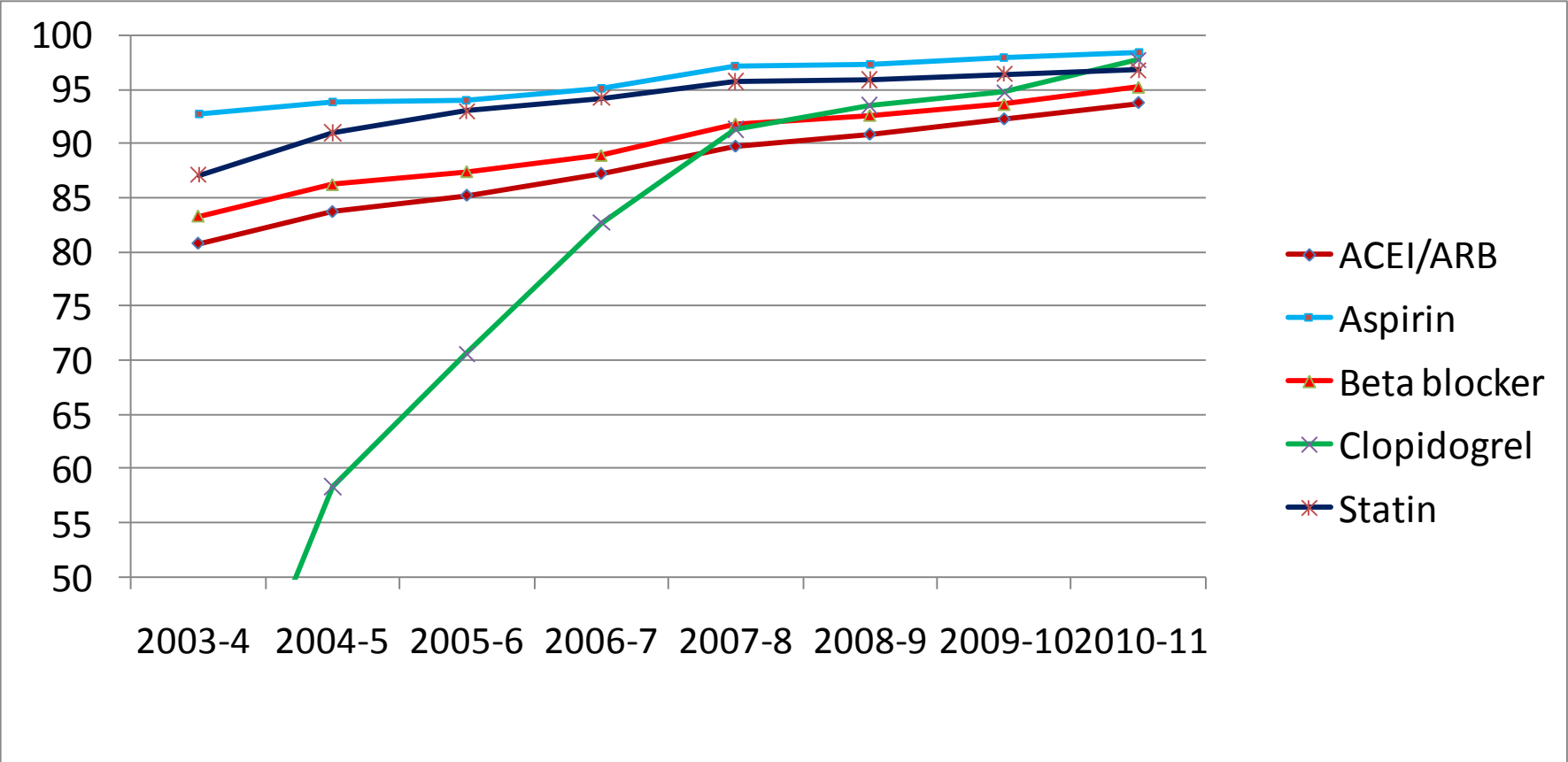


The median time is 43 minutes, for 25% the interval is less than 30 minutes and for 75% the interval is less than 64 minutes

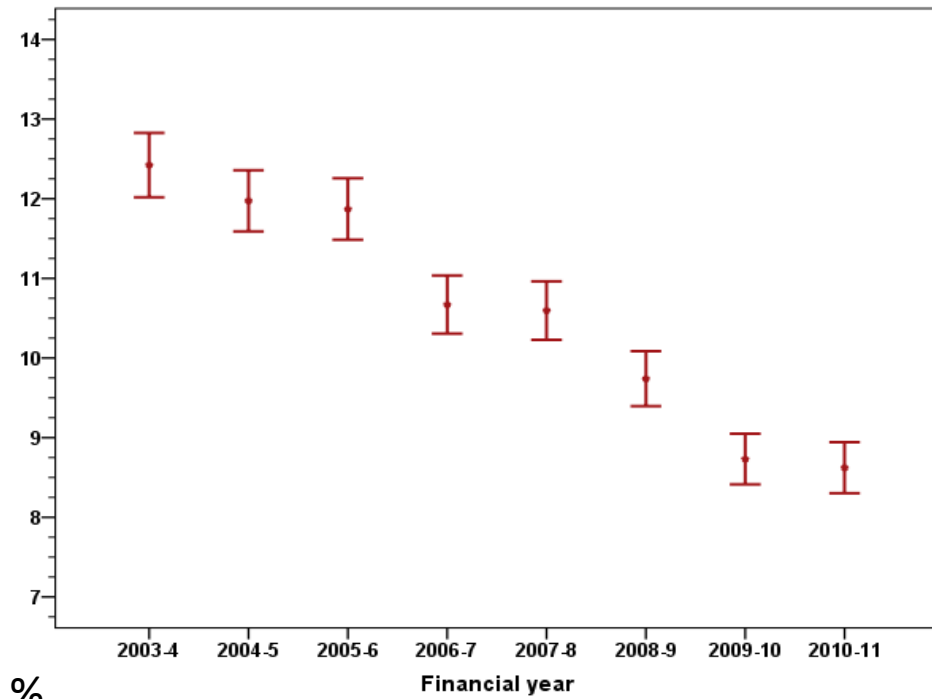
Use of reperfusion treatment for patients with a final diagnosis of STEMI



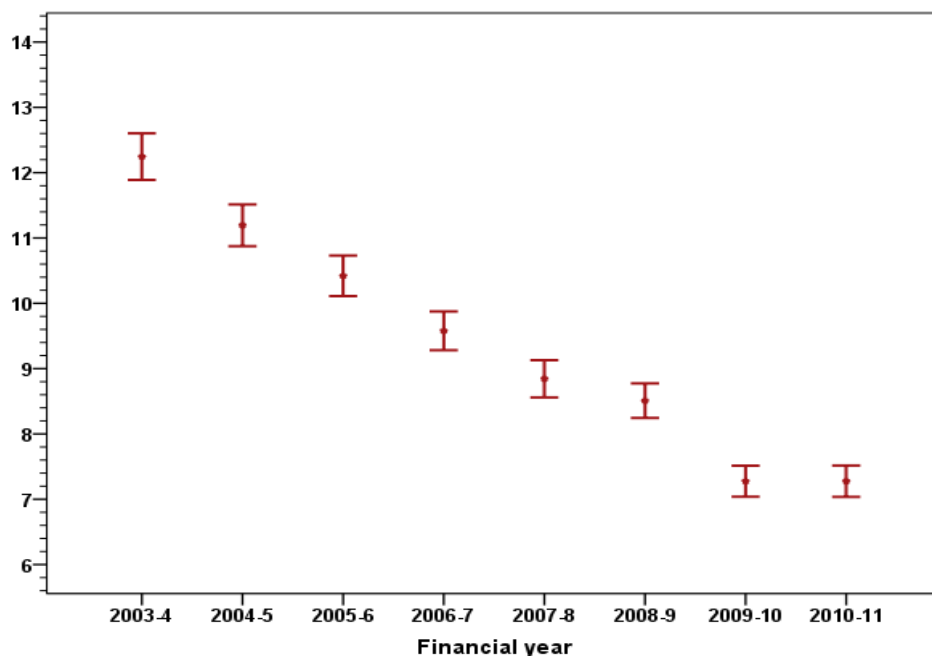
Use of secondary prevention medication for myocardial infarction



[Transfers, deaths, contraindicated and pt refused are all excluded.]

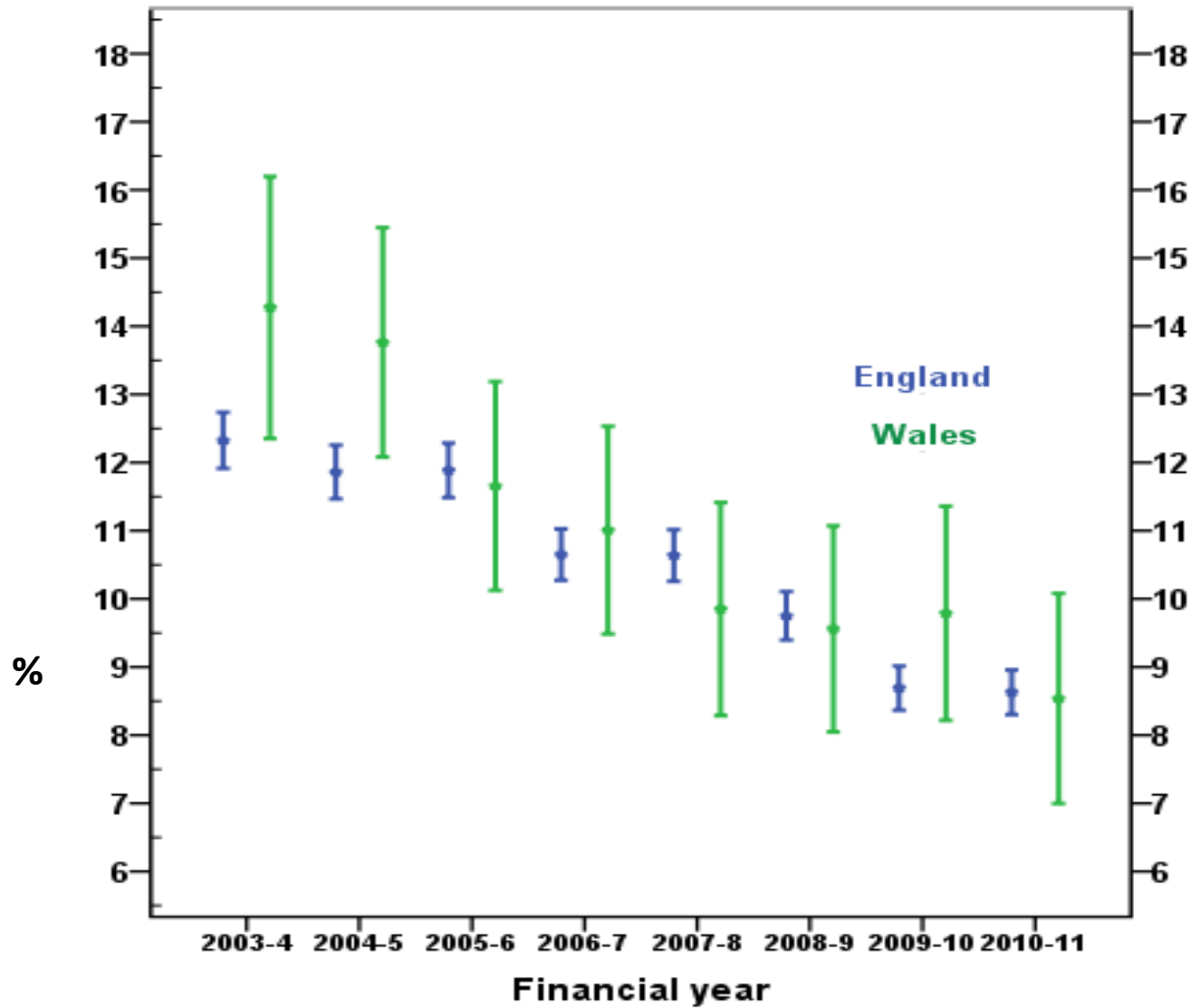


30 day mortality, (95% CI) for all patients having ST segment elevation infarction



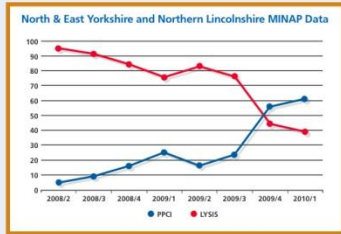
30 day mortality, (95% CI) for all patients having non-ST segment elevation infarction

The data for 2010-11 are provisional and may be revised



30 day mortality for England and Wales for STEMI

North & East Yorkshire and Northern Lincolnshire



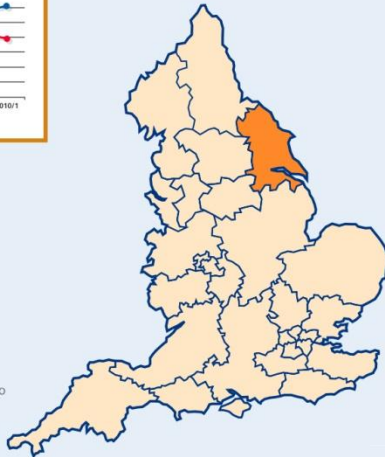
Population
1.3 million

Hospitals providing 24/7 PPCI
Castle Hill Hospital, Hull

Hospitals providing limited hours PPCI
None

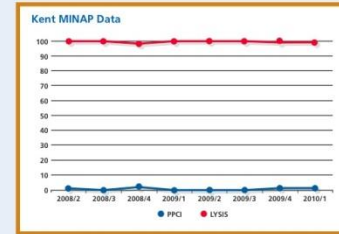
Neighbouring centres where PPCI patients may be treated
Leeds General Infirmary, Leeds
James Cook University Hospital, Middlesbrough

Comments
PPCI currently covers 60% of the population. Planning to roll out to 100% by November 2011.



www.improvement.nhs

Kent



Population
1.6 million

Hospitals providing 24/7 PPCI
None

Hospitals providing limited hours PPCI
None

Neighbouring centres where PPCI patients may be treated
Guys and St Thomas's, London
King's College Hospital, London

Comments
Kent now has 100% population coverage for PPCI based at The William Harvey Hospital, Ashford. The service commenced on 12 April 2010.

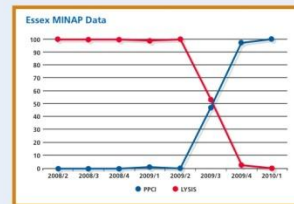


www.improvement.nhs.uk/heart

16 National roll-out of Primary PCI for patients with ST segment elevation myocardial infarction: Interim report

PPCI in English Regions Oct 2010

Essex



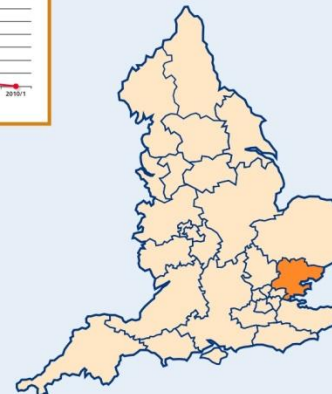
Population
1.7 million

Hospitals providing 24/7 PPCI
Essex Cardiothoracic Centre, Basildon

Hospitals providing limited hours PPCI
None

Neighbouring centres where PPCI patients may be treated
Bart's and the London NHS Trust, London
Harefield Hospital, Middlesex

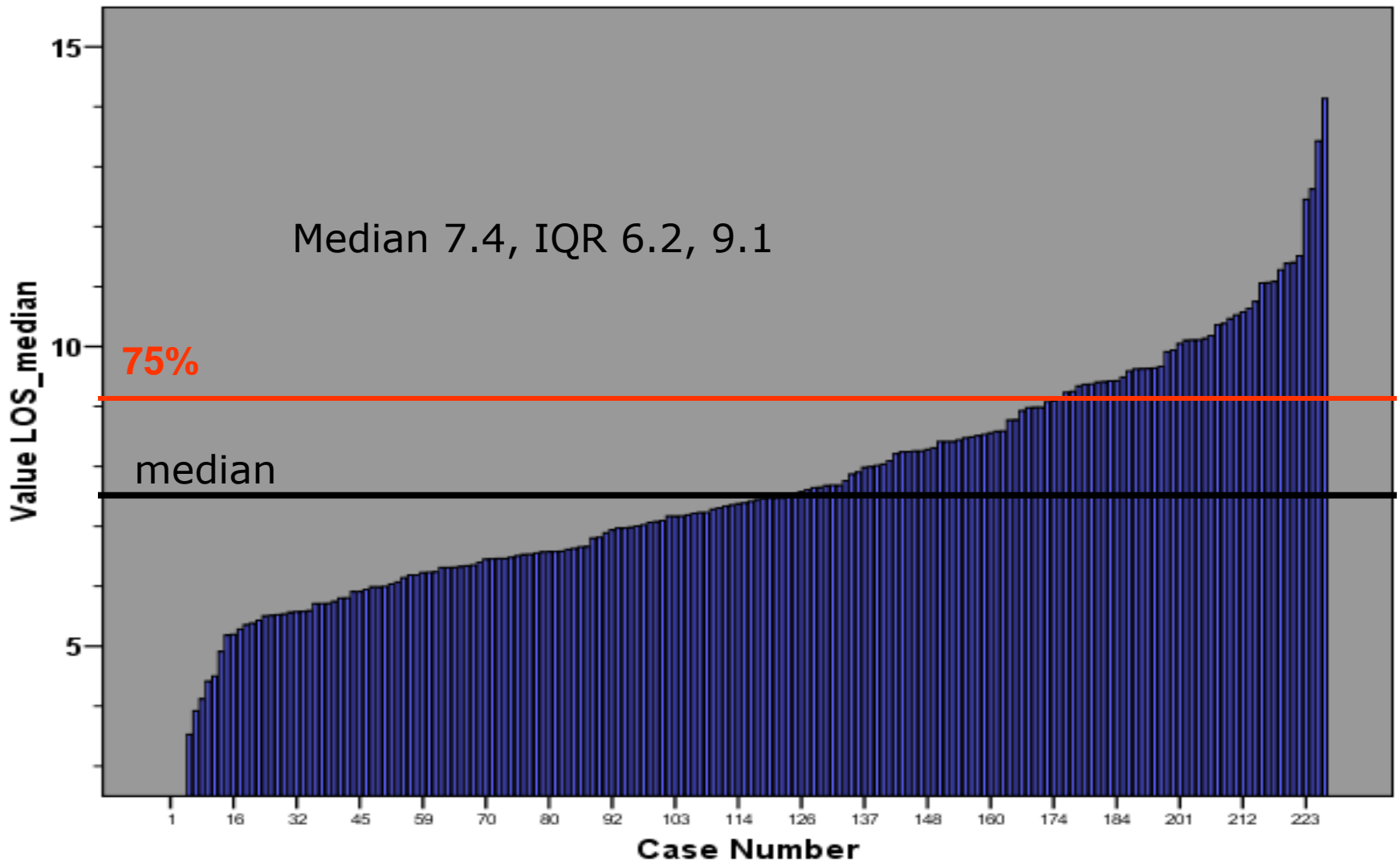
Comments
100% population coverage achieved.



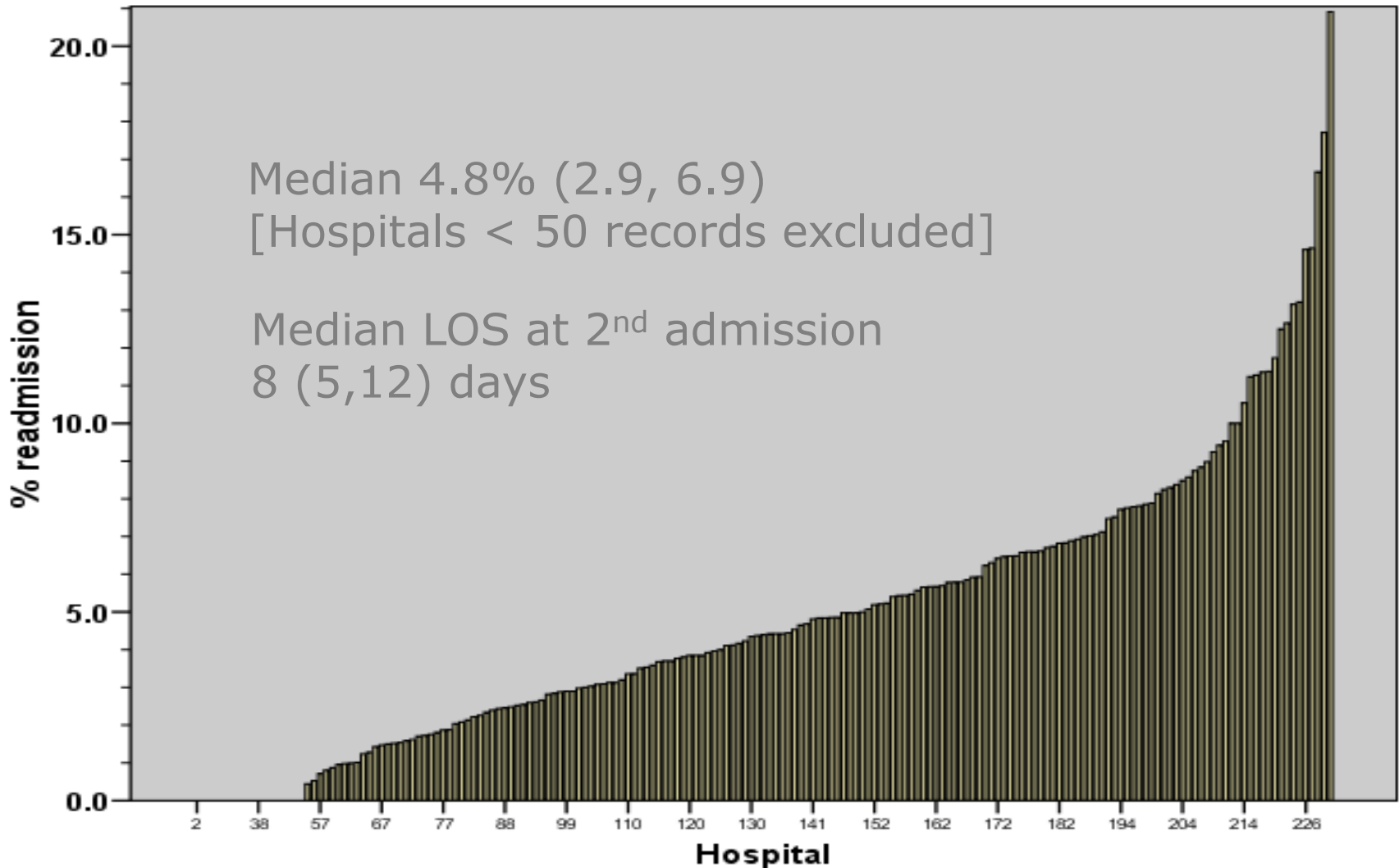
www.improvement.nhs.uk/heart

Courtesy Dr J McLenachan

Median LOS for nSTEMI in 2005



Readmission within 6 months following nSTEMI by hospital



Research article

Open Access

Funnel plots, performance variation and the Myocardial Infarction National Audit Project 2003–2004

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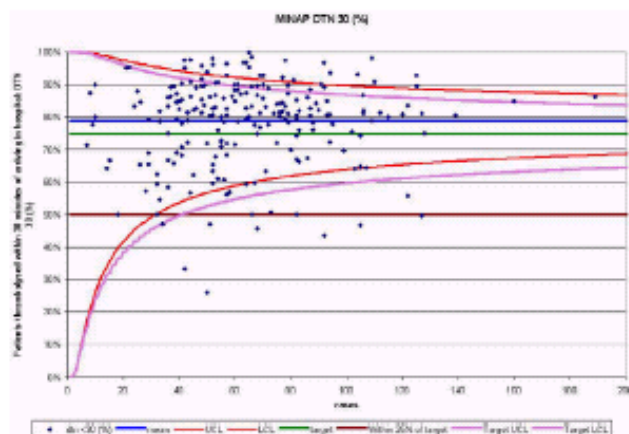


Figure 1

Funnel plot for percentage of patients thrombolysed within 30 minutes of arriving in hospital (DTN 30). Data abstracted from the MINAP Third Public Report.[11] DTN = door to needle time, LCL = lower control limit, UCL = upper control

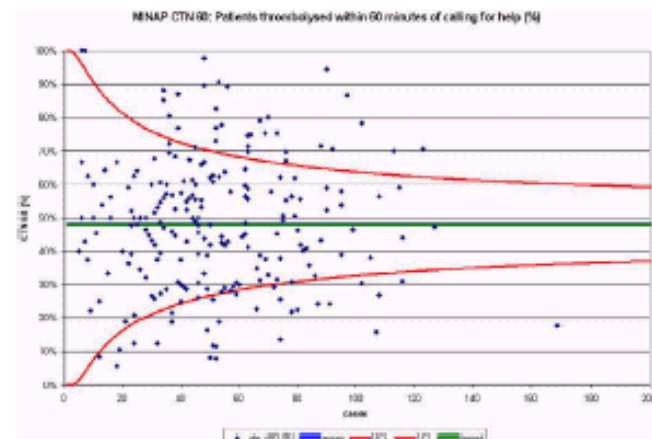
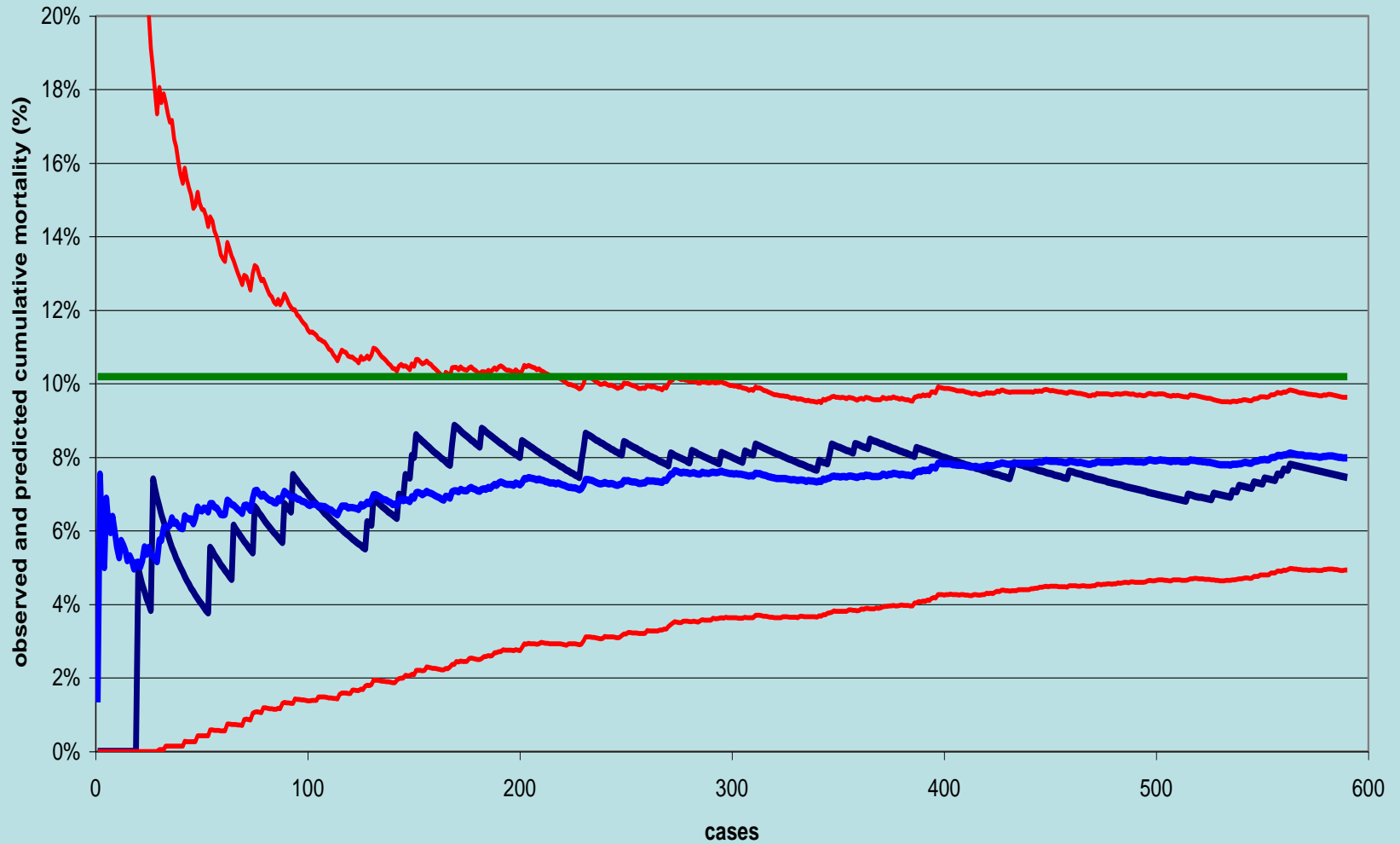


Figure 2

Funnel plot for percentage of patients thrombolysed within 60 minutes of calling for help (CTN 60). Data abstracted from the MINAP Third Public Report.[11] CTN = call to

Observed and predicted (MINAP) cumulative mortality for Acute Myocardial Infarction JCUH April 2004 to December 2005



Observed 30 day mortality Predicted 30 day mortality UCL LCL MINAP National mean 30 day mortality

Making it local - passive localism

TABLE 4 AMBULANCE SERVICES IN ENGLAND AND WALES

Year	Patients having thrombolytic treatment within 40 mins of calling for help		Patients having thrombolytic treatment within 40 mins of calling for help		Patients having pre-hospital thrombolysis	Patients having pre-hospital thrombolysis	Primary angioplasty within 130 mins of calling for help for patients with direct admission to interventional centre		Primary angioplasty within 150 mins of calling for help for patients transferred to interventional centre	
	2009/10		2010/11		2009/10	2010/11	2010/11		2010/11	
	%	n	%	n	n	n	%	n	%	n
England national average	70%	3473	69%	1732	1630	824	88%	995	59%	1543
Isle of Wight	74%	38	81%	26	19	17		2		1
London		10		8	1	2	88%	1307	51%	236
Great Western	71%	156	52%	29	89	14	80%	547	58%	77
North East		4		11	1	1	97%	184	61%	192
North West	70%	307	74%	536	165	146	92%	865	47%	297
Yorkshire	60%	198	37%	40	89	10	80%	1107	19%	104

TABLE 5 SECONDARY PREVENTION MEDICATION IN ENGLAND

These analyses are based on all patients discharged from hospital with a diagnosis of myocardial infarction. Patients are excluded if they are transferred from the admitting hospital to another hospital for further treatment. Patients are also excluded from analysis if there is a contraindication to a drug, if they refuse treatment, or have severe non-cardiac co-morbidity that limits prognosis.

Year	Patients discharged on secondary prevention medication									
	Aspirin		Beta blocker		Statins		ACE inhibitor		Diagnosis/Thienopyridine inhibitor	
	%	n	%	n	%	n	%	n	%	n
England national average	99%	52189	96%	47008	97%	52723	94%	48856	95%	49755
Addenbrooke's Hospital, Cambridge	95%	170	99%	151	99%	175	99%	134	95%	142
Aradale General Hospital, Sleaford	98%	192	99%	149	99%	198	99%	179	87%	209
Arrow Park Hospital, Wrexham	100%	252	93%	201	90%	207	71%	241	85%	222
Barnet General Hospital, Barnet	100%	62	100%	38	98%	43	92%	39	97%	39
Barnsley District General Hospital, Barnsley	96%	159	92%	151	92%	162	93%	146	96%	147

Active localism - case studies

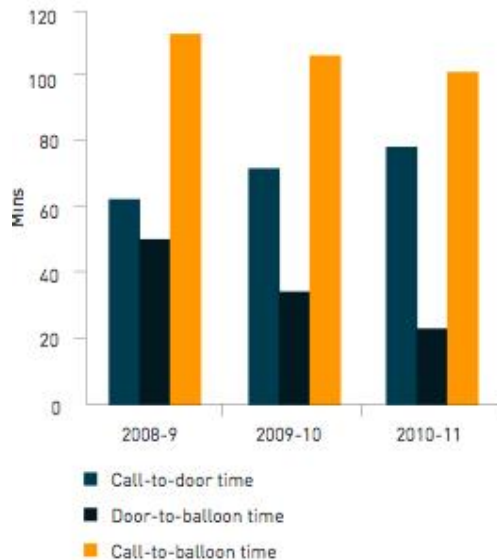
Implementing a primary PCI service in Oxford

Oxford Heart Centre

Jan Keenan, Consultant Nurse

Dr Robin Choudhury, Senior Research Fellow

Chart two: Increase in call-to-door time with increasing geographical spread with concurrent decrease in door to balloon time with pathway development



- MINAP data used to see developments over time as we focused our energies on improving Team working
- MINAP data demonstrates the achievement of national standards, and shows us where to focus our efforts.”

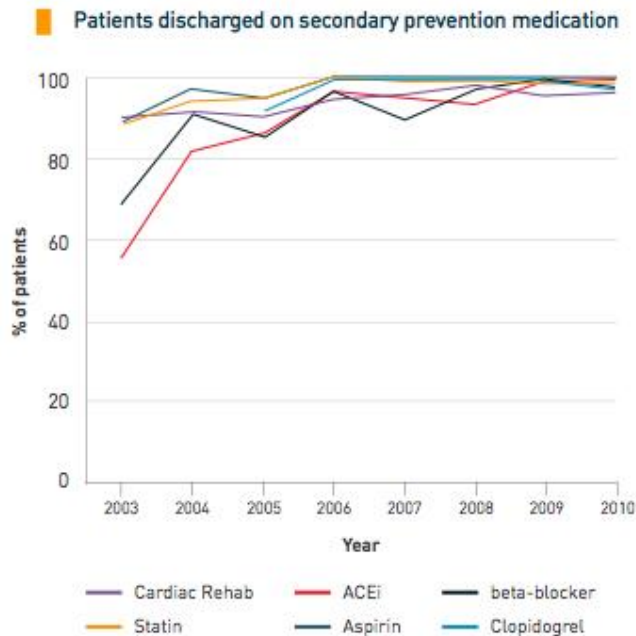
Active localism - case studies

MINAP, promoting prevention.

The Heart Hospital, University College London
Hospitals Foundation Trust

Dr Costas O'Mahoney, Cardiology

Dr Clare Dollery, Clinical Director.



- Monthly multidisciplinary MINAP meetings... Cardiologists, nurses, physiologists, London Ambulance Service reps:

- Feedback to primary PCI team

- Routine review of MINAP data used in local implementation of NICE guidelines

- Review referrals to cardiac rehabilitation services and use of [drugs]

Active localism - case studies

Improvement in call-balloon times at the London Chest Hospital, Barts and the London NHS Trust

London Chest Hospital, Barts and the London NHS Trust

Eileen Ferguson, Heart attack centre coordinator

Ajay Jain, HAC lead clinician

Andrew Wragg, Clinical Effectiveness Lead

Anthony Mathur, Cardiology lead clinician

Charles Knight, CAU director

Andrew Archbold, North East London Cardiac Network lead

London Ambulance Service NHS Trust

Mark Whitbread, Clinical Practice Manager/
Cardiac Lead

Joanne Smith, Clinical Advisor to the
Medical Director

- MINAP/BCIS data used to drive a successful quality improvement program.
 - Invested in improving the quality and reporting of our audit data
 - Heart Attack Centre (HAC) coordinator, HAC team, data analysis, weekly reporting
 - Weekly meeting with ambulance service
 - sharing audit data, education through case-by-case feedback & study days
 - Weekly MINAP reports to focus on performance
 - [reset] standard for DTB time
- “MINAP/BCIS *great tools*...significant investment ...hard work by HAC team”

Active localism - case studies

Using data from MINAP to model a PPCI service in the Cheshire and Merseyside network area

Cheshire and Merseyside Cardiac and Stroke Network

Ruth Grainger, Clinical Information Analyst

- Working with management consultants to model Patterns of ambulance service use in proposed Primary PCI service.
-

Use of MINAP data to analyse and improve the PPCI service

Papworth Hospital NHS Foundation Trust

Dr Sarah Clarke, Clinical Director for Cardiac Services

Hayley Dimmock, Cardiac Information Analyst

- Monitoring activity (outcomes) of PPCI service
 - Validate MINAP entry at discharge
 - 98% patients achieve 90 min DTB
 - Examination of 'breaches'
-

Establishing a primary angioplasty service in Lincolnshire

United Lincolnshire Hospitals NHS Trust

Dr David O'Brien, Interventional Cardiologist,

Alun Roebuck, Consultant Nurse Critical and Acute Care

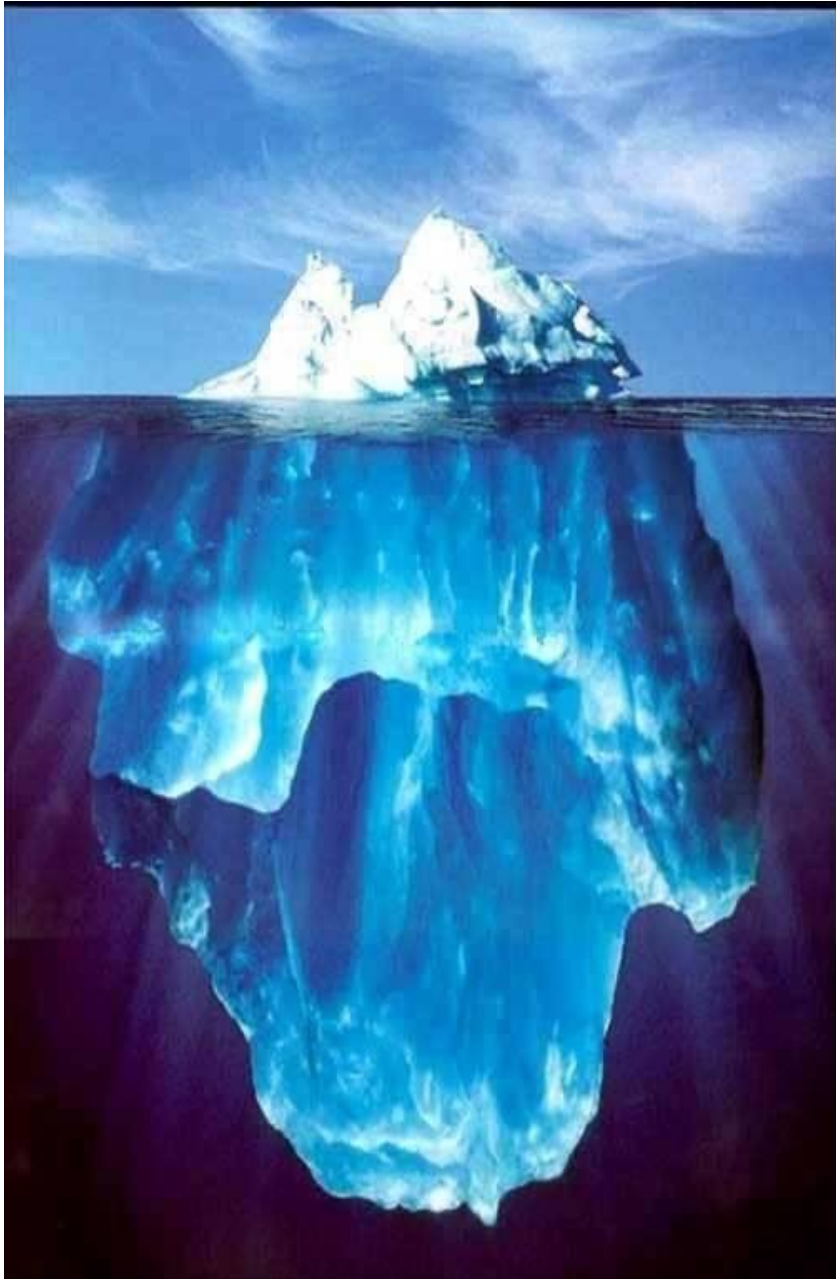
- Justification of Primary PCI service.

What can it tell us ?

- Performance against national targets
- Other management of ACS
- Trends in management
- Link to mortality/morbidity
- Observational research

Other (allied) uses

- To demonstrate 'service' performance
- To build the reputation of a local service to influence patient choice
- To influence commissioning
- To change (inform) clinical behaviour
- To support a business case
- To inform hospital income
- To form a scaffold for team working



Visible/measured e.g.

Patient's age, gender,
ECG change

Delay to treatment

Invisible/unmeasured

Patient Frailty

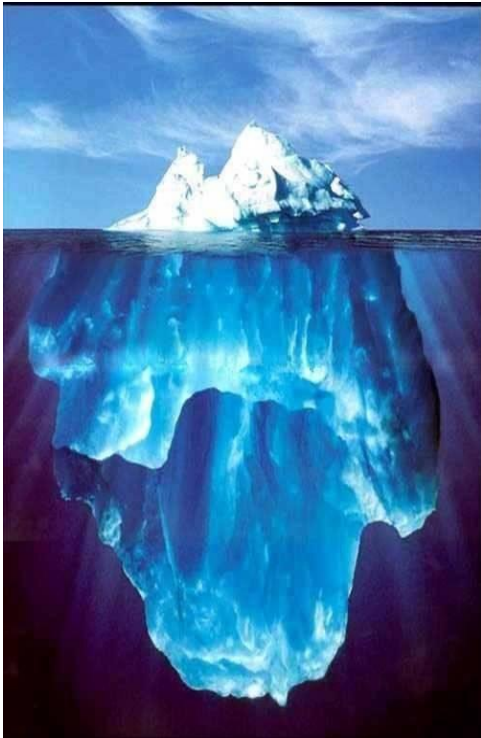
Patient's experience &
quality of caring

Quality of treatment

Attendance at 'rehab'

Adherence to treatment

Incomplete & Missing data



The more of the submerged iceberg you wish to see
the more like a Swiss cheese it looks

Original concept - Dr Chris Gale (Leeds/York)

Wisdom

“It is only by collecting data and using them that you get sense”



LINACRE, HARVEY, SYDENHAM AND OSLER

William Osler In: *Aequanimitas*, 413

Acknowledgments

MINAP is one of seven national cardiac audits managed within the National Institute for Clinical Outcomes Research (NICOR), University College London.

It is commissioned by the Healthcare Quality Improvement Partnership (HQIP)