

BCIS Audit Returns Adult Interventional Procedures

Jan 2011 to Dec 2011



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BCIS National Audit Lead

On behalf of

British Cardiovascular Intervention Society

Glasgow 5th October 2012

Contents



2011 data: Ludman

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 - Surgical cover
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 - Data Quality
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 - PPCI activity (by unit, pmp, by vessel)
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 - Adjunctive pharmacotherapy
 - LV support and shock
 - Additional interventional techniques, devices
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 - PFO / ASD closure / LAA occlusion
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 - Tracked 30 day mortality
 - Outcome by syndrome
 - Outcome by lesion subset
 - Risk adjusted outcomes
 - 3 year MACCE
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 - Predicted risk by centre type

Data Sources



2011 data: Ludman



Procedures from 1st Jan 2011 to 31st December 2011

BCIS AGGREGATE DATA AUDIT FORM

**Data for
ADULT INTERVENTIONAL PROCEDURES**

January 1st 2011 to December 31st 2011
(CCID must be uploaded in addition)

1. Centre details		
1.1	Name of Centre	
1.2	Your name	
1.3	Your position	
1.4	Contact phone	
1.5	Contact email	
1.6	Surgical cover <i>(circle correct answer)</i>	On site / off site / none
2. Your catheter labs		
2.1	Number of cath labs used for adult cath or PCIs	
2.2	Number of labs in Q 2.1 that are biplane labs	
2.3	Number of sessions used for adult cath or PCIs per week	
3. Diagnostic procedures		
3.1	Number of diagnostic adult coronary procedures	
	<small>NB If a 'cath.' proceed' case becomes a PCI, this would count as one diagnostic procedure here, and one PCI procedure (further on in form)</small>	
3.2	Number of local consultant cardiologists performing diagnostic coronary procedures	
3.3	Number of visiting consultant cardiologists performing diagnostic coronary procedures	
3.4	Number of consultant radiologists performing diagnostic coronary procedures	
4. Interventional procedures		
4.1	Number of local cardiologists performing PCI	
4.2	Number of visiting cardiologists performing PCI	
4.3	Number of radiologists performing PCI	
4.4	Number of SpRs being given subspecialty training in PCI <small>(number in your hospital, not the total in your training scheme)</small>	

NICOR Portal

NICOR Portal

NICOR - National Institute for Cardiovascular Outcomes Research

NICOR Portal | BCIS - \$Patients

BCIS

Patient Data

- View/Edit Patient Data
- Procedures by Date
- Deleted Records

Procedures

- All Procedures

Import / Export

- Import Data (bcis.csv)
- Export Data (analysis)
- View Import Logs

Reports

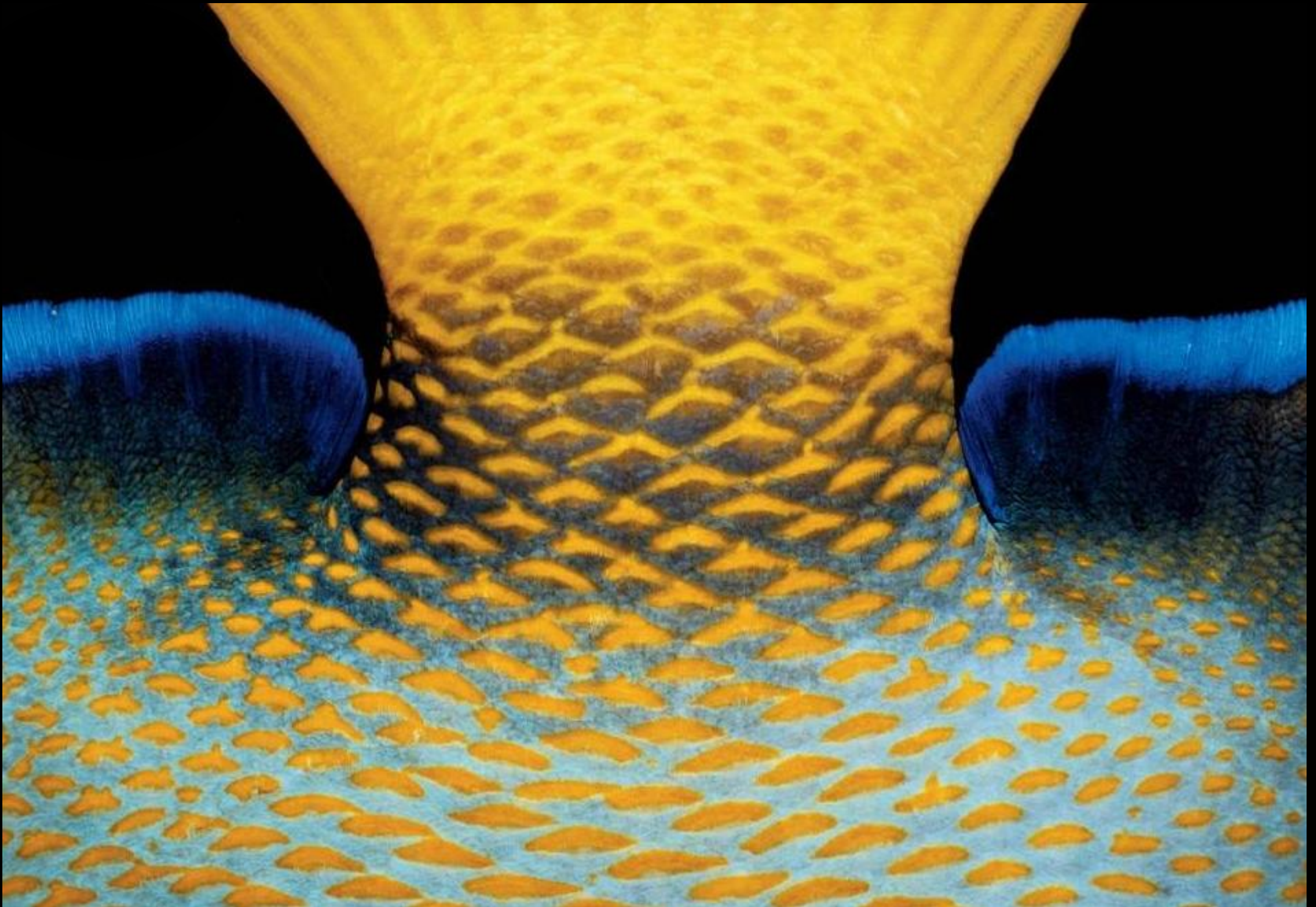
- Aggregate Report
- Delays Report
- VLAD Plot
- Funnel Plot



Structure



2011 data: Ludman



Angiography Only Centres 2011



2011 data: Ludman

New Angio Centres

Ulster Hospital Dundonald

Angio Centres Stopped

Bath BMI

Royal Boulton

Tameside Hospital

Thornbury Hospital BMI

West Cumberland Hospital

PCI Centres 2011



2011 data: Ludman

PCI Centres from existing angiography units

Royal Gwent Hospital, Newport

Spire Hospital, Southampton

Calderdale Royal Hospital, Halifax

Cumberland Infirmary, Carlisle

PCI Centres stopped

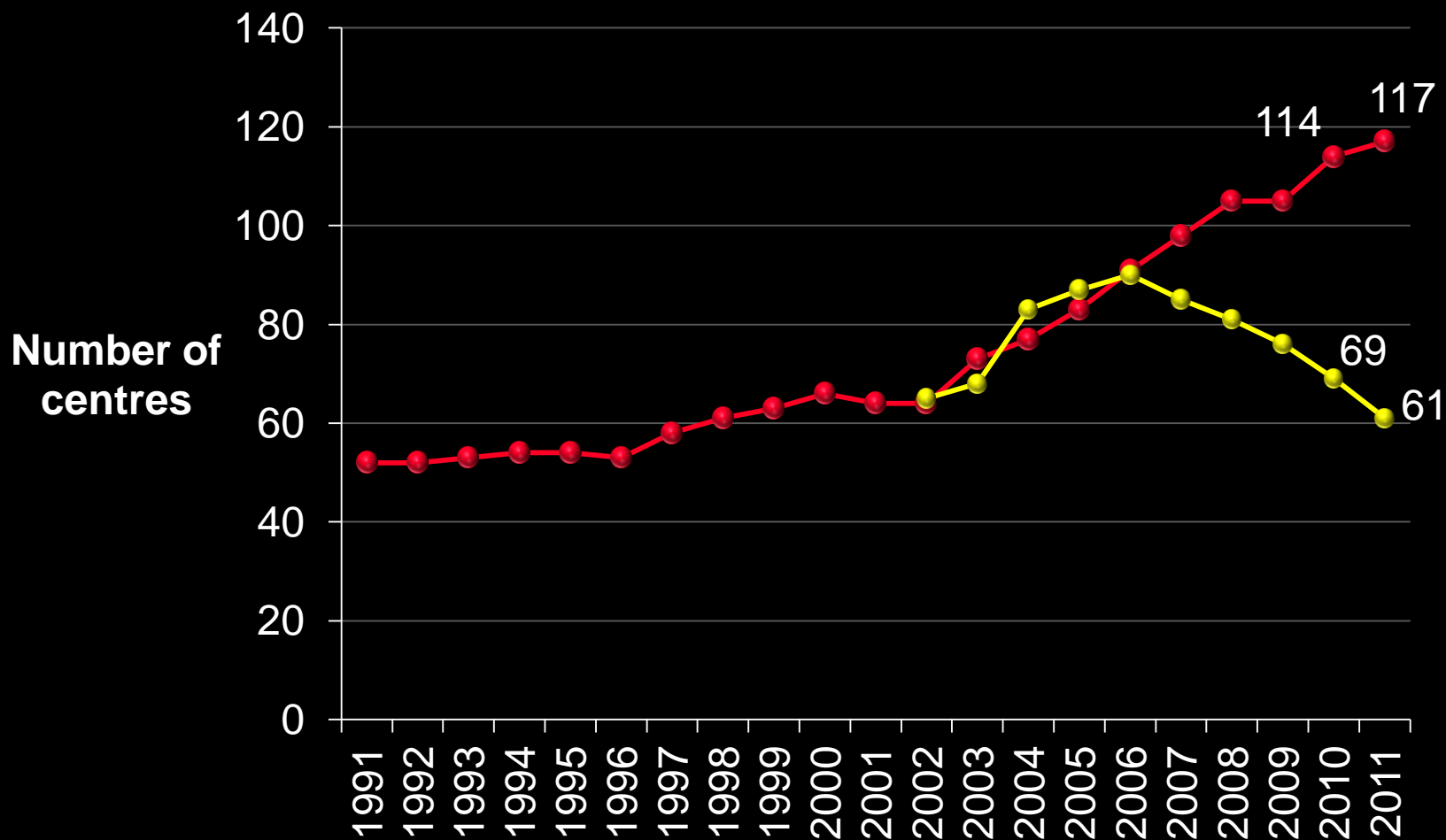
St Mary's Hospital, London

UK Centres 2011



2011 data: Ludman

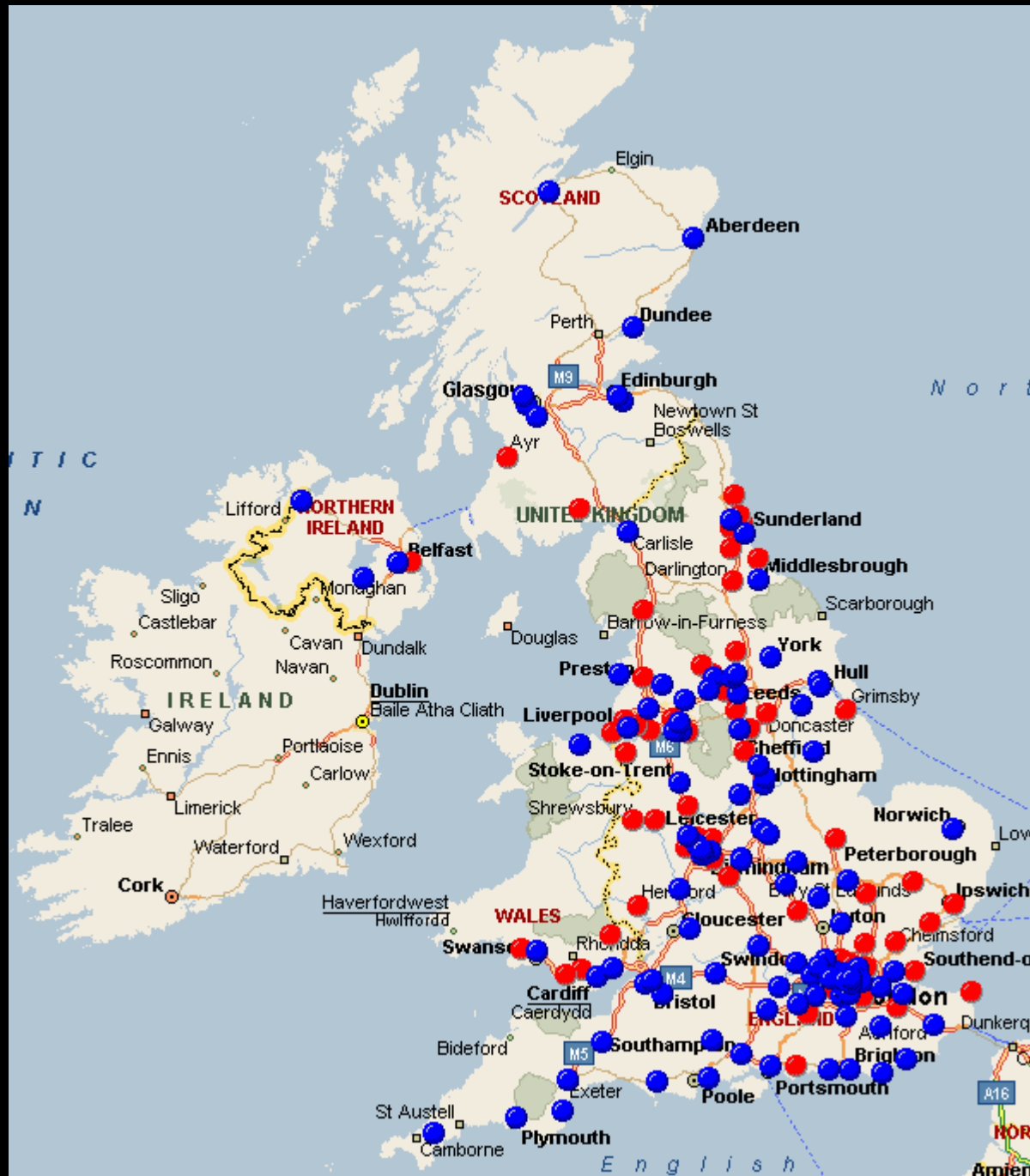
● PCI ● Angio only



2011



2011 data: Ludman

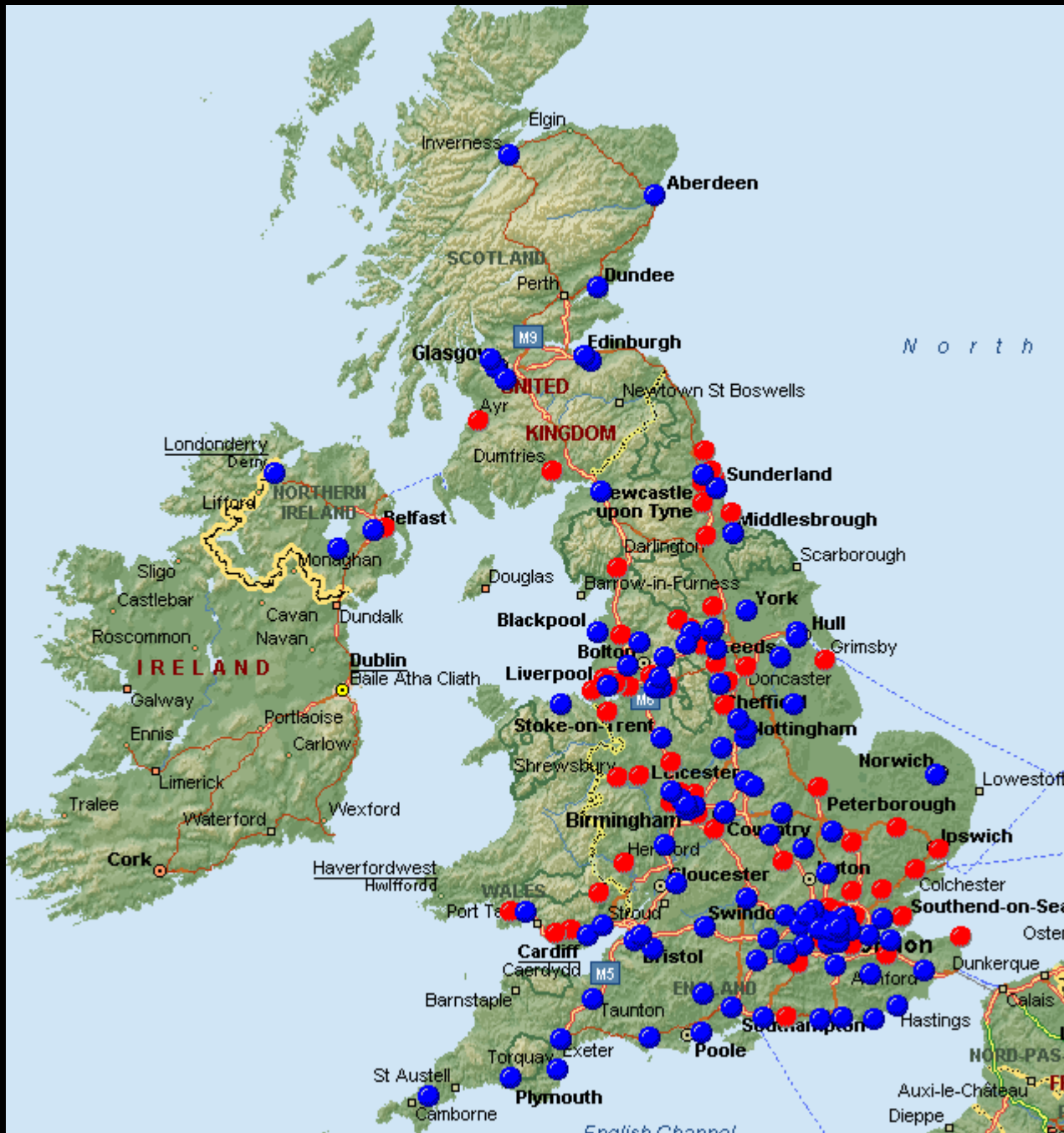


- Angiography (61)
- PCI (117)

2011



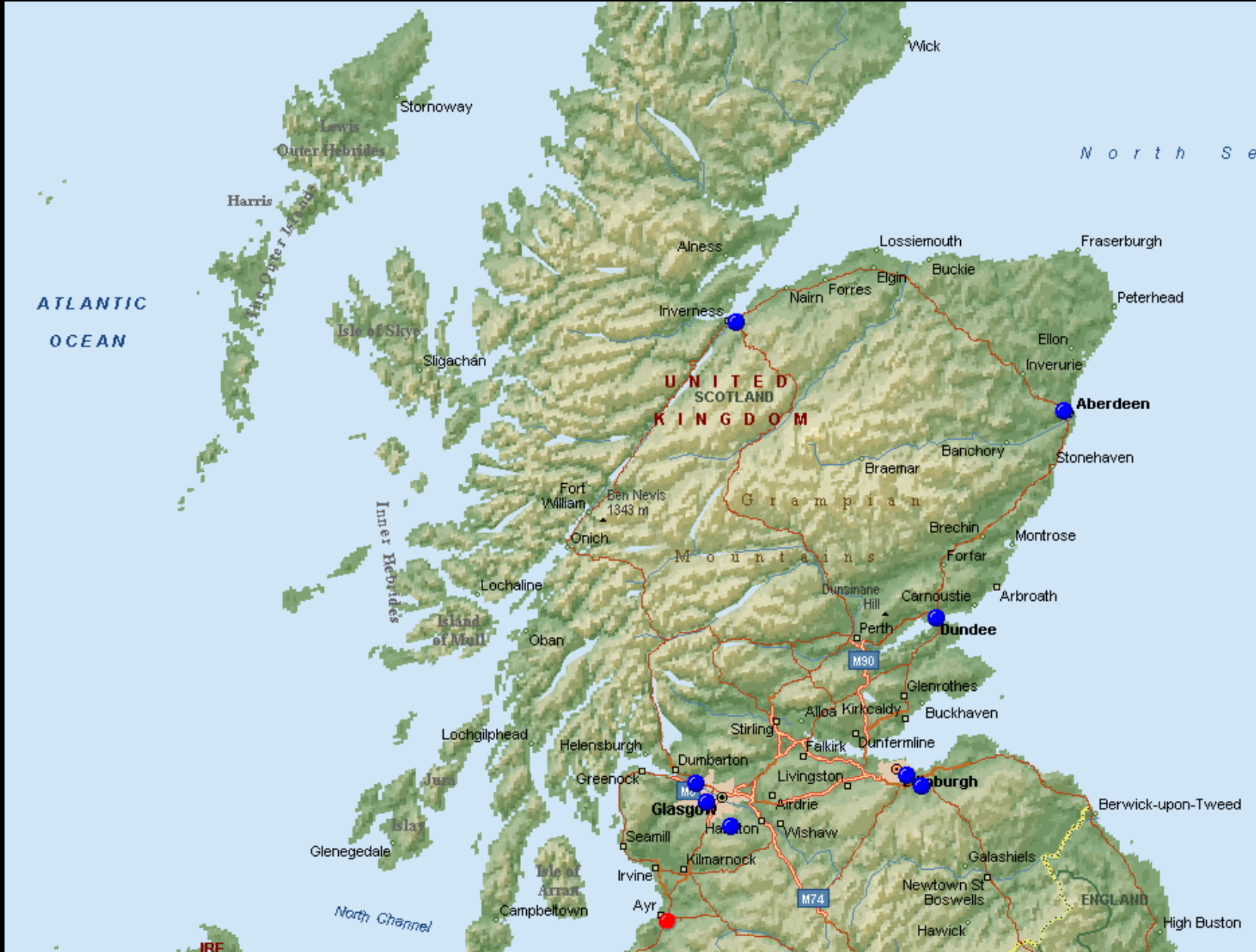
2011 data: Ludman



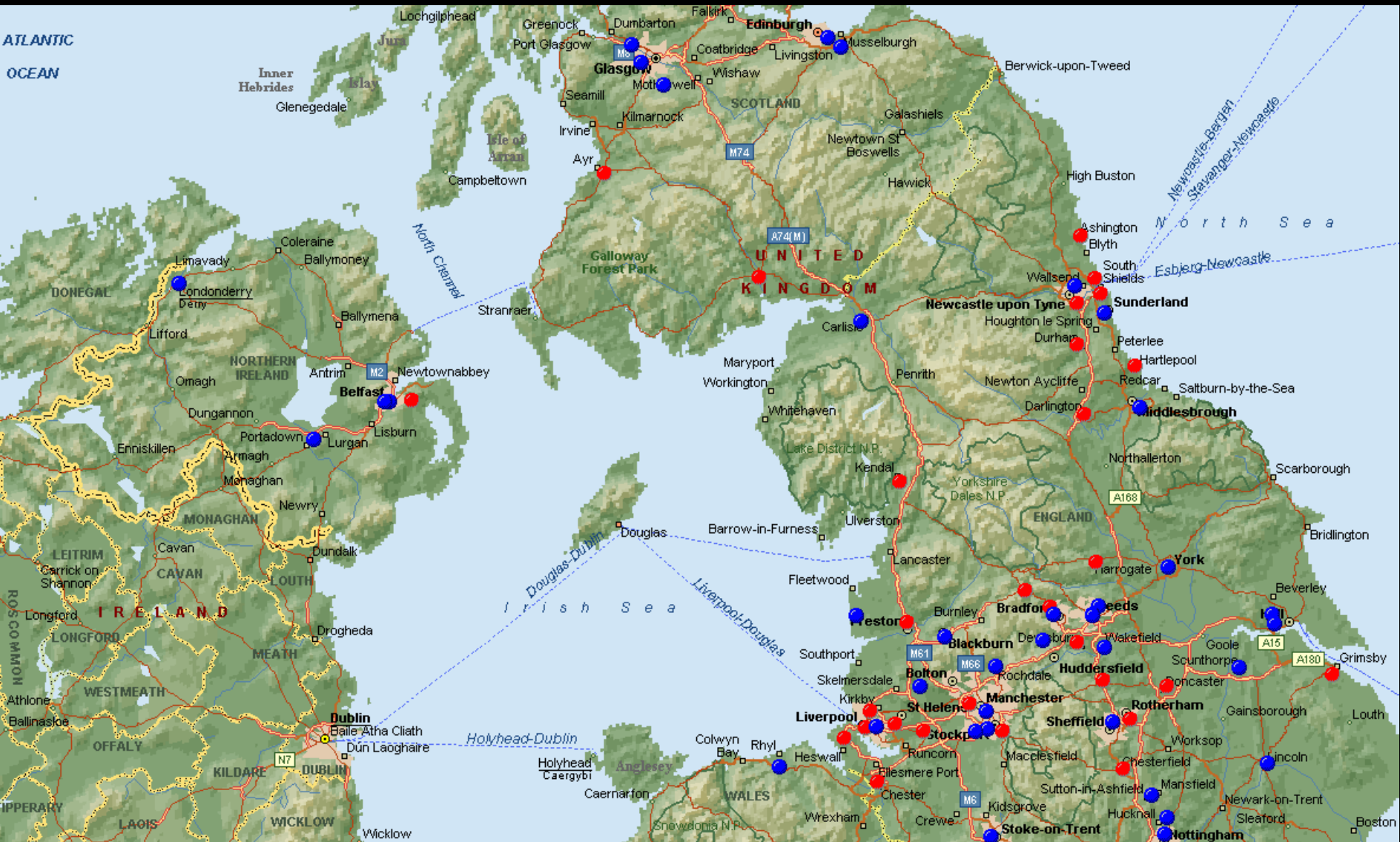
● Angiography (61)

● PCI (117)

2011



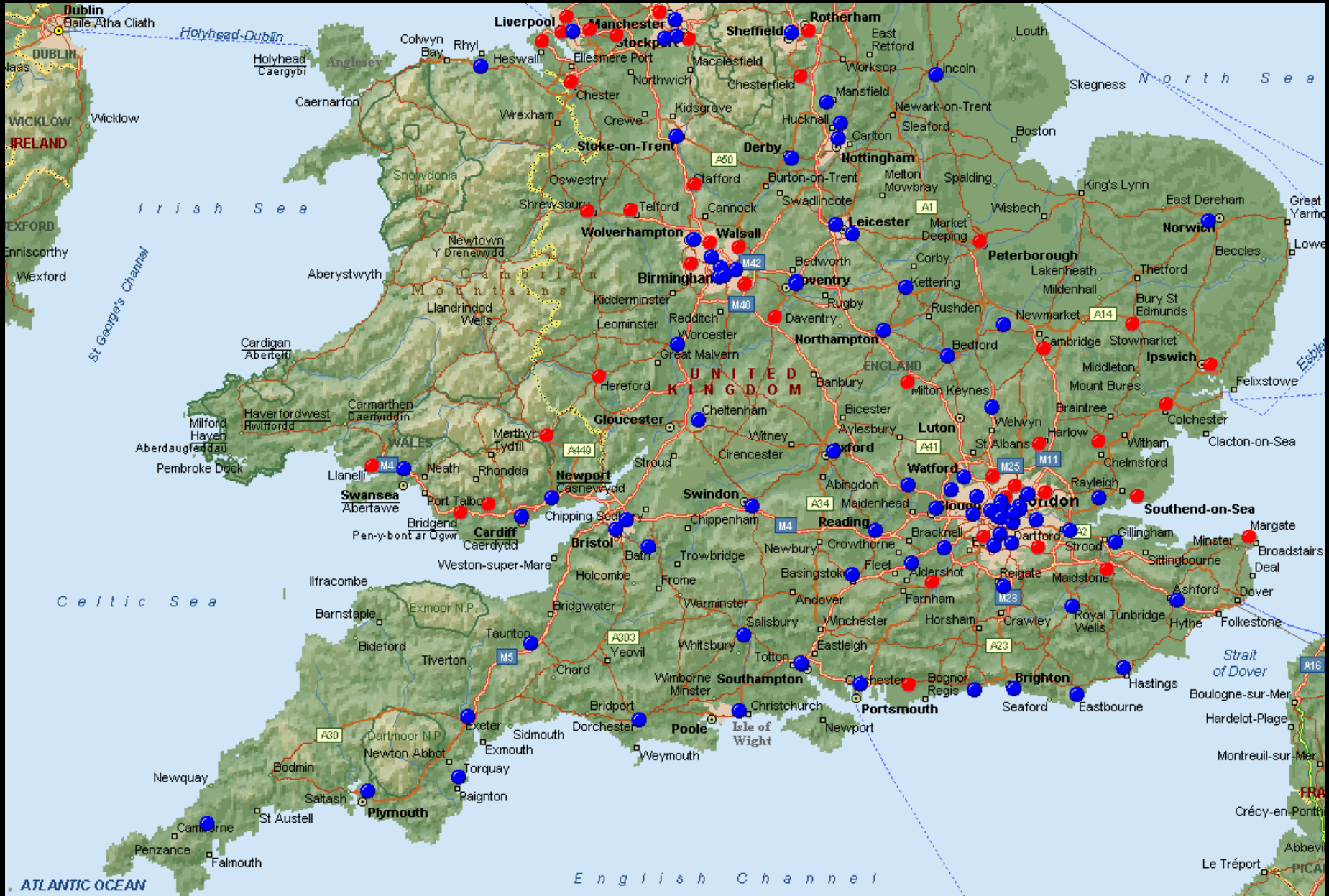
2011



2011



2011 data: Ludman

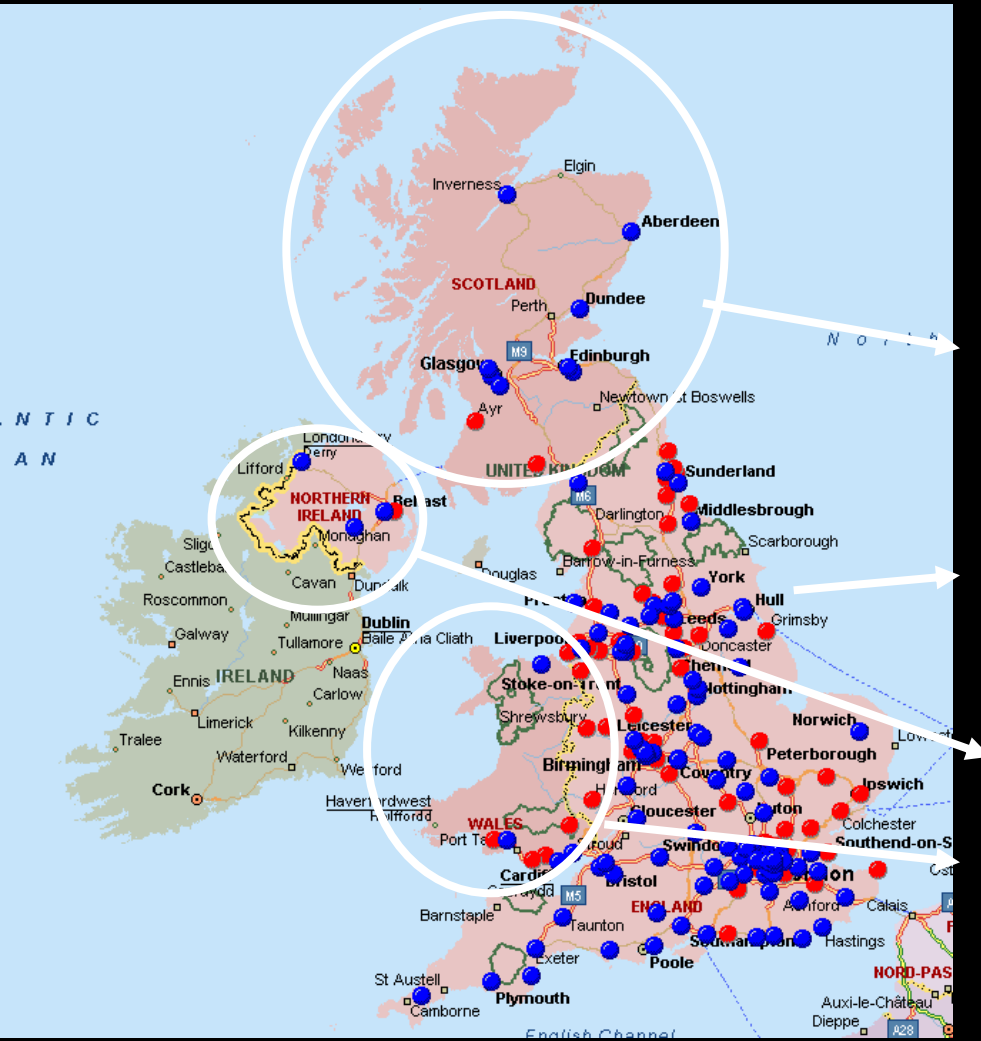





PCI Centres in 2011

UK Countries



2011 data: Ludman



	Scotland	NHS	6
		Private	2
	England	NHS	85
		Private	16
	N Ireland		4
	Wales		4
	Total		117

UK Interventional and Diagnostic centres 2011



2011 data: Ludman

	No.	No cath data	No PCI data	Caths	PCIs
NHS Interventional	99	0	0	190,045	87,468
Private Interventional	18	0	0	3,402	1,224
Diagnostic only	61	0	-	41,929	-
TOTAL	178			235,376	88,692

Population Estimates



Births



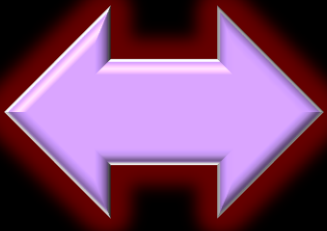
Deaths



Net international migration



2011 Estimate



Population Estimates

<http://www.ons.gov.uk/ons/rel/census/2011-census/population-and-household-estimates-for-england-and-wales/stb-e-w.html#tab-How-the-census-estimates-compare-to-the-2010-mid-year-population-estimates>



Office for
National Statistics

Date: 16 July 2012

Coverage: England and Wales

Theme: Population

**Explaining the Difference between the 2011 Census
Estimates and the Rolled-Forward Population Estimates**



Population Estimates



In general terms, the population estimates over the 10-year period since 2001 Census have been prepared by starting with the 2001 Census-based population estimates, and every year adding on births, subtracting deaths, and adding in any net international migration that has taken place since 2001.

Table 1

The difference between census day and the revised rolled-forward population estimates

			Thousands
	Revised rolled-forward population estimates [*]	2011 Census estimates	Difference to explain
Total	55,600	56,076	476
Males	27,429	27,573	144
Females	28,171	28,503	332

Population estimates

Mid 2011



2011 data: Ludman



Total UK: 63.142 m

Scotland 5.255 m

Northern Ireland 1.811 m

England 53.013 m

est: N. Welsh pop 0.7m

0.45m served locally

0.25m Rx in England

Total Rx in England 53.263 m

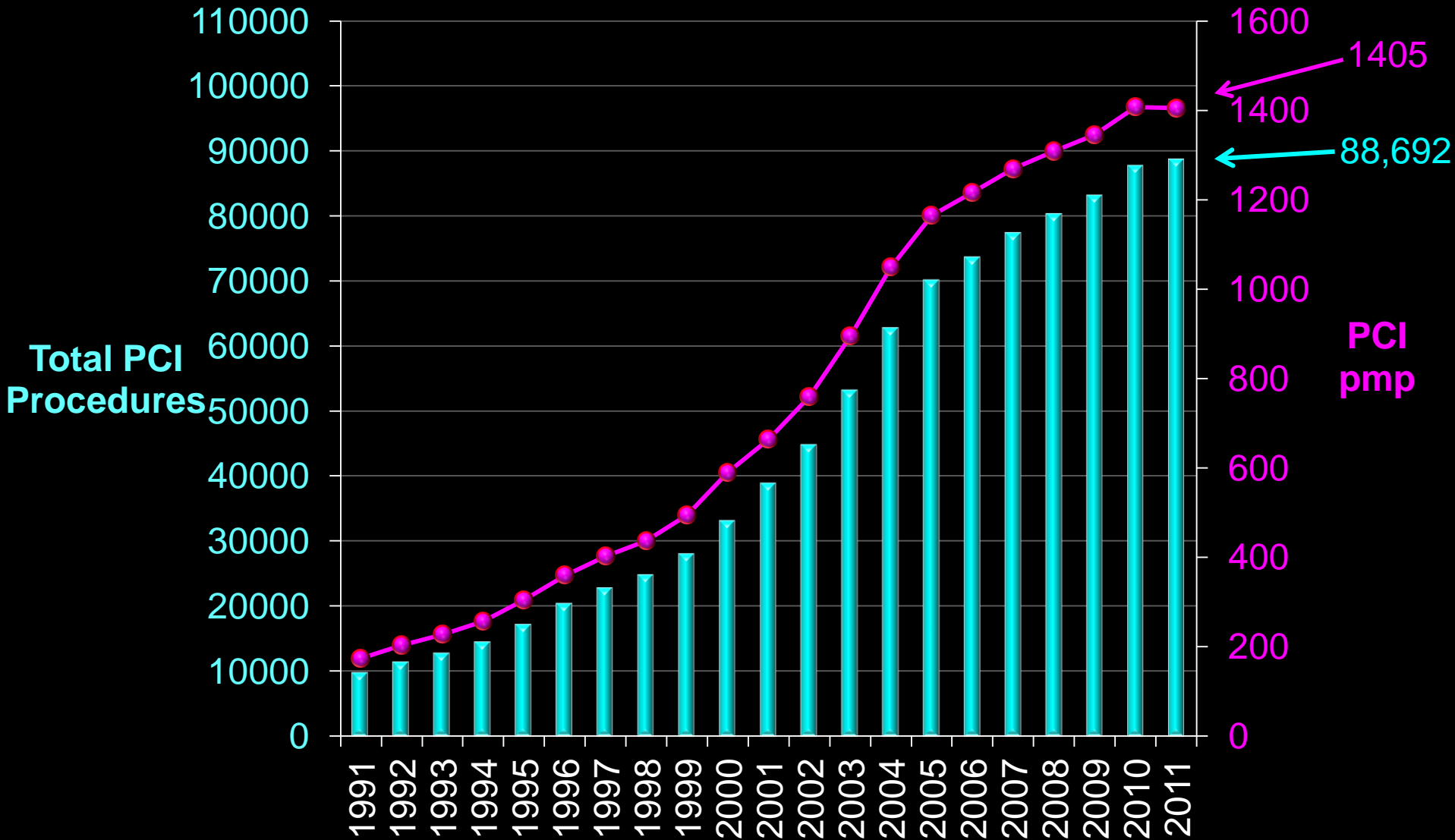
Wales 3.064 m

est: Rx in Wales: 2.814 m

Total PCI activity to 2011 (UK)



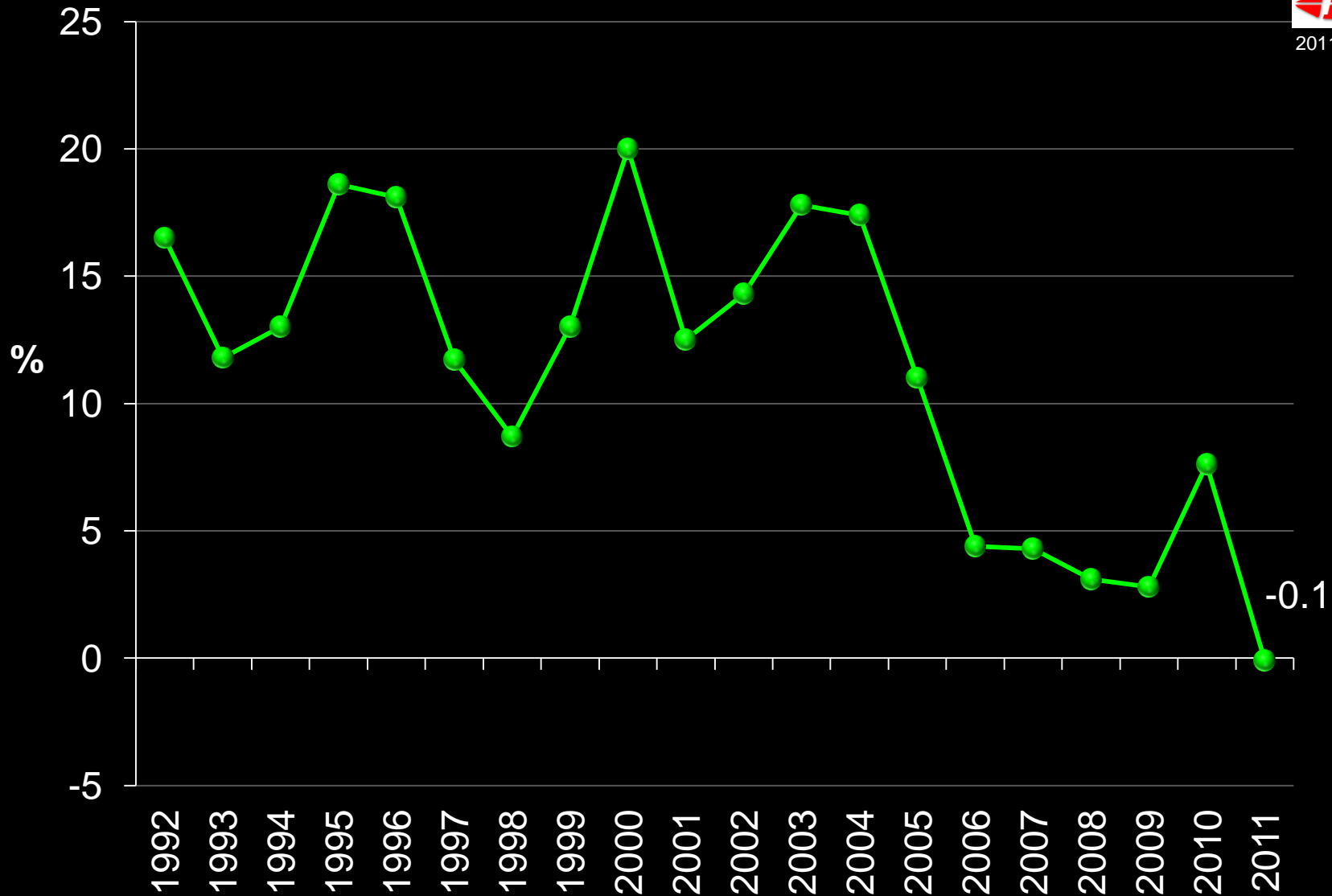
2011 data: Ludman



Rate of Increase in PCI Procedures pmp



2011 data: Ludman



PCI per Angiogram ratio



2011 data: Ludman

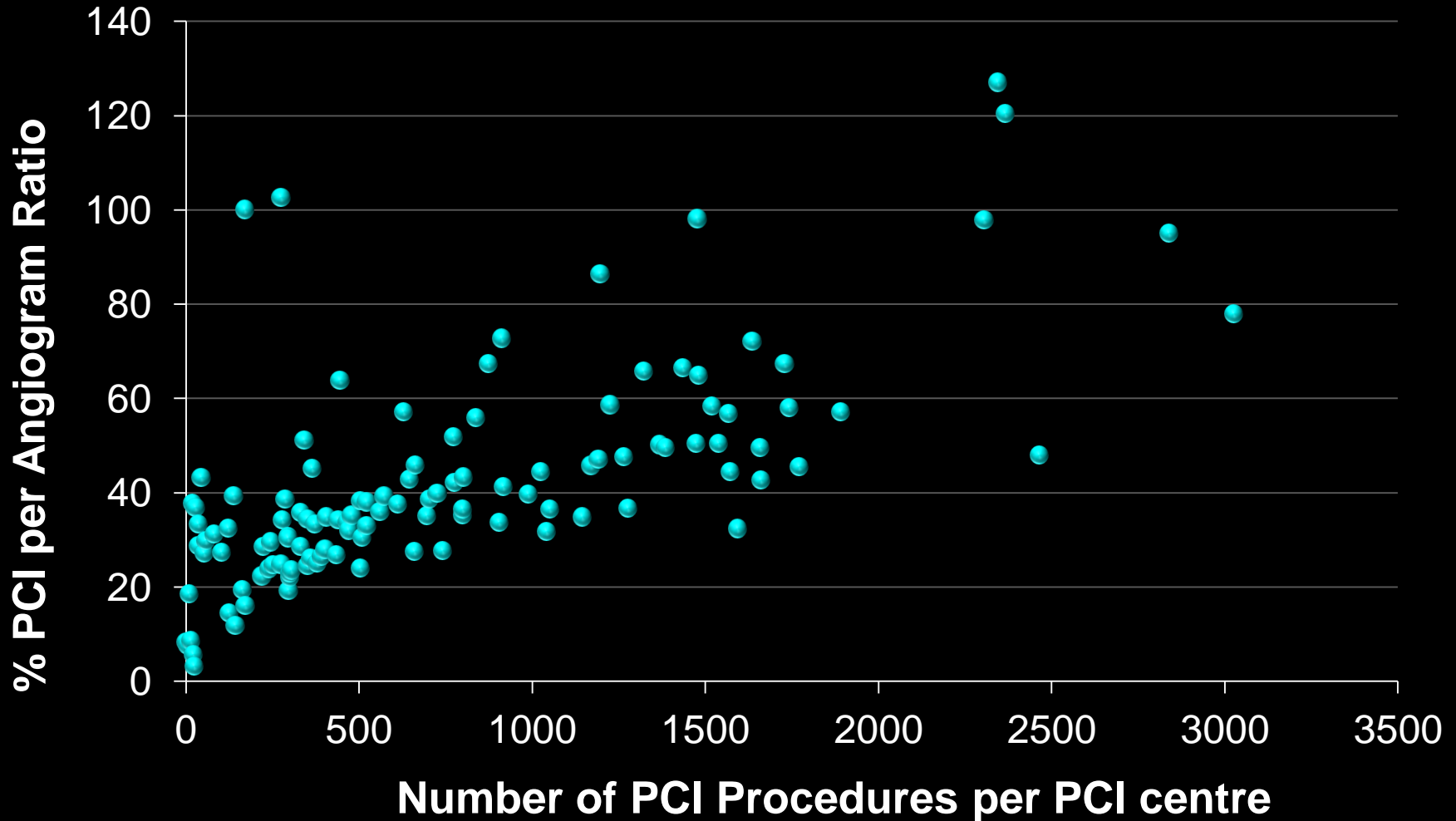


PCI per Angiogram ratio

By Individual PCI Units



2011 data: Ludman

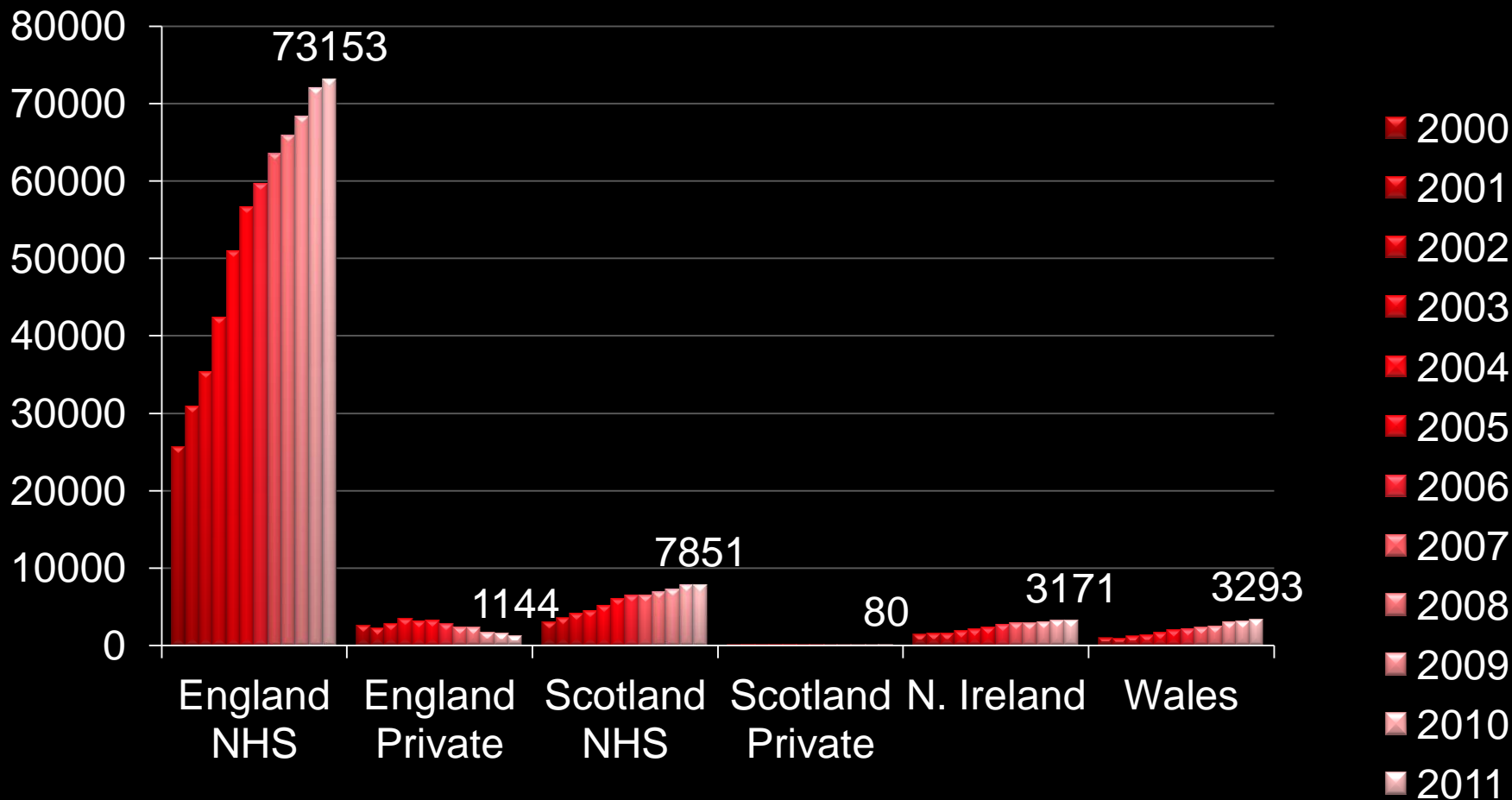


Total PCIs in the UK Countries

by Type of Institution



2011 data: Ludman

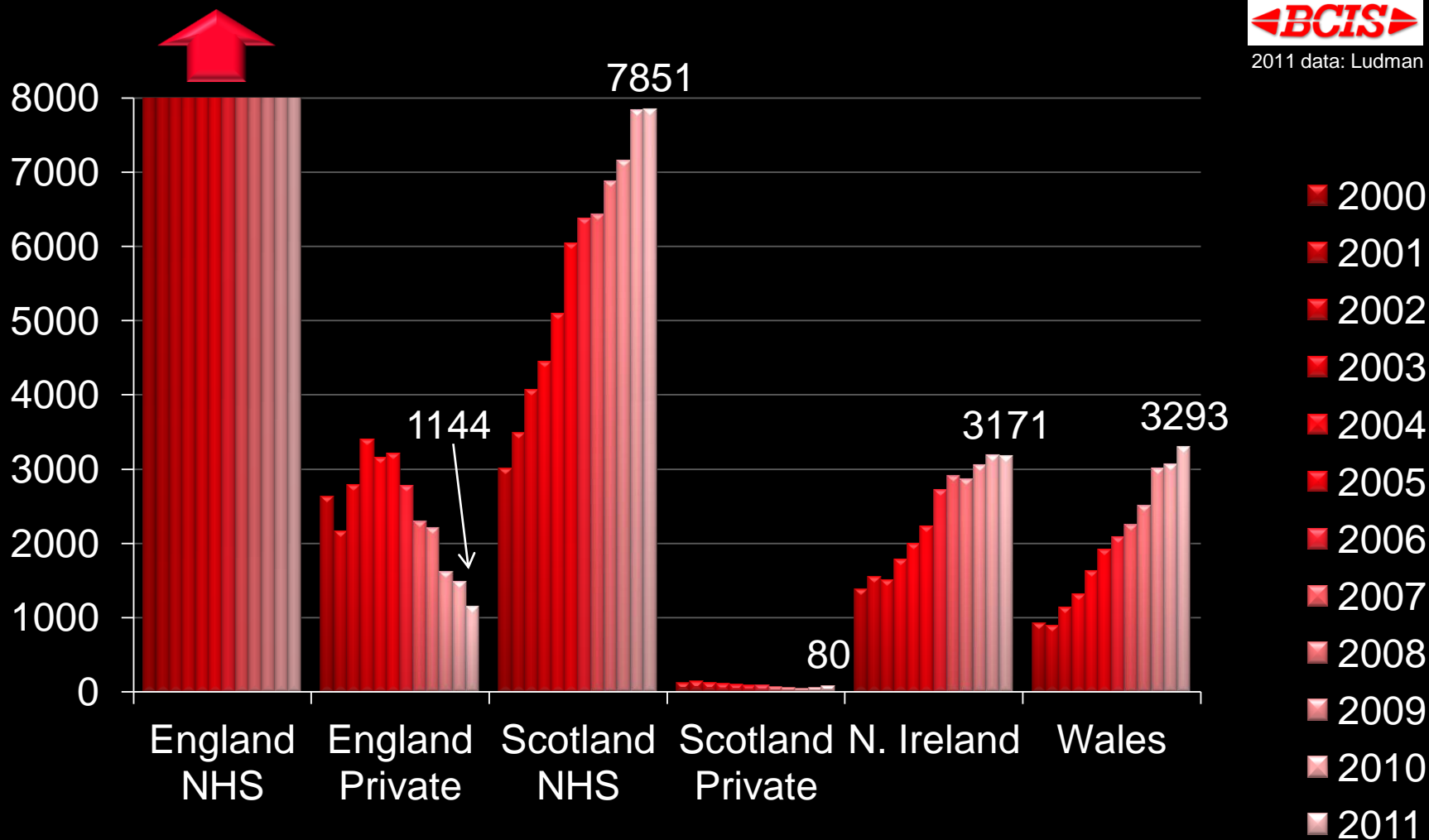


Total PCIs in the UK Countries

by Type of Institution



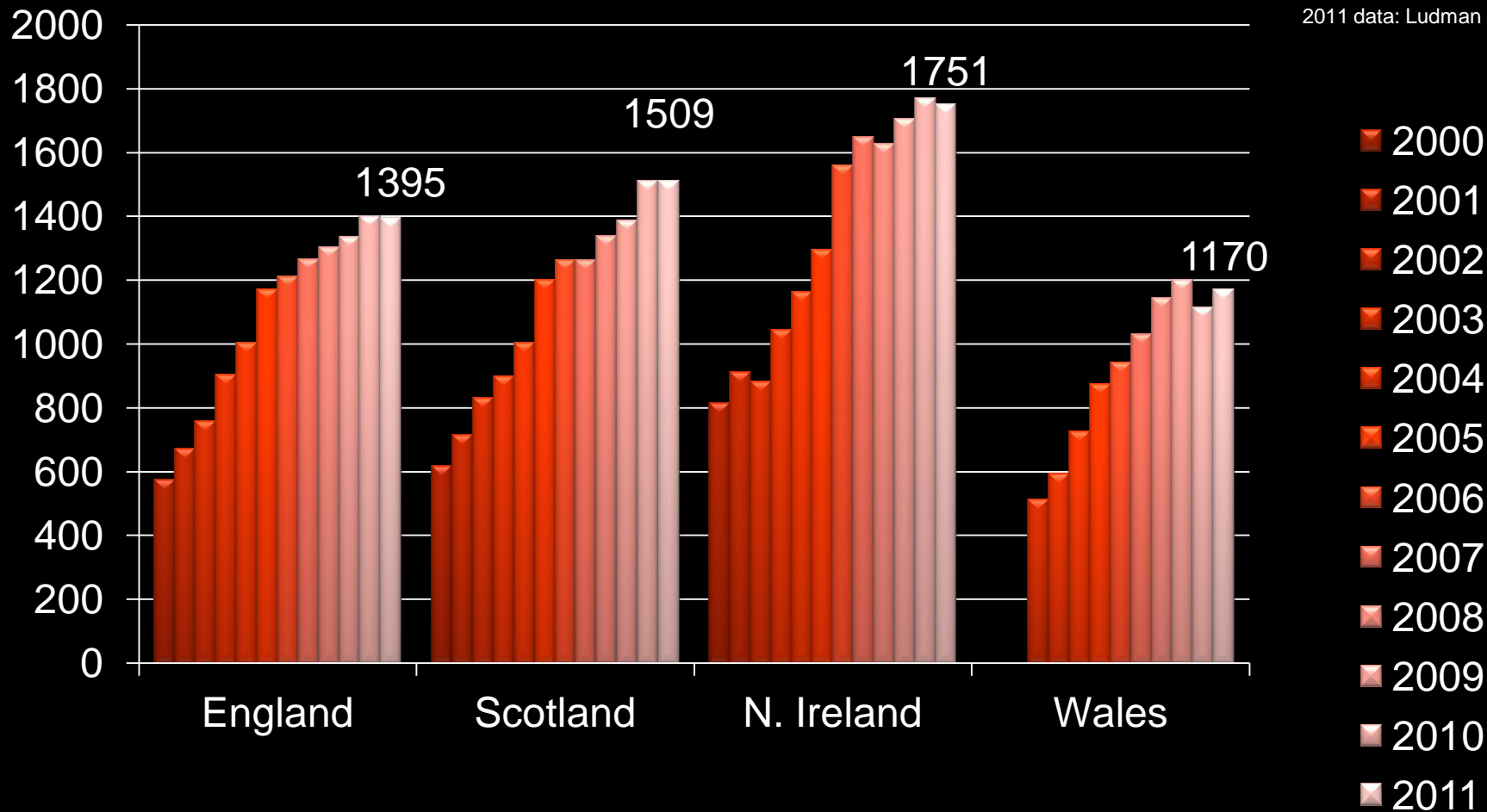
2011 data: Ludman



PCI pmp in the UK Countries



2011 data: Ludman

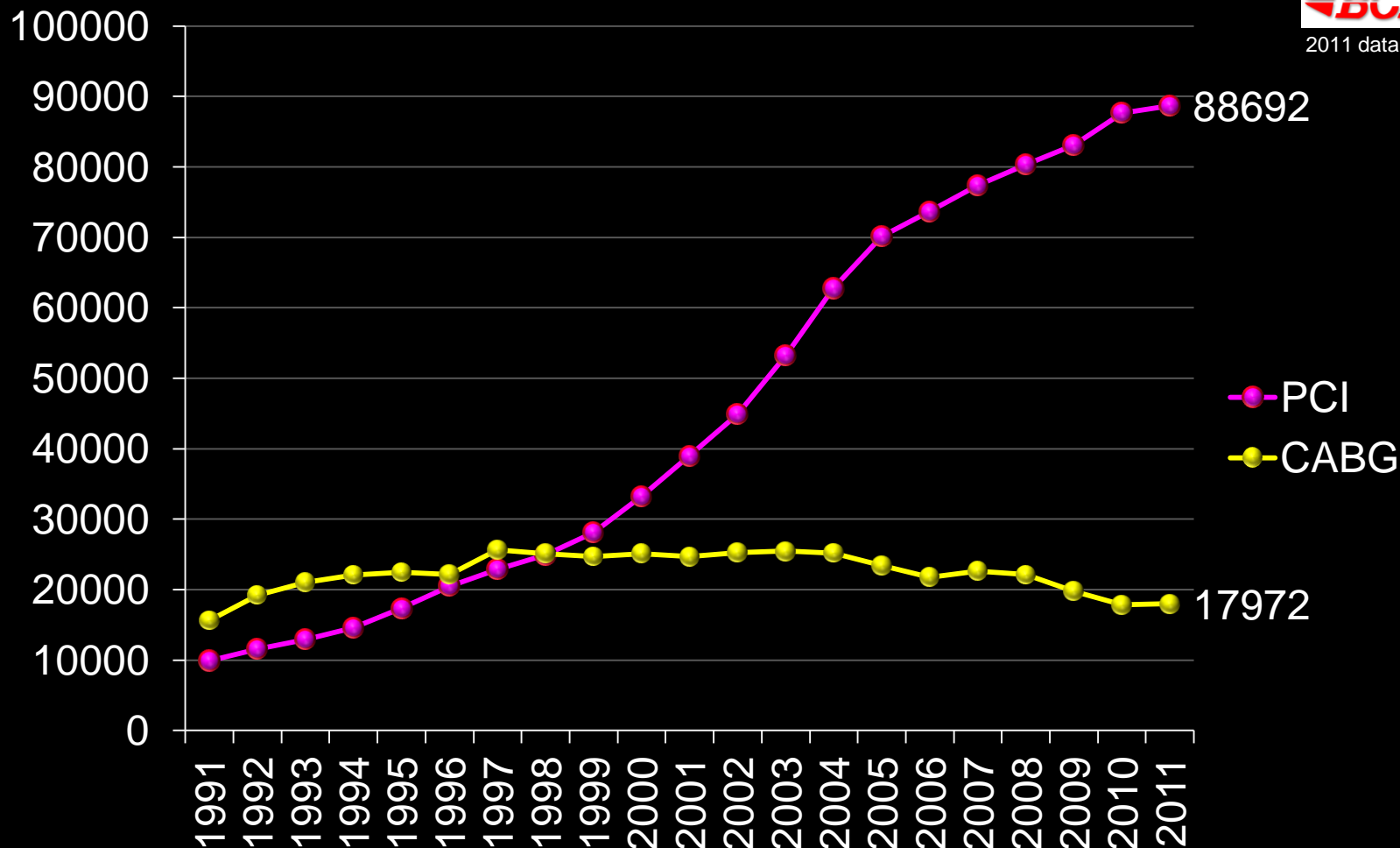


PCI vs Isolated CABG Numbers (UK)

1991 to 2011



2011 data: Ludman



Note: CABG data to 2008 for financial yr
CABG from 2006 from SCTS database

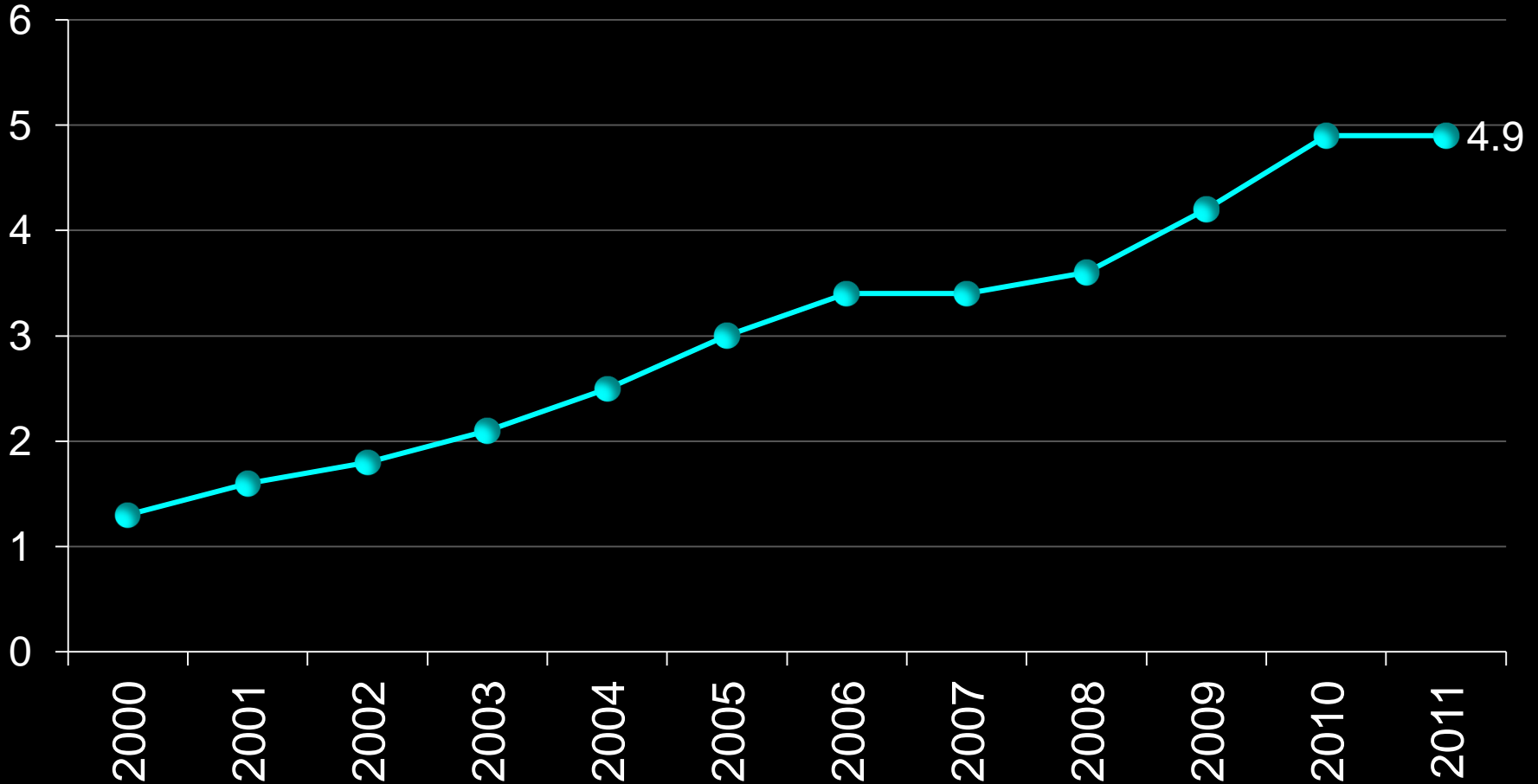
Aggregate forms

PCI vs Isolated CABG Ratio (UK)

2000 to 2011



2011 data: Ludman

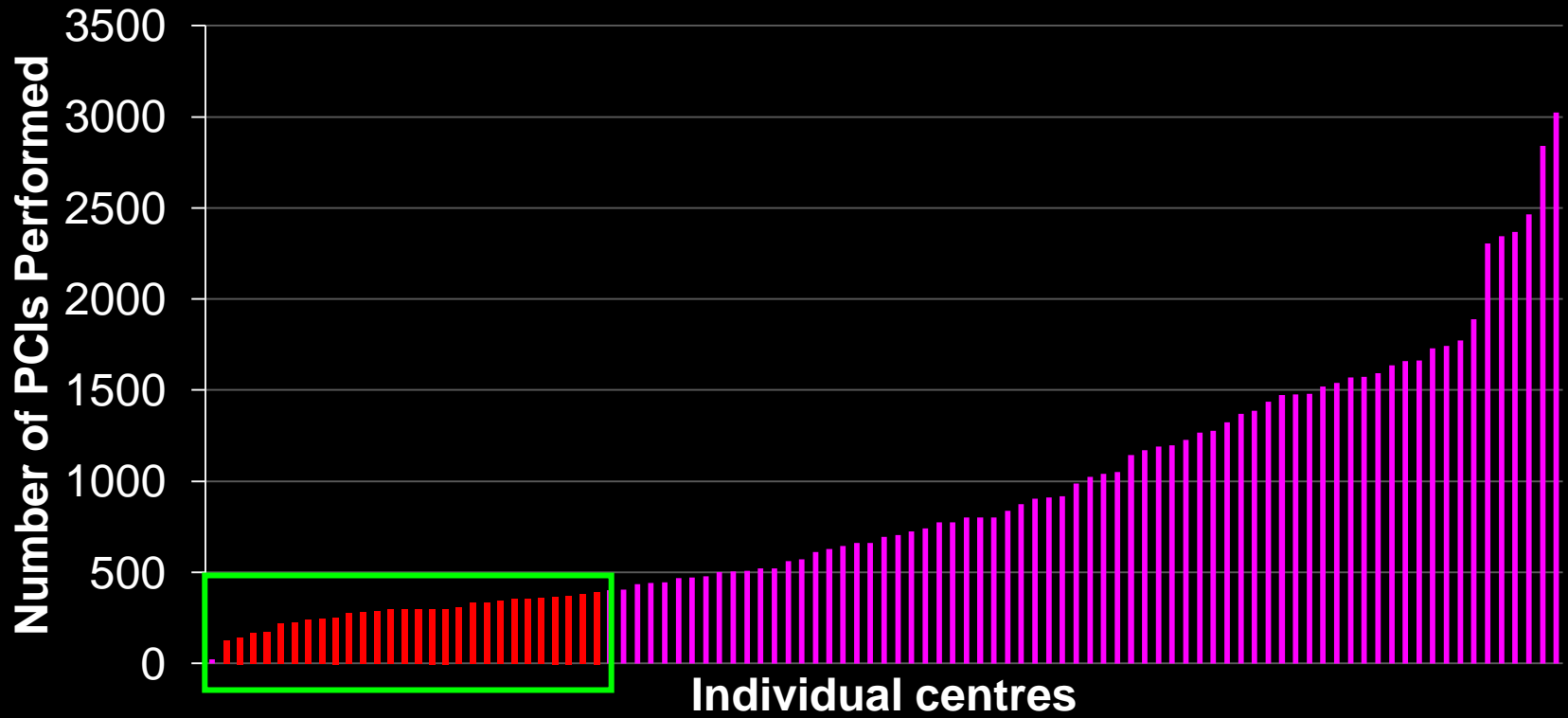


Number of PCIs performed in 2011

(per NHS Centre)

Mean = 883

Median = 695



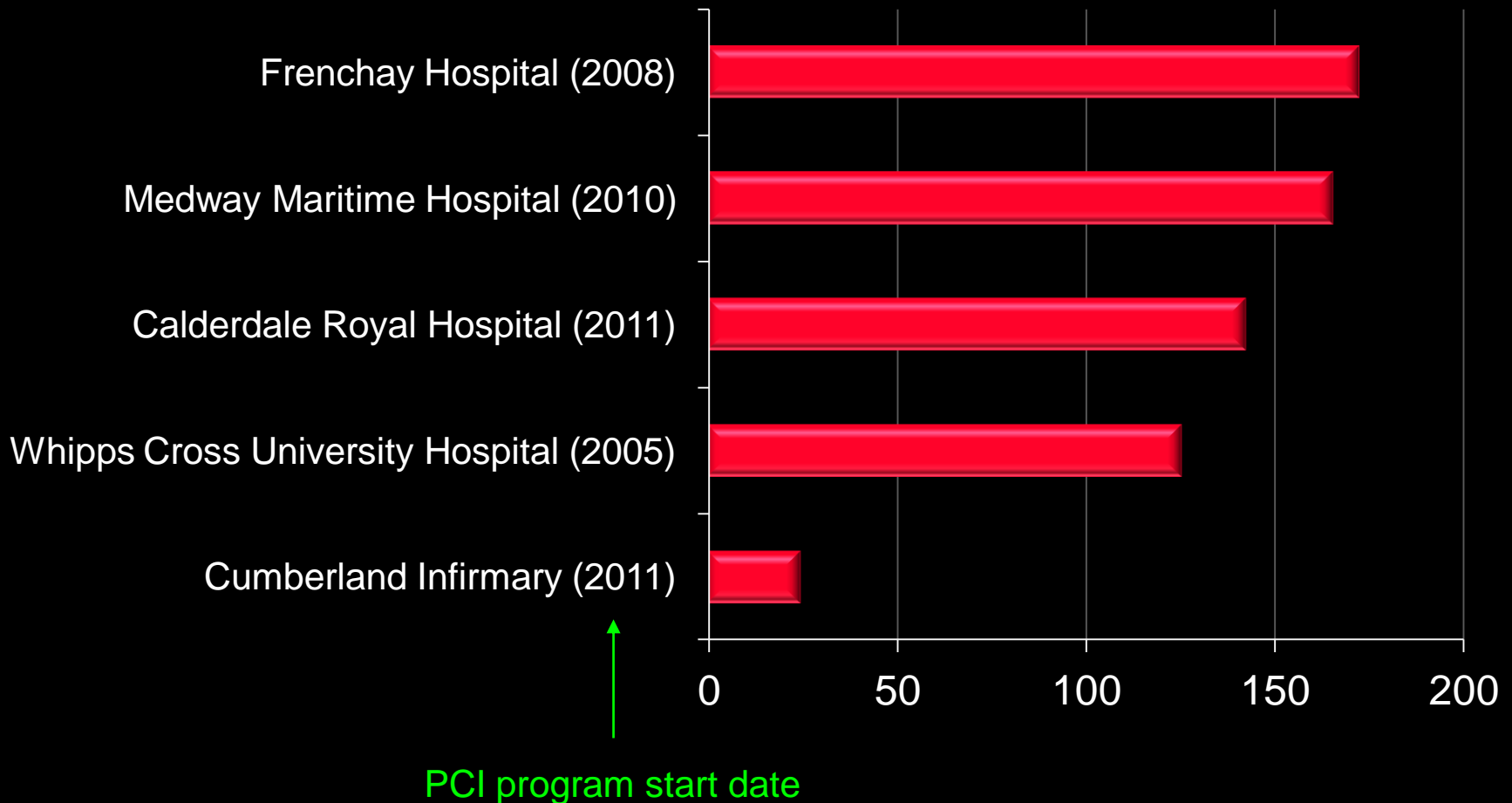
29 Centres performing < 400 cases (29%)

Number of PCIs performed in 2011



2011 data: Ludman

NHS Centres performing < 200 procedures

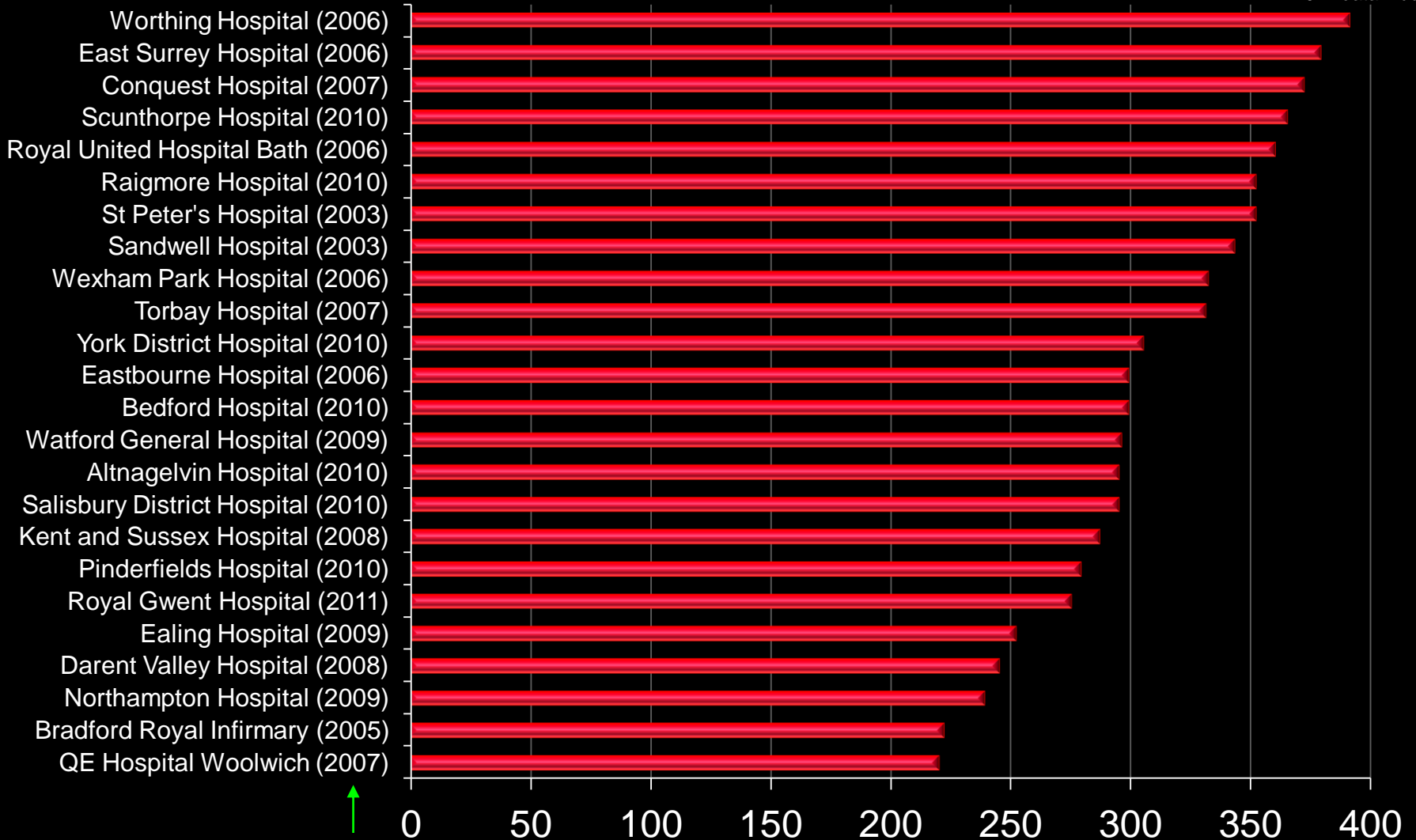


Number of PCIs performed in 2011

NHS Centres performing 200 to 400 procedures



2011 data: Ludman



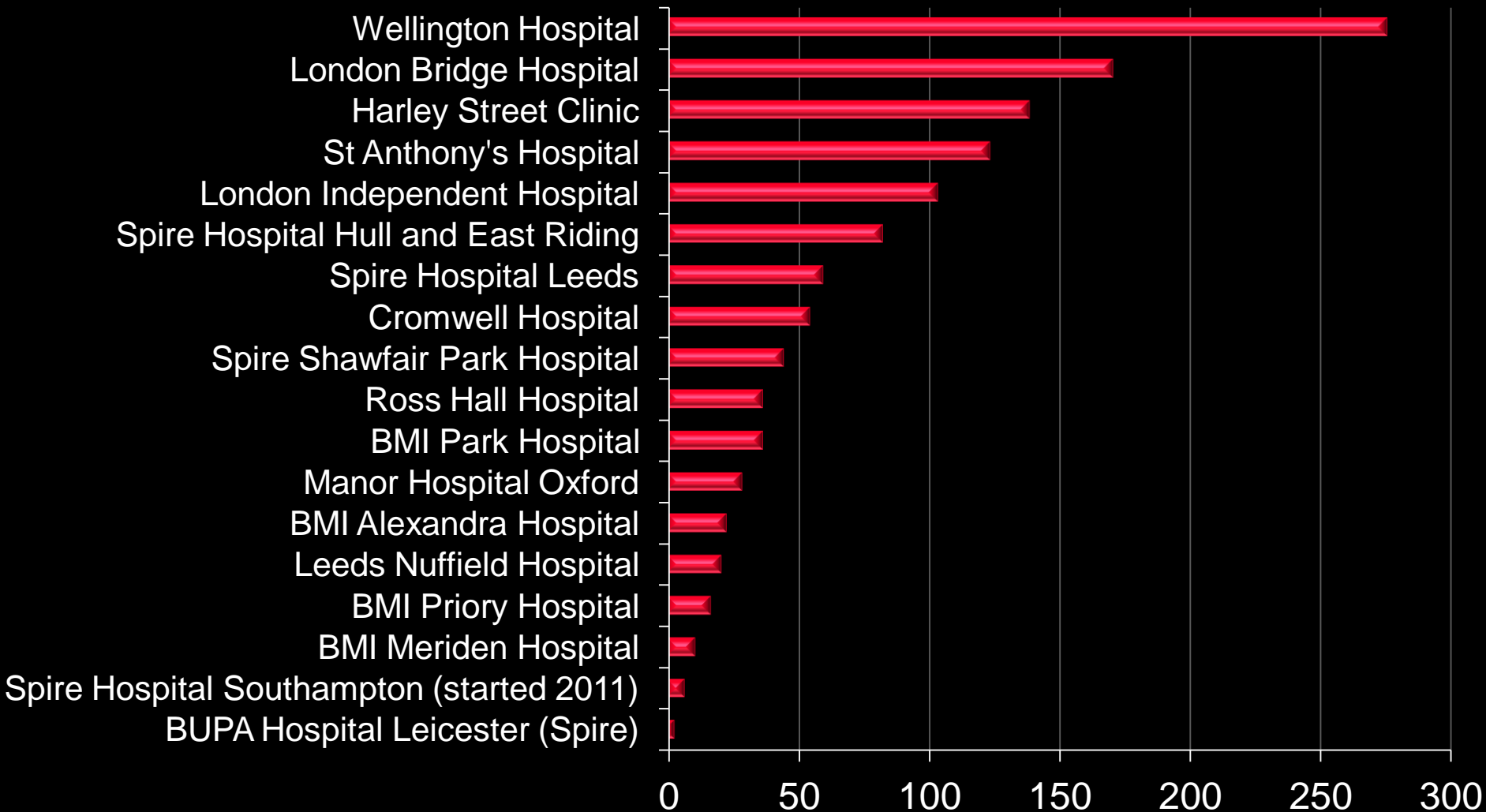
PCI program start date

Number of PCIs performed in 2011

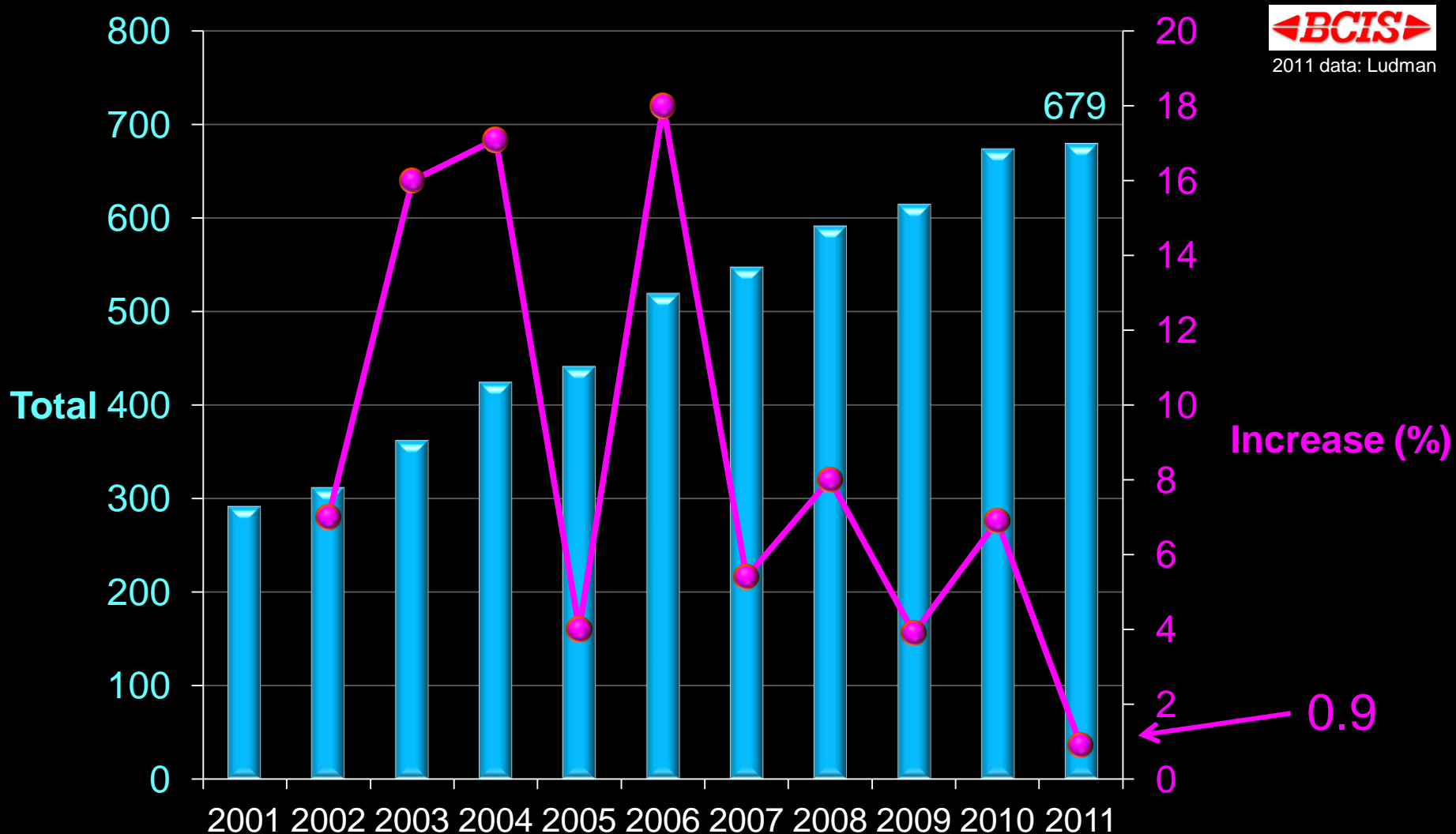


2011 data: Ludman

Private Centres performing < 400 procedures



No. of Interventional Consultants (NHS centres)



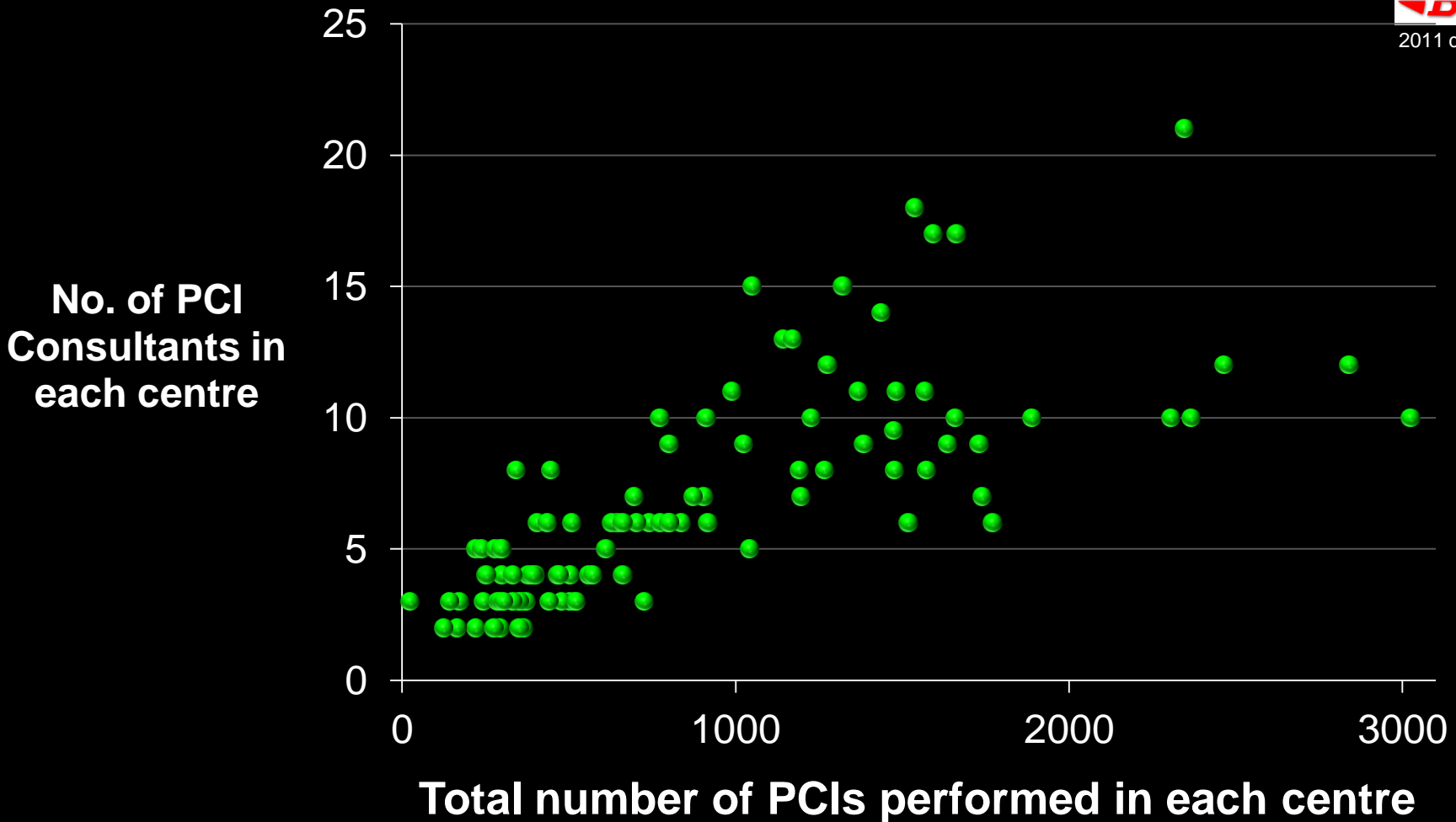
Note: if work at two NHS centres will be counted twice
Includes cardiologists and radiologists

No. of Consultant in each Centre

(NHS Centres 2011)



2011 data: Ludman

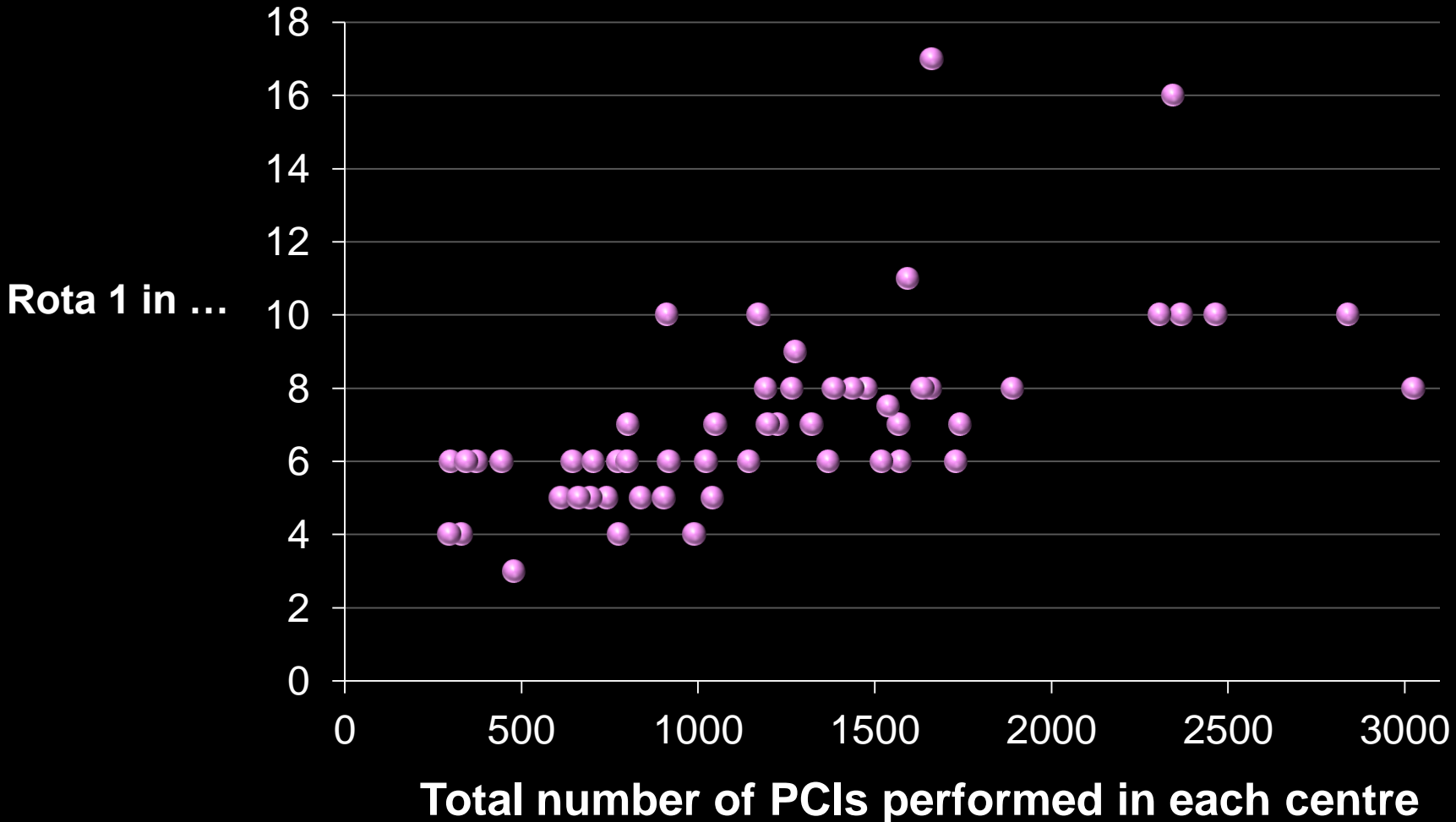


On call rota

24/7 PPCI Centres - Weekdays



2011 data: Ludman



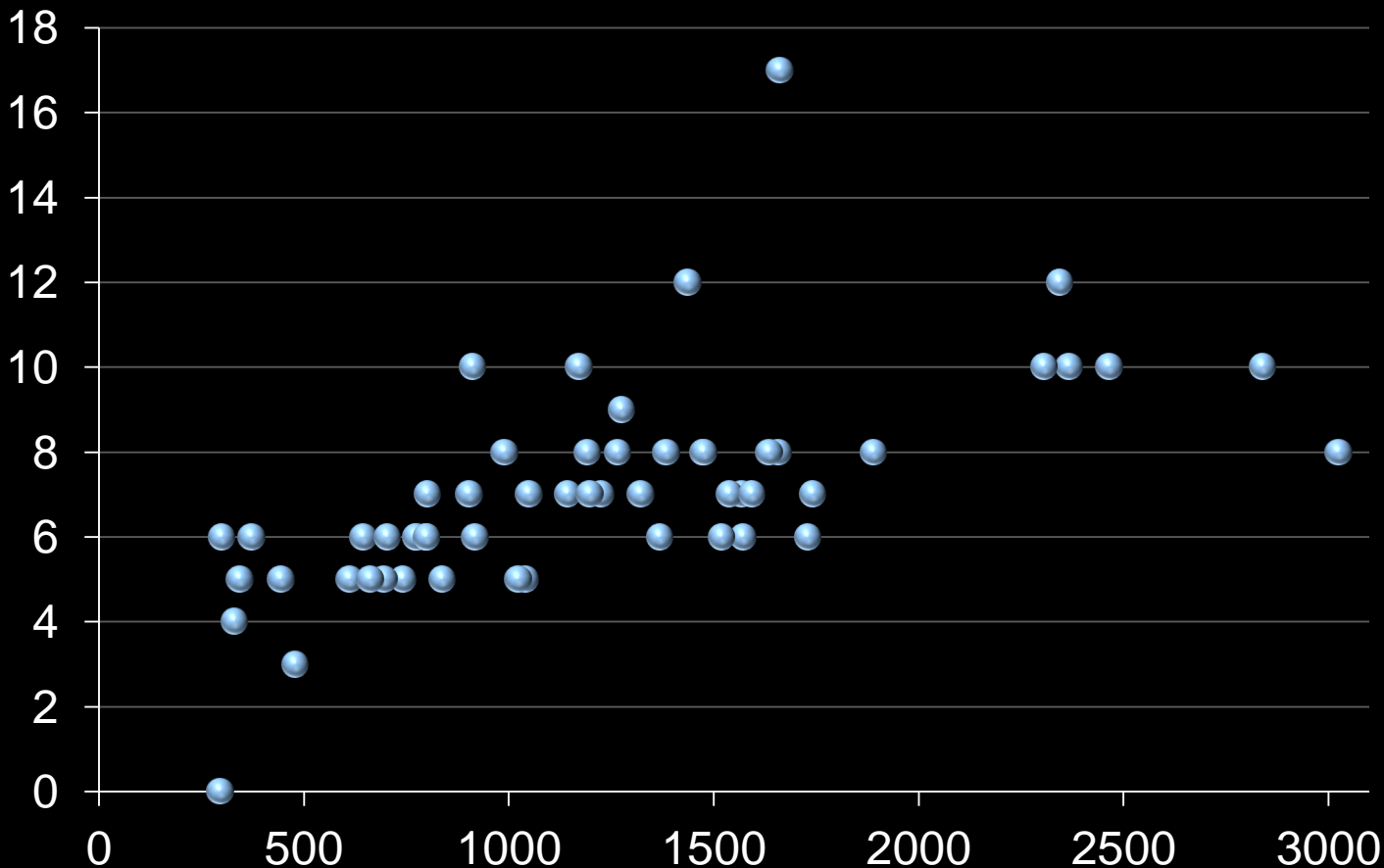
On call rota

24/7 PPCI Centres - Weekends



2011 data: Ludman

Rota 1 in ...



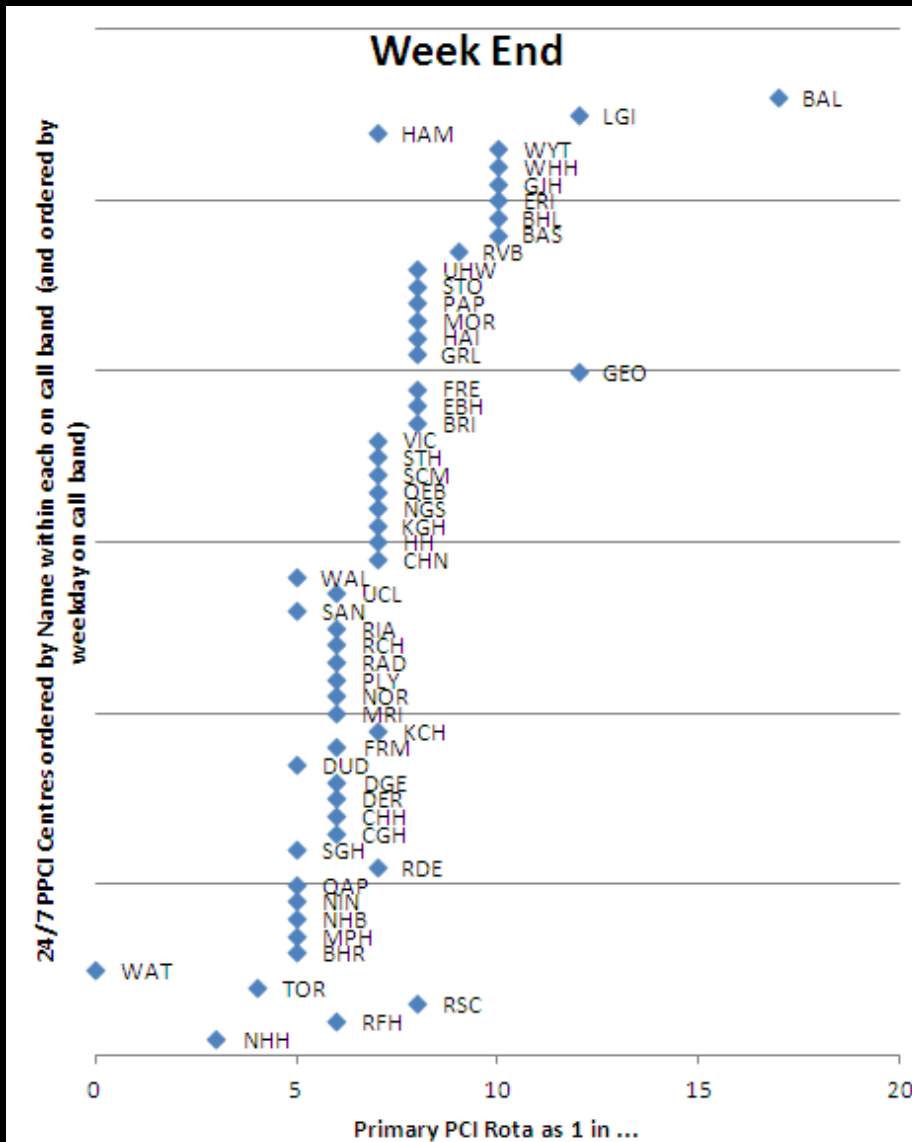
Total number of PCIs performed in each centre

On call rota

24/7 PPCI Centres - Weekends



2011 data: Ludman

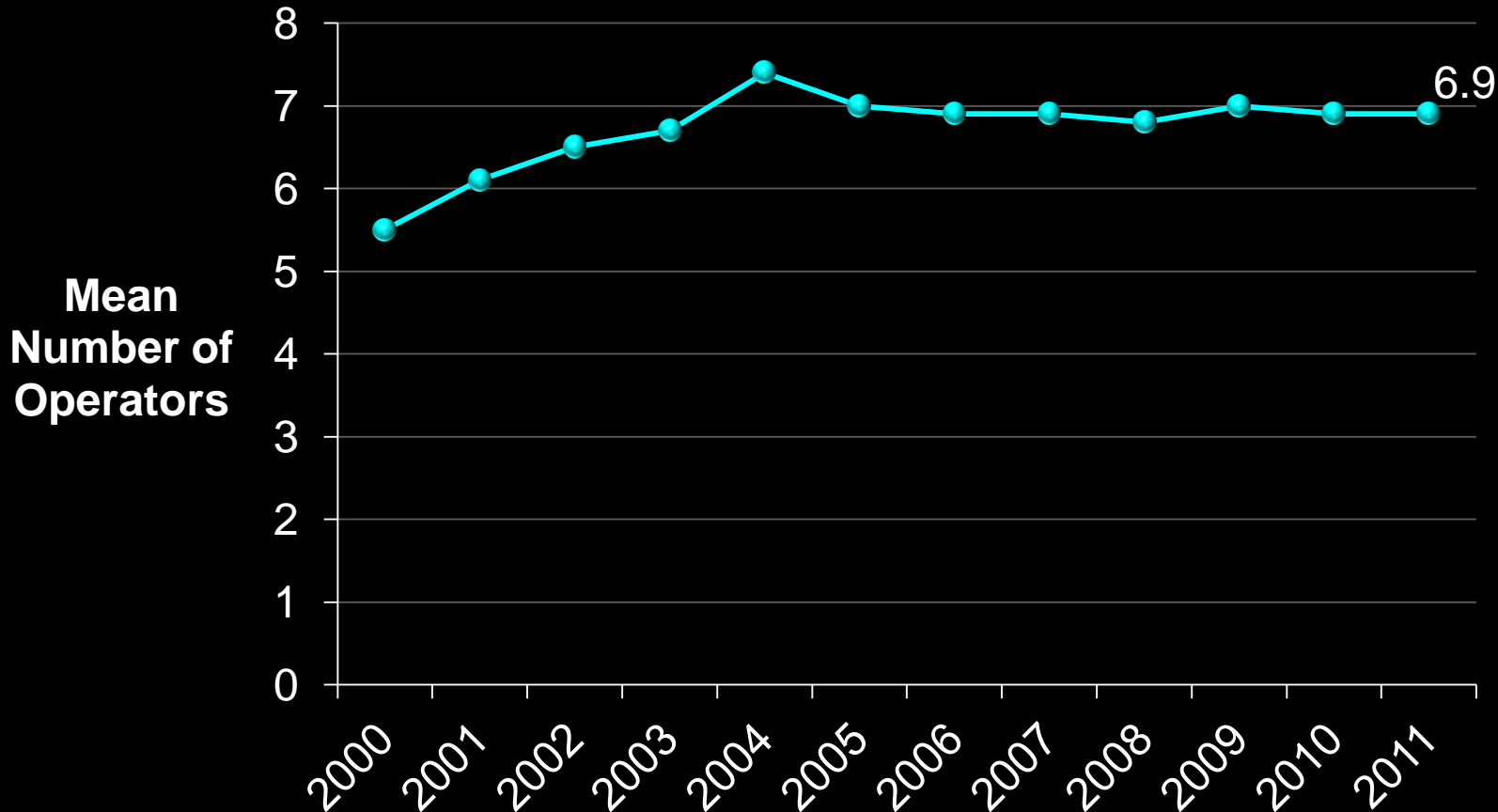


No. of Consultant in each unit

(NHS Centres 2011)



2011 data: Ludman



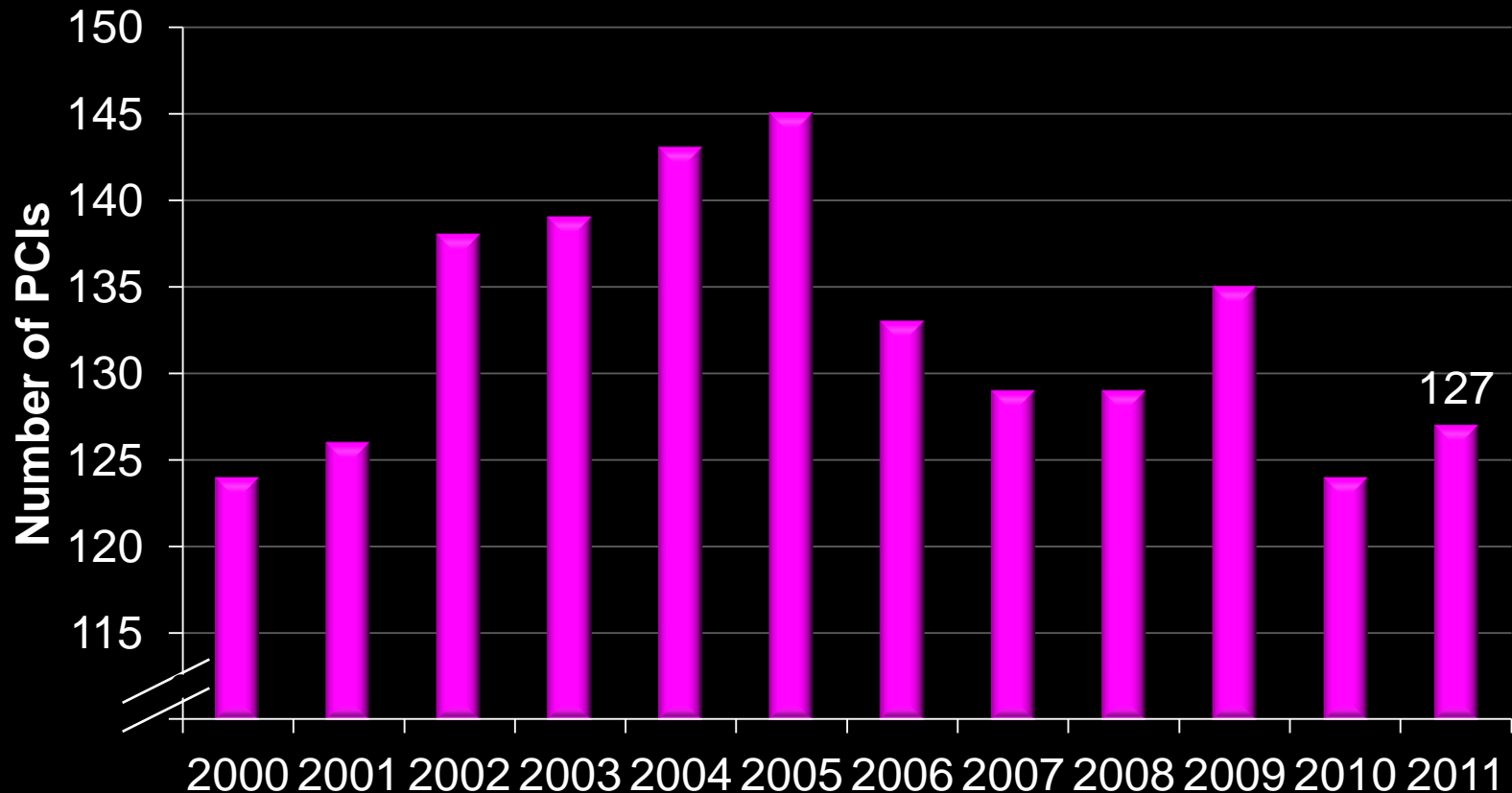
Note: if work at two NHS centres will be counted twice

PCI per Consultant

PCI Centre case volume / Number of operators



2011 data: Ludman

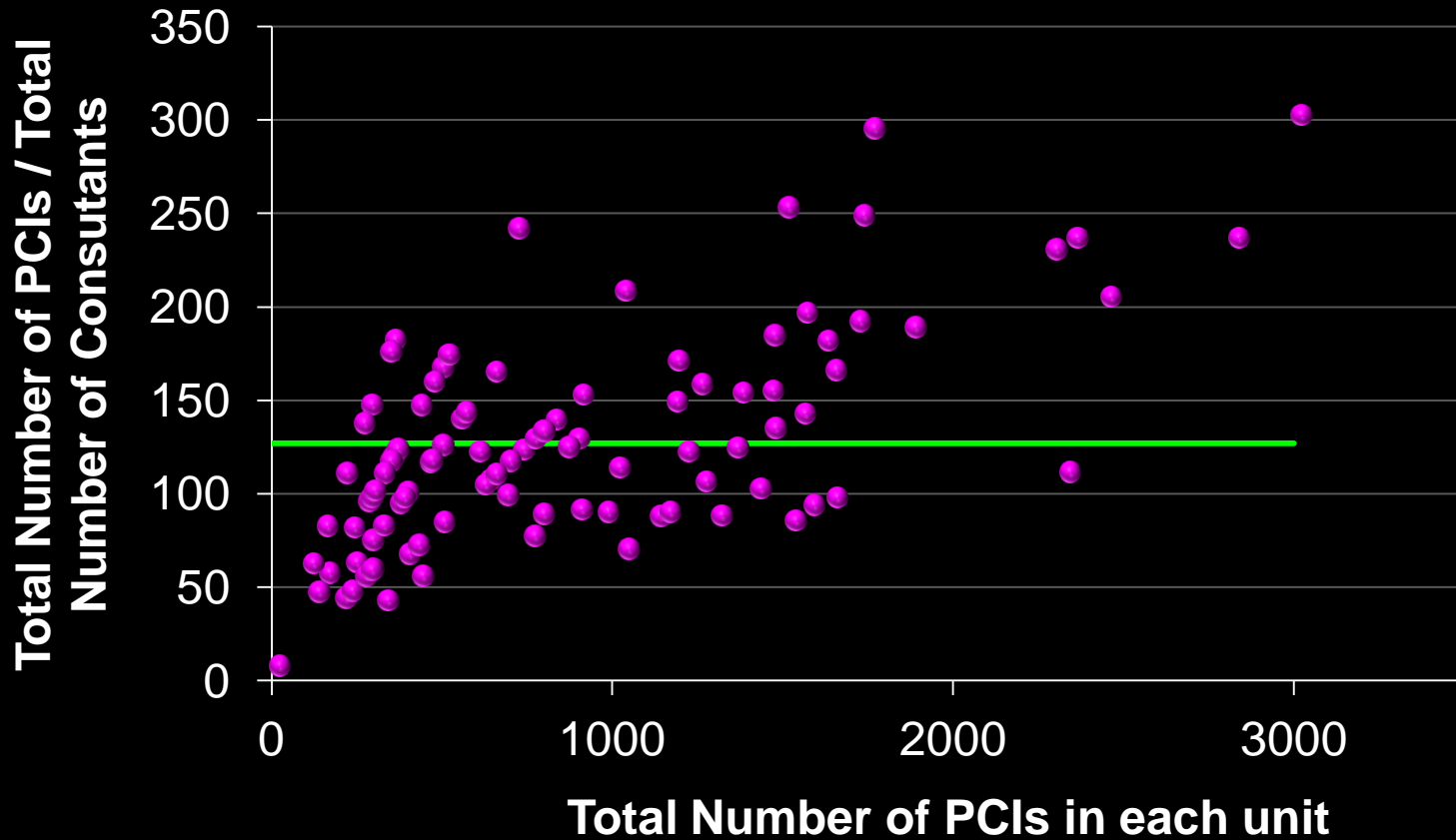


No. of PCIs per Consultant

(NHS Centres 2011)



2011 data: Ludman



Note:

Data from institutional volume divided by No operators per institution

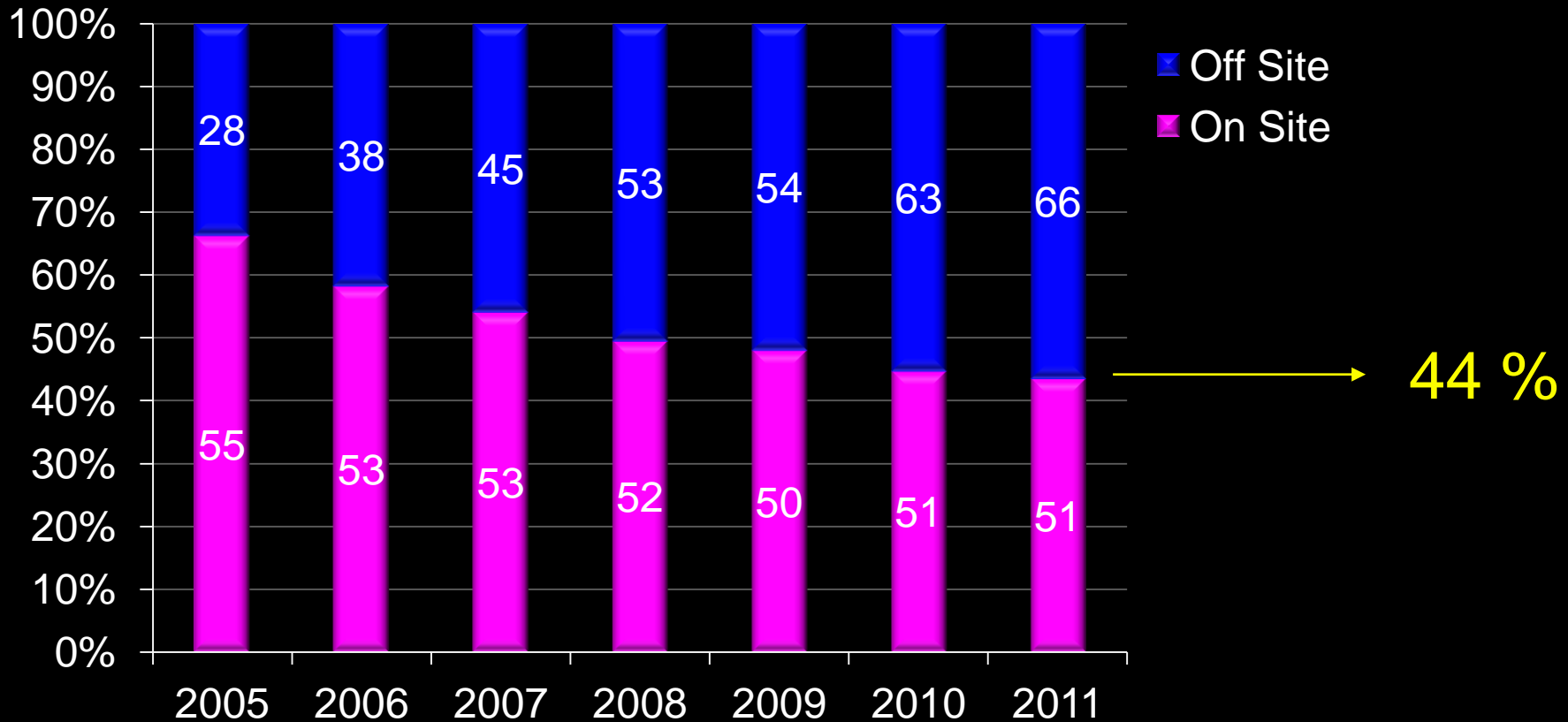
Some consultants work in multiple institutions

On v Off Site Surgery

All Centres (NHS and private)



2011 data: Ludman

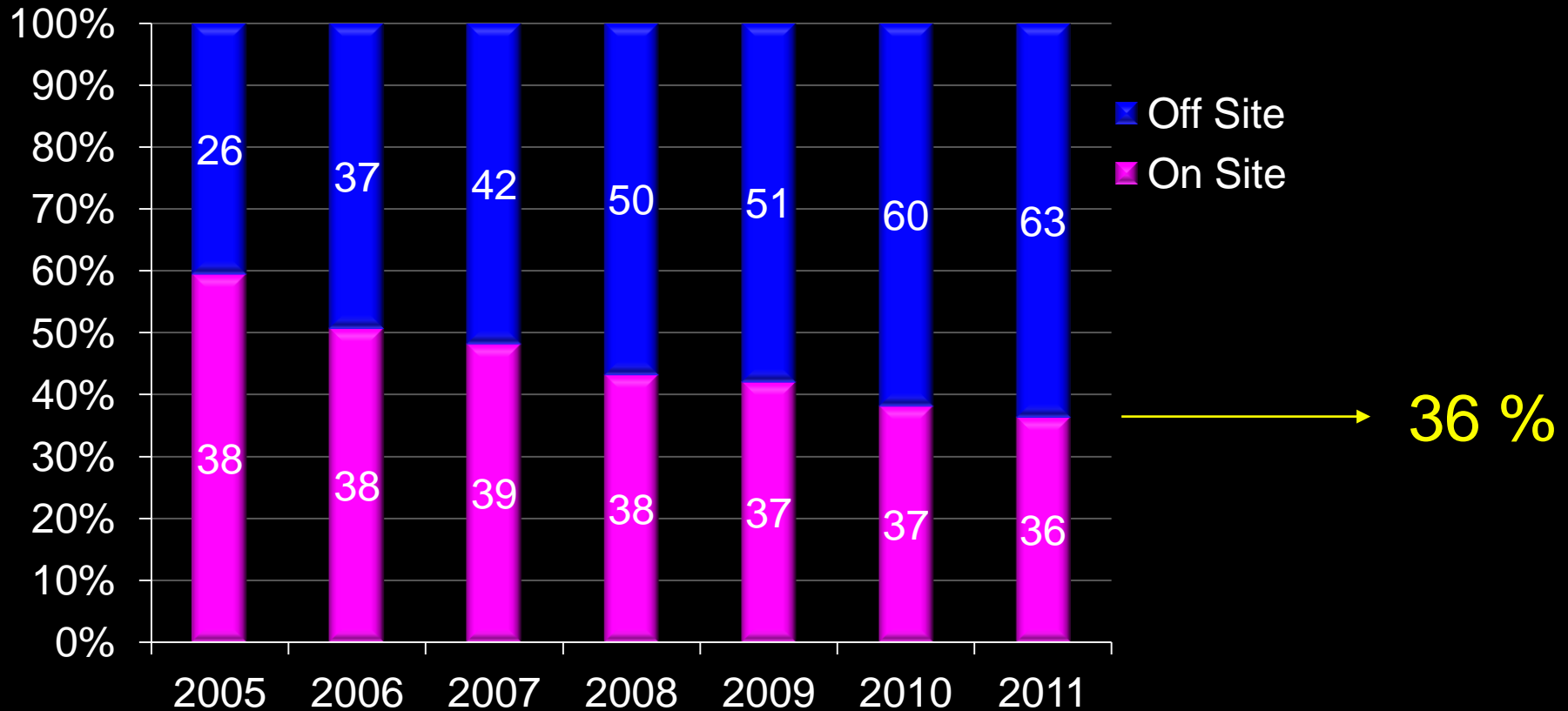


On v Off Site Surgery

NHS Centres Only



2011 data: Ludman

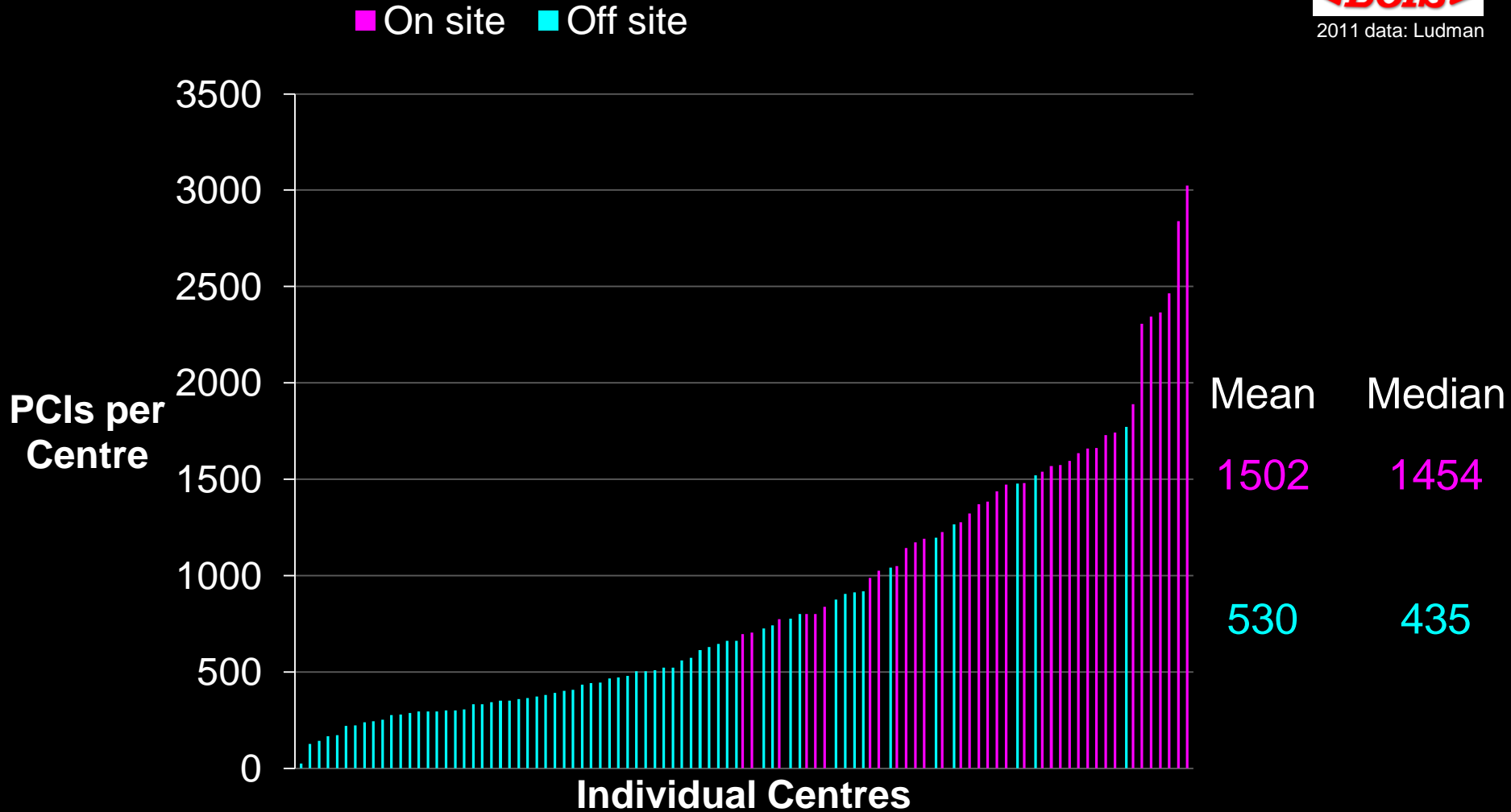


Surgical Cover

(2011 - all NHS centres)



2011 data: Ludman



Surgical Cover

(all 117 NHS and Private Centres)



2011 data: Ludman

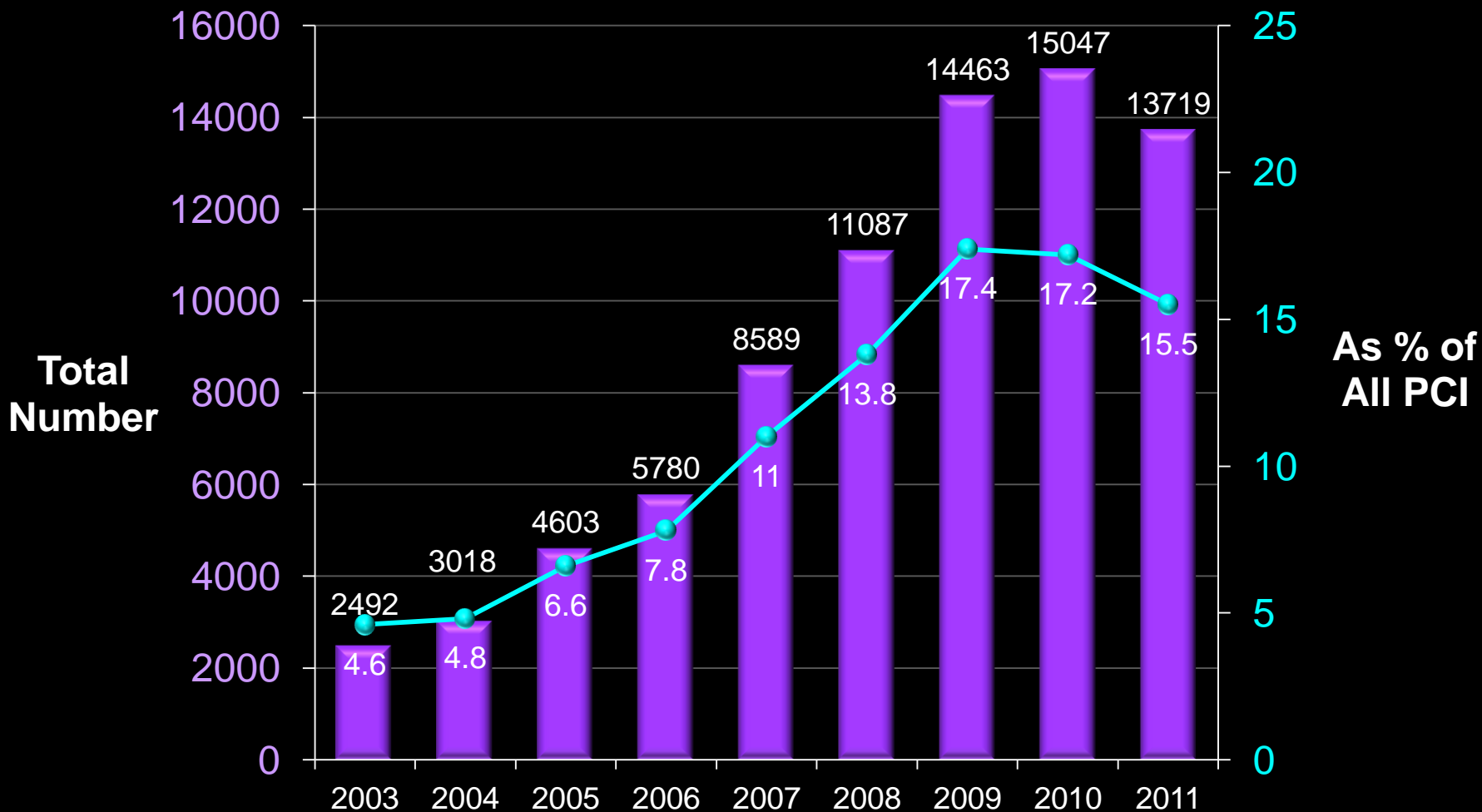
	On site	Off site
No of centres	51 (44%)	66 (56%)
No. of PCI (% of total)	55,191 (62%)	33,510 (38%)
Mean No. PCI per centre (all)	1082	508
Mean No. PCI per centre (NHS)	1502	530

Day Case PCI

- 68 of 95 Units performing day case PCI



2011 data: Ludman



Data from: 68 of 117 centres

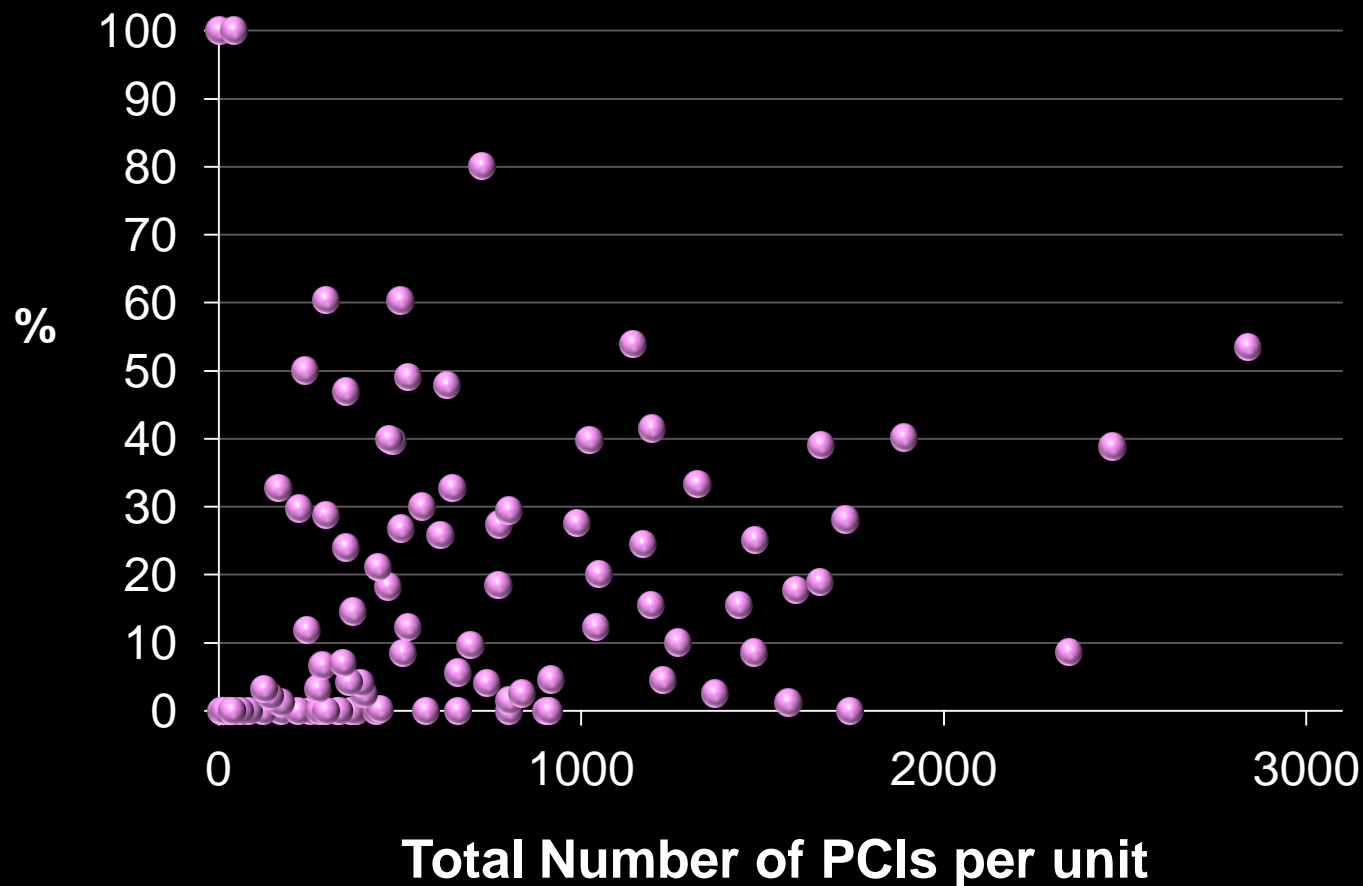
Day Case PCI

As Percentage of all PCI activity

2011 Data from 68 of 95 centres



2011 data: Ludman



Primary PCI

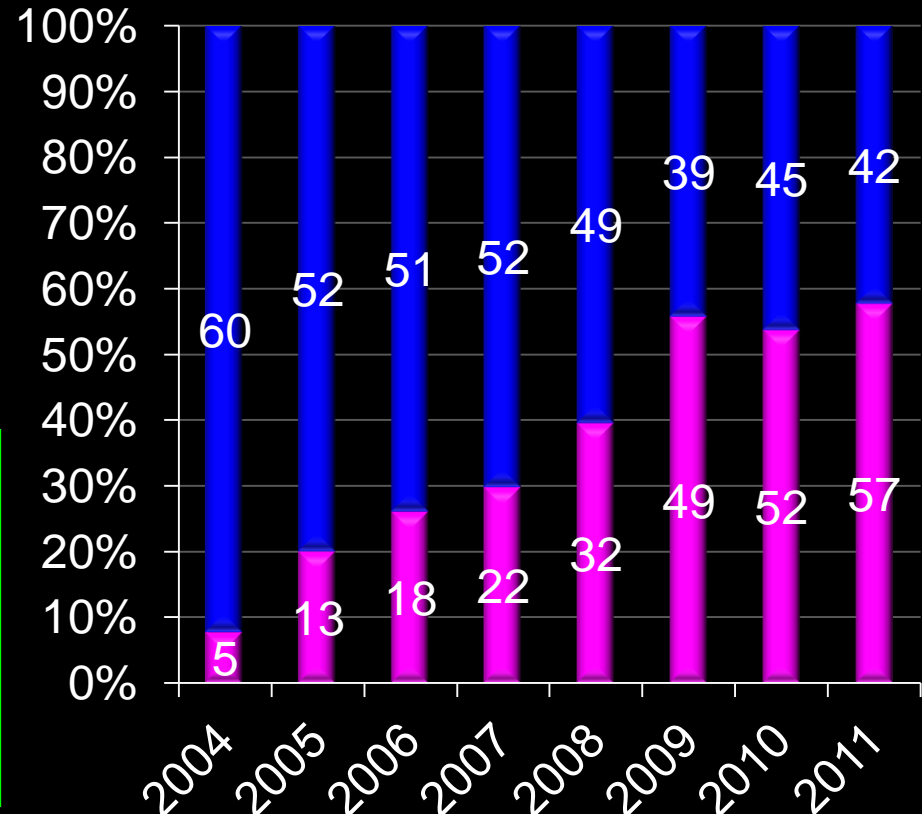
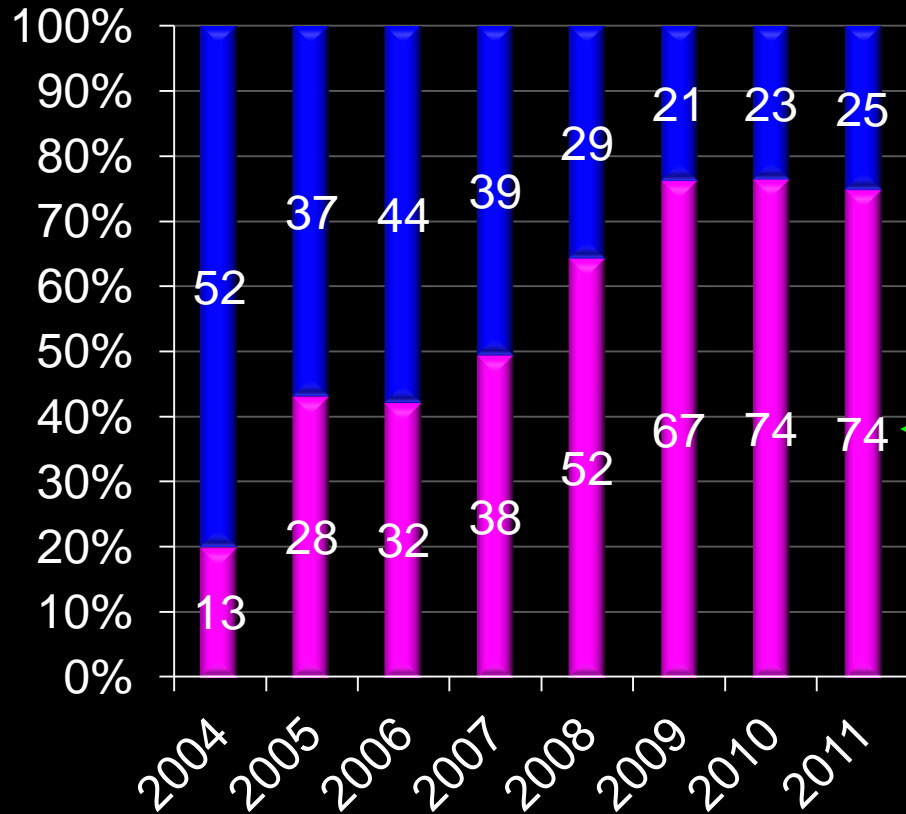
% of Centres using PPCI as default for STEMI



2011 data: Ludman

Working Hours

24/7



Number of centres

NHS Centres only
Working Hrs includes all 24/7 sites

PPCI 2011



2011 data: Ludman



- No PPCI
- PPCI day
- PPCI 24/7

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- Adult non coronary intervention

- Septal ablation for HOCM
- PFO / ASD closure / LAA occlusion
- Renal Denervation
- Valve therapies
- Other adult structural intervention

- Outcome

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- Tracked 30 day mortality
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- Risk adjusted outcomes
 - 3 year MACCE
 - 1 year MACCE
 - Predicted risk by centre type

Appendix: PCI Centre CCAD codes

NICOR

National Institute for Cardiovascular Outcomes Research



2011 data: Ludman

- NICOR awarded contract for provision of 6 national cardiac audits
 - PCI (BCIS)
 - Adult Cardiac Surgery (SCTS)
 - Cardiac Rhythm Management (HRUK)
 - Congenital Heart Disease (BCCA)
 - Heart Failure (BSH)
 - MINAP (BCS)
 - TAVI (BCIS and SCTS)*

(*7th audit run under auspices of SCTS and BCIS)

NICOR



2011 data: Ludman

- Contract
 - April 2011 to 2014
 - Delivery unit NICOR / CCAD team
 - Management structure of UCL

Patient Specific Data Analysis



2011 data: Ludman

- Data
 - Centre participation
 - Case ascertainment
 - Data completeness
 - Data quality

Procedure Specific Analysis

Participation in NICOR



2011 data: Ludman

		Total No. of Centres	Data to NICOR	Missing
England	NHS	85	85	0
	Private	16	6	10
Wales		4	3	1*
N Ireland		4	3	1
Scotland	NHS	6	5	1
	Private	2	1	1

*Centre started in June 2011

Procedure Specific Analysis

Participation in NICOR



2011 data: Ludman

		Total No. of Centres	Data to NICOR	Missing
England	NHS	85	85	0
	Private	16	6	10
Wales		4	3	1*
N Ireland		4	3	1
Scotland	NHS	6	5	1
	Private	2	1	1

*Centre started in June 2011

Procedure Specific Analysis

Participation in NICOR



2011 data: Ludman

		Total No. of Centres	Data to NICOR	Missing
England	NHS	85	85	0
	Private	16	6	10
Wales		4	3	1*
N Ireland		4	3	1
Scotland	NHS	6	5	1
	Private	2	1	1

*Centre started in June 2011

Procedure Specific Analysis

Participation in NICOR



2011 data: Ludman

		Total No. of Centres	Data to NICOR	Missing
England	NHS	85	85	0
	Private	16	6	10
Wales		Altnagelvin		1*
N Ireland		4	3	1
Scotland	NHS	6	5	1
	Private	2	1	1

*Centre started in June 2011

Procedure Specific Analysis

Participation in NICOR



2011 data: Ludman

		Total No. of Centres	Data to NICOR	Missing
England	NHS	85	85	0
	Private	16	6	10
Wales		4	3	1*
N Ireland		Hairmyres Hospital		1
Scotland	NHS	6	5	1
	Private	2	1	1

*Centre started in June 2011

Procedure Specific Analysis

Participation in NICOR



2011 data: Ludman

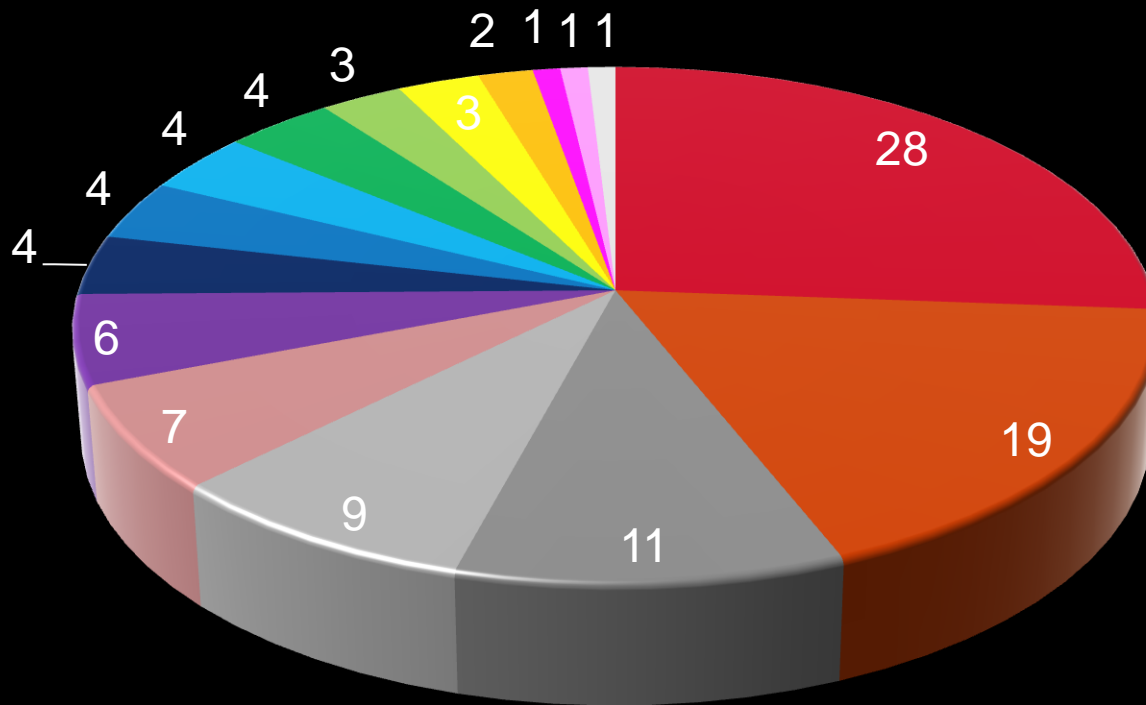
		Total No. of Centres	Data to NICOR	Participation
England	NHS	85	85	100%
	Private	16	6	38%
Wales		4	3	75%
N Ireland		4	3	75%
Scotland	NHS	6	5	83%
	Private	2	1	50%

'Front end' Database used

2011



2011 data: Ludman



- Tomcat
- BCIS
- Medcon
- PATS
- Cardaas
- Lotus Notes
- Datacam
- Dendrite
- In House
- Minerva
- Cardass
- Prism
- Infoflex
- Cardex
- Cardiobase
- PIMMS

Patient Specific Data Analysis



2011 data: Ludman

- Data
 - Centre participation
 - Case ascertainment
 - Data completeness
 - Data quality

Case Ascertainment

Procedures from 1st Jan 2011 to 31st December 2011

BCIS AGGREGATE DATA AUDIT FORM

Data for ADULT INTERVENTIONAL PROCEDURES

January 1st 2011 to December 31st 2011

(CCAD must be uploaded in addition)

1. Centre details	
1.1	Name of Centre
1.2	Your name
1.3	Your position

Procedures from 1st Jan 2011 to 31st December 2011

10. Interventional procedures	
10.1	Overall total number of PCI procedures
(N.B. This does not include procedures where ONLY a pressure wire / IVUS or OCT has taken place)	
<i>Total number of procedures in which the following other diagnostic tools were used: (remember to include here diagnostic-only procedures that did not proceed to PCI)</i>	
12.1	IVUS (Intravascular Ultrasound)
12.2	Pressure wire for fractional flow reserve
12.3	OCT (Optical Coherence Tomography)



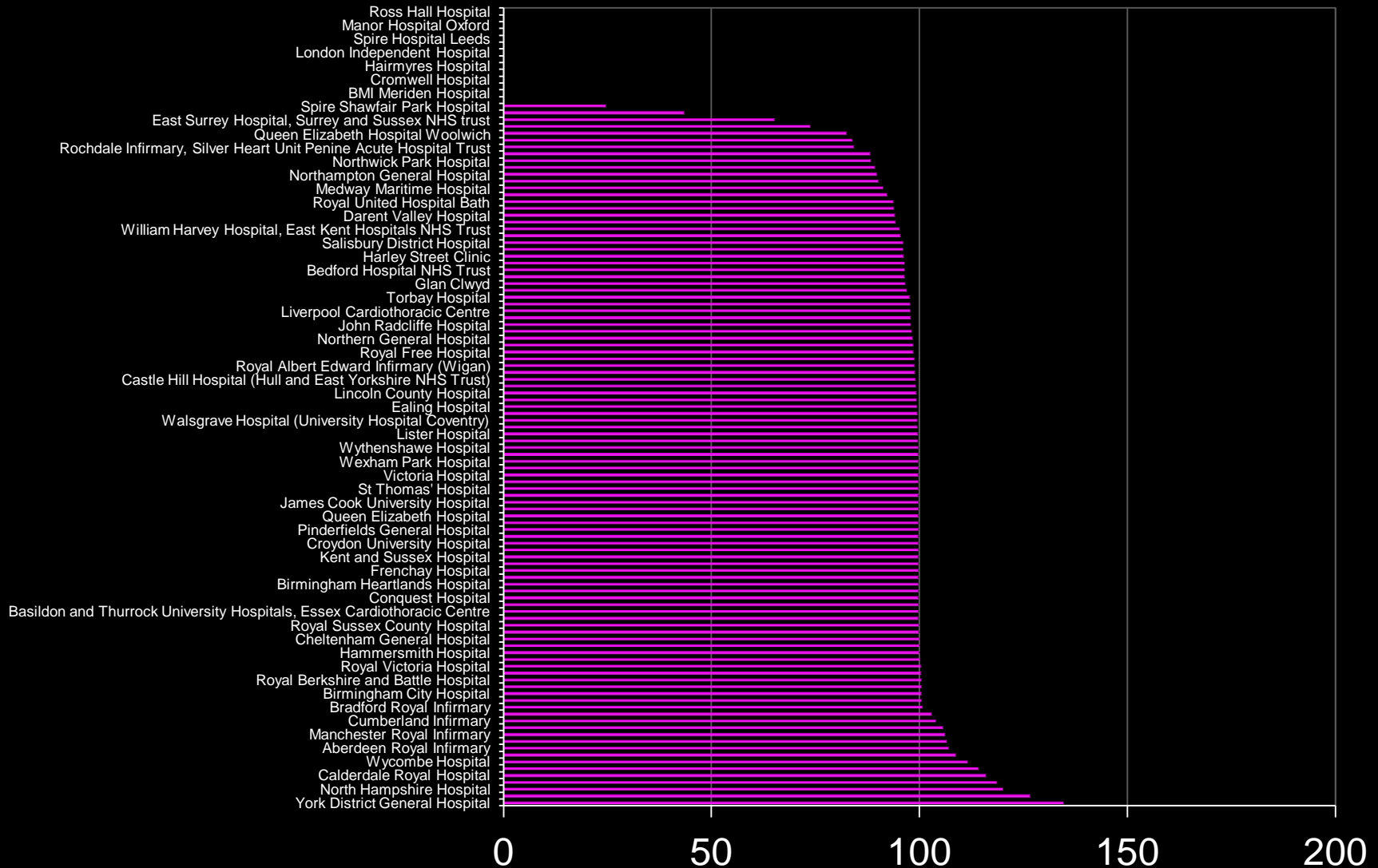
NICOR
Data warehouse

NICOR Case Ascertainment



2011 data: Ludman

UK PCI data in NICOR as % of Reported Totals



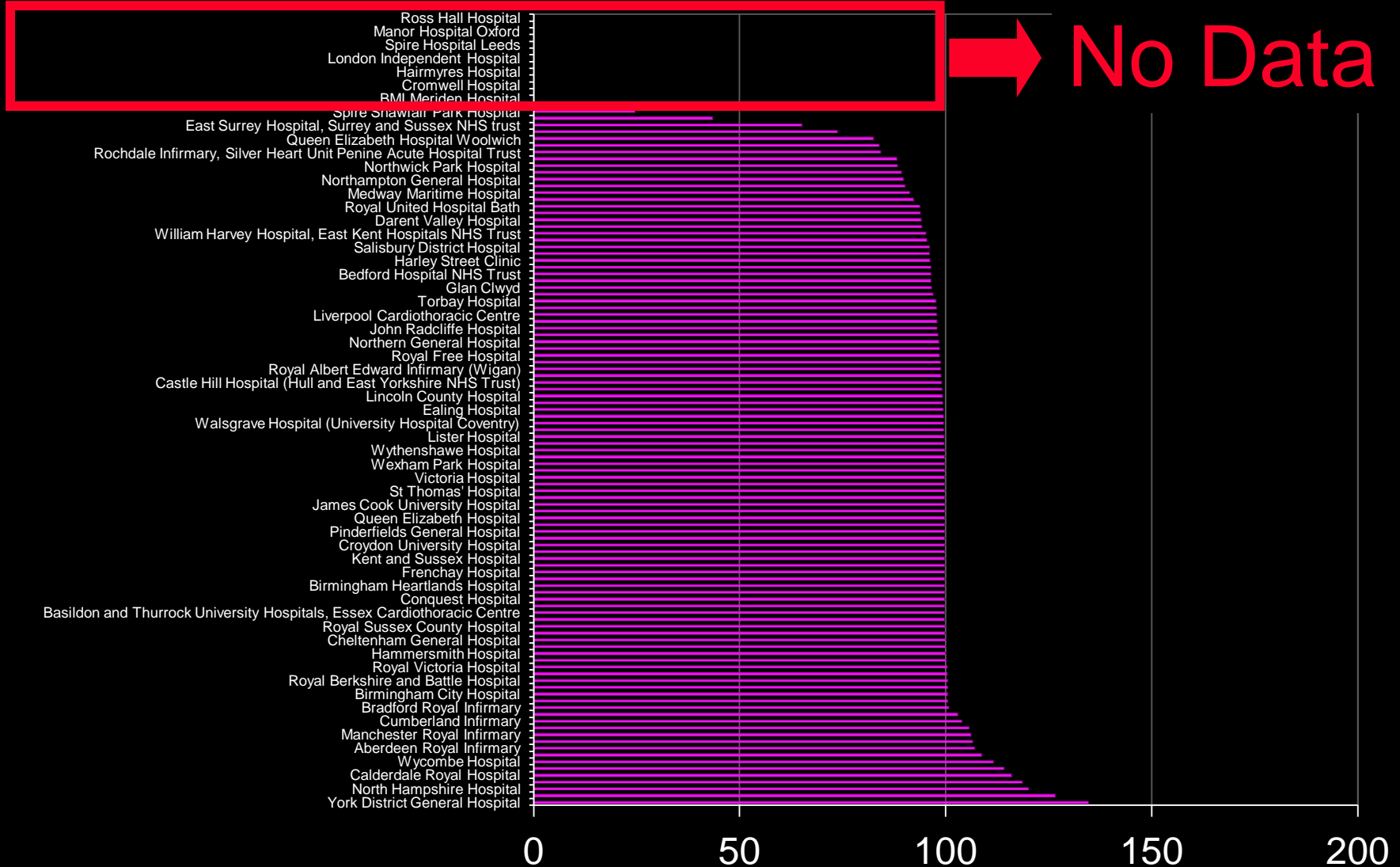
As August 2012

NICOR Case Ascertainment



2011 data: Ludman

UK PCI data in NICOR as % of Reported Totals



As August 2012

NICOR Case Ascertainment



2011 data: Ludman

UK PCI data in NICOR as % of Reported Totals



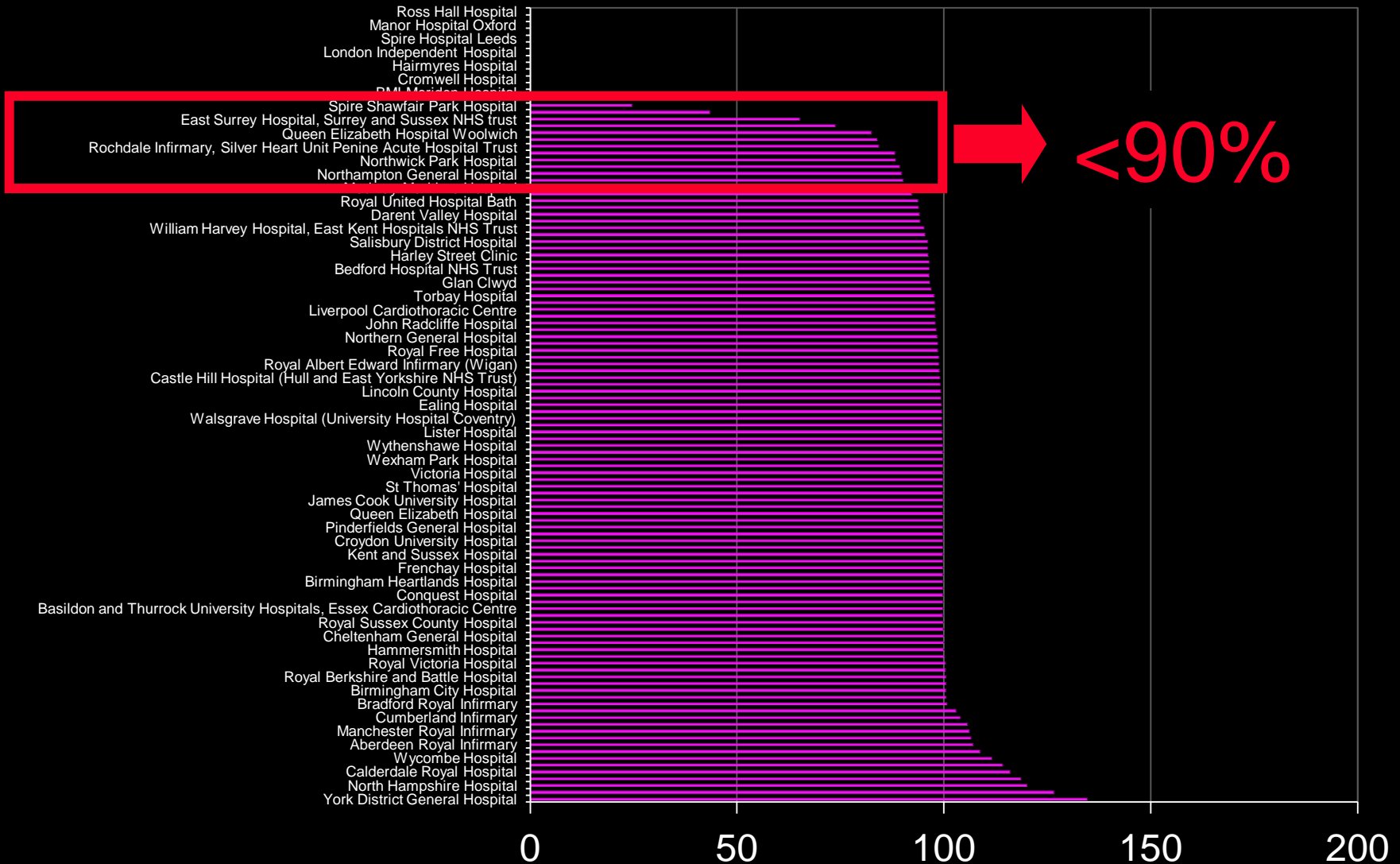
As August 2012

NICOR Case Ascertainment



2011 data: Ludman

UK PCI data in NICOR as % of Reported Totals



As August 2012

NICOR Case Ascertainment



2011 data: Ludman

UK PCI data in NICOR as % of Reported Totals



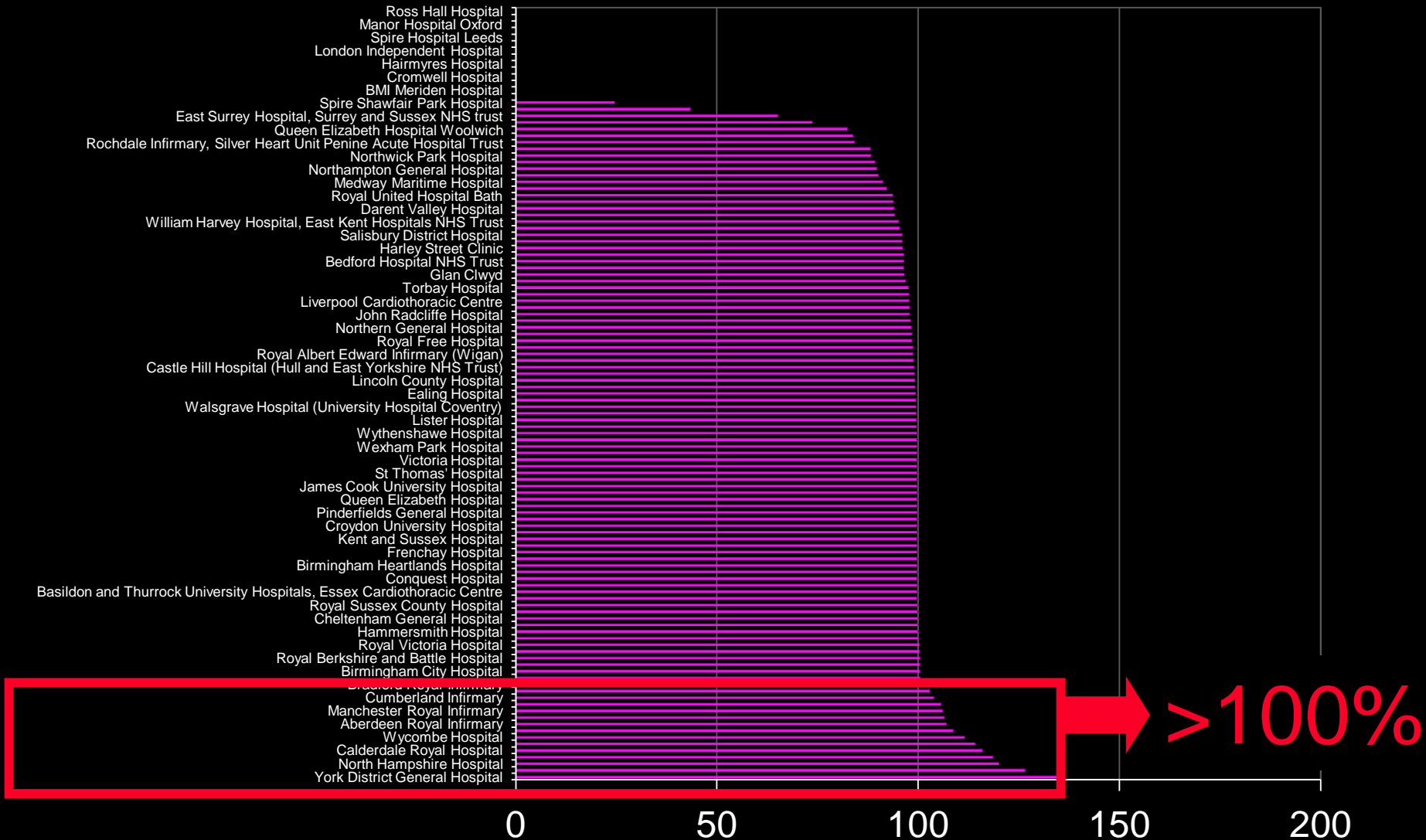
As August 2012

NICOR Case Ascertainment



2011 data: Ludman

UK PCI data in NICOR as % of Reported Totals



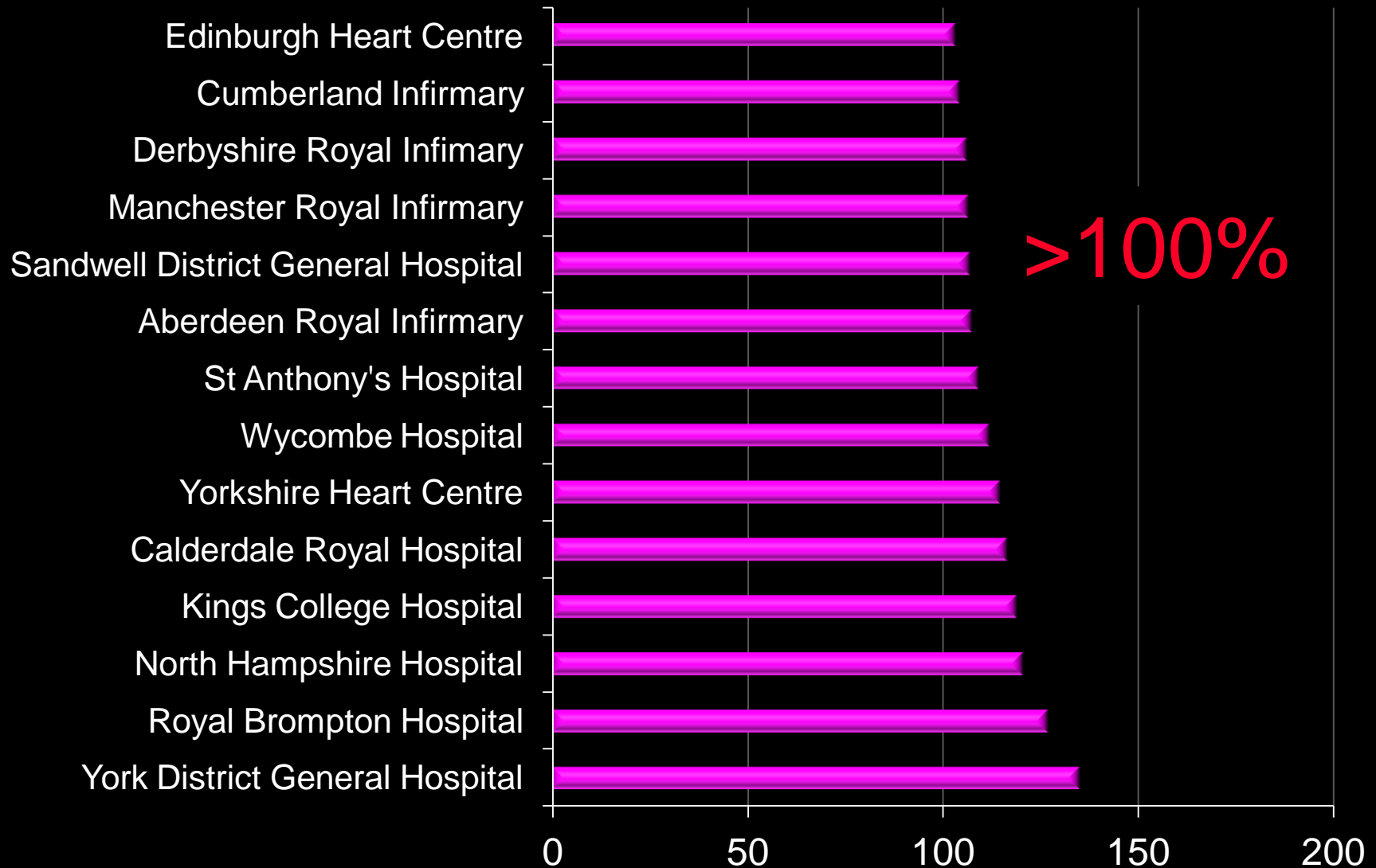
As August 2012

NICOR Case Ascertainment



2011 data: Ludman

UK PCI data in NICOR as % of Reported Totals



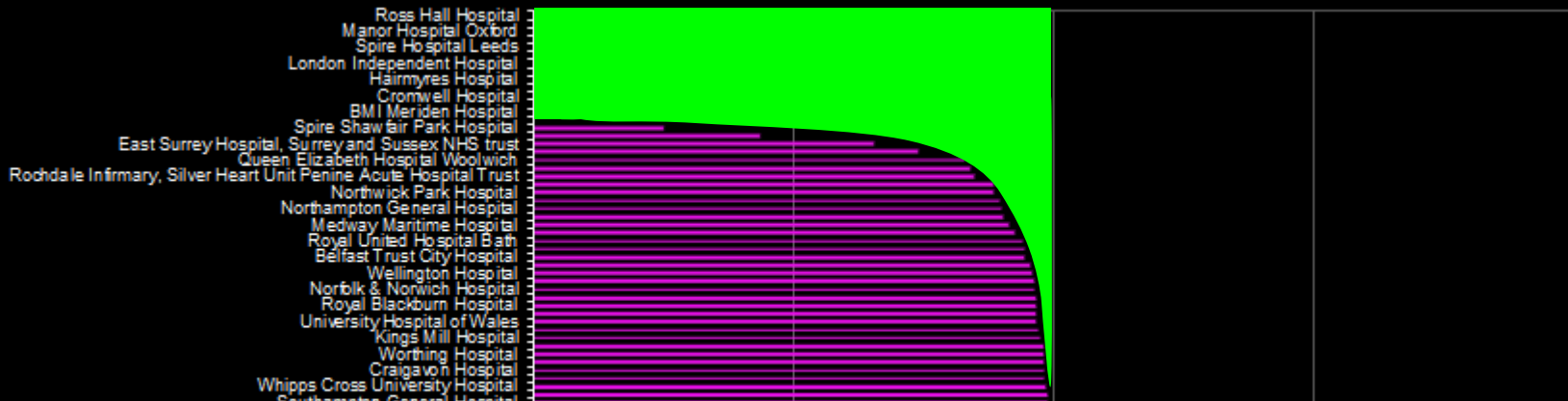
As August 2012

NICOR Case Ascertainment



2011 data: Ludman

UK PCI data in NICOR as % of Reported Totals



	UK	E&W (NHS)	Scotland (NHS)	N. Ireland
Declared PCIs	88,692	76,446	7,851	3,171
In CCAD	86,325	75,993	6,698	2,820
Missing	2,367	453	1,153	351
% Missing	2.7 %	0.6 %	14.7%	11.1 %

Patient Specific Data Analysis



2011 data: Ludman

- Data
 - Centre participation
 - Case ascertainment
 - Data completeness
 - Data quality

Risk Stratified Outcome

A D Grayson et al Heart 2006;92:658–663

- NWQIP risk adjustment model

Age 70–79 years
Age ≥ 80 years
Female sex
Cerebrovascular disease
Cardiogenic shock
Urgent PCI
Emergent PCI
LMS lesion treated
Graft lesion treated

% Completeness

12 fields required for risk adjusted outcome NWQIP

Hospital	DOB	Sex	Medical History	Shock	Urgency	Vessels treated	Renal disease	Diabetes	Discharge date	Discharge status	PCI hospital outcome	NHS number	TOTAL
a	98.9	99.6	94.7	100	100	83.9	92.4	98.5	99.6	99.6	94.6	99.6	1161.4
b	100	100	63.6	100	100	100	99.1	98	94	94	100	99.8	1148.5
c	100	100	75.4	0	100	100	91.3	97.1	99.3	99.3	99.3	89.9	1051.6
d	100	99.9	93.7	97.1	99.9	99.3	90.7	98	93.7	92.8	91.4	76.1	1132.6
e	100	100	84.1	98.9	99.9	100	97.2	95.5	72.2	92.5	100	93.6	1133.9
f	100	100	36.4	100	100	100	87.9	75.1	45.6	45.9	100	59	949.9

Top score potential = 1200



% Completeness



2011 data: Ludman

Excellent

England NHS

Hospital	Date of Birth	Sex	Medical History	Pre-procedure shock	Procedure urgency	Vessels treated	Renal disease	Diabetes	Discharge date	Discharge status	PCI hospital outcome	NHS number
CGH. Conquest Hospital	100	100	100	100	100	100	100	100	100	100	100	100
DGE. Eastbourne DGH	100	100	100	100	100	100	100	100	100	100	100	100
DUD. City Hospital	100	100	100	100	100	100	100	100	100	100	100	99.4
FRM. Frimley Park Hospital	100	100	100	100	100	100	100	100	100	100	100	99.6
FRY. Frenchay Hospital	100	100	100	100	100	100	100	100	100	100	100	100
QEB. Queen Elizabeth Hospital Edgbaston	100	100	100	100	100	100	100	100	100	100	100	99.9
WEX. Wexham Park Hospital	100	100	100	100	100	100	100	100	100	100	100	99.7
WYT. Wythenshawe Hospital	100	100	100	100	100	100	100	100	100	100	100	100
SPH. St Peter's Hospital	100	99.7	100	100	100	100	100	100	100	100	100	99.4
RDE. Royal Devon & Exeter Hospital	100	100	100	100	100	99.6	100	100	100	100	100	99.8
NCR. New Cross Hospital	100	100	99.6	100	100	100	99.9	99.9	100	100	100	100.1
BHH. Rochdale Infirmary	100	100	100	100	100	100	100	100	99.3	100	99.8	100
BHR. Royal Berkshire and Battle Hospital	100	99.8	99.8	99.8	100	100	100	99.5	100	100	100	99.4
KGH. Kettering General Hospital	100	100	98.8	100	100	100	100	100	100	100	100	99.9
CHH. Castle Hill Hospital	100	100	98.7	100	100	100	100	100	100	100	100	99.9
TOR. Torbay Hospital	100	100	100	99.6	100	98.8	100	100	100	100	100	99.4
WAT. Watford General Hospital	100	100	100	100	100	100	100	100	99	99.3	100	100
PMS. The Great Western Hospital	100	100	99.3	100	99.3	100	100	99.5	100	100	100	100
BRD. Bradford Royal Infirmary	100	99.6	100	100	100	99.1	99.6	100	100	100	99.6	99.2
QAP. Queen Alexandra Hospital	100	99.9	99.9	100	99.9	99.8	99.5	99.4	99.9	99.7	99.9	100.7
SCM. James Cook University Hospital	100	100	99.5	100	100	100	98.9	99.5	100	100	100	100.1
STH. St Thomas' Hospital	100	100	99.8	100	100	100	99.5	98	100	100	100	96.7
WRC. Worcestershire Royal Hospital	100	100	99.7	100	100	99.2	100	100	100	100	98.1	100
RFH. Royal Free Hospital	100	100	100	100	100	96.9	100	100	100	100	100	99.7
PLY. Derriford Hospital	100	100	98.7	99.4	100	99.9	98	99.4	100	100	99.9	100.1
BLA. Royal Blackburn Hospital	100	100	100	100	98.7	99.3	99.3	99.4	98.7	99.6	100	99.8
SAN. Sandwell District General Hospital	100	99.2	100	100	100	95.1	100	100	100	100	100	100
RCH. Royal Cornwall Hospital	100	100	99.7	100	100	100	94.7	99.7	100	100	100	100.1
BHL. Liverpool Heart and Chest Hospital	100	100	100	100	100	100	99.9	99.9	97	97.2	100	100.1
LIS. Lister Hospital	100	95.2	99	100	100	100	99.5	100	100	100	100	99.8
KMH. Kings Mill Hospital	100	99.8	100	99.7	98.6	99.6	99	98	99	99.6	100	100
UCL. University College Hospital	100	100	98	99.8	100	100	98.6	98.4	98.5	99	100	97.7



% Completeness

Excellent

England NHS

Hospital	Date of Birth	Sex	Medical History	Pre-procedure shock	Procedure urgency	Vessels treated	Renal disease	Diabetes	Discharge date	Discharge status	PCI hospital outcome	NHS number
NTH. Northampton General Hospital	100	100	100	100	99.1	99.1	98.6	98.6	97.7	99.1	100	100
NOR. Norfolk & Norwich Hospital	100	100	98.4	100	100	99.7	97.7	99.5	98.3	100	98.4	100.1
SGH. Southampton General Hospital	100	99.7	100	100	100	98.8	99.2	99.4	99.7	99.9	95.3	100.9
VIC. Victoria Hospital	100	99.7	100	99.7	99.9	95.6	99.9	99.9	97.4	100	99.9	99.3
GEO. St George's Hospital	100	100	94.7	98.7	100	99.9	98.5	99.3	99.9	99.8	99.9	99.2
KCH. King's College Hospital	100	99.4	98.6	99.5	99.8	97.9	97.1	98.6	99.8	99.8	100	99.4
NGS. Northern General Hospital	100	99.9	95.3	100	100	100	98.2	97.4	99.6	99.7	99.9	99.9
BRI. Bristol Royal Infirmary	100	99.8	95	97.9	99.9	99.6	98.3	98.8	99.7	99.7	99.8	99.2
HAM. Hammersmith Hospital	100	100	100	99.2	97.4	97.8	98.7	95.6	99.2	100	100	102.6
DVH. Darent Valley Hospital	100	100	98.1	99.3	100	100	91.7	99.6	99.2	99.6	100	100.4
SUN. Sunderland Royal Hospital	100	100	99.8	100	100	99.5	100	100	92.5	97.6	97.8	96.4
WDH. Dorset County Hospital	100	99.8	89.4	100	100	99.4	99.8	99.8	99.1	99.2	99.4	100
CHG. Cheltenham General Hospital	100	99.9	90.7	100	100	97.7	99.9	100	99.7	99.7	97.7	100
RAD. John Radcliffe Hospital	100	100	100	100	100	100	99.9	84.3	100	99.9	100	95.2
DER. Royal Derby Hospital	100	100	93.6	99.6	98.5	99.9	98.7	99.1	97.4	98.1	99	99.7
PIN. Pinderfields Hospital	100	100	100	99.6	100	100	98.9	85.3	100	99.6	100	100
WAL. University Hospital Coventry	100	100	94.9	100	100	99.9	93.5	97.5	98.8	99.4	99.2	99.5
BOU. Royal Bournemouth General Hospital	100	100	92.1	100	100	100	94.7	97.2	98.5	99.9	100	100
HH. Harefield Hospital	100	99.8	97.2	99.3	99.9	97.2	92.4	96.2	99.8	99.5	99.9	99.5
RSC. Royal Sussex County Hospital	100	100	95.3	100	100	99.9	92.1	96.9	100	99.9	96.3	99.6
MAY. Mayday University Hospital	100	100	97.1	95.2	100	100	96.2	91.5	99.6	100	99.6	99.8
NHB. Royal Brompton Hospital	100	100	98.8	93.3	100	99.4	95	98	99.3	99.3	95.9	95
GRL. Glenfield Hospital	100	100	94.4	100	100	100	93.9	91	99.9	99.9	99.8	99.8
EBH. Birmingham Heartlands Hospital	100	100	95.1	97.5	100	96.4	91	93.7	99.9	99.6	99.7	99.5
MPH. Taunton & Somerset	100	99.9	87.3	100	100	97.9	93.7	99.9	99.5	96.7	97.9	99.7
WRG. Worthing Hospital	100	99.7	81.6	100	100	100	95.3	98.7	98.4	99	100	100
FRE. Freeman Hospital	100	100	97.6	99.5	100	98.8	95.5	97.9	100	100	80.9	99.8



% Completeness



2011 data: Ludman

England NHS Room for Improvement

Hospital	Date of Birth	Sex	Medical History	Pre-procedure shock	Procedure urgency	Vessels treated	Renal disease	Diabetes	Discharge date	Discharge status	PCI hospital outcome	NHS number
BAS. Basildon Hospital	100	100	98.1	98.2	100	100	74.6	99.4	100	99.8	100	99.9
LIN. Lincoln County Hospital	100	100	100	96.9	99.8	99.1	87.4	84.6	100	99.3	100	100
CHN. Nottingham City Hospital	100	100	85.1	100	99.9	100	84.9	94.1	100	100	100	99.8
MDW. Medway Maritime Hospital	99.3	100	100	79.8	100	98	94.7	95.4	98.7	98	100	96
EAL. Ealing Hospital	100	98.4	100	97.1	100	97.6	96	73.4	99.6	97.2	100	100
PAP. Papworth Hospital	100	100	67.5	100	100	100	92.2	99.9	99.9	99.6	100	100.1
AEI. Royal Albert Edward Infirmary	99.8	99.8	99.3	89.5	96	96	98.3	96.9	88.5	91.6	100	96.2
WHC. Whipps Cross University Hospital	100	100	90.2	100	100	100	99.2	66.7	99.2	100	100	100
NHH. North Hampshire Hospital	100	100	100	96.8	100	100	97.7	59	100	100	100	99.5
STO. North Staffordshire Hospital	99.6	97.8	99.8	100	100	97.8	89.8	98.1	98.2	99.1	69	99.8
RHI. Calderdale Royal Hospital	100	100	55.1	98.2	99.4	97	100	98.8	100	100	100	99.4
BAL. Barts and the London	100	99.2	91.7	95.2	99.3	99.3	92.7	93.4	93.1	93	91.5	95.4
MRI. Manchester Royal Infirmary	100	100	100	99.9	100	99.5	90.4	95.3	99.8	99.5	62.8	96.1
YDH. York District Hospital	100	100	60.9	98.4	99.5	99.5	98.1	97.6	96.9	96.9	98.3	99.1
LGI. Yorkshire Heart Centre	99.9	90.4	89.3	94.1	99.7	98.8	90.1	90.9	96.7	97.1	93.7	99
CMI. Cumberland Infirmary	100	100	88	100	92	100	76	88	100	96	100	88
GWH. Queen Elizabeth Hospital, Woolwich	100	99.5	100	46.2	99.5	97.8	96.2	94.6	98.4	98.4	100	98.9
SAL. Salisbury Hospital	100	100	60.9	100	100	100	92.7	72.3	98.6	100	100	100
SCU. Scunthorpe General Hospital	100	100	83.8	100	100	100	94.2	74.2	78.6	91.6	100	100
KSX. Kent & Sussex Hospital	100	99.3	93	99.2	100	100	99.7	85.2	66.4	67.4	100	99
ESU. East Surrey Hospital	100	100	100	80.7	99.6	100	58.4	69.6	100	100	100	100
AMG. Wycombe General Hospital	100	100	83.8	99.1	100	100	97.1	98.1	62.4	62.9	100	100.9
WHH. William Harvey Hospital	100	100	74	98.9	99.8	99.1	80.2	89.7	82.4	88.7	88.5	98.9
BED. Bedford Hospital	100	100	70.9	100	100	100	94.1	70.6	57.1	85.8	100	99.7
BAT. Royal United Hospital Bath	100	100	47.8	99.6	100	100	83.3	81.8	77.7	77.7	100	99.4
NPH. Northwick Park Hospital	100	99.5	100	0.7	98.1	85.4	46.8	57.6	53.7	85	99.8	88.4

Patient Specific Data Analysis



2011 data: Ludman

- Data
 - Centre participation
 - Case ascertainment
 - Data completeness
 - Data quality

Dataset Version History



2011 data: Ludman

5.5.5 1st November 2010 (Notification 16th April 2010)

In addition to improved descriptors for some of the field definitions the dataset changes include:

- 7 additional fields
- 1 modification of field options
- 4 updates to volatile fields

The full dataset 5.5.5 is available on the BCIS web site.

The principle changed sections are highlighted in yellow below:

7 Additional fields (see full dataset for description and explanations)

5.29	Date/time of ECG triggering PPCI pathway (only for those developing STEMI while in hospital, that is patients in Q 5.3 who fulfil criteria for options 2 and 3)		
5.30	Patient location at time of STEMI onset (for patients treated for acute STEMI only)	1	1. Onset of STEMI while patient not in hospital (STE on first ECG)
		2	2. STE first recorded on a subsequent ECG in, (or before arrival at) a non-interventional hospital
		3	3. STE first recorded on a subsequent ECG in, (or before arrival at) the interventional hospital
		9	9. Unknown
5.31	Consultant responsible for procedure GMC Number		
5.32	Primary Operator GMC number		
5.33	Second Operator GMC number		
5.34	Third Operator GMC number		
5.35	Creatinine		

5.5.6 1st February 2011 (Notification November 2010)

Updates to volatile fields:

Dataset Version Collected

% Missing new dataset item:
Location at onset of STEMI



CRG. Craigavon Area Hospital	0
DER. Royal Derby Hospital	0
HHW. Wellington Hospital North	0
LIS. Lister Hospital	0
MDW. Medway Maritime Hospital	0
QEB. Queen Elizabeth Hospital Edgbaston	0
SAN. Sandwell District Hospital	0
SPH. St Peter's Hospital	0
STH. St Thomas Hospital	0
WDH. Dorset County Hospital	0
WRC. Worcestershire Royal Hospital	0
WYT. Wythenshawe Hospital	0
YDH. York District Hospital	0
MPH. Taunton & Somerset Hospital	0.492610837
NCR. New Cross Hospital	0.549450549
FRM. Frimley Park Hospital	0.769230769
DUD. City Hospital	0.943396226
QAP. Queen Alexandra Hospital	1.13960114
CHG. Cheltenham General Hospital	1.234567901
RCH. Royal Cornwall Hospital	1.492537313
PLY. Derriford Hospital	1.785714286
RVB. Royal Victoria Hospital	1.923076923
STO. University Hospital of North Staffordshire	1.937984496
TOR. Torbay Hospital	2.197802198
FRE. Freeman Hospital	2.283653846

NOR. Norfolk and Norwich Hospital	2.528735632
HH. Harefield Hospital	3.342618384
PMS. The Great Western Hospital	3.571428571
NGS. Northern General Hospital	3.75
GEO. St George's Hospital	3.791469194
SCM. James Cook University Hospital	3.821656051
SGH. Southampton General Hospital	3.908794788
WAT. Watford General Hospital	4.081632653
PAP. Papworth Hospital	4.705882353
MAY. Mayday University Hospital	8.333333333
NTH. Northampton General Hospital	8.333333333
LGI. Leeds General Infirmary	9.076042518
RDE. Royal Devon & Exeter Hospital	9.271523179

Dataset Version Collected



2011 data: Ludman

% Missing new dataset item: Location at onset of STEMI

RAD. John Radcliffe Hospital	10.91811414
EBH. Birmingham Heartlands Hospital	11.47058824
BHL. Liverpool Heart and Chest Hospital	11.77199504
CLW. Glan Clwyd DGH Trust	12.5
UCL. University College Hospital	14.72392638
NHB. Royal Brompton Hospital	15.38461538
MOR. Morrision Hospital	17.24137931
BRI. Bristol Royal Infirmary	24.68916519
AEI. Royal Albert Edward Infirmary	25
KMH. Kings Mill Hospital	25
BLA. Royal Blackburn Hospital	28.57142857
ERI. Royal Infirmary of Edinburgh	32.00795229
BFT. Belfast City Hospital	33.33333333
HAM. Hammersmith Hospital	34.09090909
MRI. Manchester Royal Infirmary	34.22712934
GRL. Glenfield Hospital	34.30232558
BAT. Royal United Hospital Bath	37.83783784
CHN. Nottingham City Hospital	38.16155989
KGH. Kettering General Hospital	38.16793893
WAL. University Hospital Coventry	38.75968992
UHW. University Hospital of Wales	45.25862069
LIN. Lincoln County Hospital	46.83544304
NHH. North Hampshire Hospital	46.92307692
CHH. Castle Hill Hospital	50.58823529

ESU. East Surrey Hospital	64.28571429
EAL. Ealing Hospital	66.66666667
SCU. Scunthorpe General Hospital	66.66666667
WEX. Wexham Park Hospital	75.86206897
BAS. Basildon Hospital	98.45916795
VIC. Victoria Hospital	98.59484778
AMG. Wycombe General Hospital	100
BAL. Barts and the London	100
BHR. Royal Berkshire Hospital	100
BOU. Royal Bournemouth General Hospital	100
BRD. Bradford Royal Infirmary	100
CGH. Conquest Hospital	100
DGE. Eastbourne DGH	100
DVH. Darent Valley Hospital	100
GJH. Golden Jubilee Hospital	100
KCH. King's College Hospital	100
KSX. Kent & Sussex Hospital	100
NIN. Ninewells Hospital	100
NPH. Northwick Park Hospital	100
RAI. Raigmore Hospital	100
RFH. Royal Free Hospital	100
RIA. Aberdeen Royal Infirmary	100
RSC. Royal Sussex County Hospital	100
SAL. Salisbury District Hospital	100
SUN. Sunderland Royal Hospital	100
WHH. William Harvey Hospital	100
WRG. Worthing Hospital	100

Contents



2011 data: Ludman

- Structure

- New centres
- Total PCI numbers
- No of PCIs per centre and per angio
- PCI pmp and by country
- PCI operators, by centre, by PPCI
- On call rotas for PPCI
- Surgical cover
- Day case activity
- Primary PCI units

- NICOR data collection

- Centre participation
- Databases used
- Case ascertainment
- Data completeness
- Data Quality

- Appropriateness

- Demographics
- Indication for PCI / Clinical syndrome
- PPCI activity (by unit, pmp, by vessel)
- PCI territories / vessels / lesions
- Stents (BMS and DES)
- Adjunctive pharmacotherapy
- LV support and shock
- Additional interventional techniques, devices
- Arterial access (routes)

- Process of care

- Delays data completeness
- Delays to treatment
 - NSTEMI / PPCI
 - IHT versus Direct admission
 - PPCI age > 80 / Length of stay

- Adult non coronary intervention

- Septal ablation for HOCM
- PFO / ASD closure / LAA occlusion
- Renal Denervation
- Valve therapies
- Other adult structural intervention

- Outcome

- MACCE
- Periprocedural complications and by access
- Tracked 30 day mortality
 - Outcome by syndrome
 - Outcome by lesion subset
- Risk adjusted outcomes
 - 3 year MACCE
 - 1 year MACCE
 - Predicted risk by centre type

Appendix: PCI Centre CCAD codes

Demographics



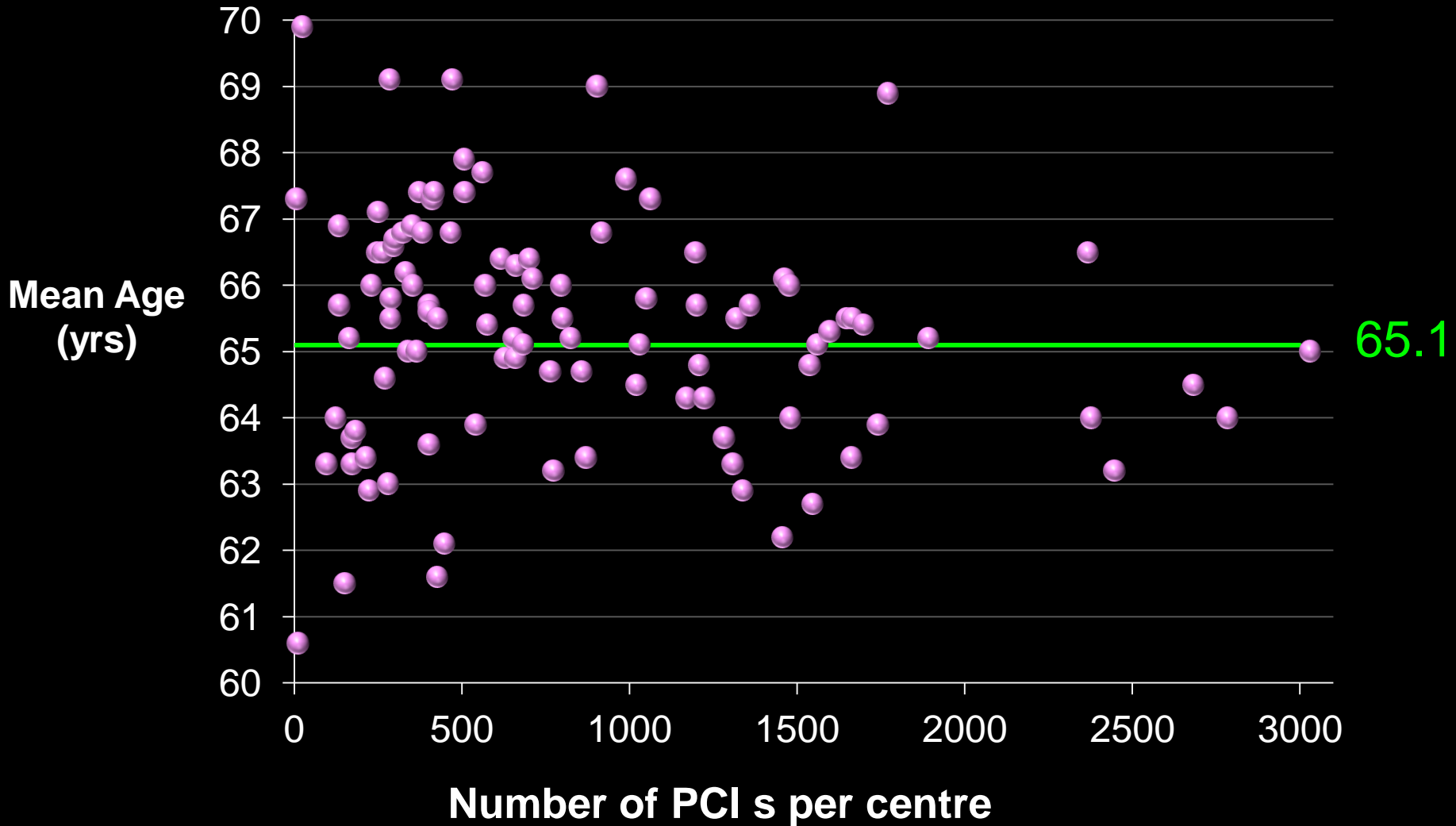
2011 data: Ludman

	2007	2008	2009	2010	2011
Age (mean)	64.3	64.4	65.0	65.1	65.3
Sex (male)	73.6%	73.8%	73.9%	74.0%	74.0%
Diabetic	17.5%	18.0%	18.2%	18.7%	19.5%
Previous CABG	8.5%	9.1%	8.6%	8.4%	7.9%
Previous PCI	18.6%	21.1%	22.3%	22.6%	22.7%
Previous MI	29.5%	30.2%	28.8%	28.4%	27.6
Current smoker				26.0%	26.1%
Ex smoker				39.0%	37.0%
Never smoked				35.1%	37.0%

Demographics - Age



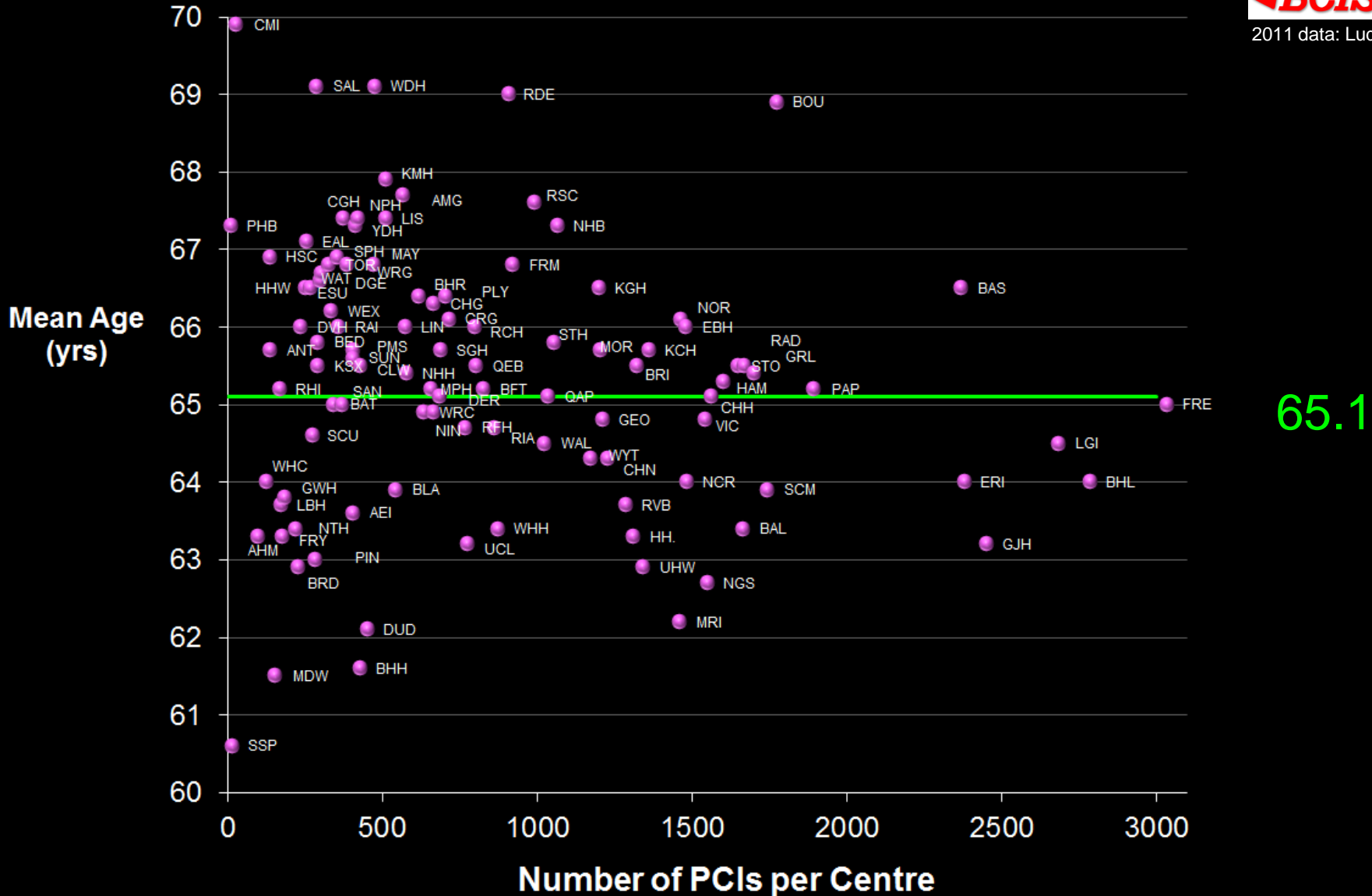
2011 data: Ludman



Demographics - Age



2011 data: Ludman



Demographics



2011 data: Ludman

Ethnic Origin

Year	2007	2008	2009	2010	2011
Data available	43,929	48,581	57,733	63,592	62,993
European	92.3%	92.0%	93.0%	92.3%	91.8%
Asian	6.7%	7.1%	6.16%	6.77%	7.2%
Black	0.83%	0.72%	0.71%	0.79%	0.83%
Oriental	0.2%	0.17%	0.15%	0.17%	0.17%

Clinical Syndrome



2011 data: Ludman

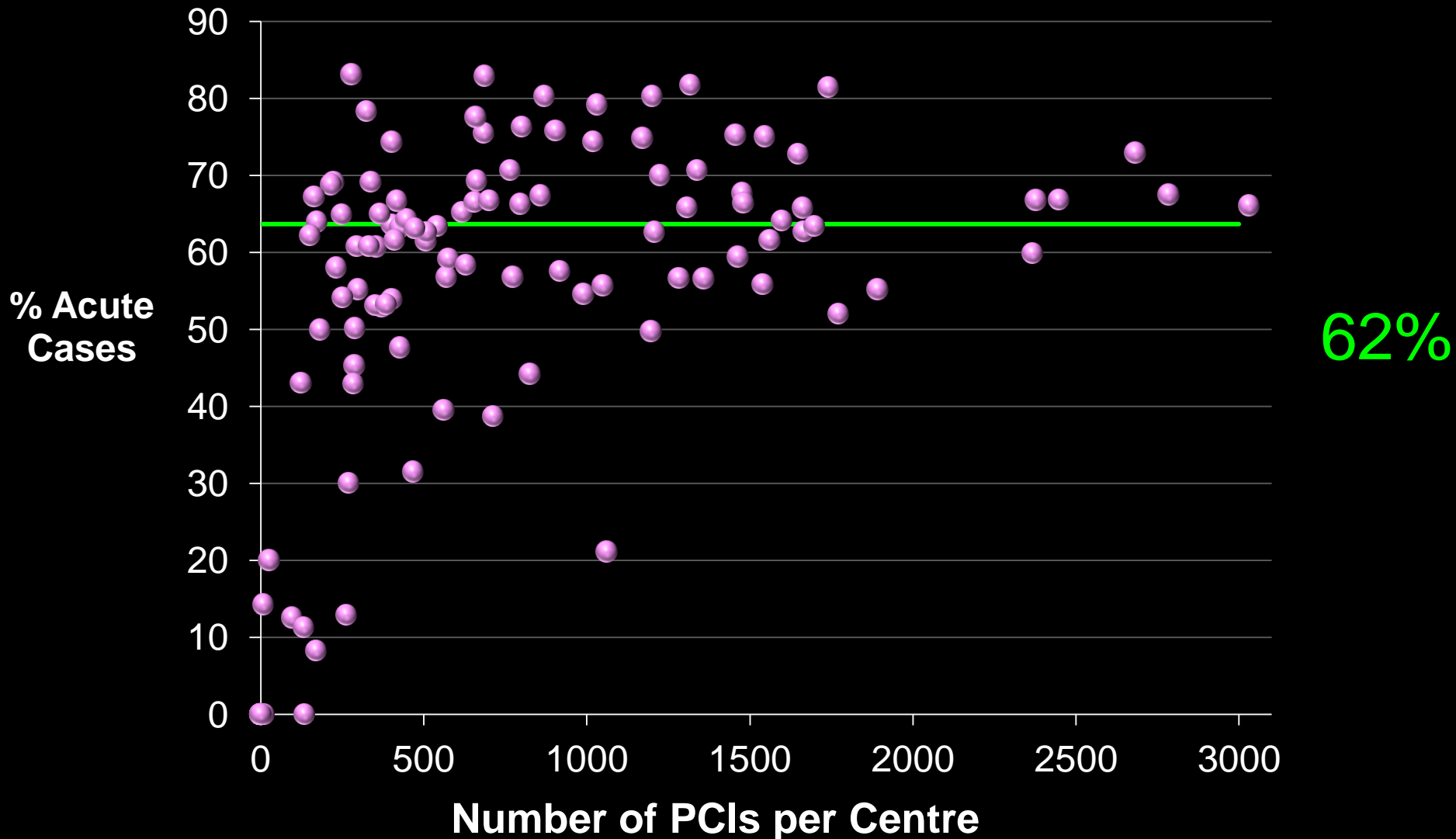


Clinical Syndrome

- % PCI in patients with Acute Syndrome



2011 data: Ludman

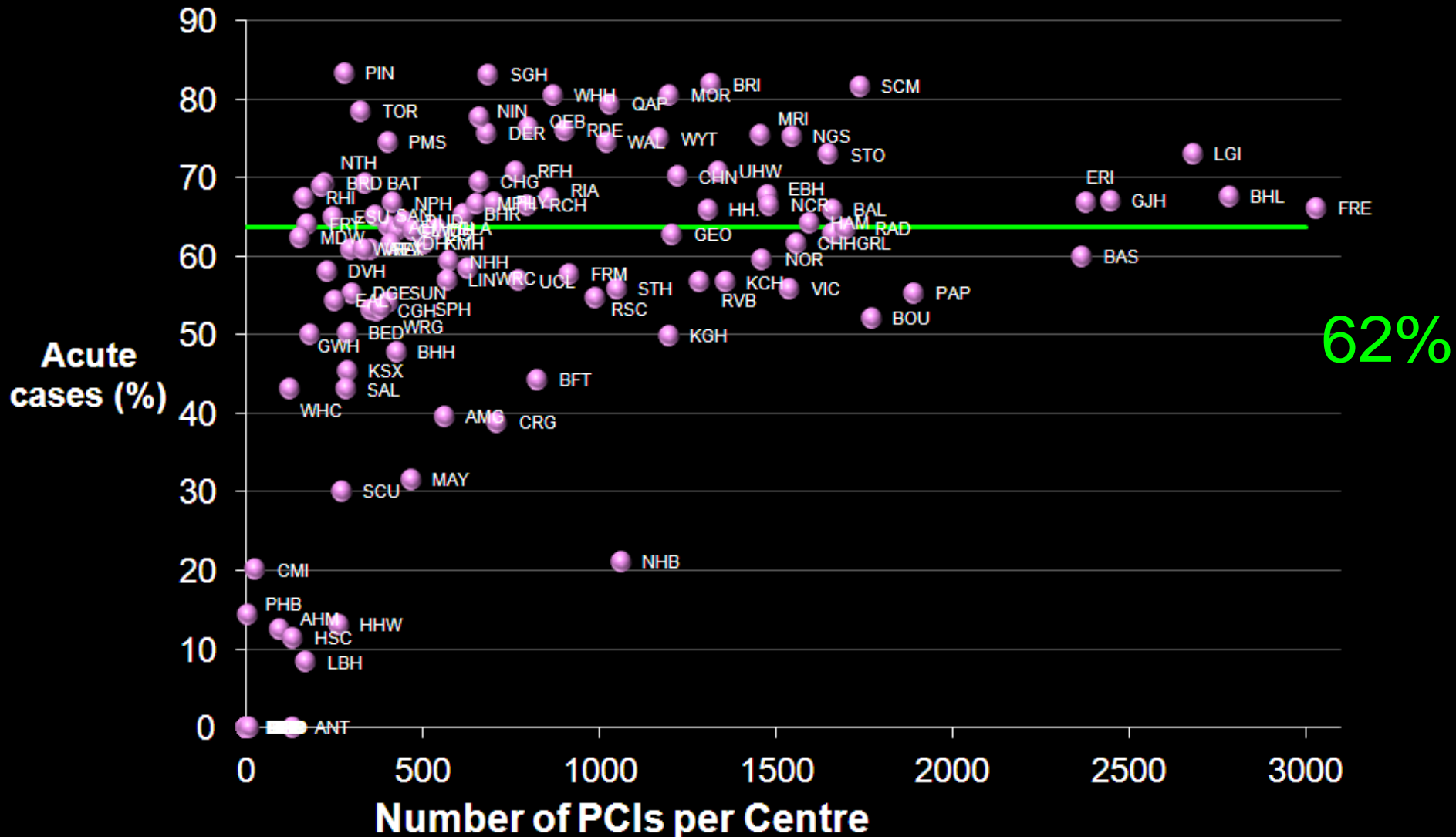


Clinical Syndrome

- % PCI in patients with Acute Syndrome



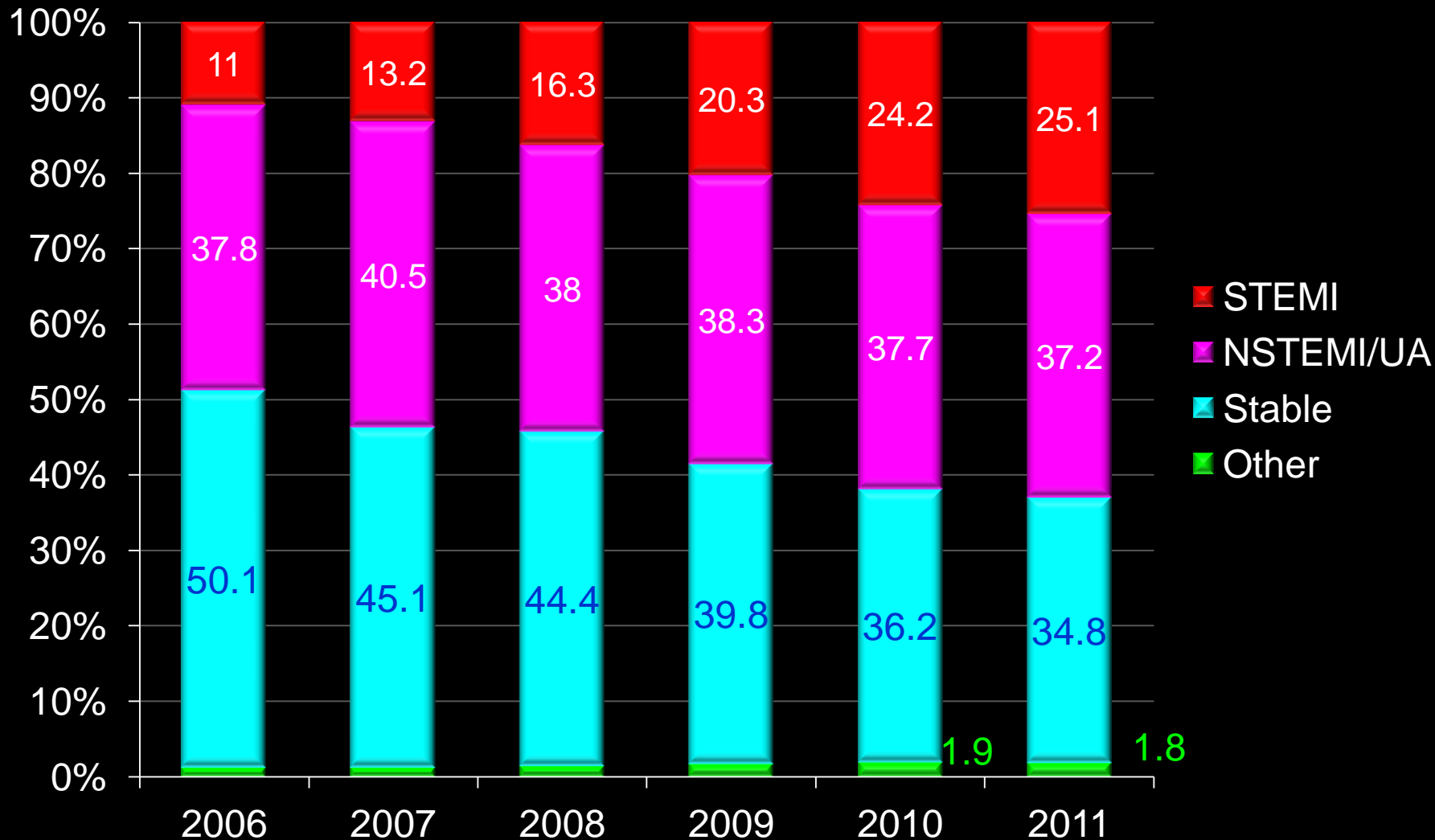
2011 data: Ludman



Indication for PCI



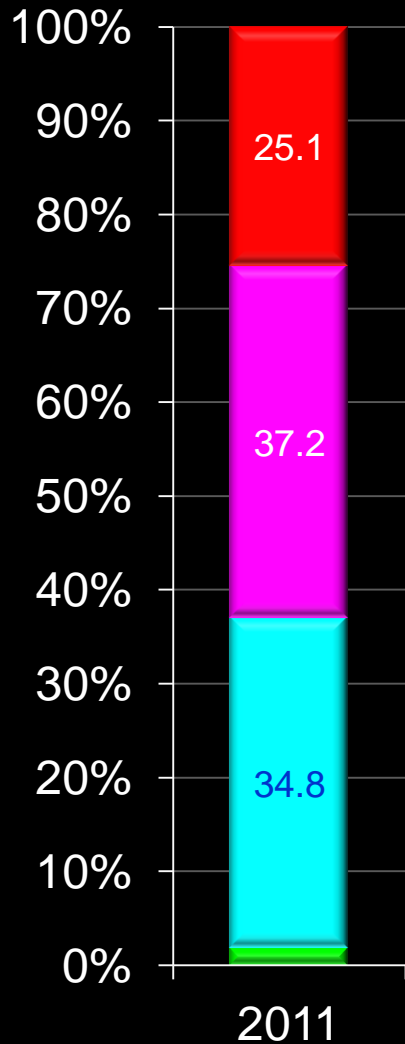
2011 data: Ludman



Indication for PCI



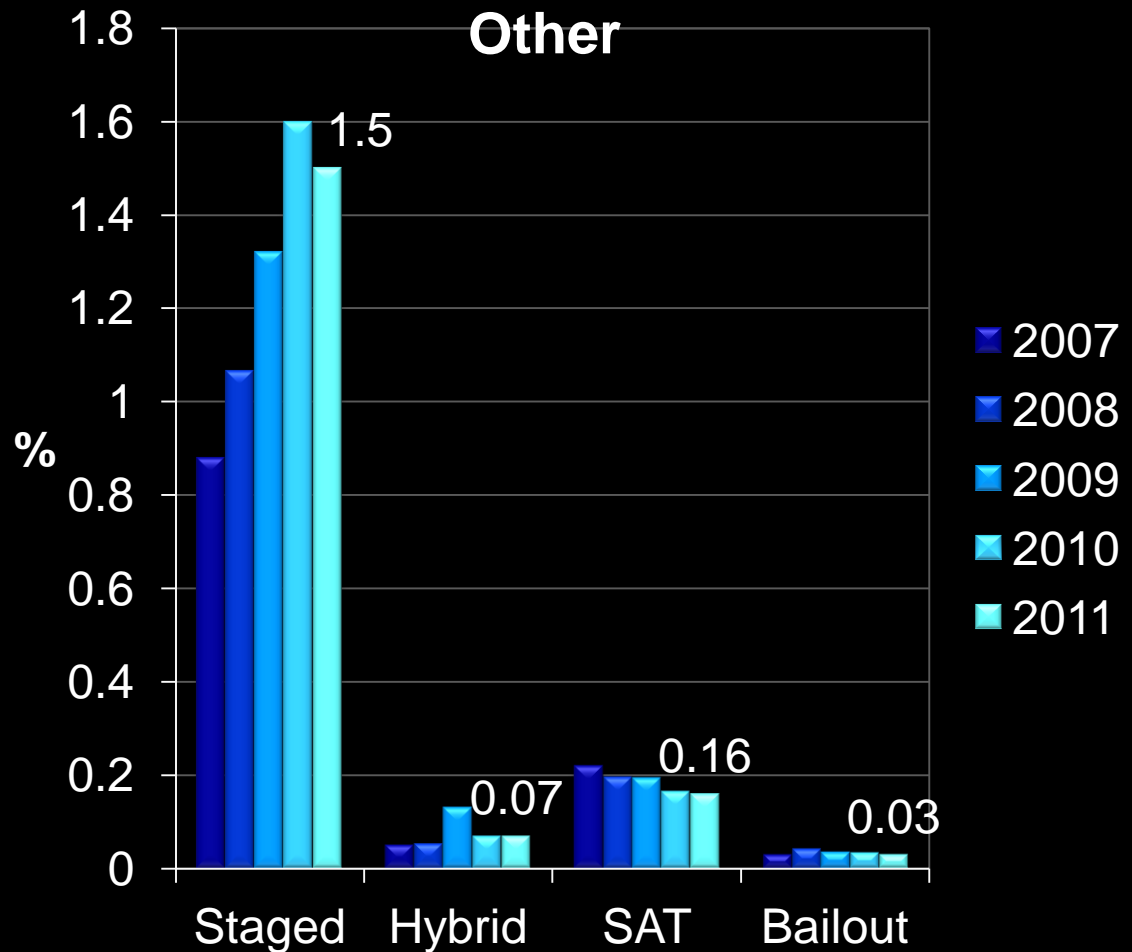
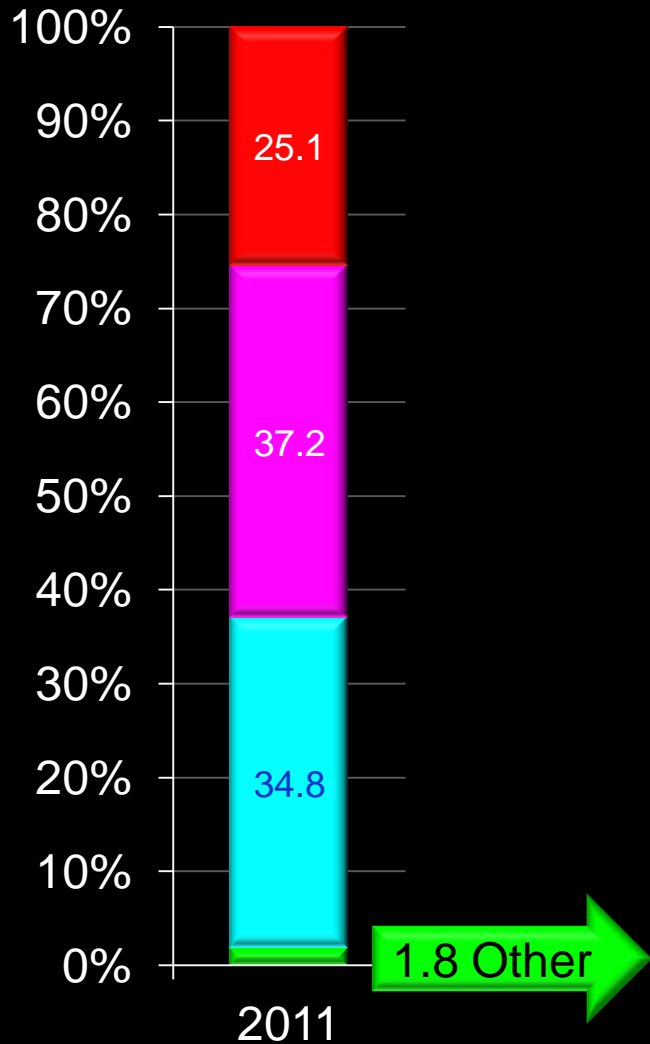
2011 data: Ludman



Indication for PCI



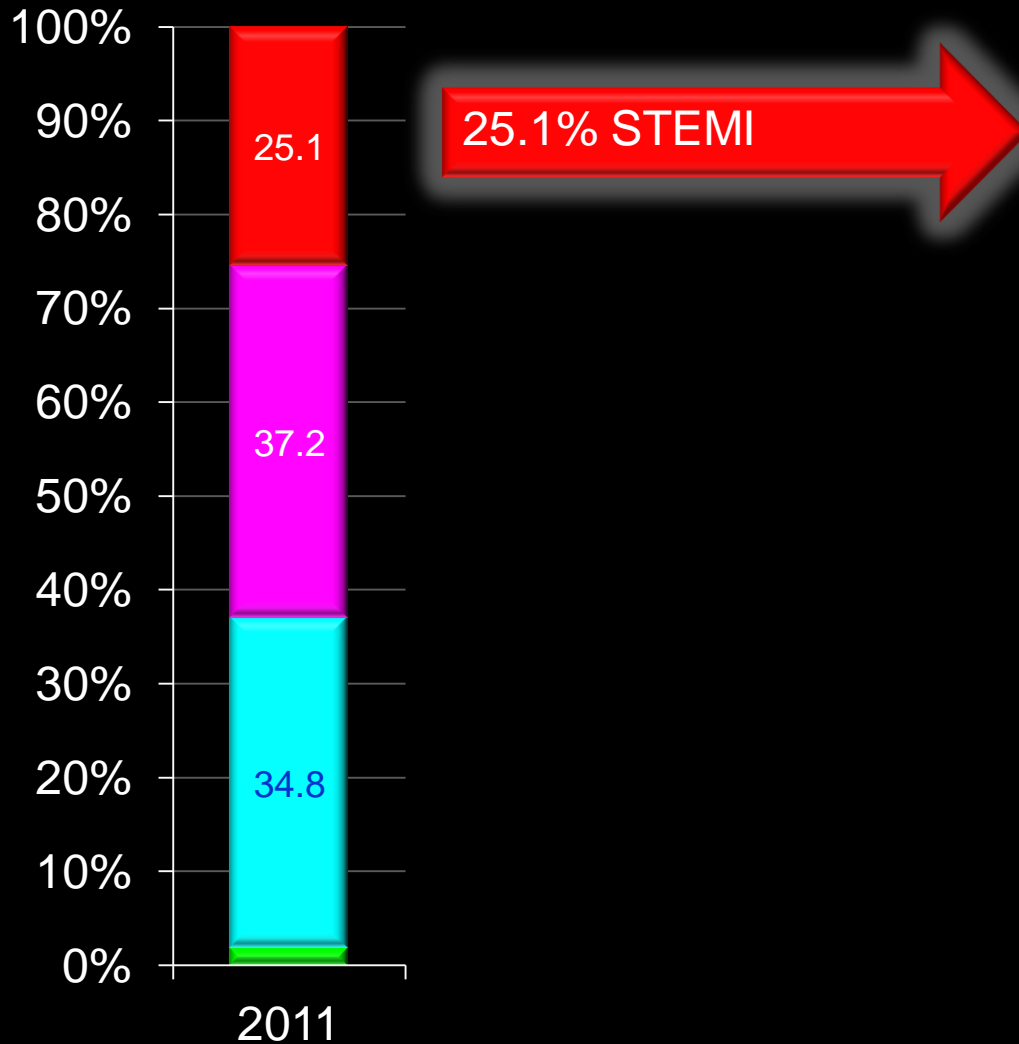
2011 data: Ludman



Indication for PCI



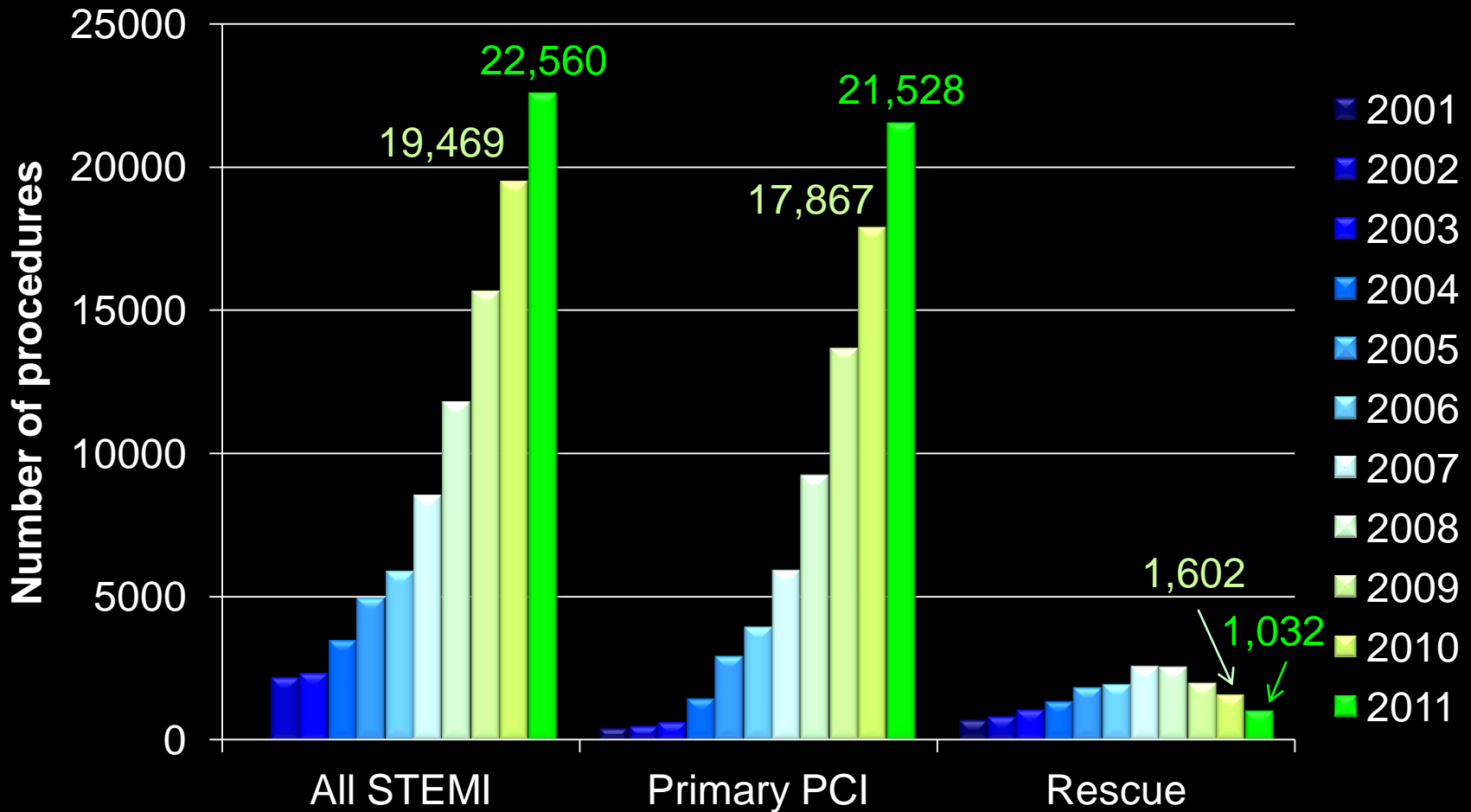
2011 data: Ludman



PCI for STEMI



2011 data: Ludman

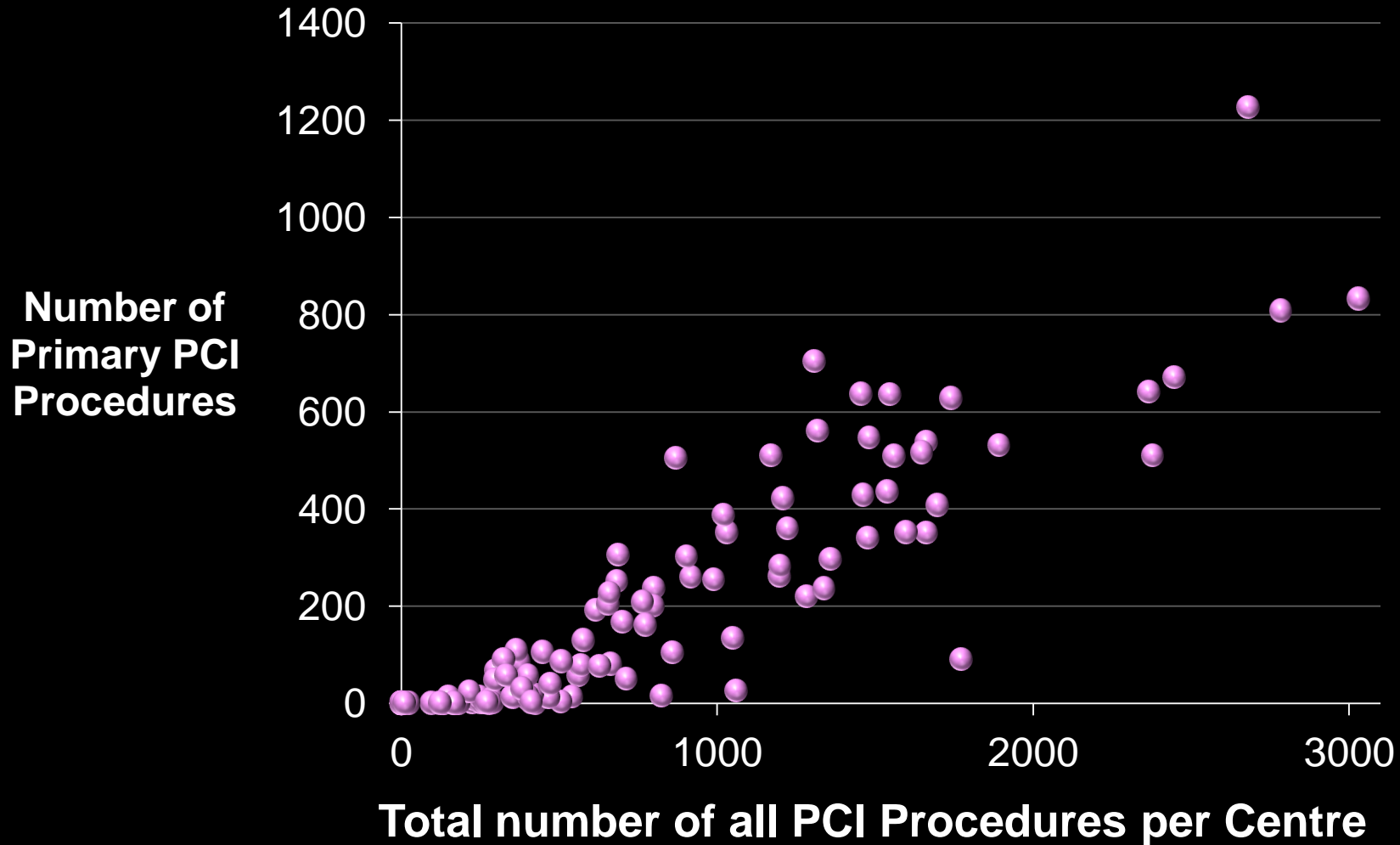


Primary PCI for STEMI

Absolute number PPCI (2011)



2011 data: Ludman

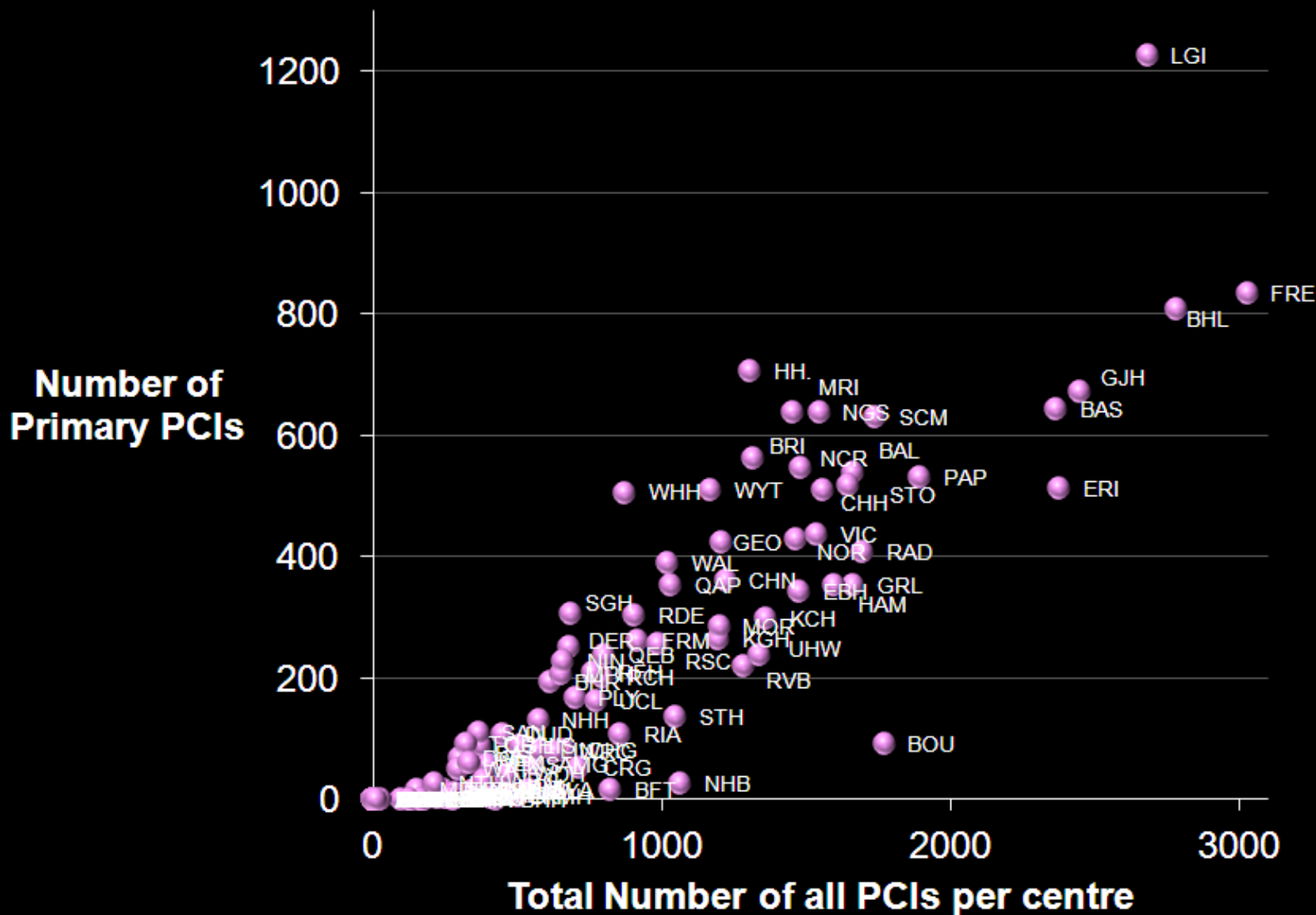


Primary PCI for STEMI

Absolute number PPCI (2011)



2011 data: Ludman

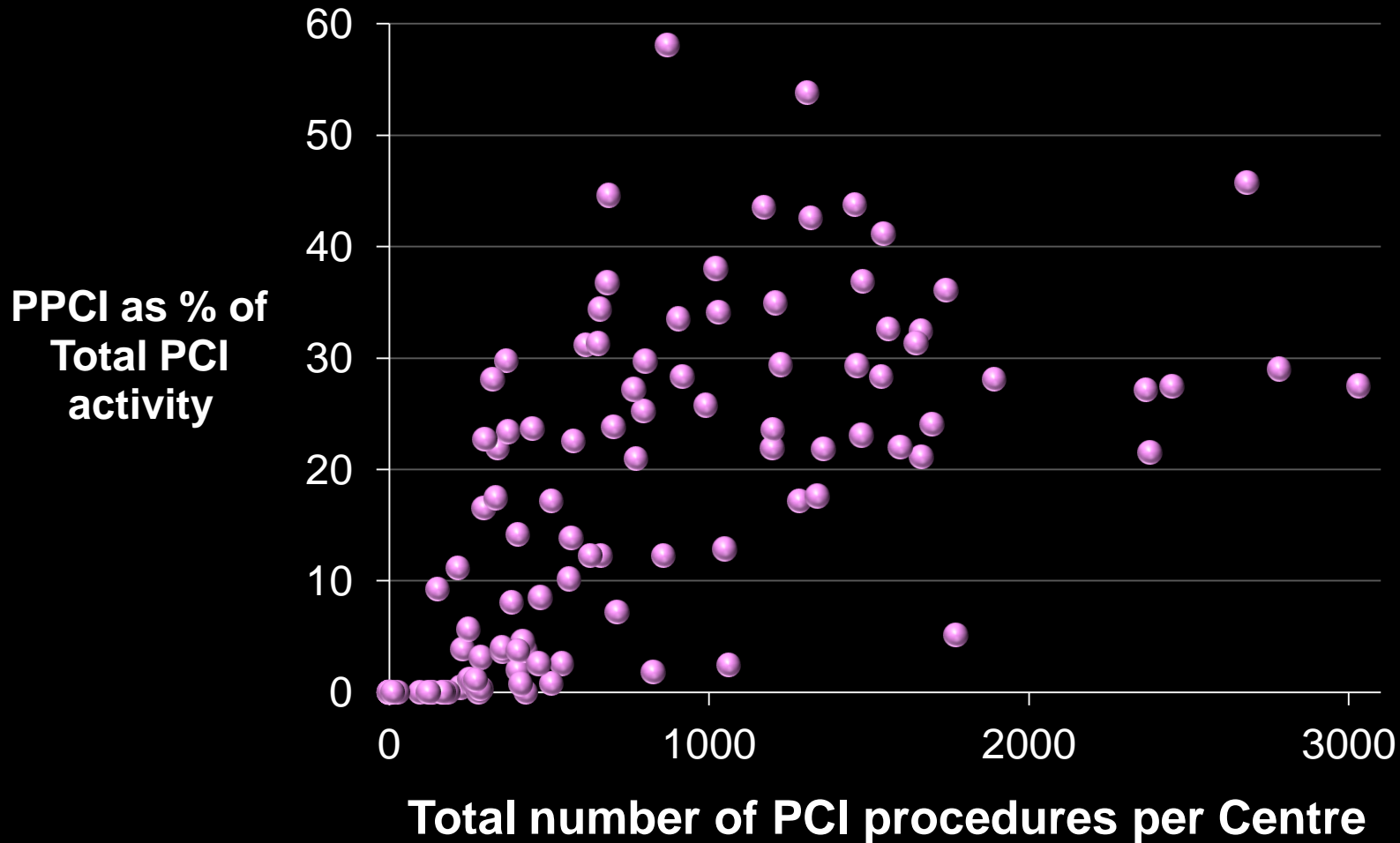


Primary PCI for STEMI

% PPCI of total activity (2011)



2011 data: Ludman



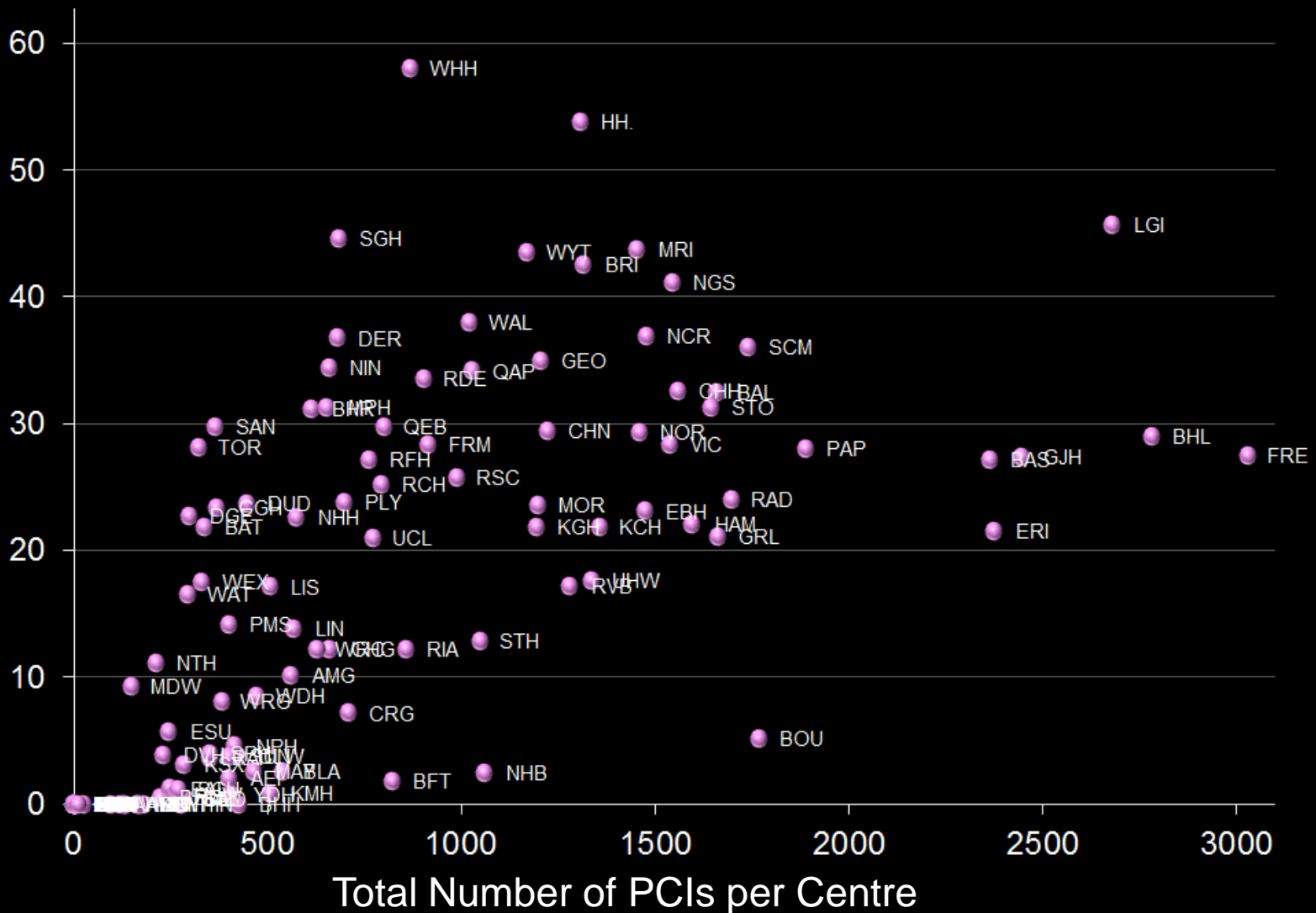
Primary PCI for STEMI

% PPCI of total activity (2011)



2011 data: Ludman

PPCI as
% of
Total PCI
Activity

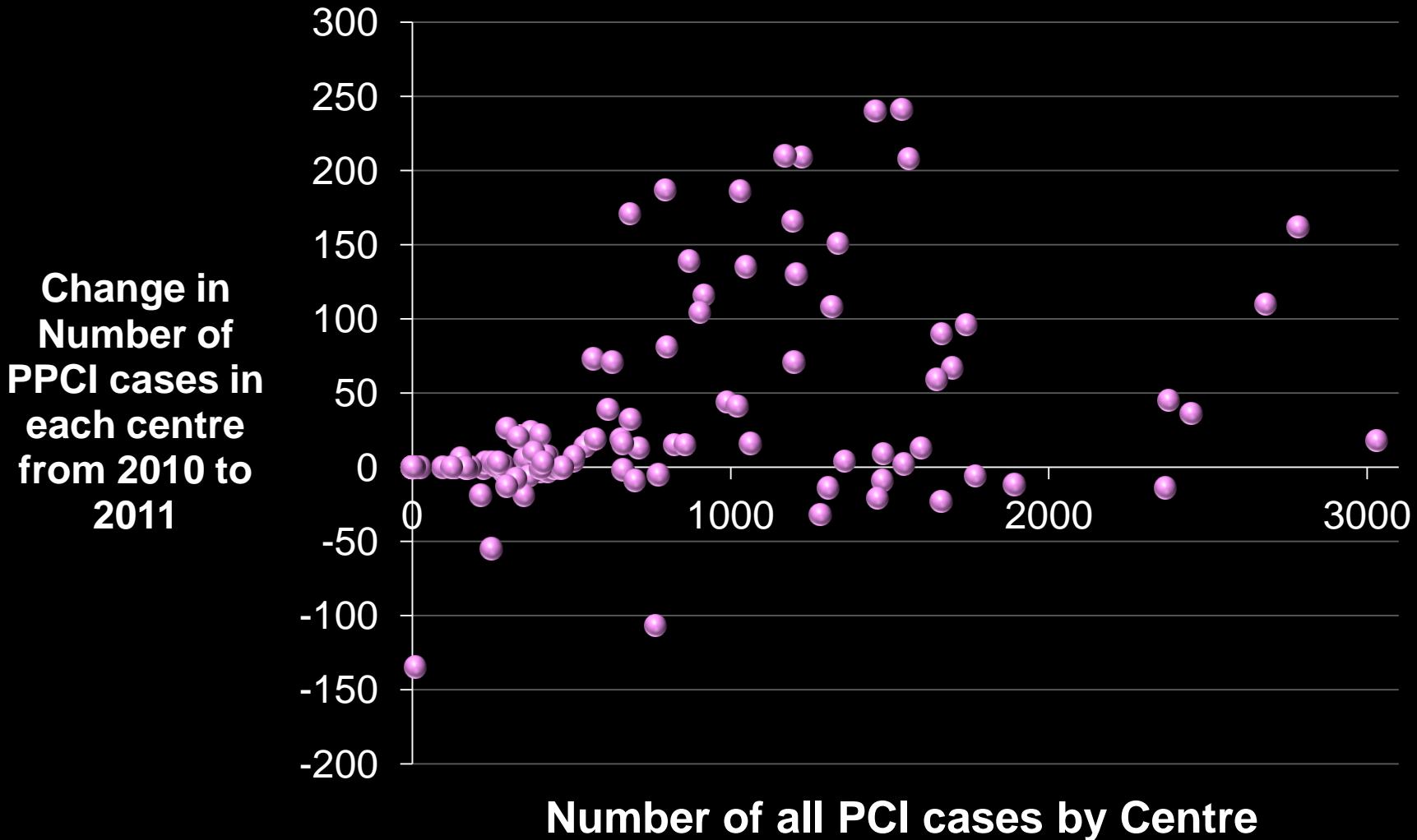


Primary PCI for STEMI

Change in PPCI activity (2010 v 2011)



2011 data: Ludman

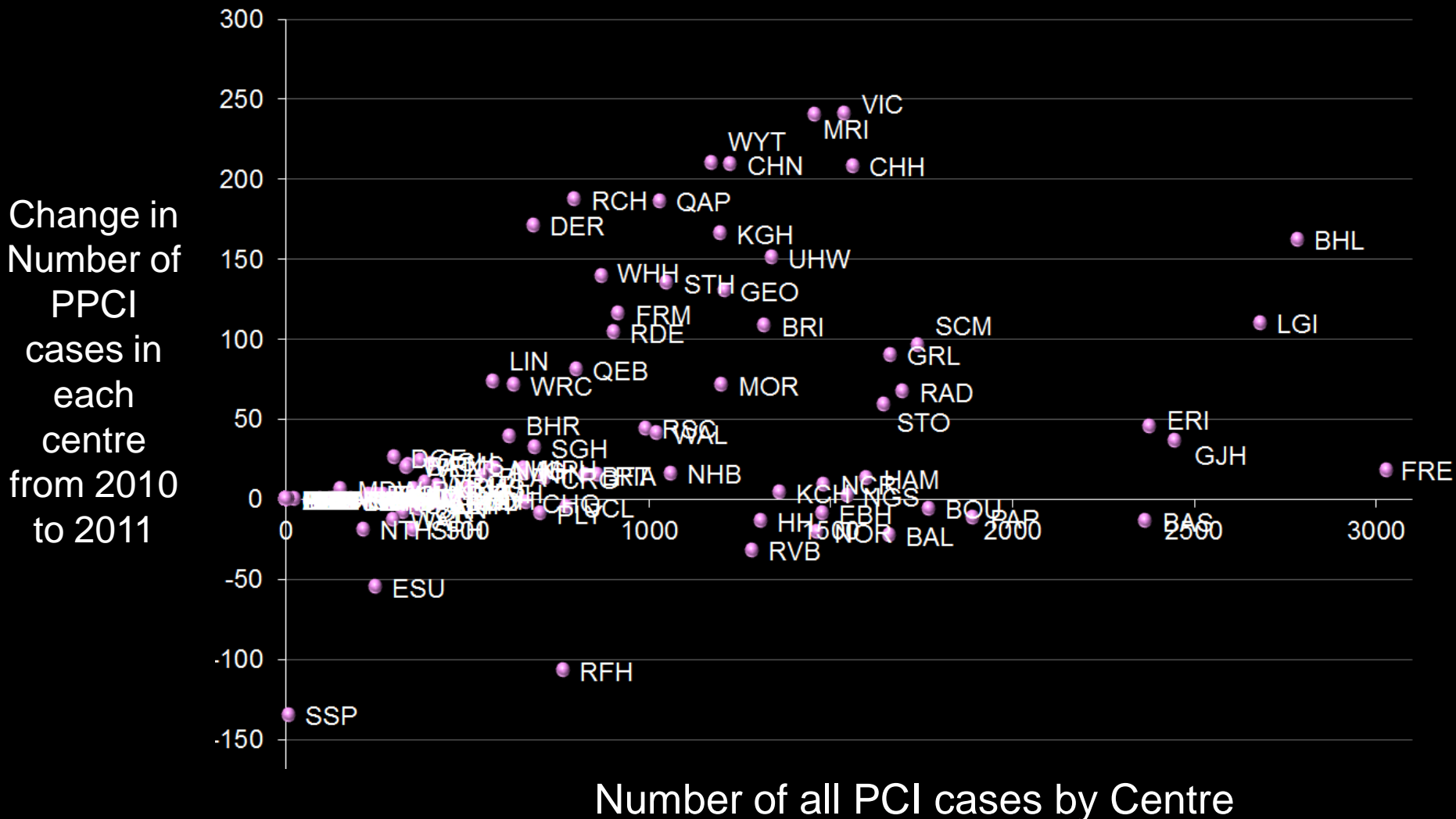


Primary PCI for STEMI

Change in PPCI activity (2010 v 2011)



2011 data: Ludman



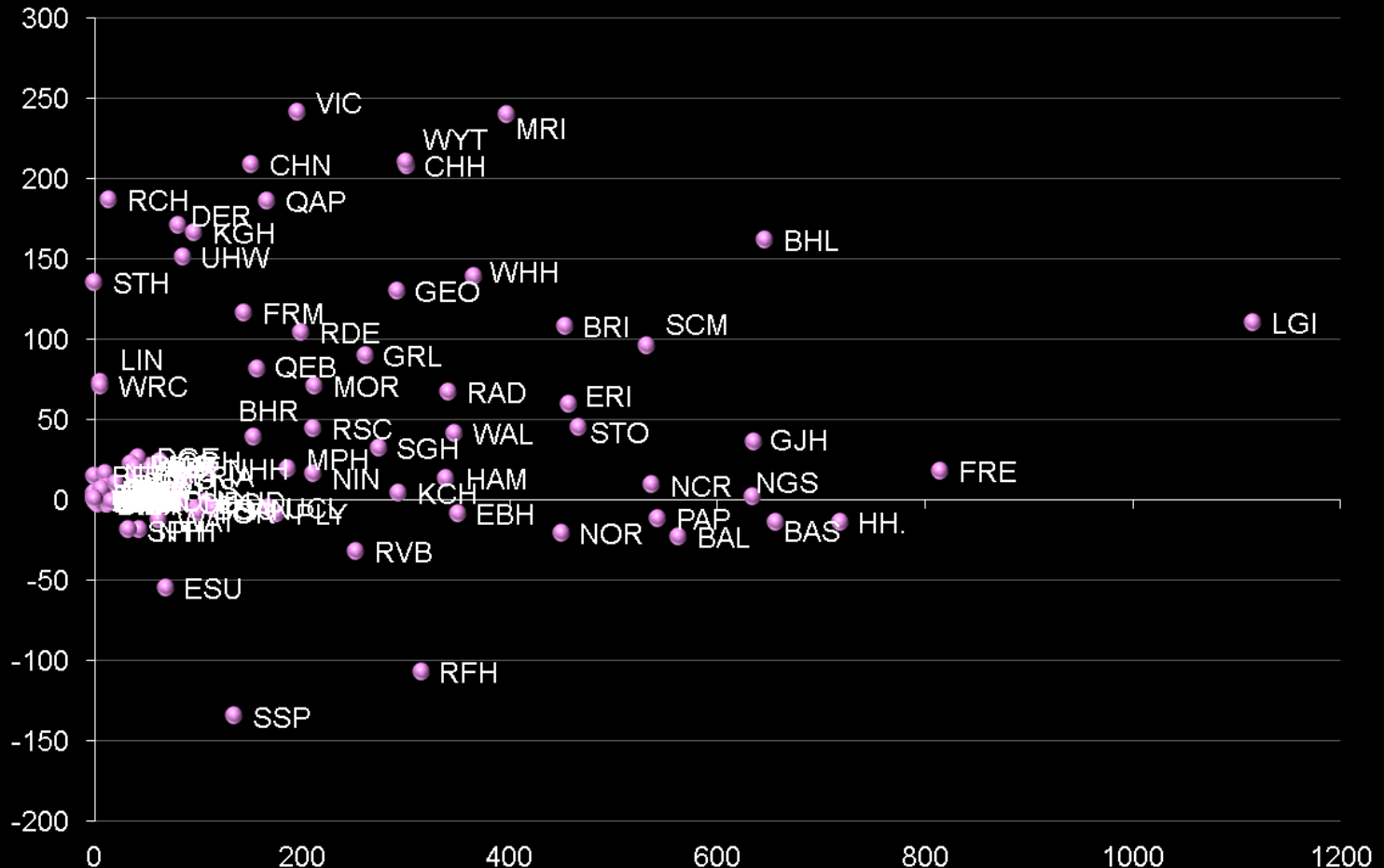
Primary PCI for STEMI

Change in PPCI activity (2010 v 2011)



2011 data: Ludman

Change in Number of PPCI cases in each centre from 2010 to 2011



Number of PPCI cases in 2010

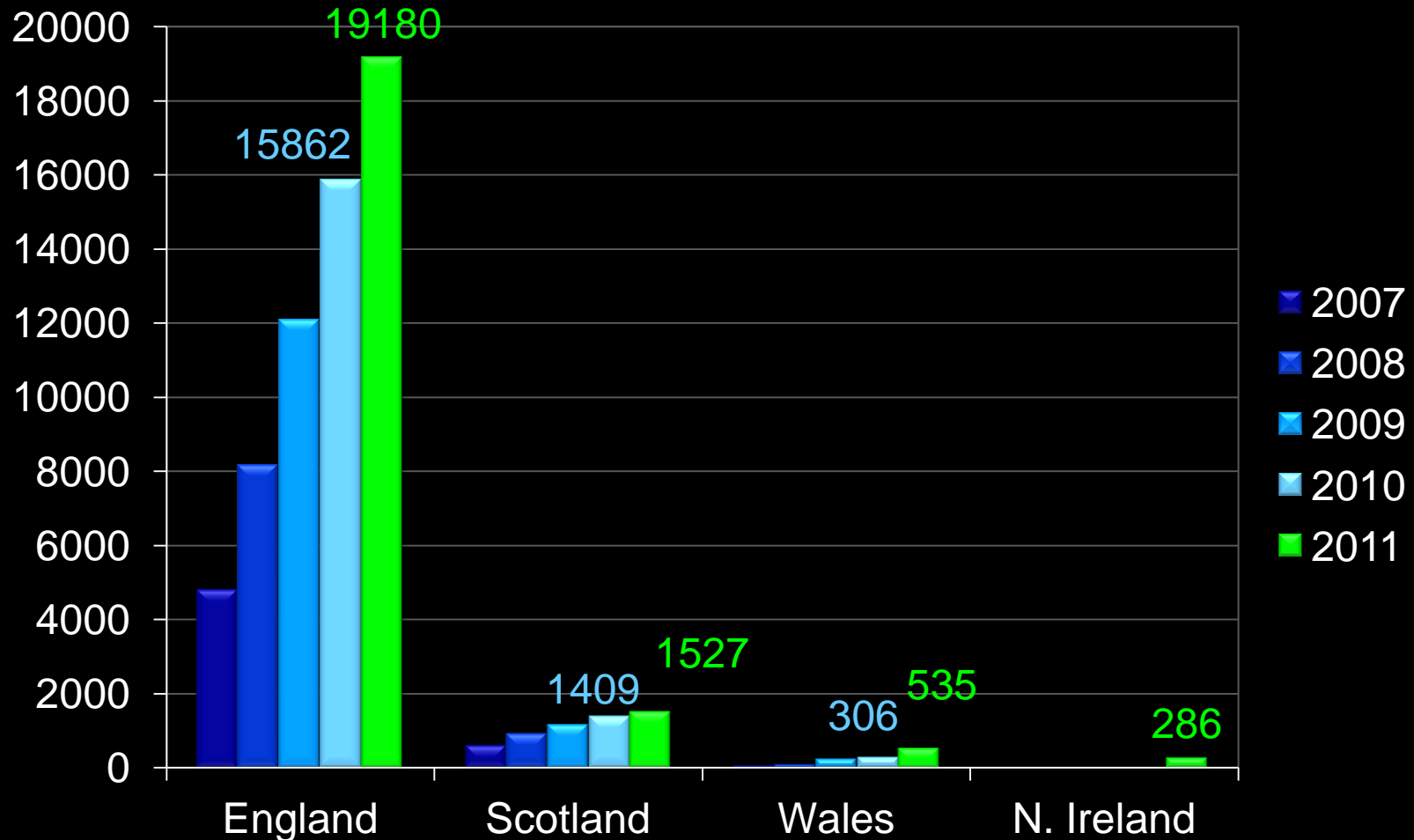
Primary PCI

UK Countries



2011 data: Ludman

Total Number of PPCI Procedures



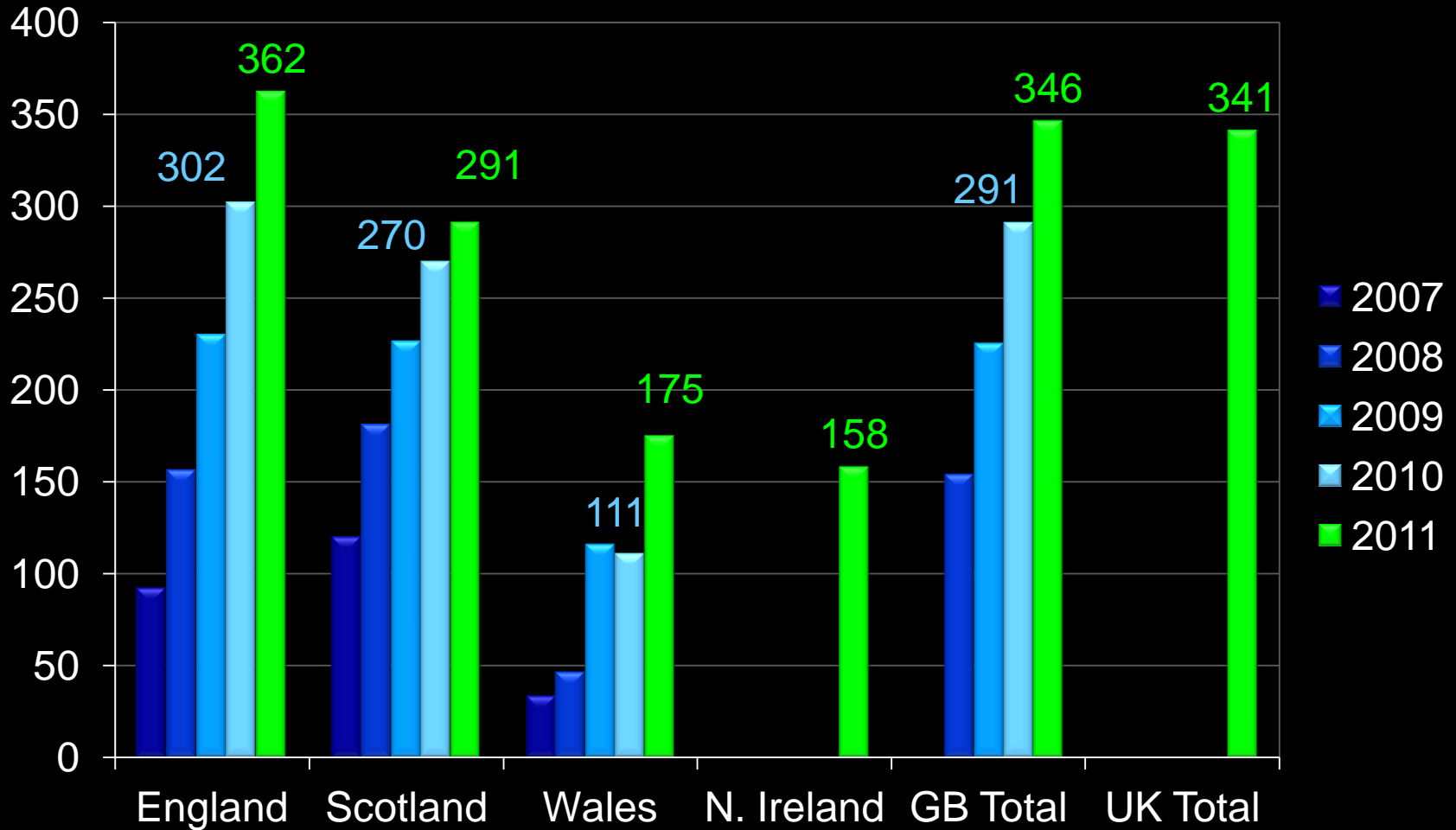
Primary PCI

UK Countries

PPCI Procedures pmp



2011 data: Ludman



Population estimates assume all Welsh to be treated in Wales

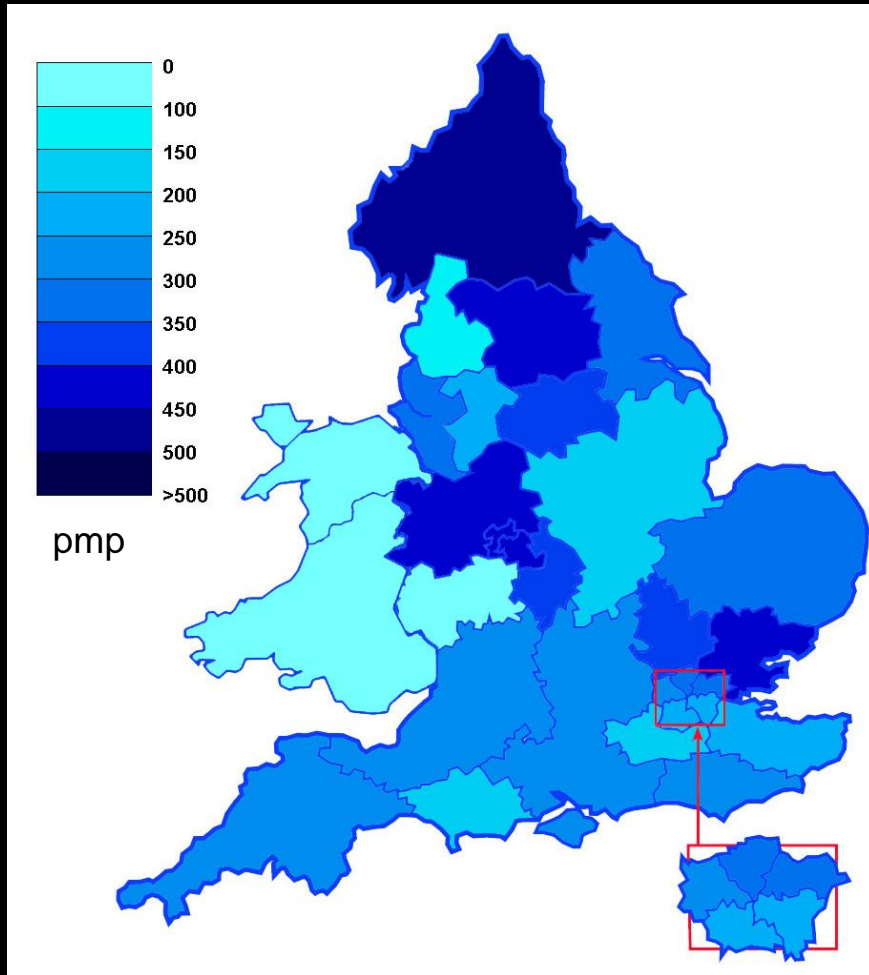
Primary PCI pmp

Cardiac Networks

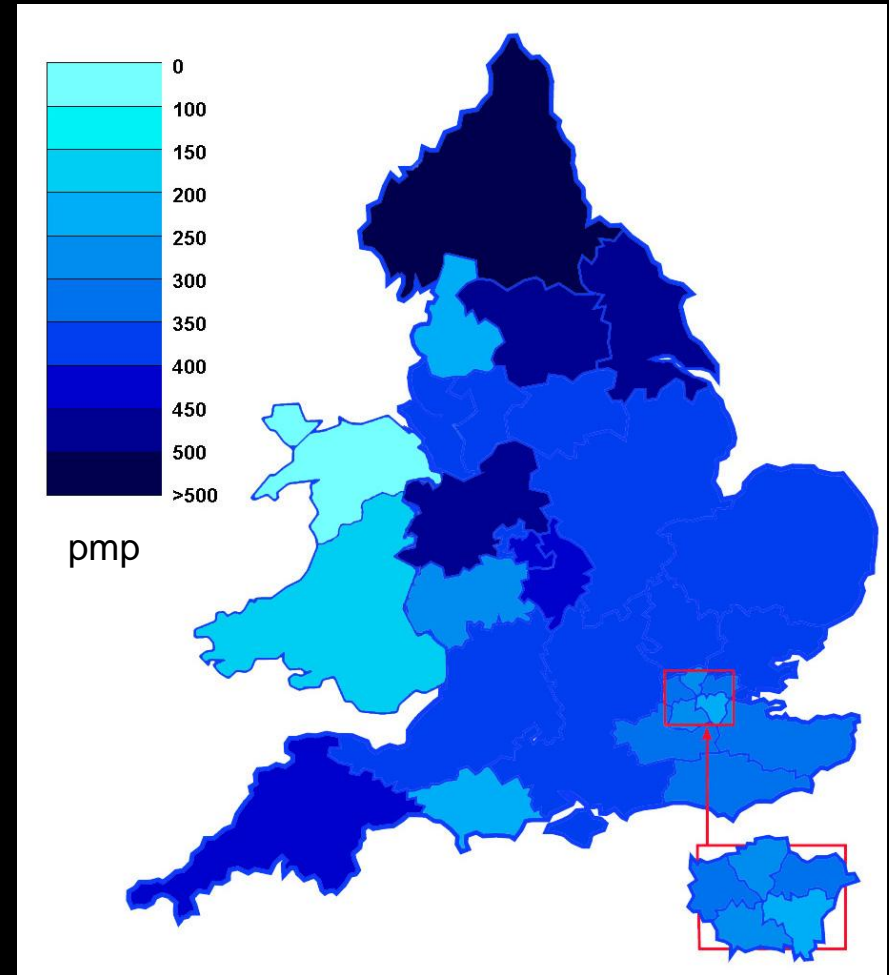


2011 data: Ludman

2010



2011



Maps and analysis: David Cunningham

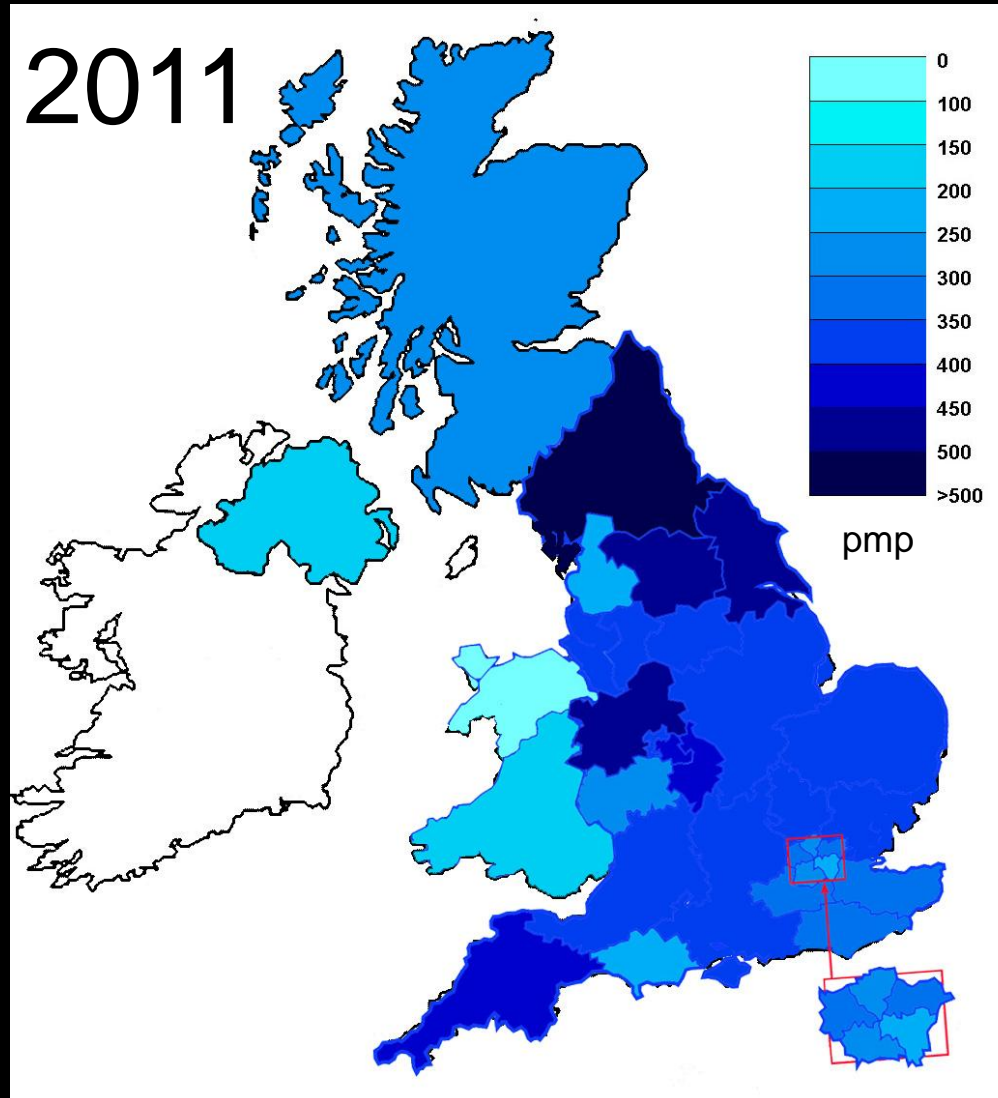
Not age adjusted

Primary PCI pmp

UK



2011 data: Ludman

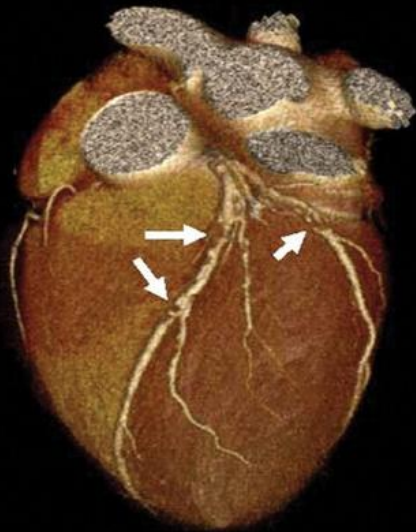


Maps and analysis: David Cunningham

Not age adjusted

Multi-vessel Disease

A



B



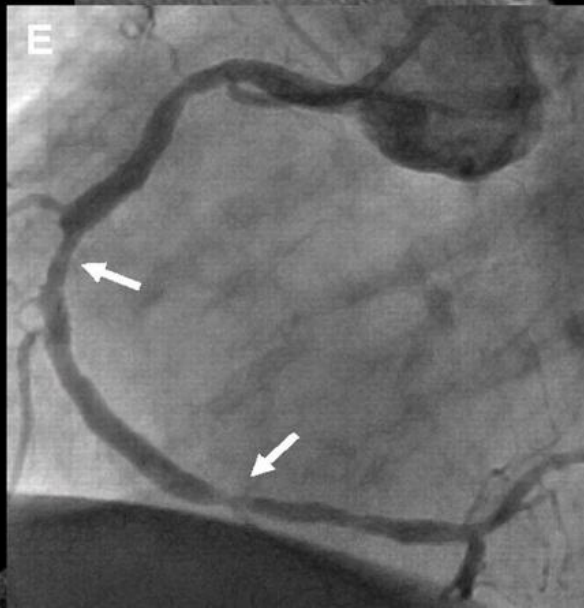
C



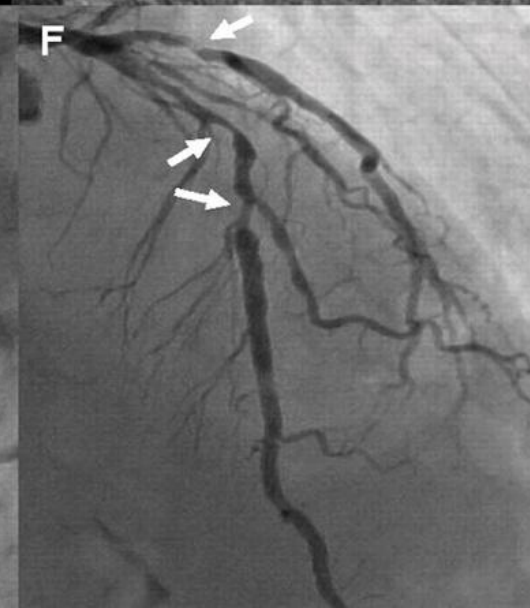
D



E



F

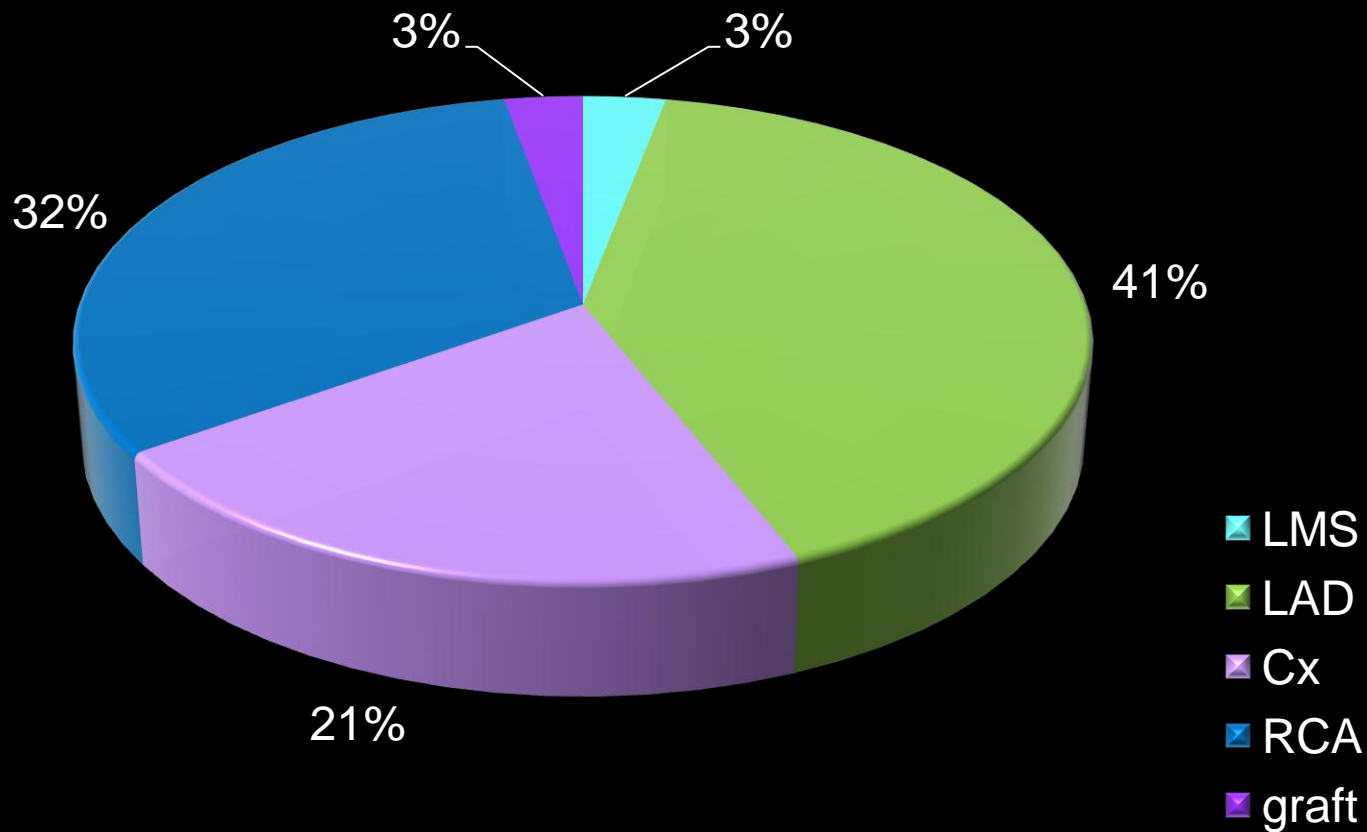


All PCI

Epicardial Territory Treated



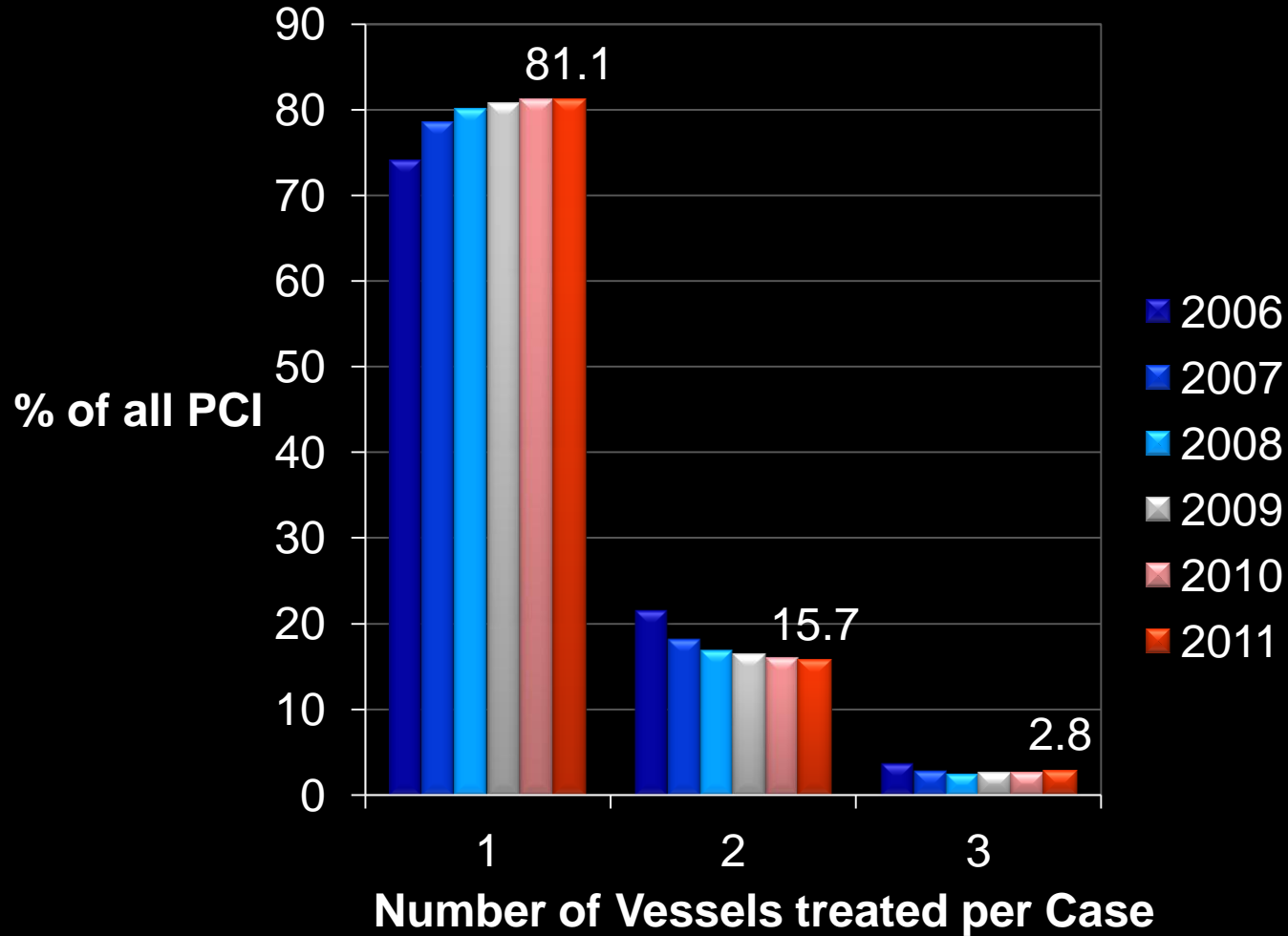
2011 data: Ludman



Multi-vessel Treatment



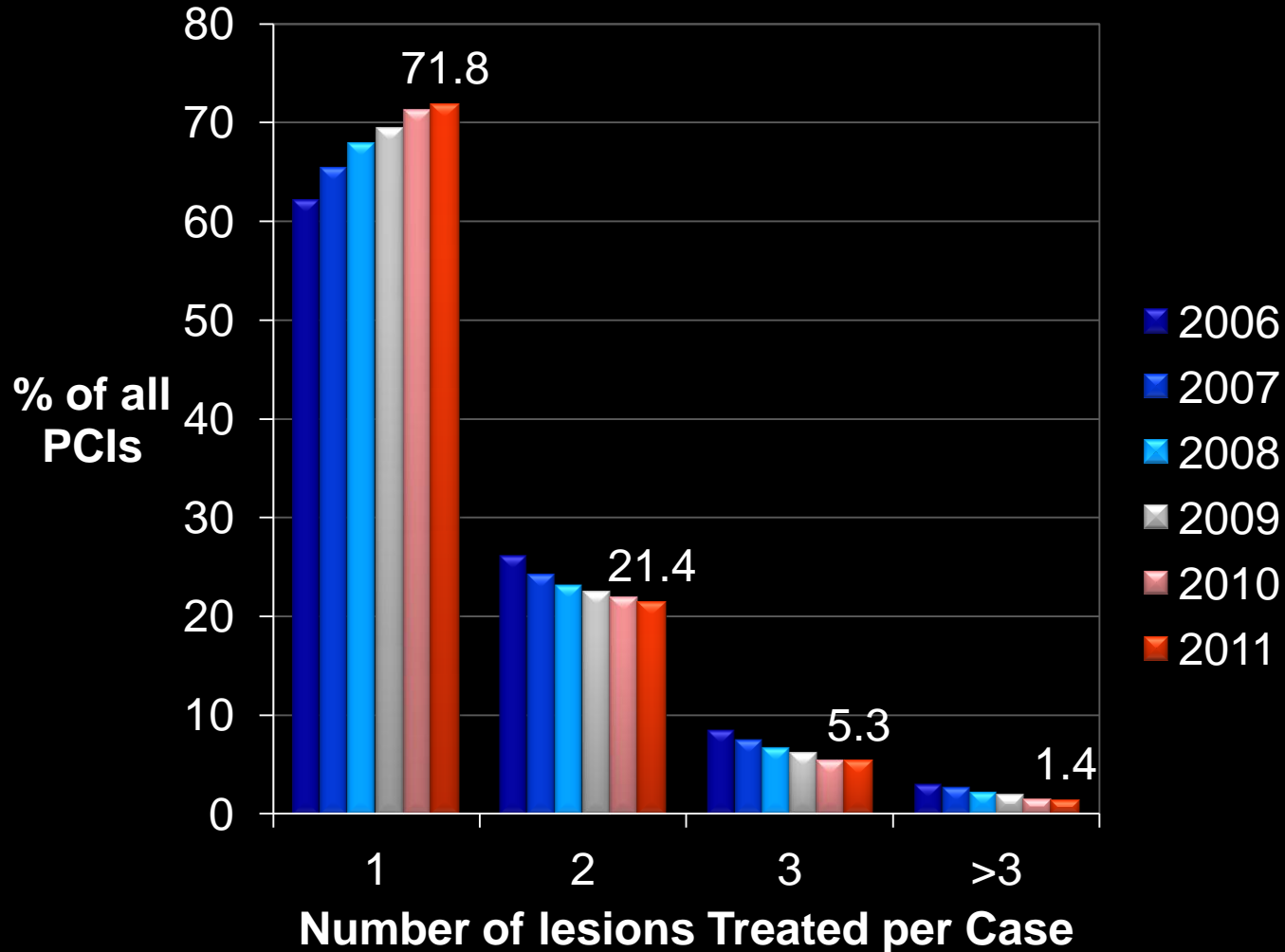
2011 data: Ludman



Multi-Lesion Treatment



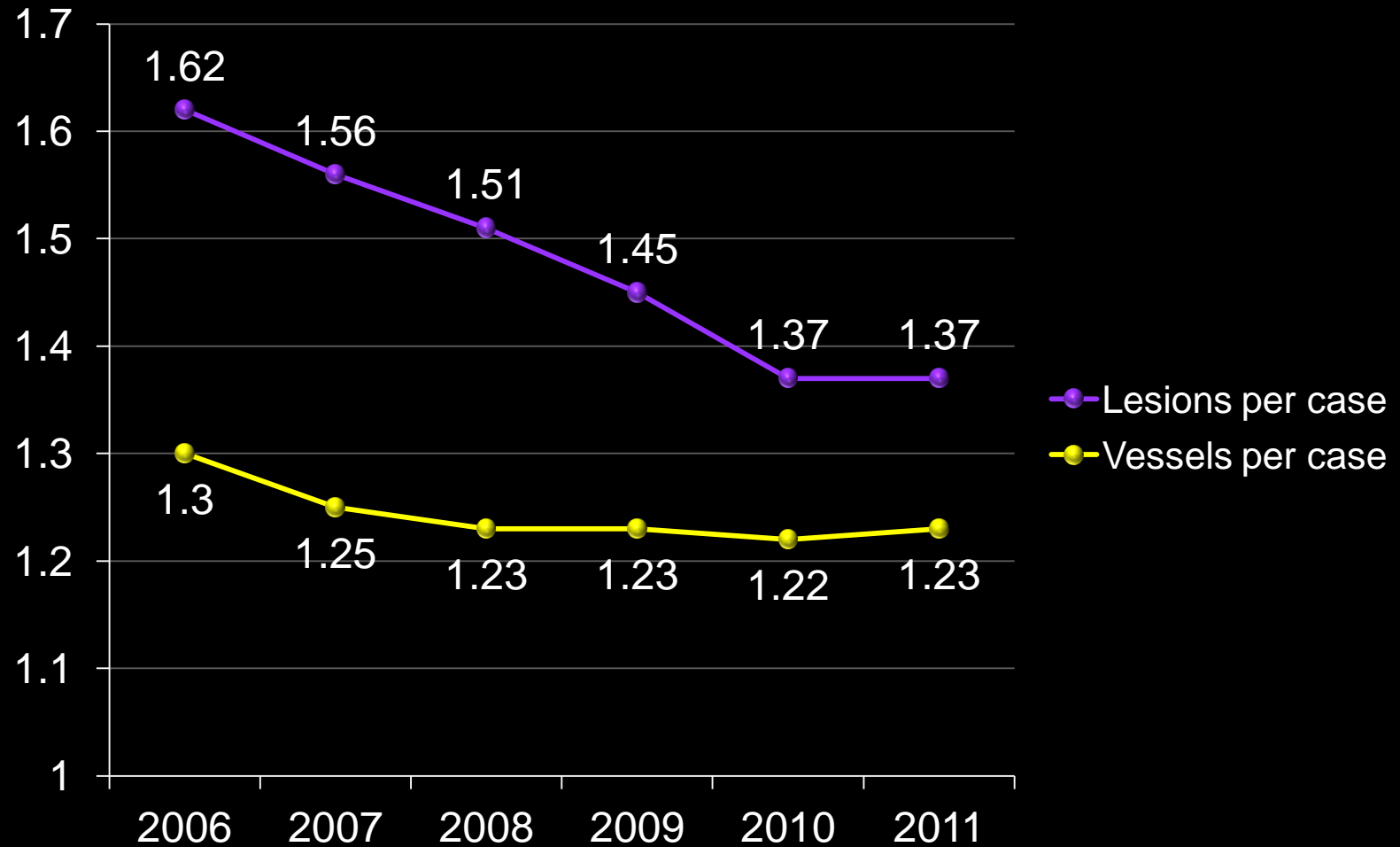
2011 data: Ludman



Multi-Lesion and vessel Treatment



2011 data: Ludman



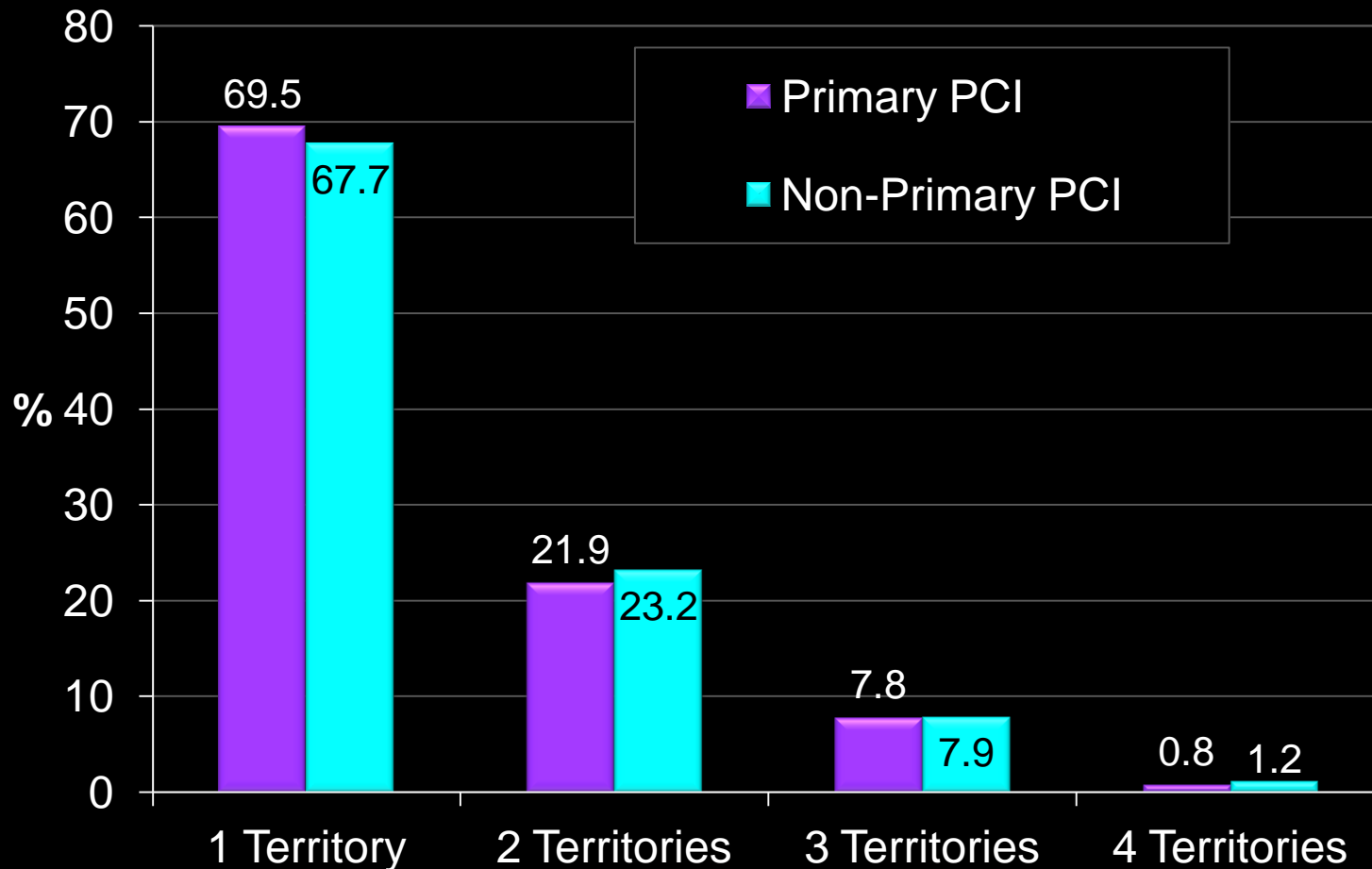
Disease Burden

Primary PCI v Non-Primary PCI Cases



2011 data: Ludman

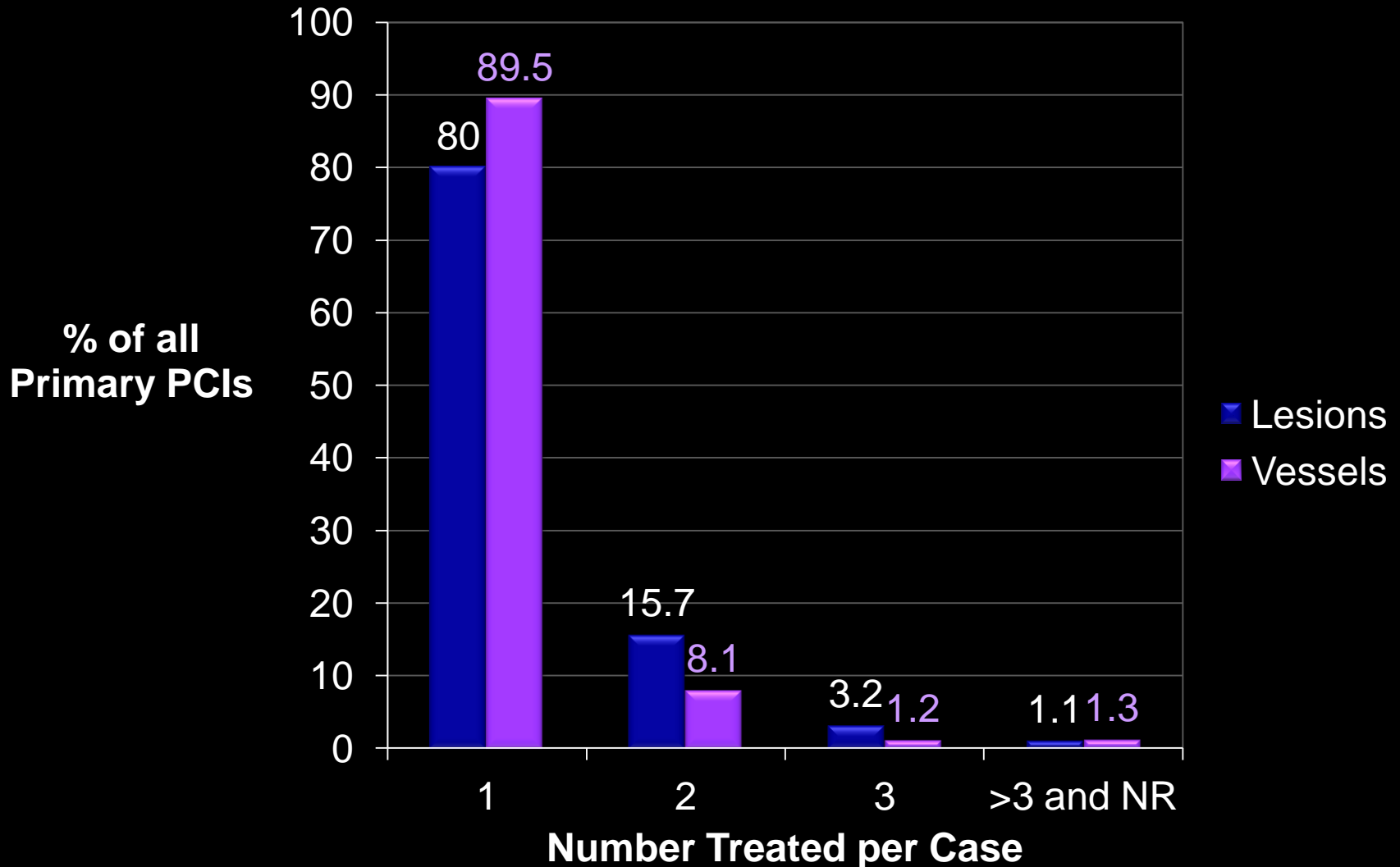
Epicardial Territories with $> 75\%$ stenoses



PPCI Multi-Lesion or Vessel PCI



2011 data: Ludman

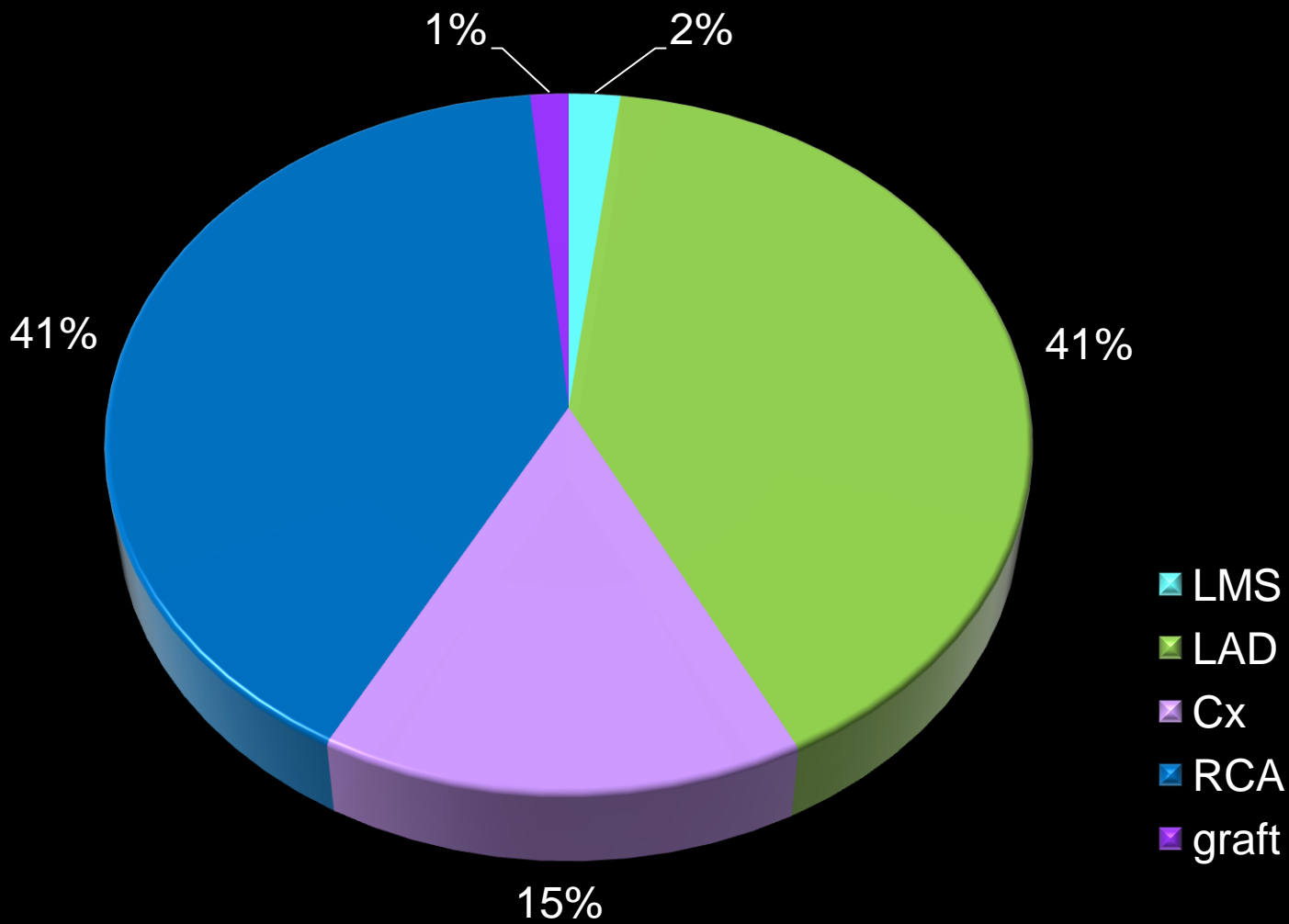


PPCI

Treated Epicardial Territory



2011 data: Ludman

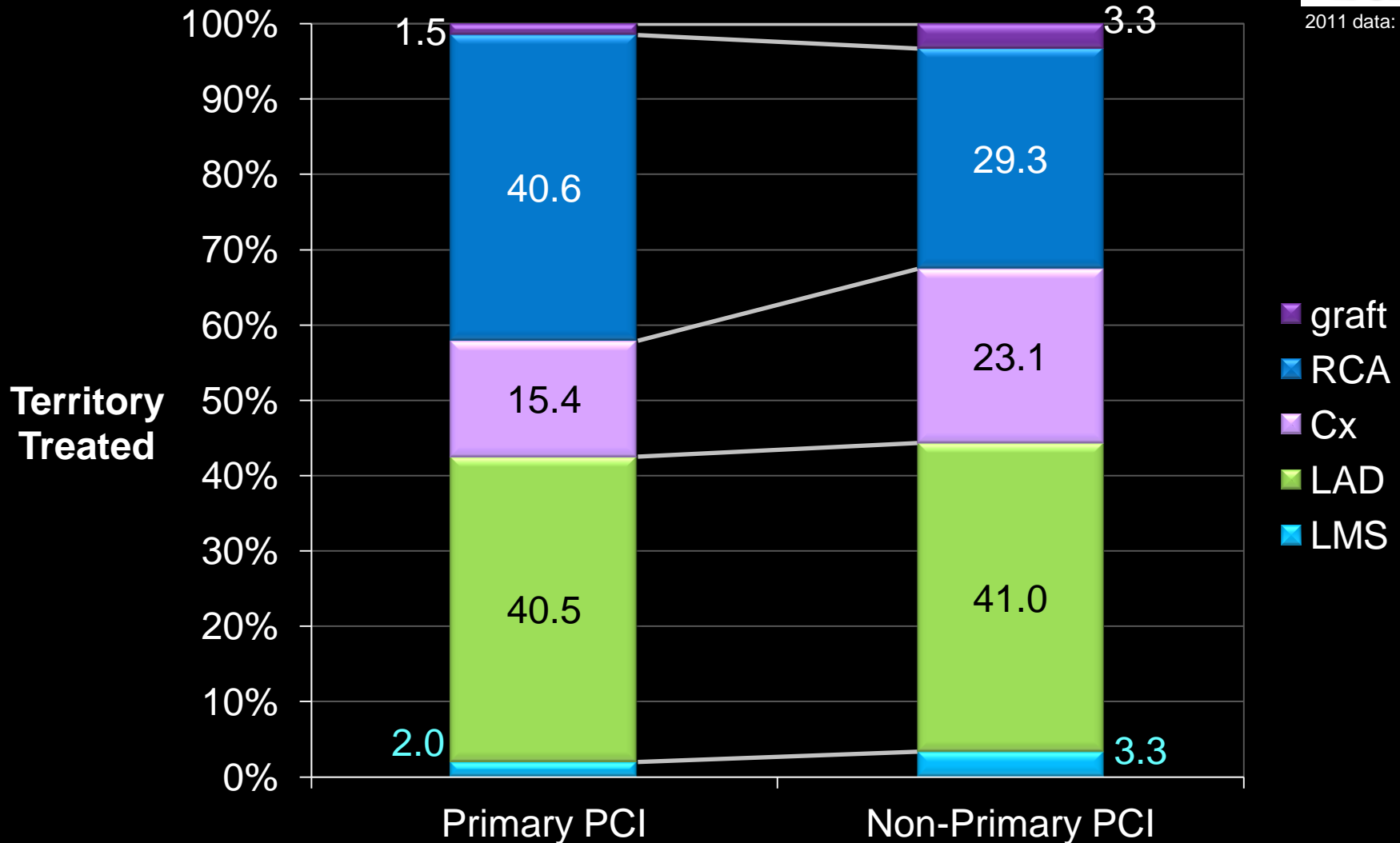


Treated Epicardial Territory

Primary PCI Versus Non-Primary PCI



2011 data: Ludman

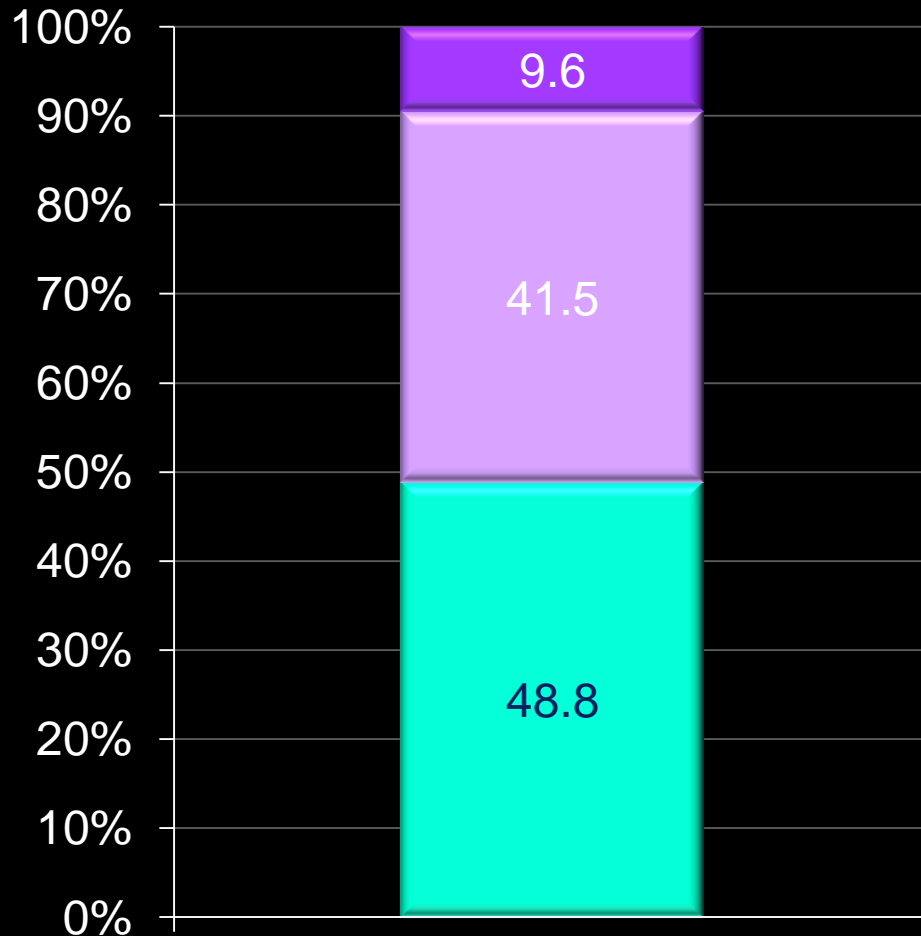


Primary PCI

Extraction Atherectomy



2011 data: Ludman



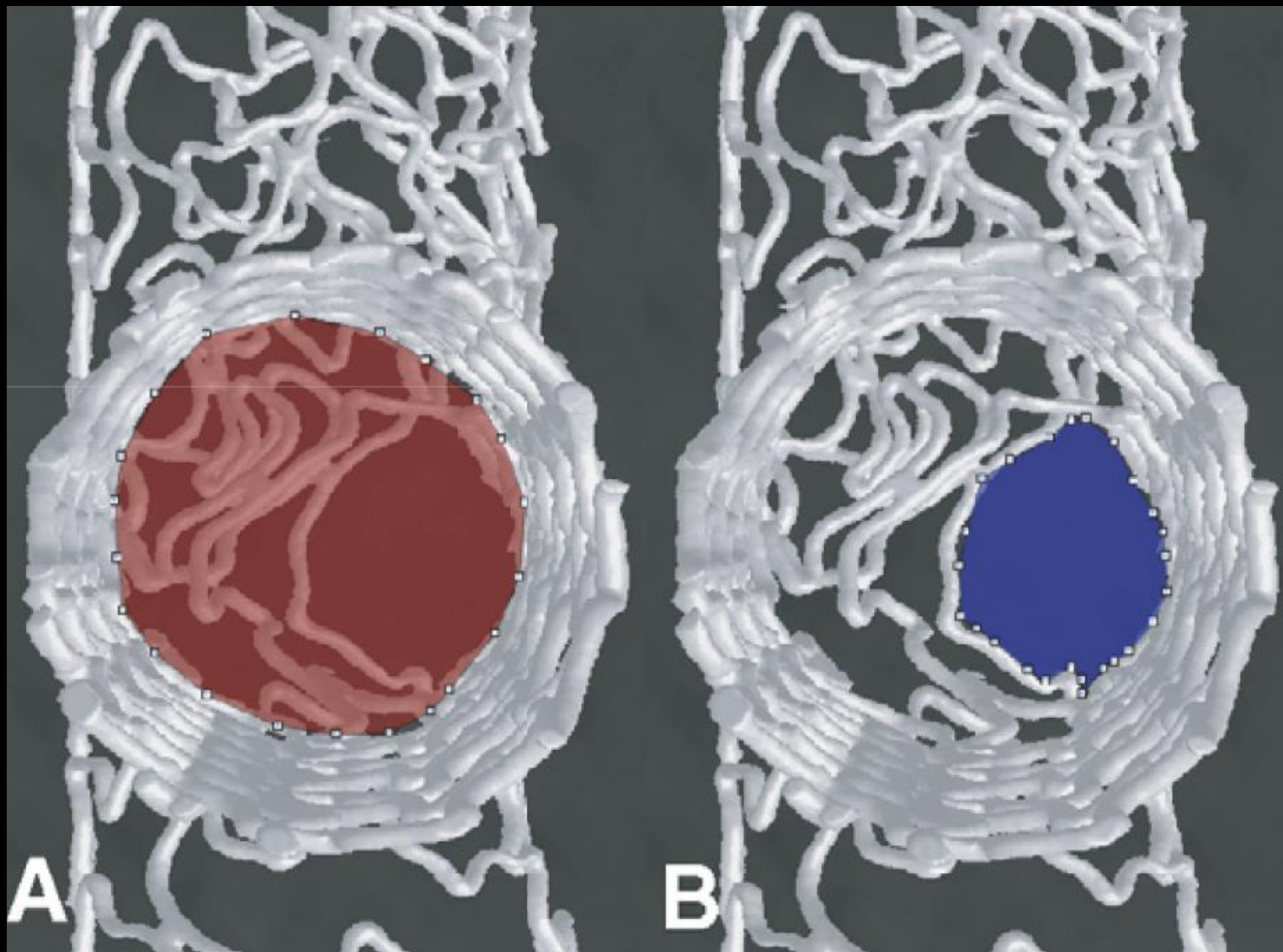
Unknown (%)

No Device Used (%)

Device Used (%)



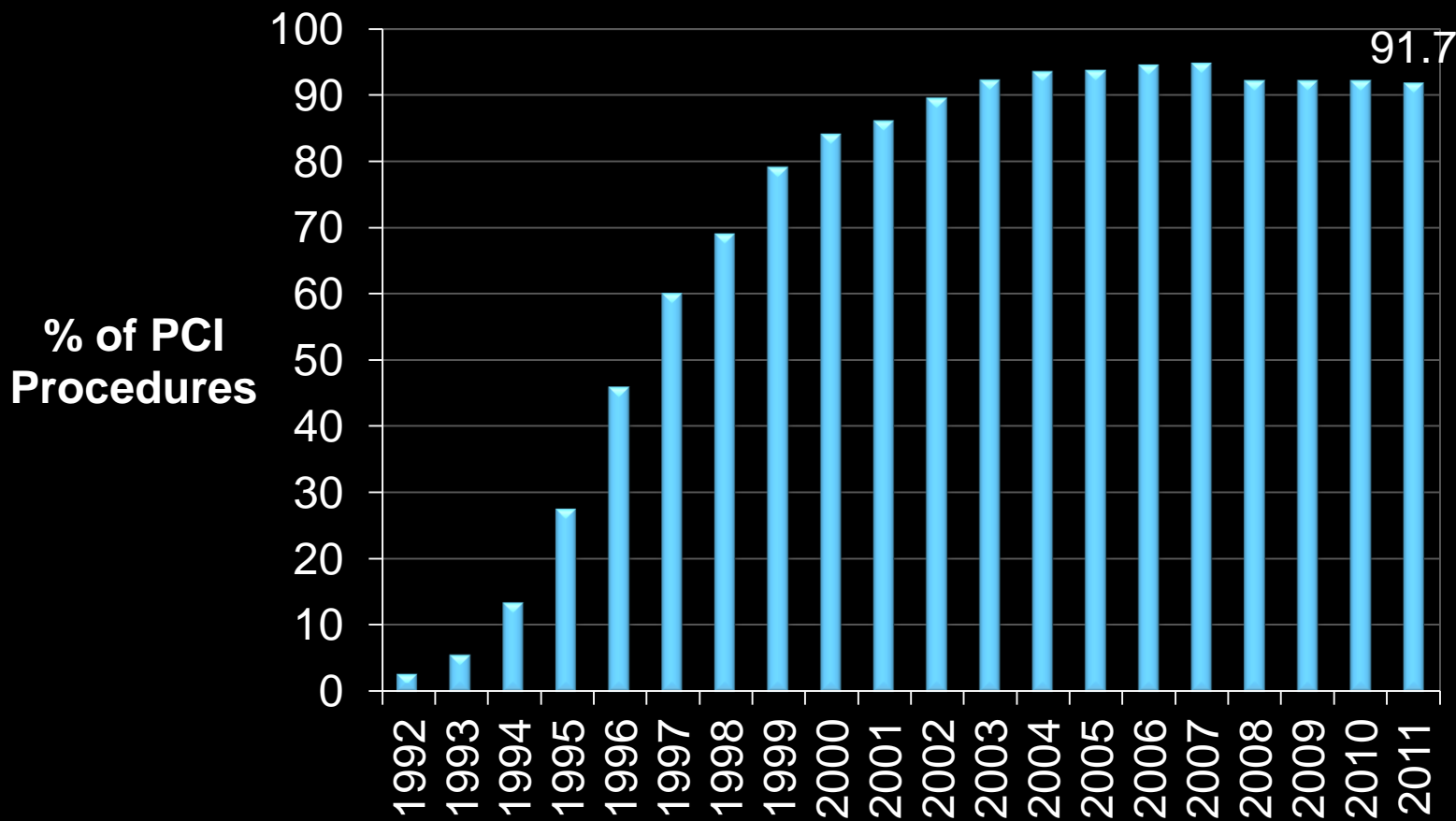
Stents



Procedures using Stents



2011 data: Ludman



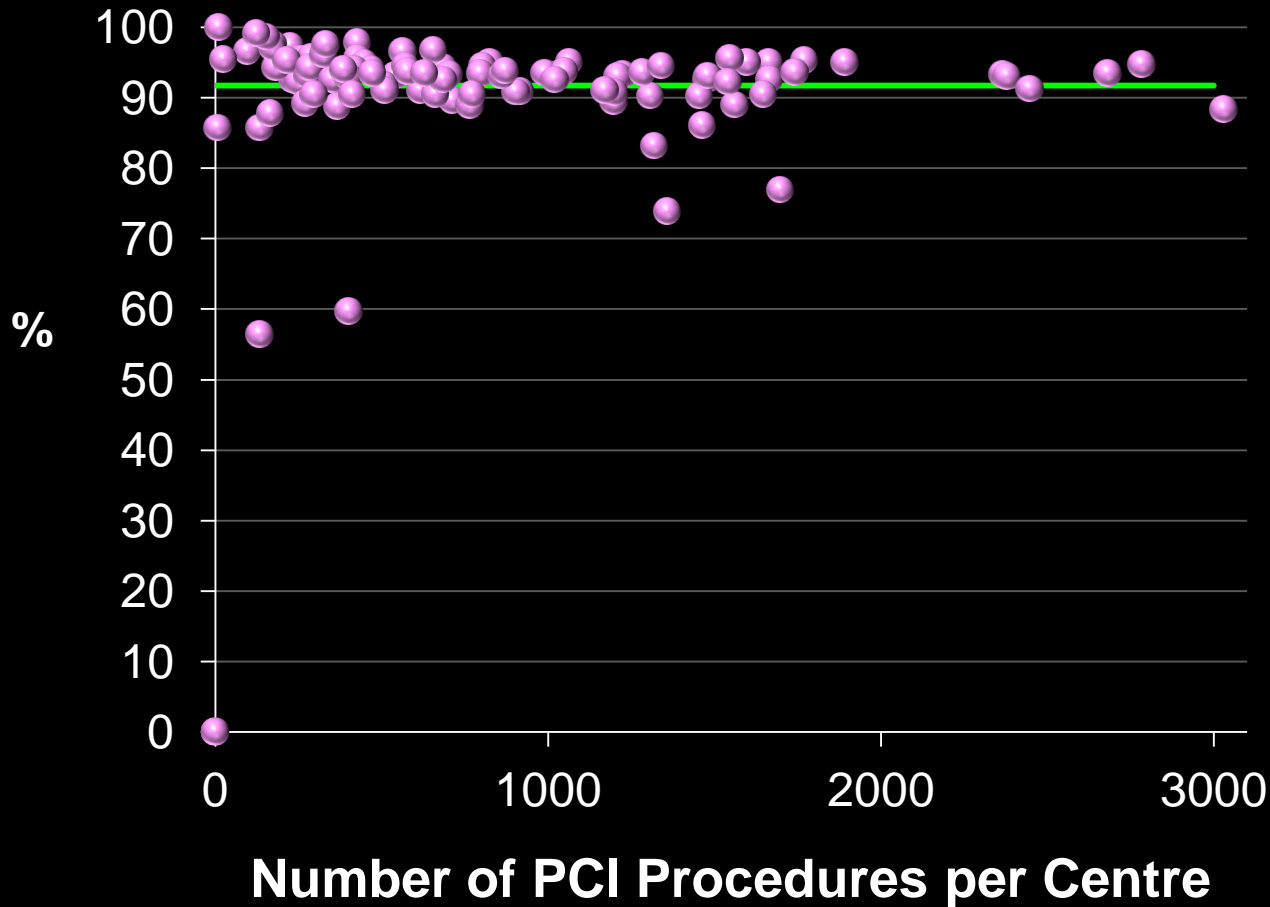
aggregate data up to 2007, NICOR for 2008 on

Procedures using Stents



2011 data: Ludman

Mean = 91.7%

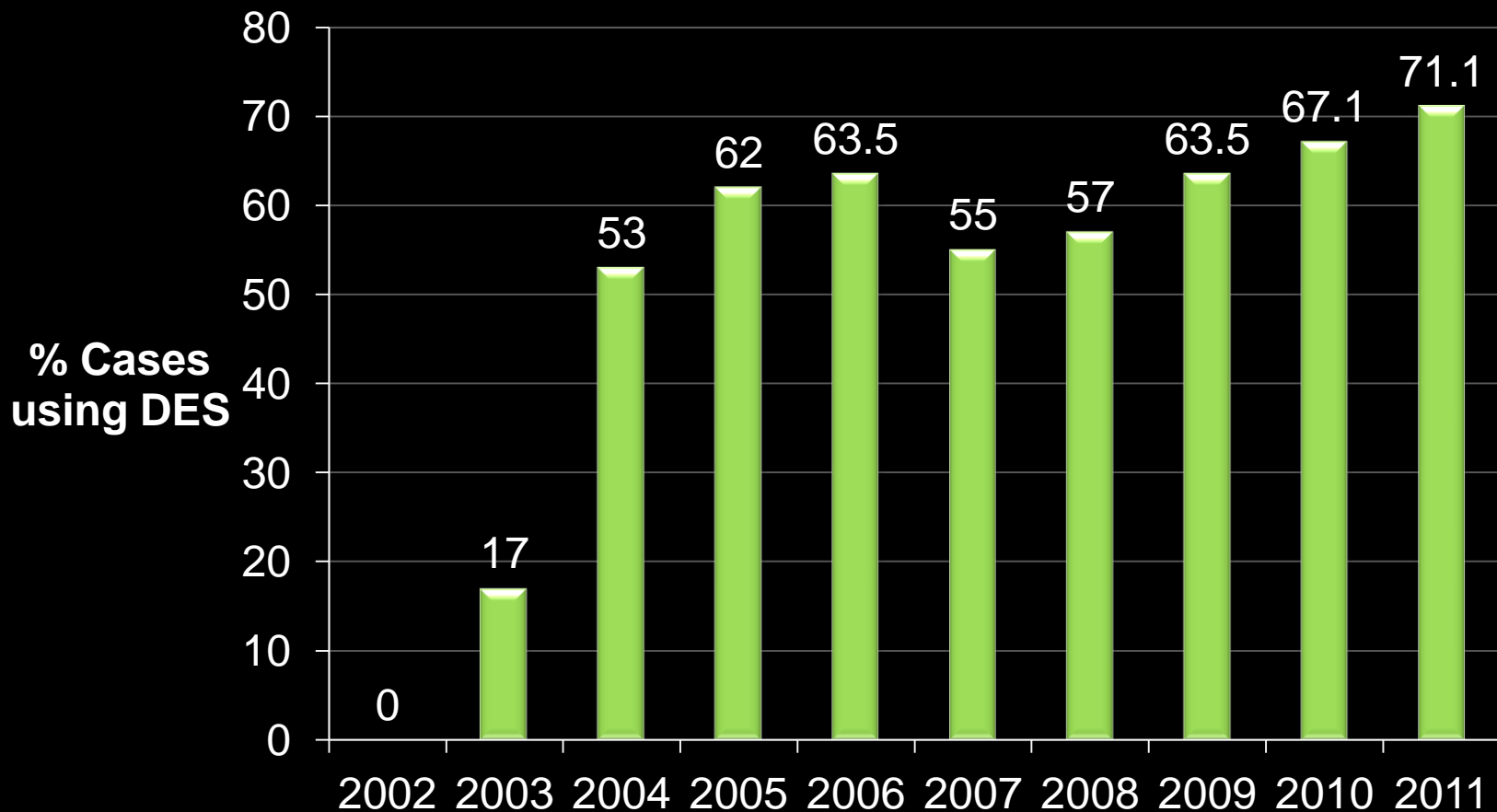


PCI with Drug Eluting Stents

Mean of % use by Centres



2011 data: Ludman

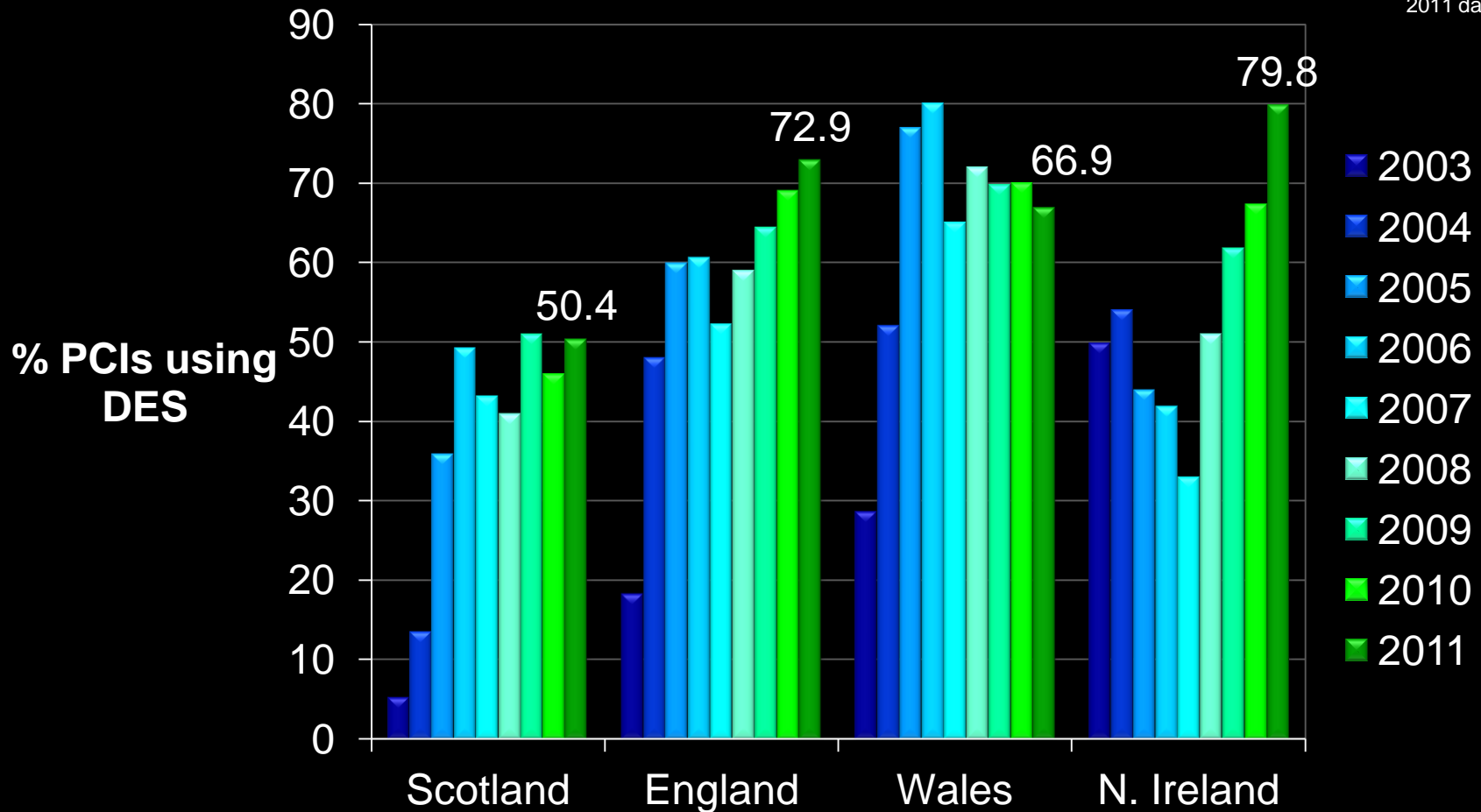


Drug Eluting Stent

% PCI with DES



2011 data: Ludman



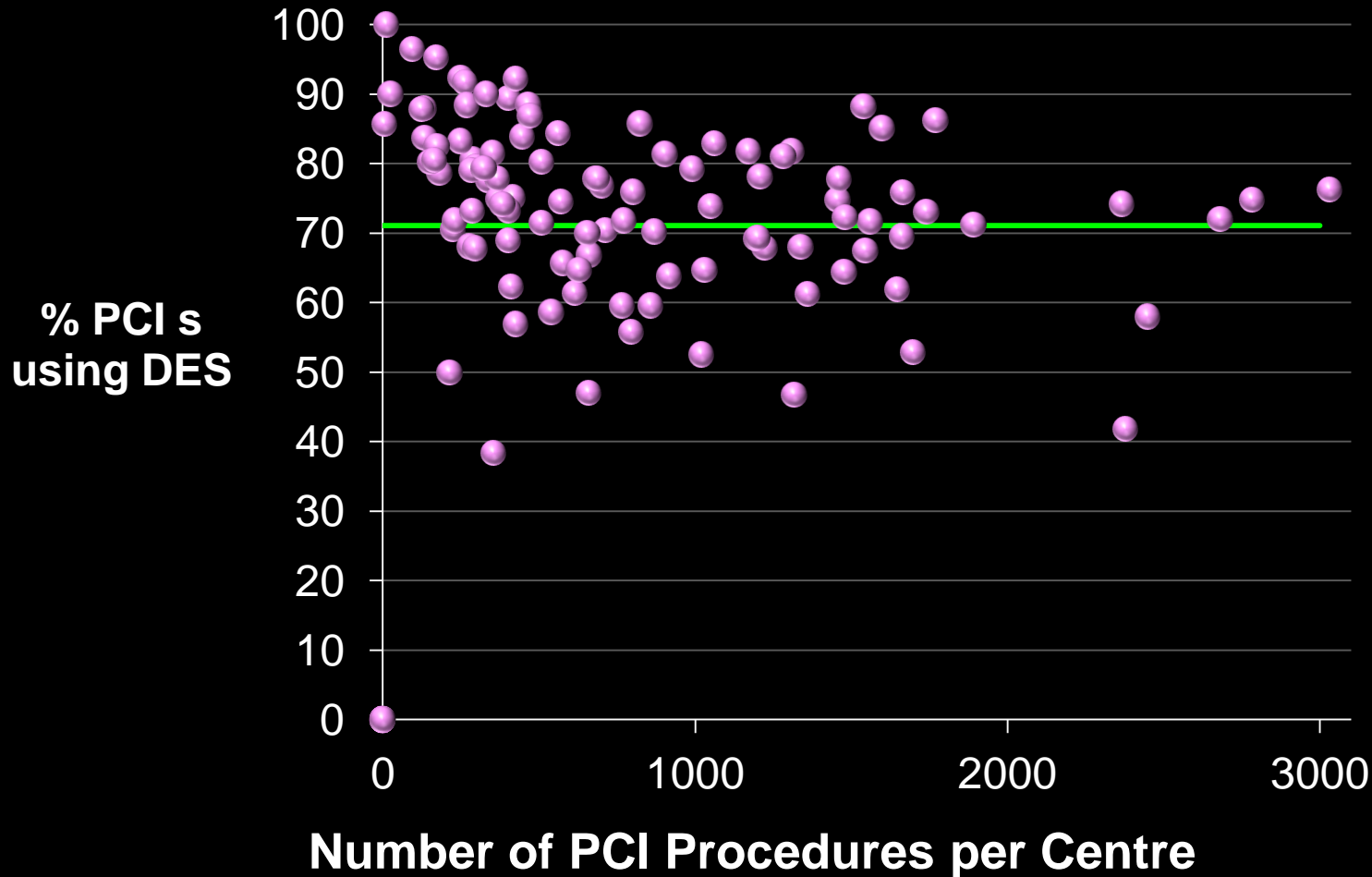
Data to 2007 NHS only
Data for 2008 to present all units from NICOR

PCI with Drug Eluting Stents



2011 data: Ludman

Mean = 71.1 %

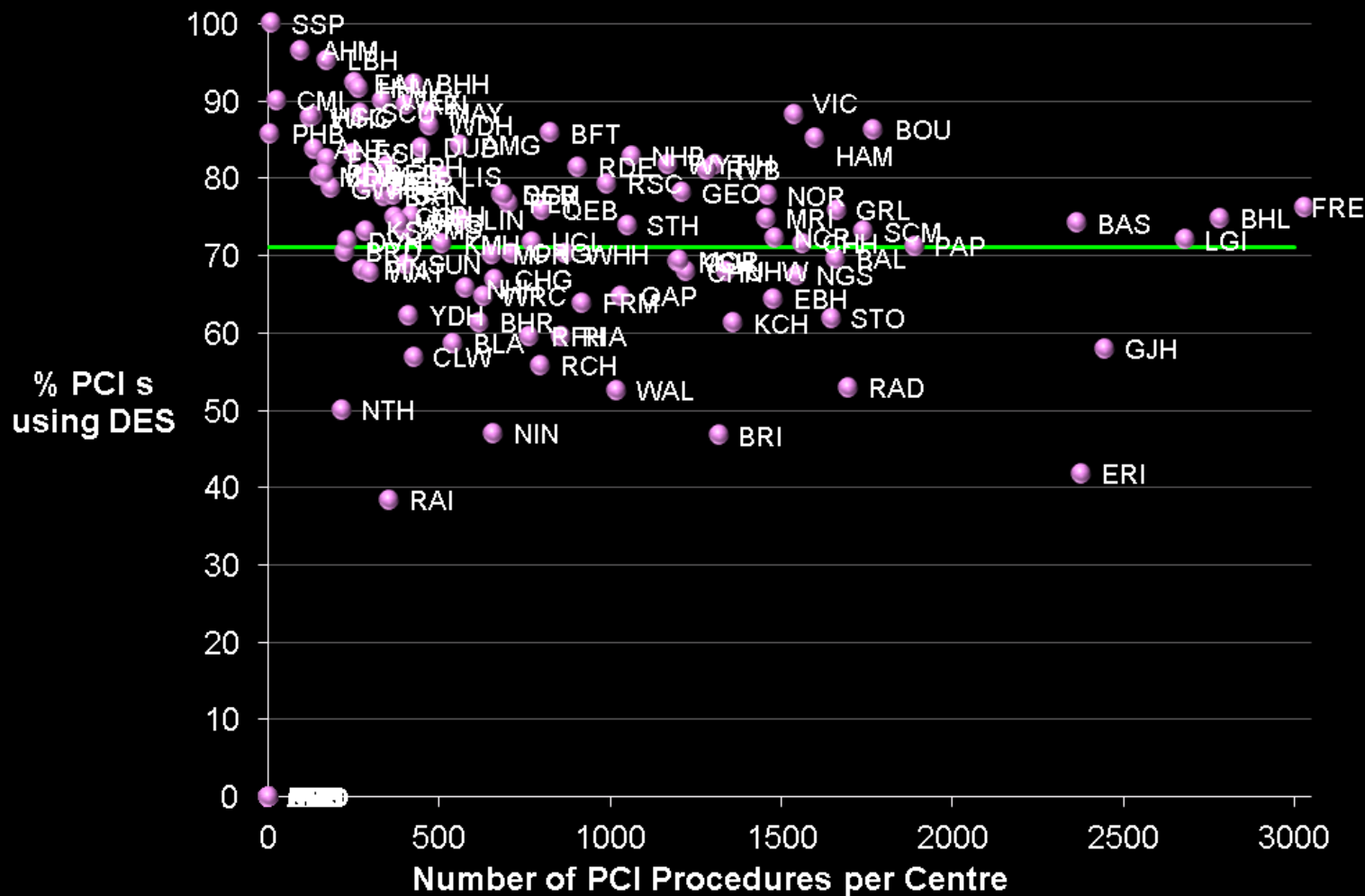


PCI with Drug Eluting Stents



2011 data: Ludman

Mean = 71.1 %

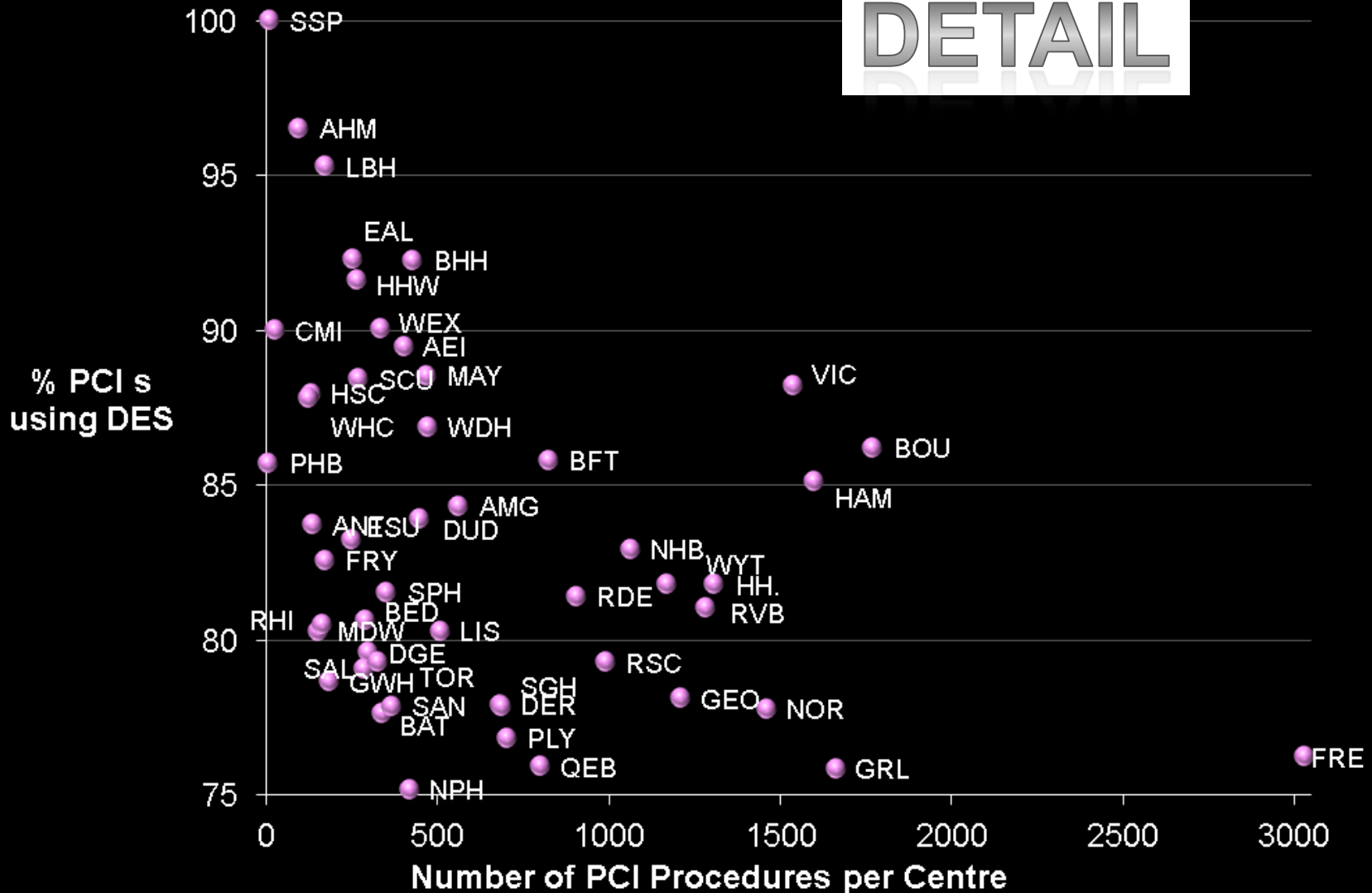


PCI with Drug Eluting Stents



2011 data: Ludman

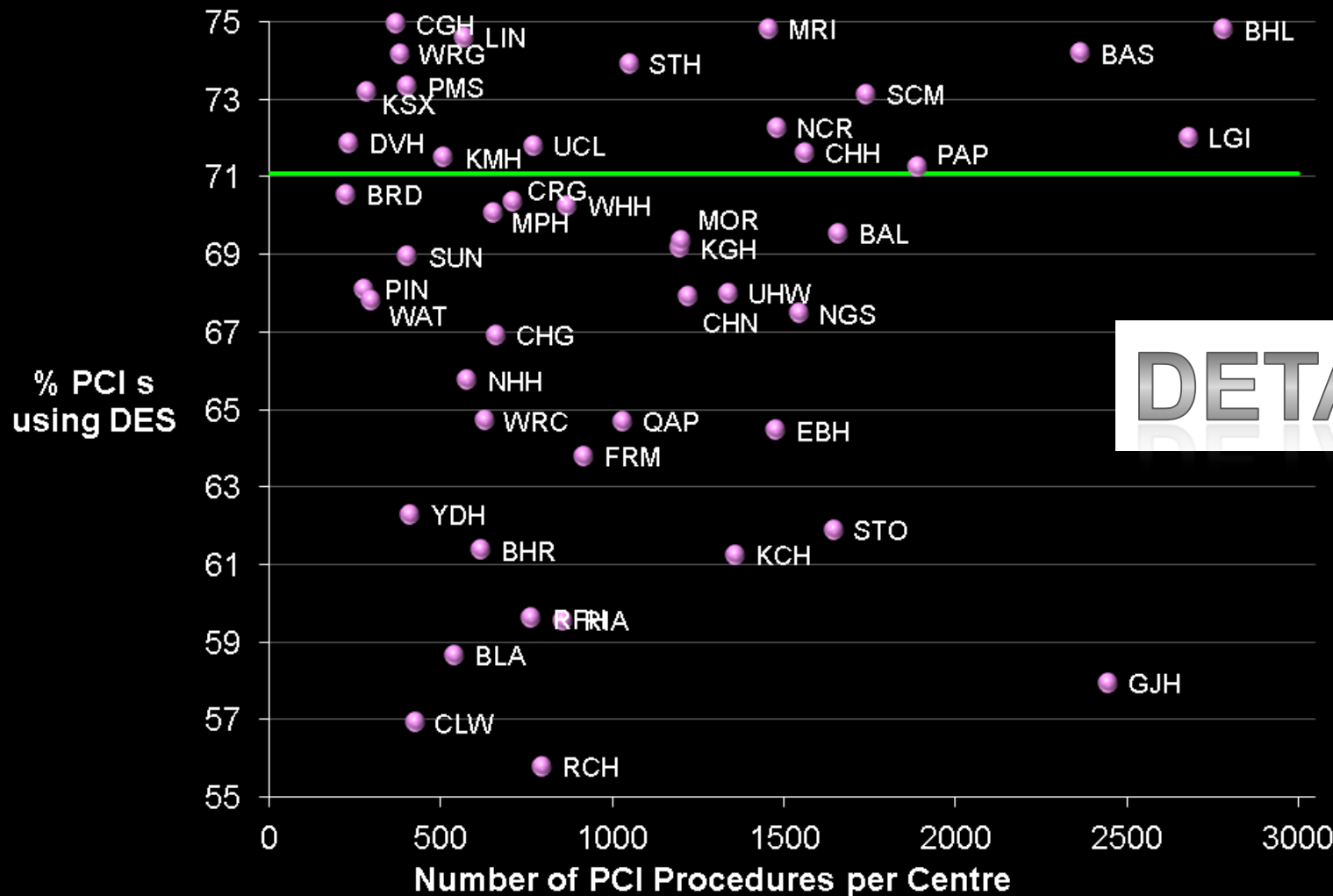
DETAIL



PCI with Drug Eluting Stents



2011 data: Ludman

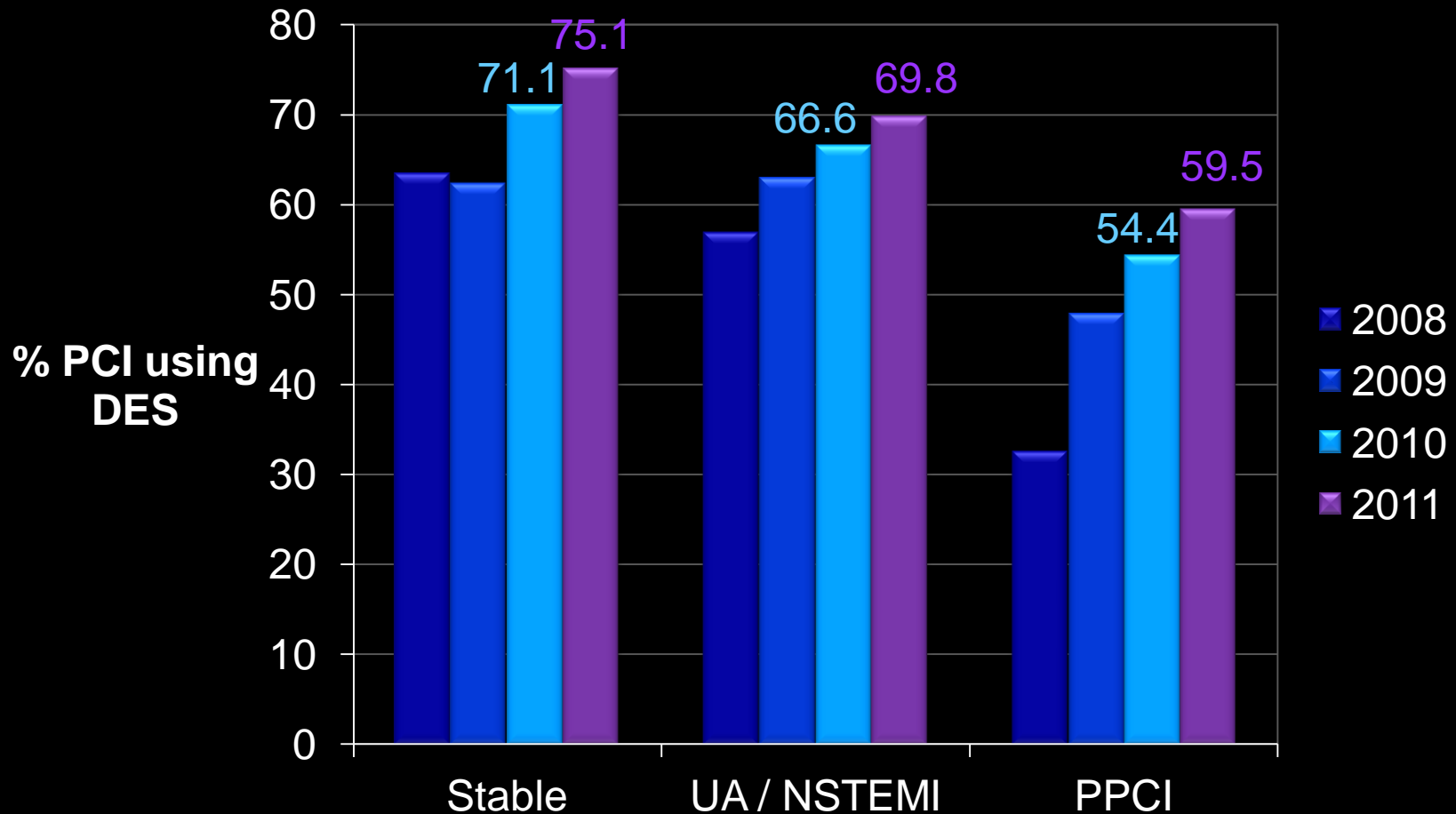


PCI with Drug Eluting Stents



2011 data: Ludman

By Syndrome

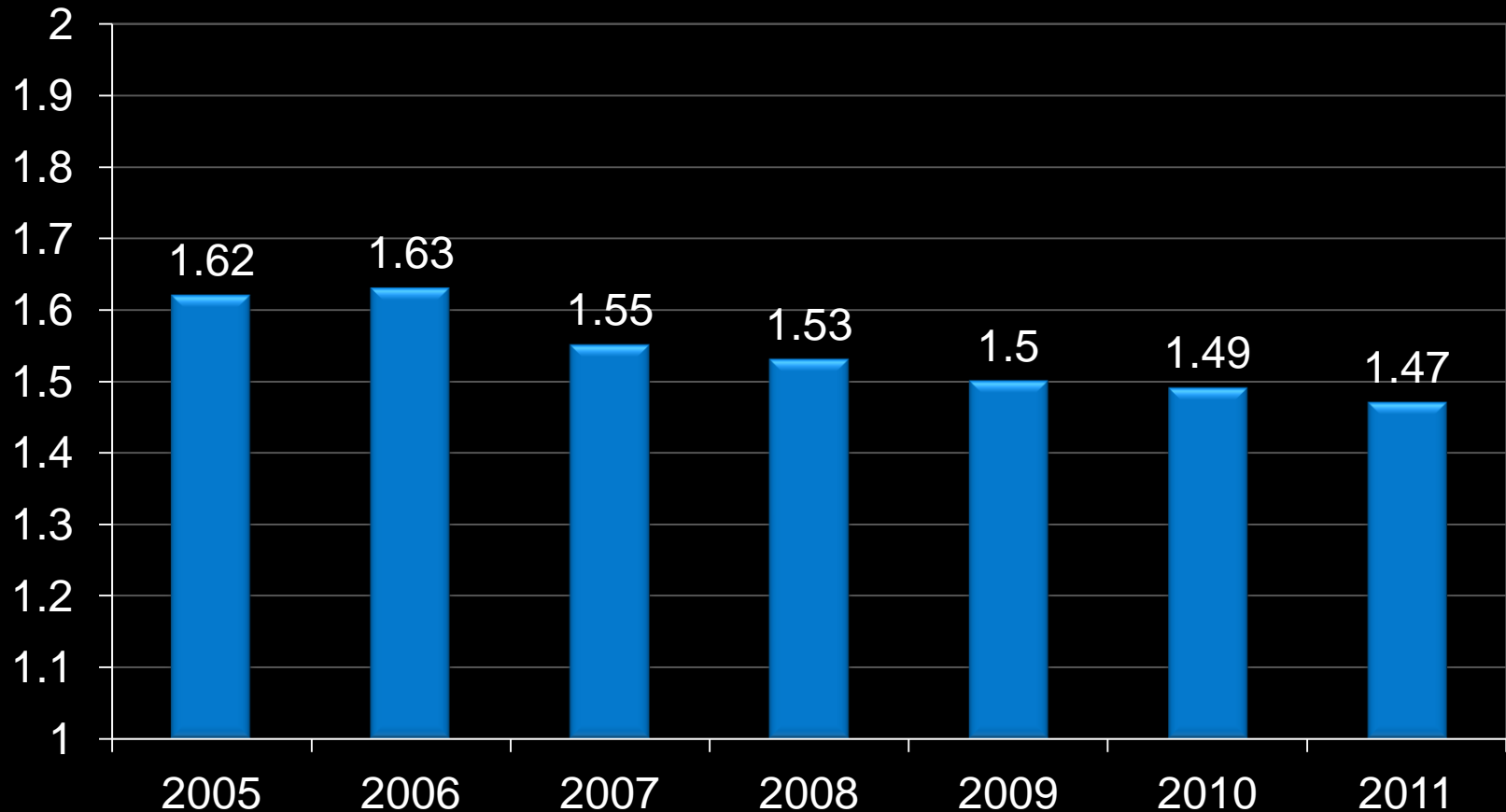


Stents per Case

- Mean number of stents per case



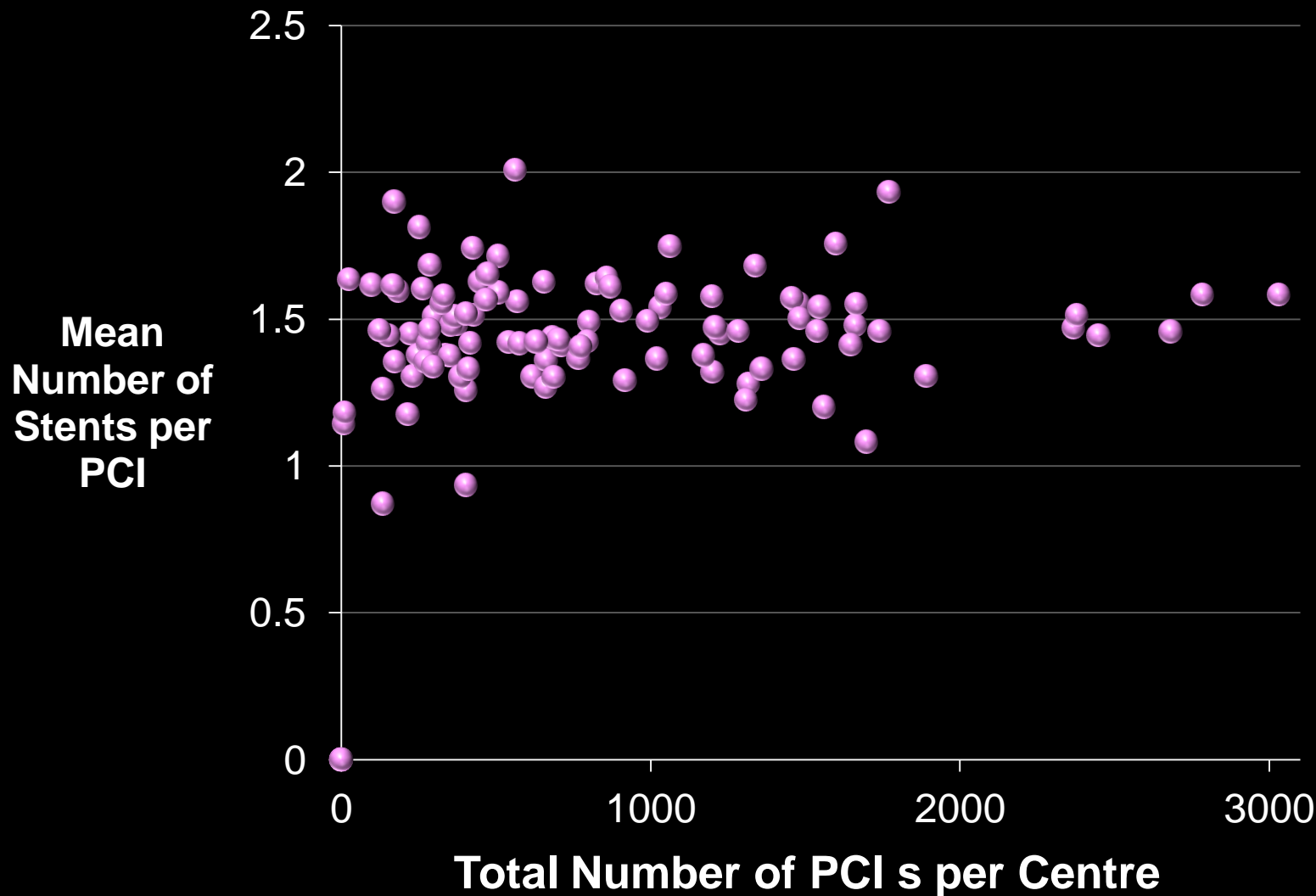
2011 data: Ludman



Mean Stents per Case (by PCI unit)



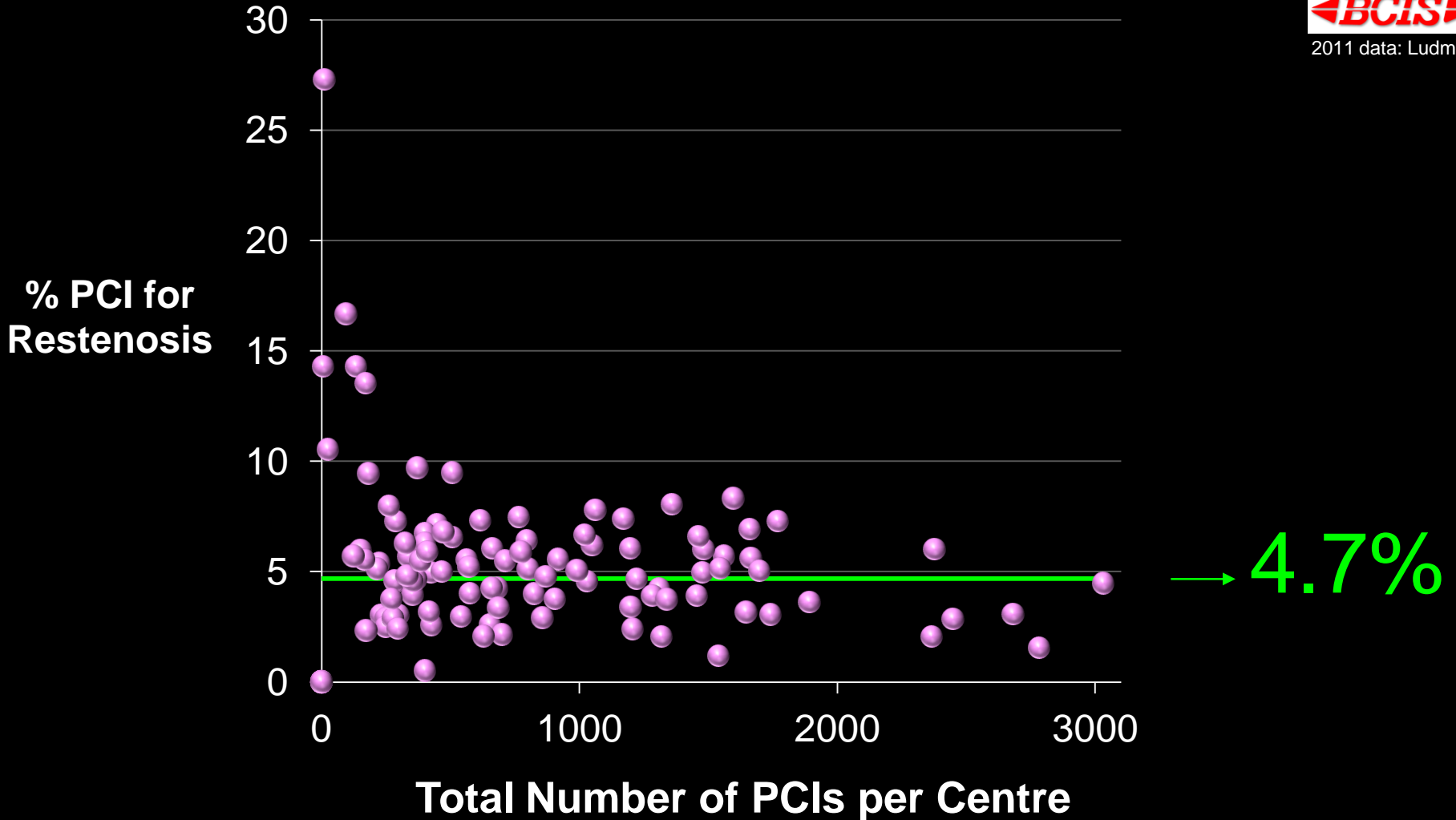
2011 data: Ludman



Procedures for Restenosis



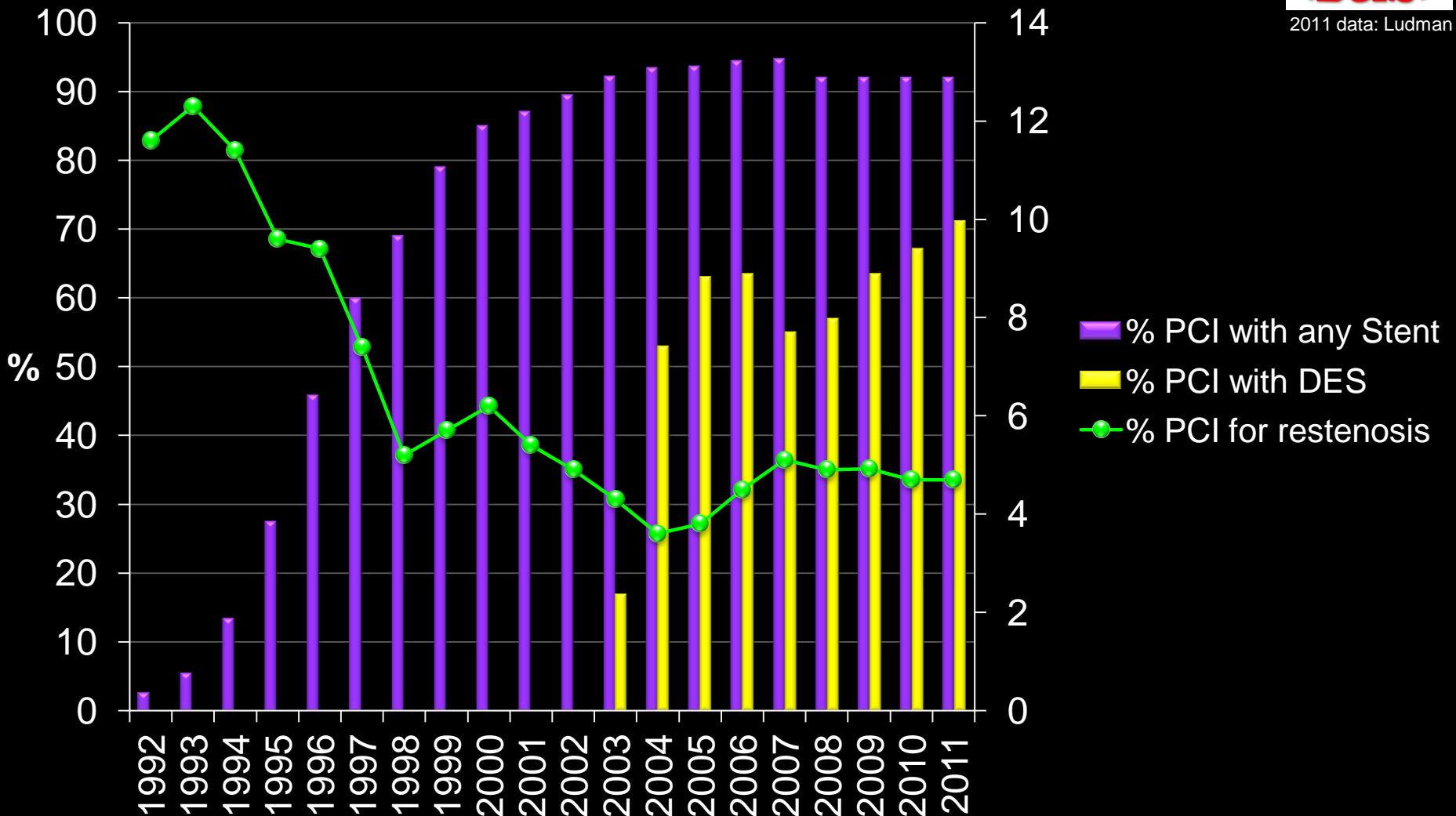
2011 data: Ludman



BMS and DES use v PCI for Restenosis



2011 data: Ludman

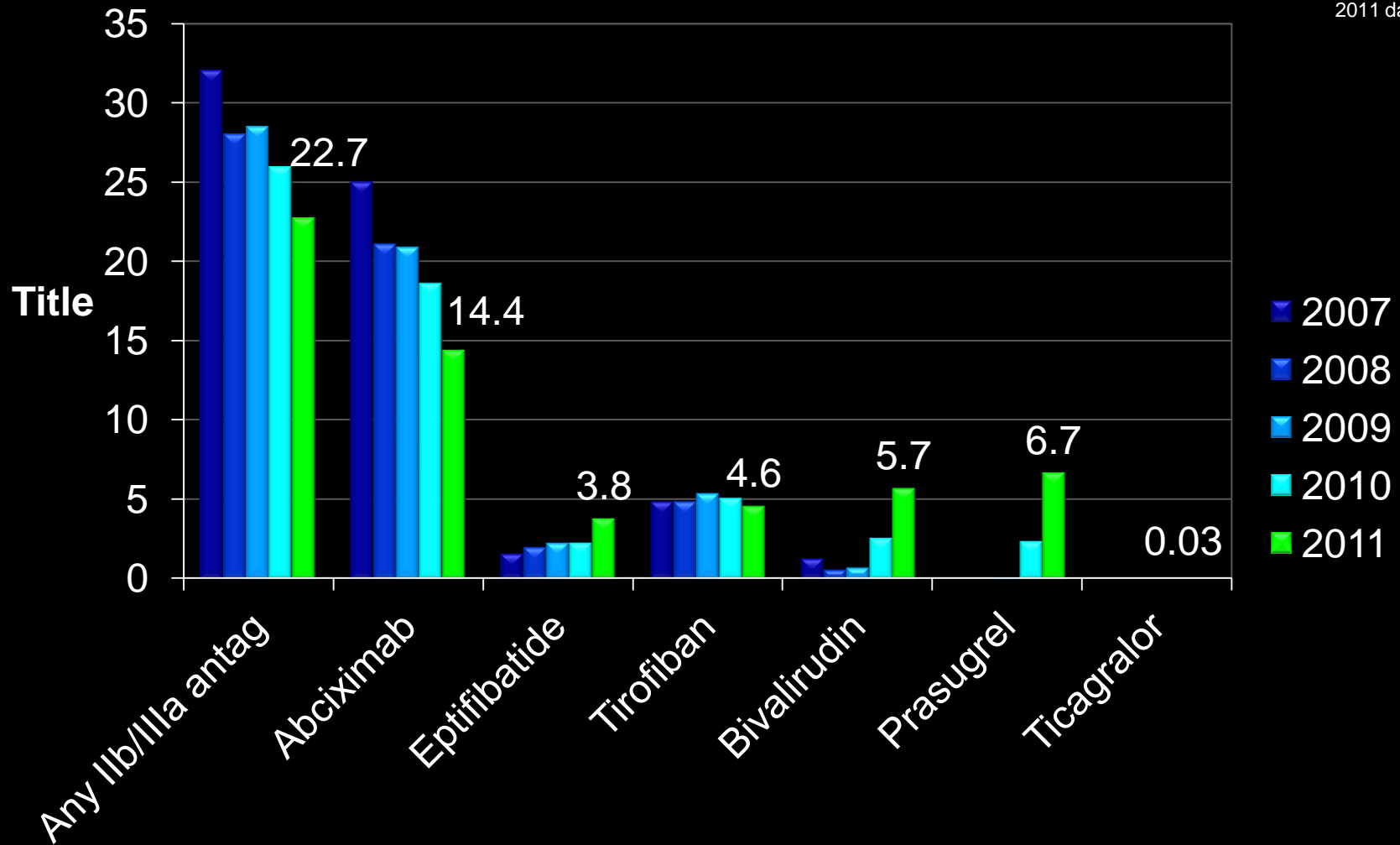


Adjunctive therapy

All PCI Indications



2011 data: Ludman

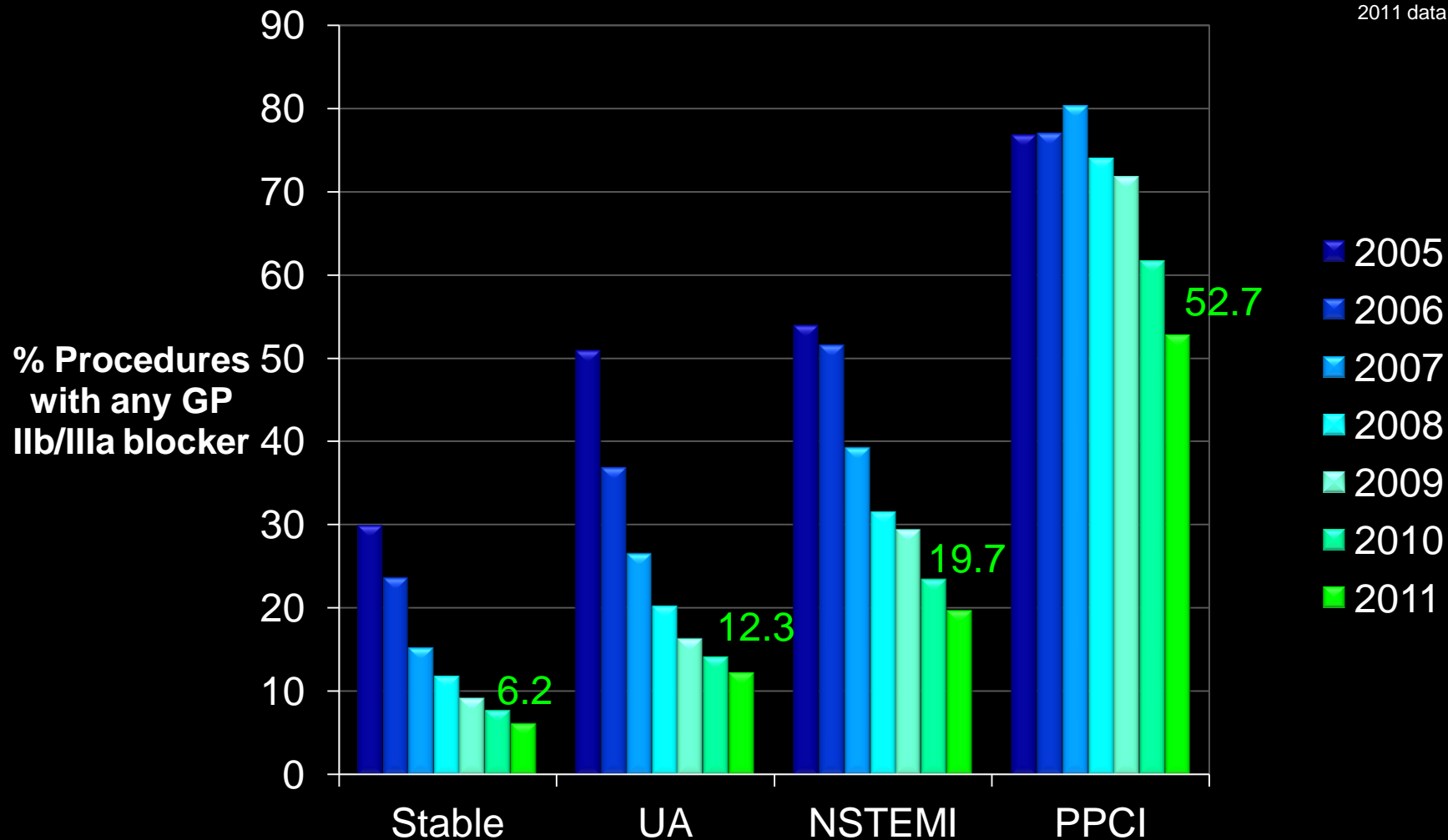


GP IIb/IIIa Antagonists

Use by Syndrome



2011 data: Ludman

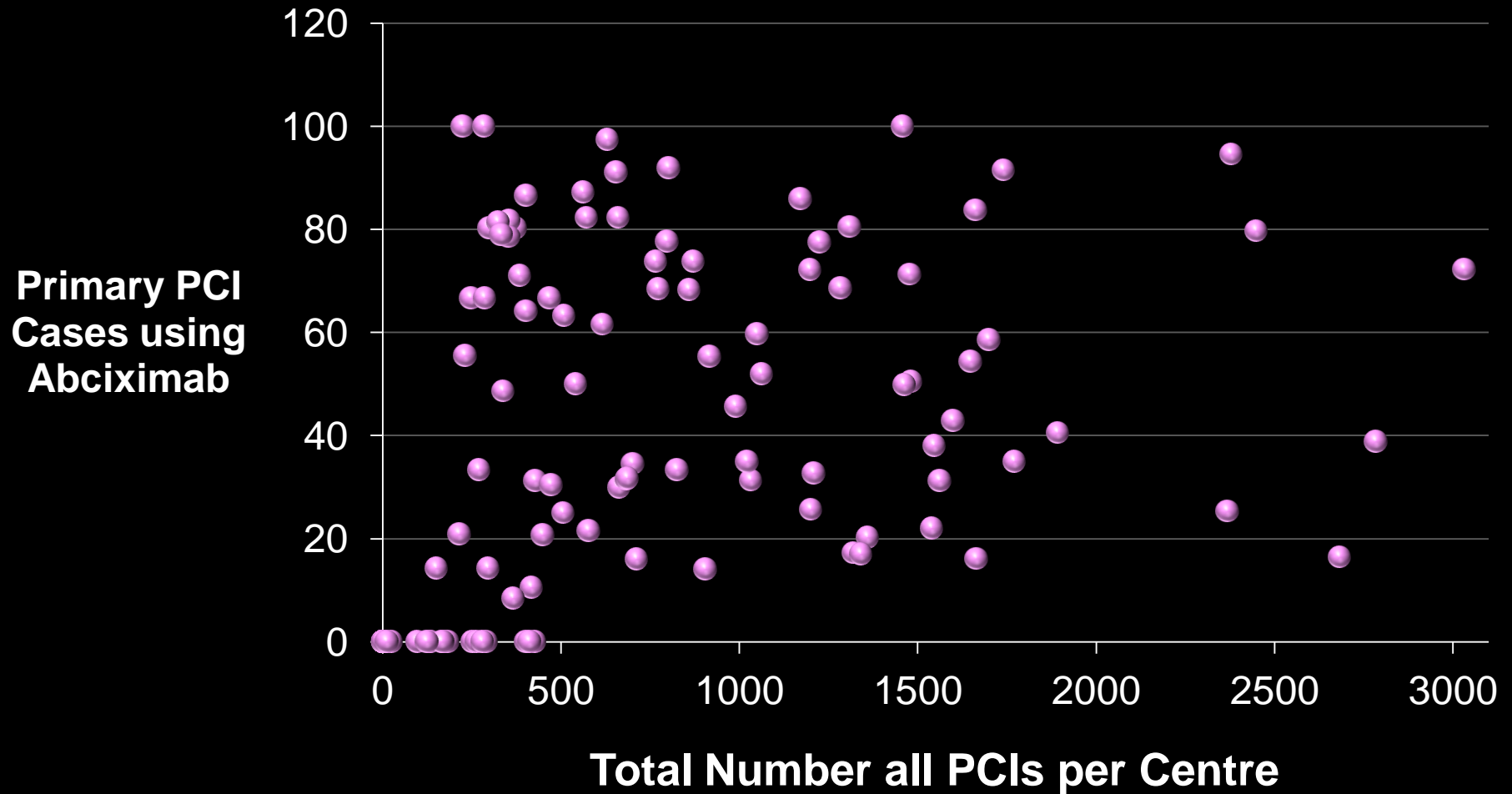


Abciximab

Use in Primary PCI v activity per unit



2011 data: Ludman

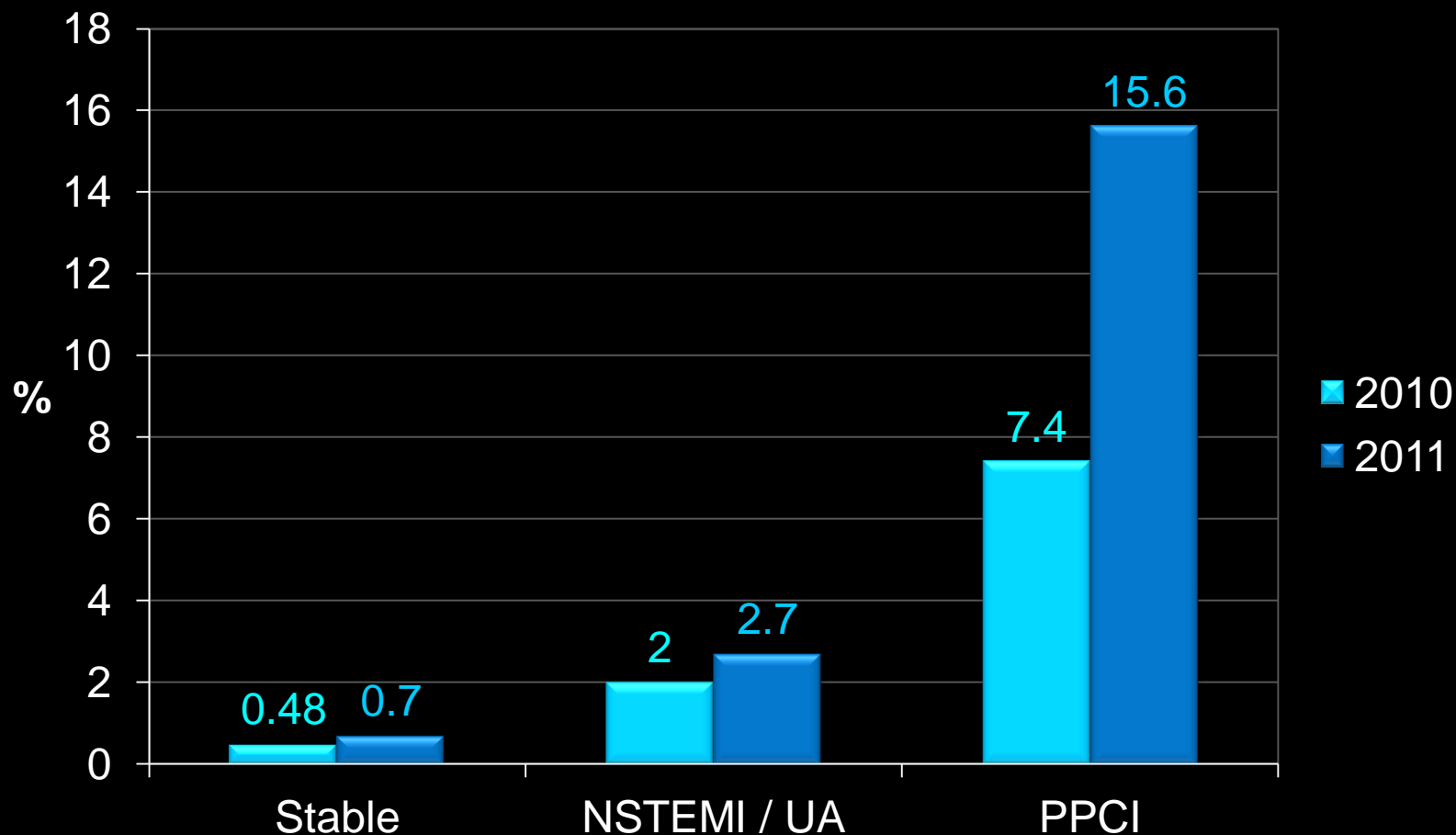


Bivalirudin

Use by Indication for PCI



2011 data: Ludman

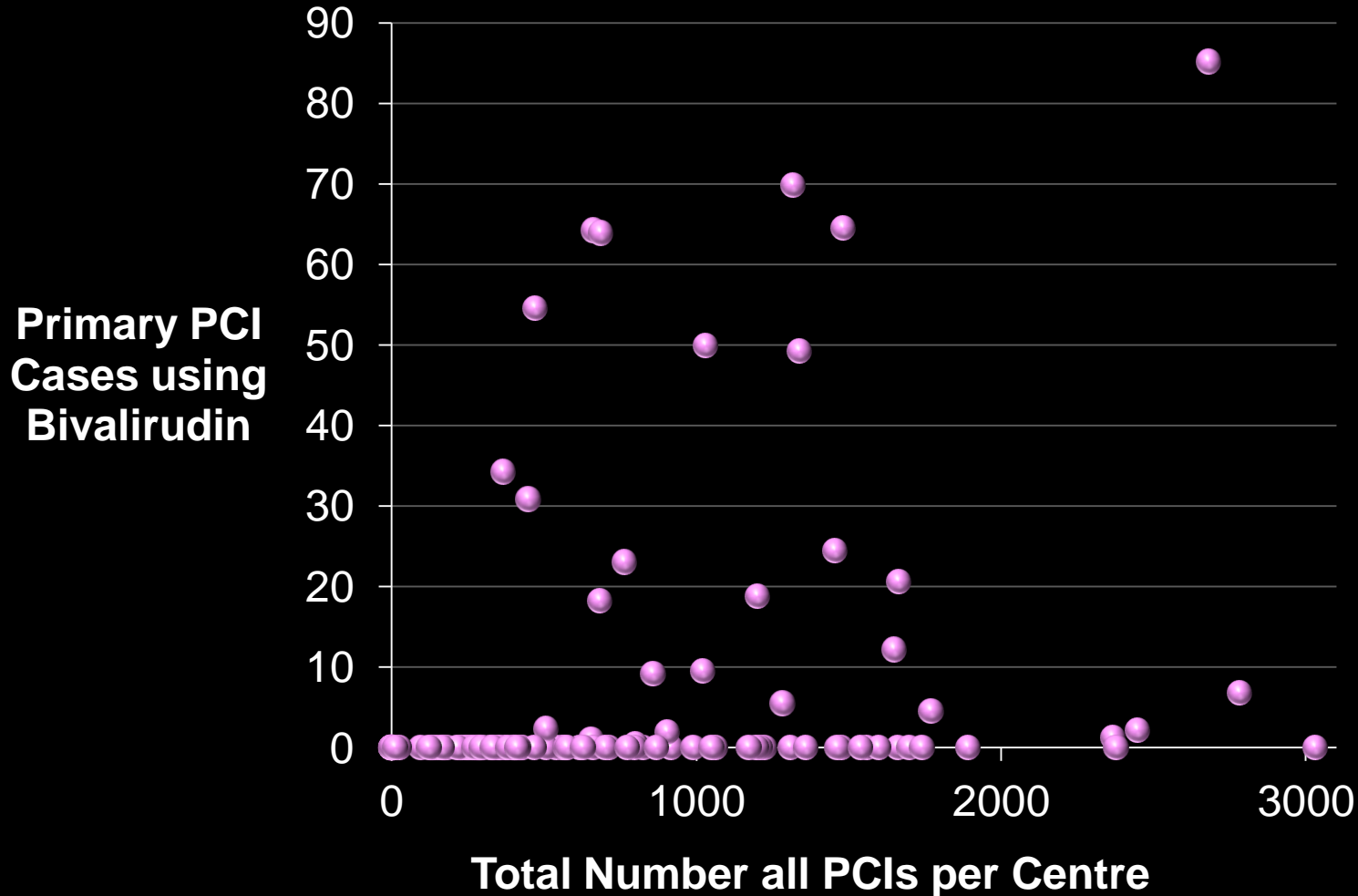


Bivalirudin

Use in Primary PCI v activity per unit



2011 data: Ludman

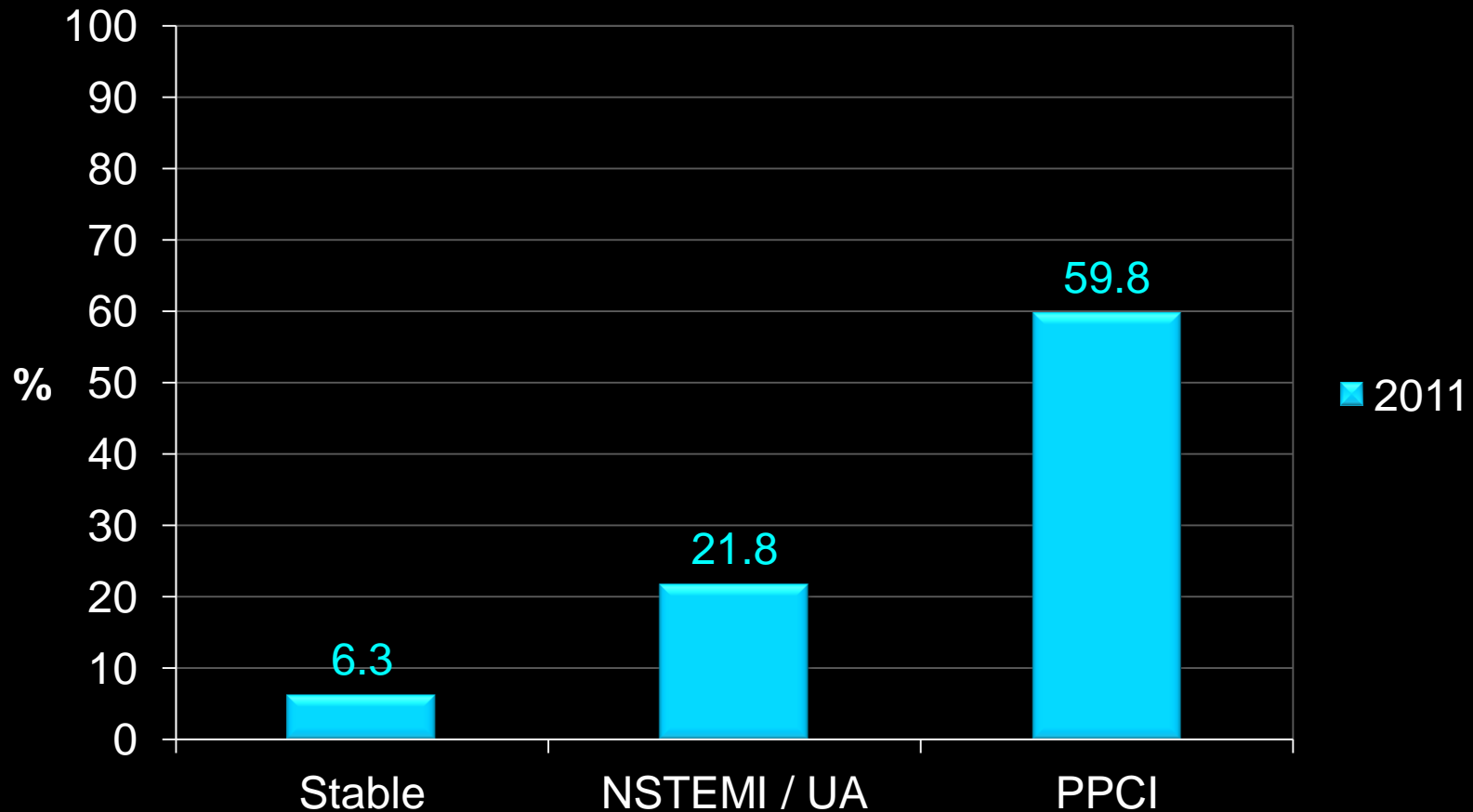


Bivalirudin or Abciximab

Use by Indication for PCI



2011 data: Ludman

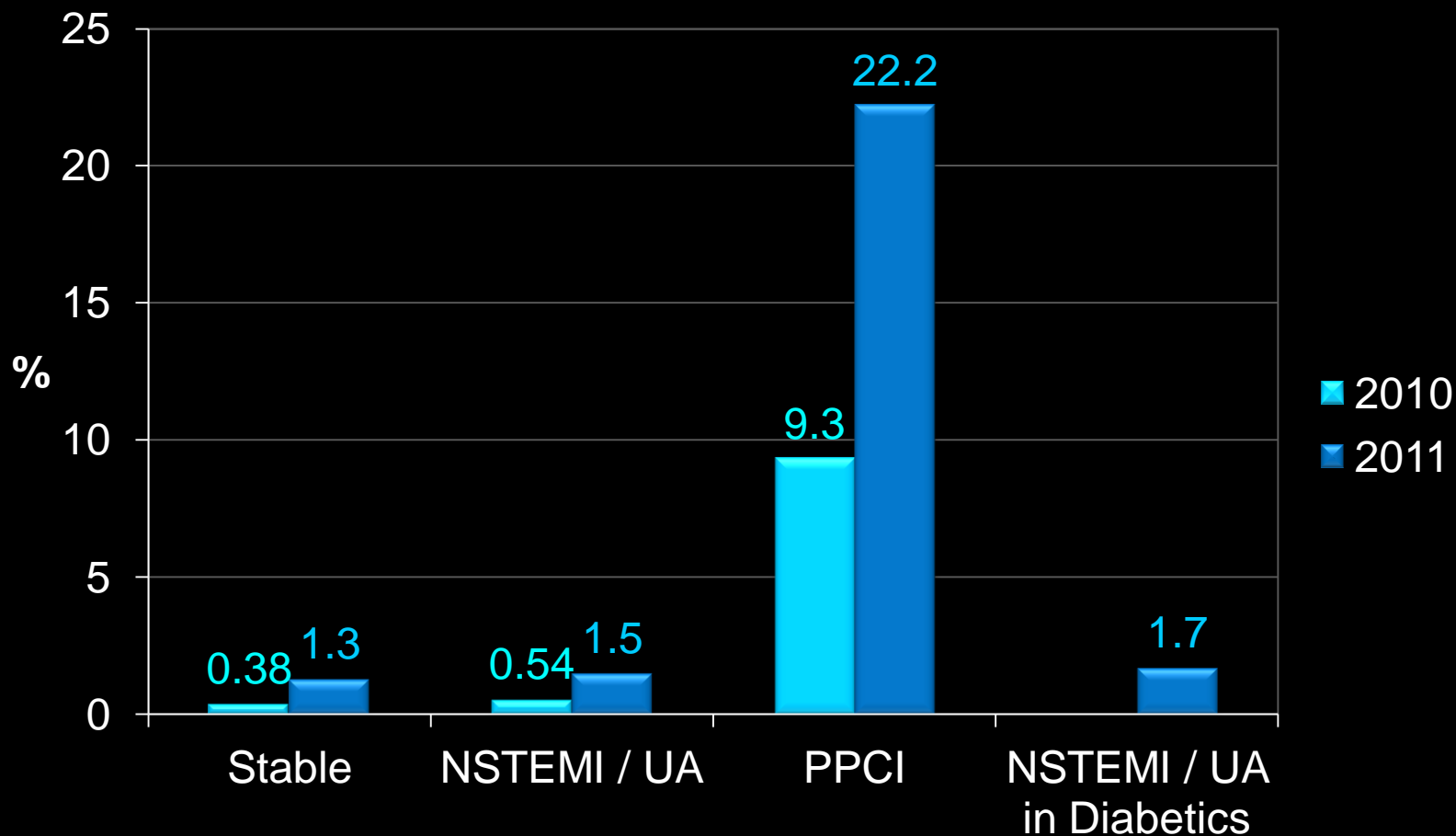


Prasugrel

Use by Indication for PCI



2011 data: Ludman

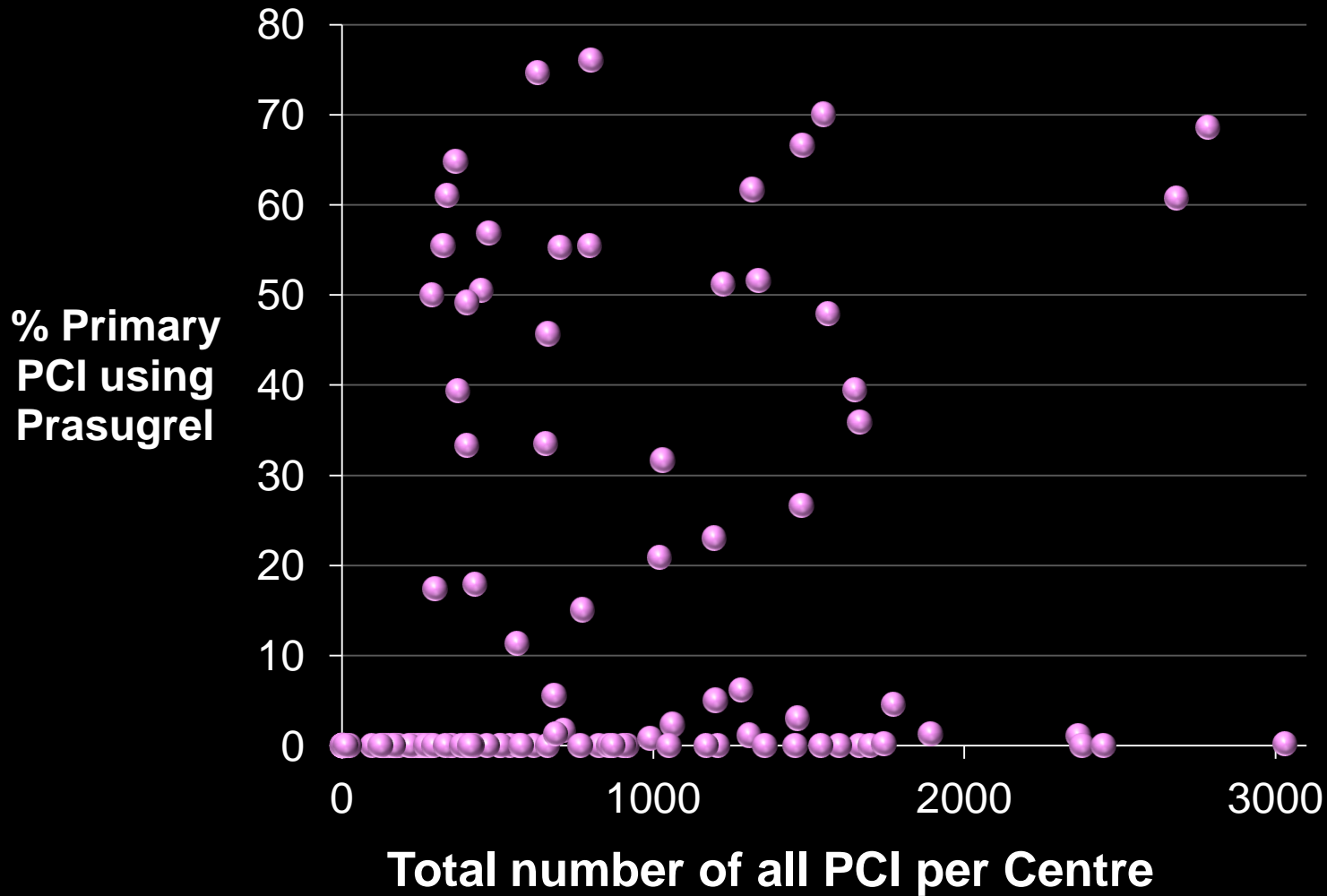


Prasugrel

Use in Primary PCI v activity per unit



2011 data: Ludman

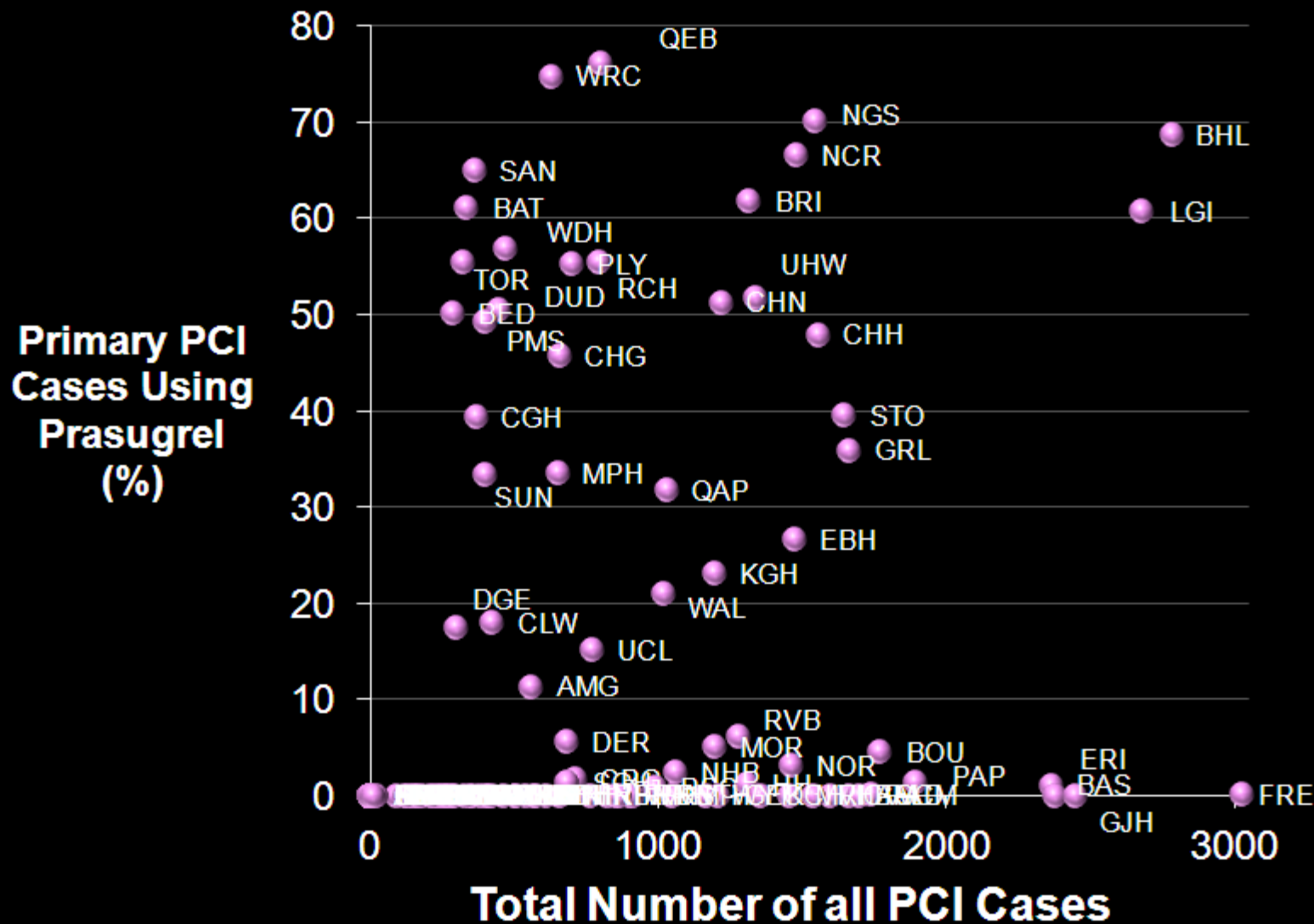


Prasugrel

Use in Primary PCI v activity per unit



2011 data: Ludman

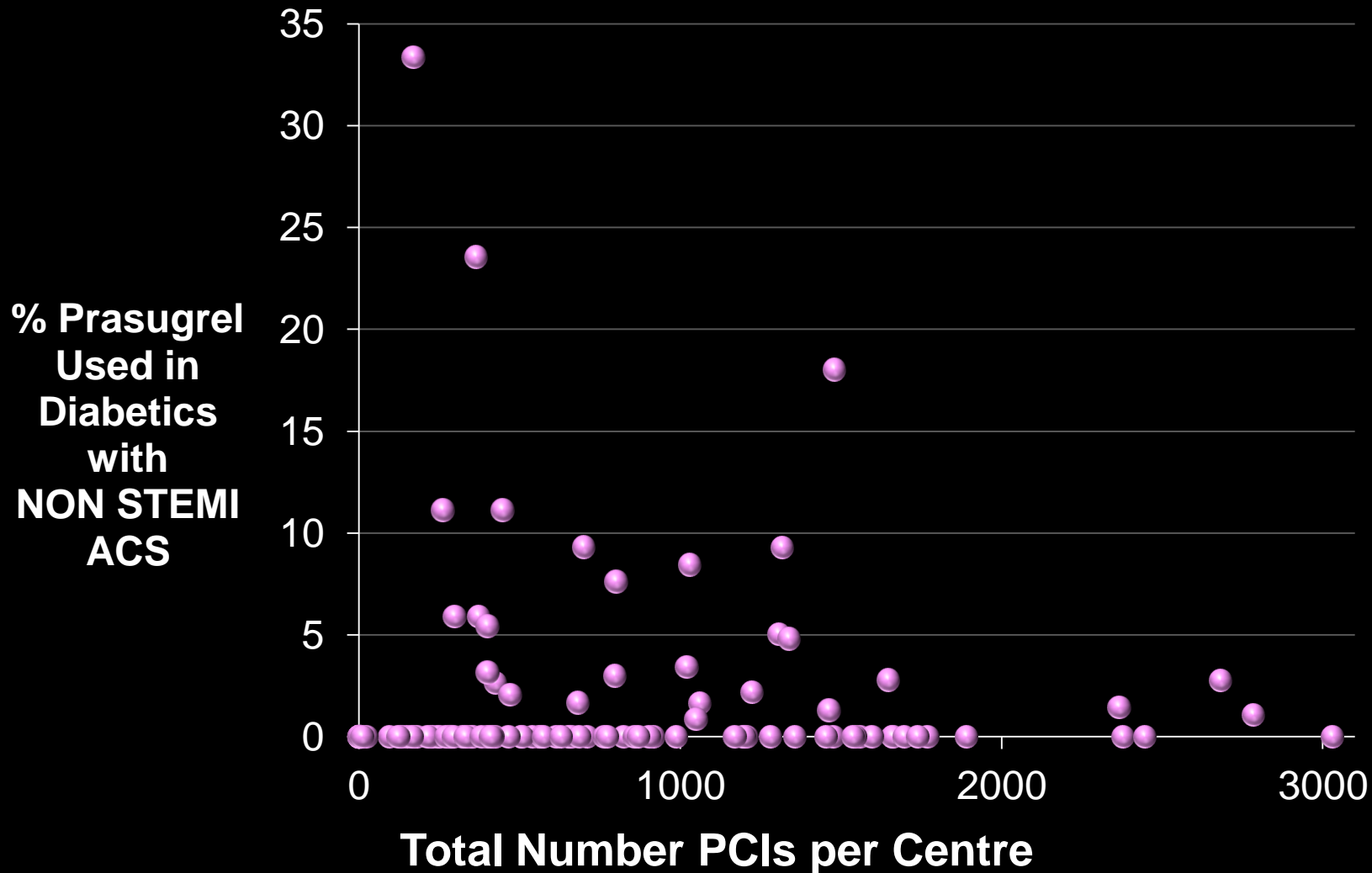


Prasugrel

Use in Diabetics with ACS per unit



2011 data: Ludman

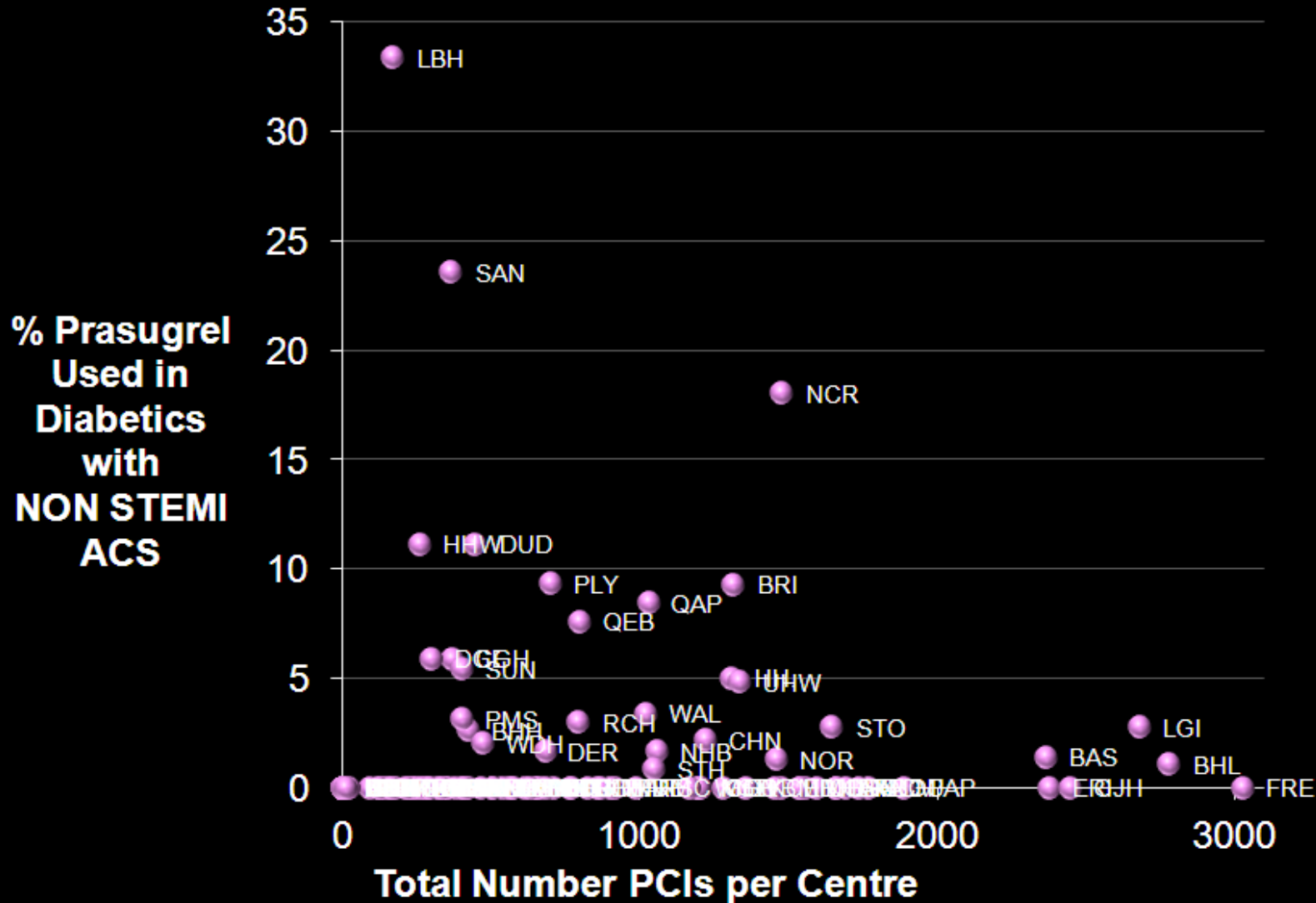


Prasugrel

Use in Diabetics with ACS per unit



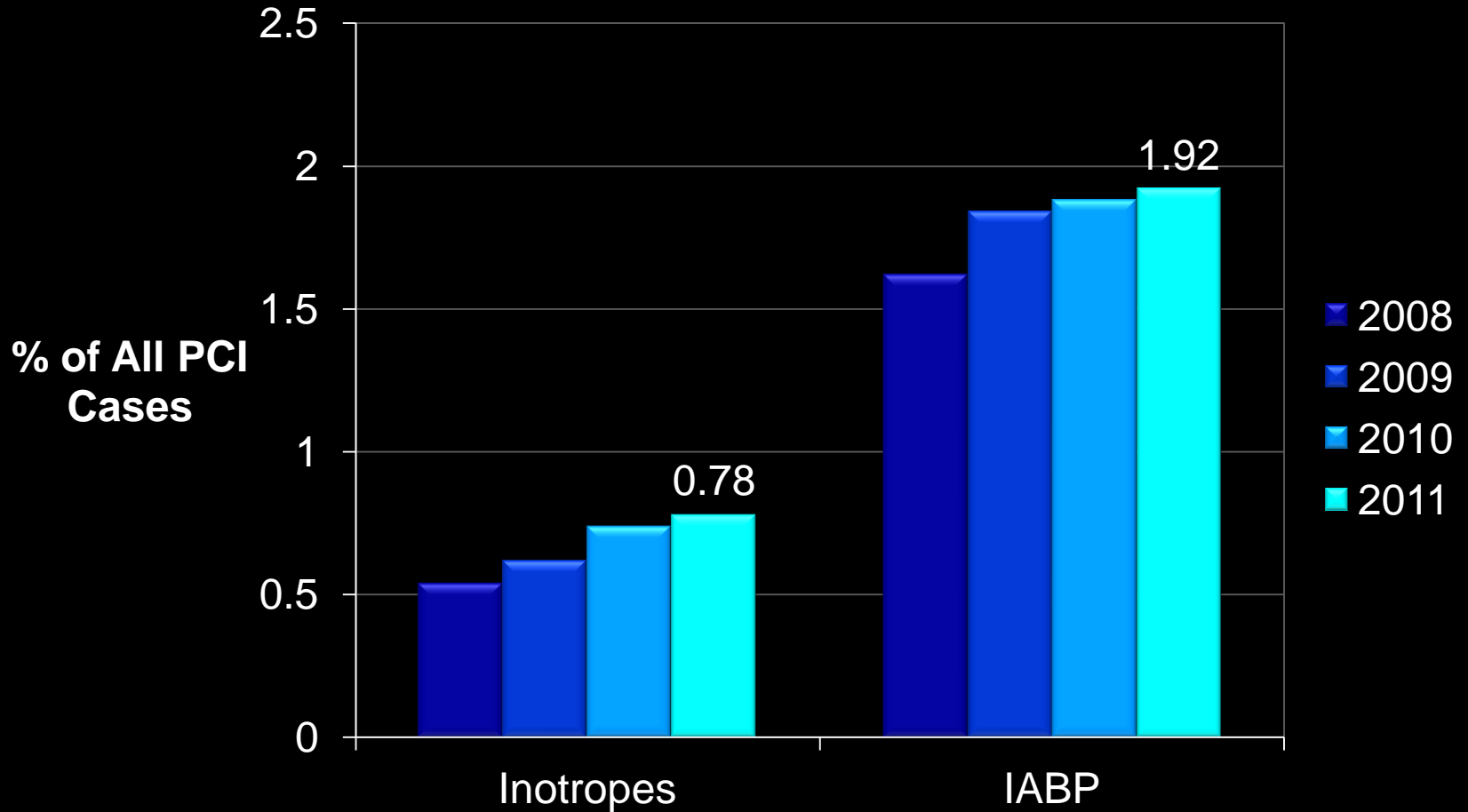
2011 data: Ludman



LV Support



2011 data: Ludman

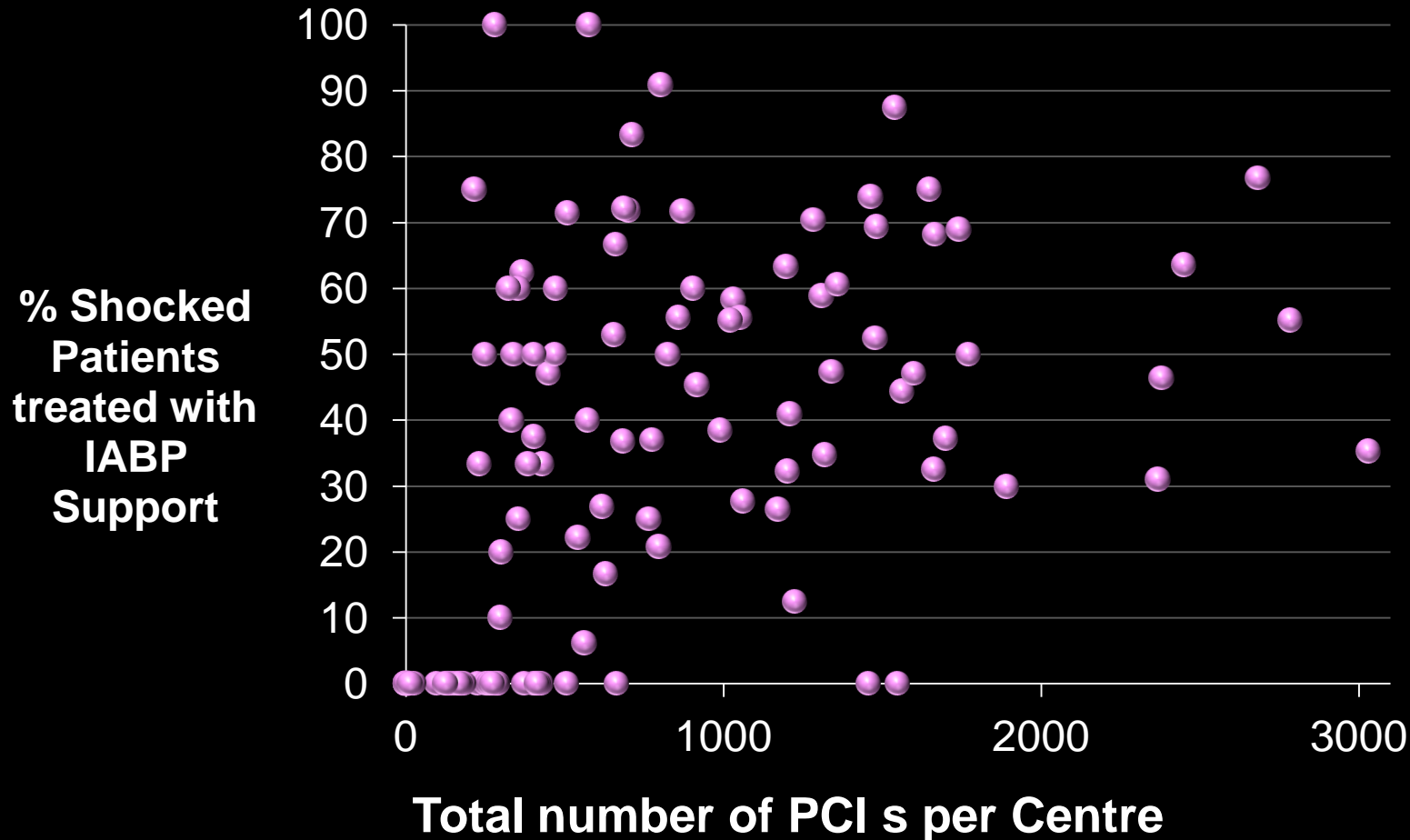


Shock Cases Treated with IABP support

Mean = 49.1%



2011 data: Ludman



Does not include Impella use

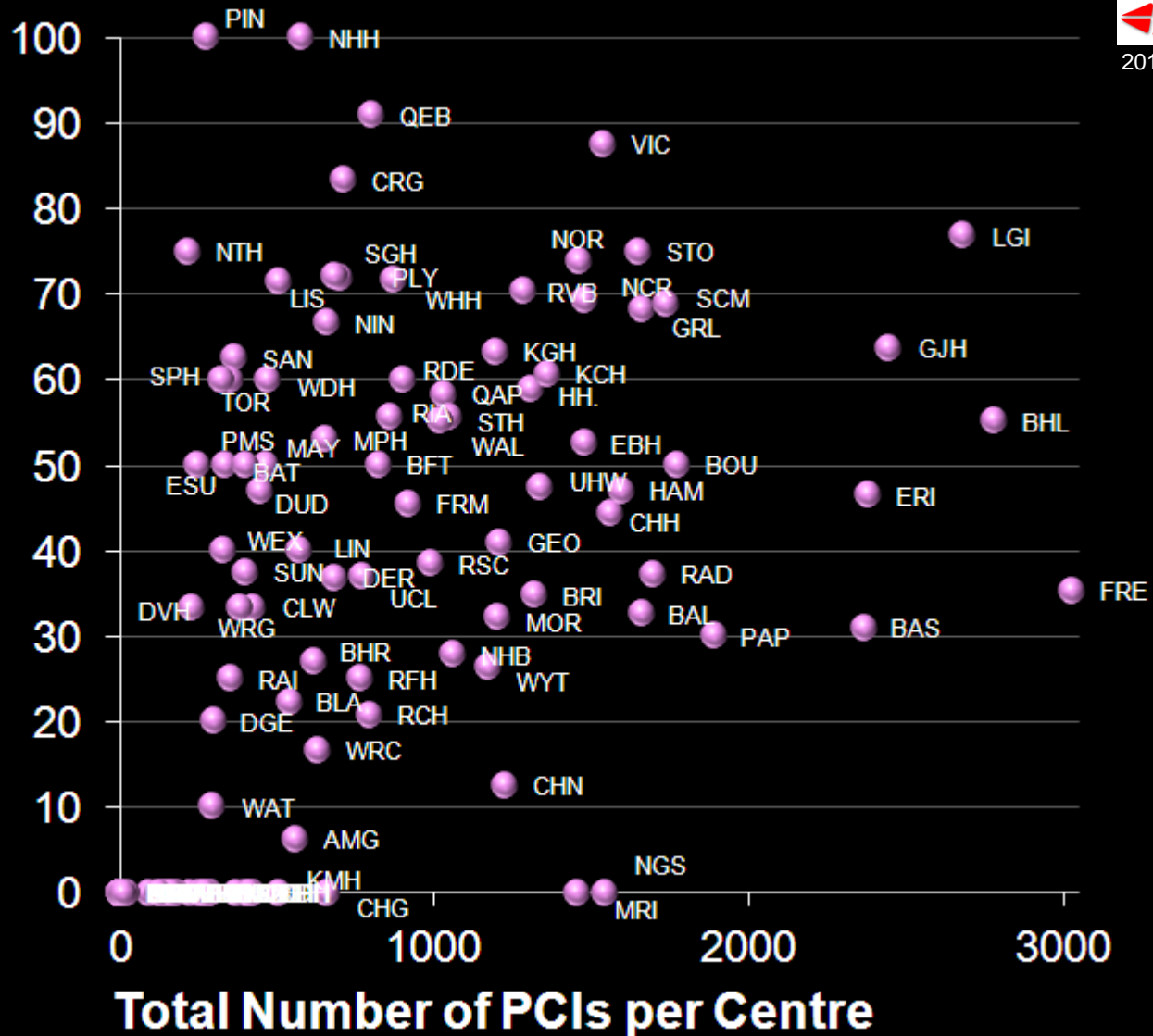
Shock Cases Treated with IABP support



2011 data: Ludman

Mean = 49.1%

Shocked Patients treated with IABP support (%)



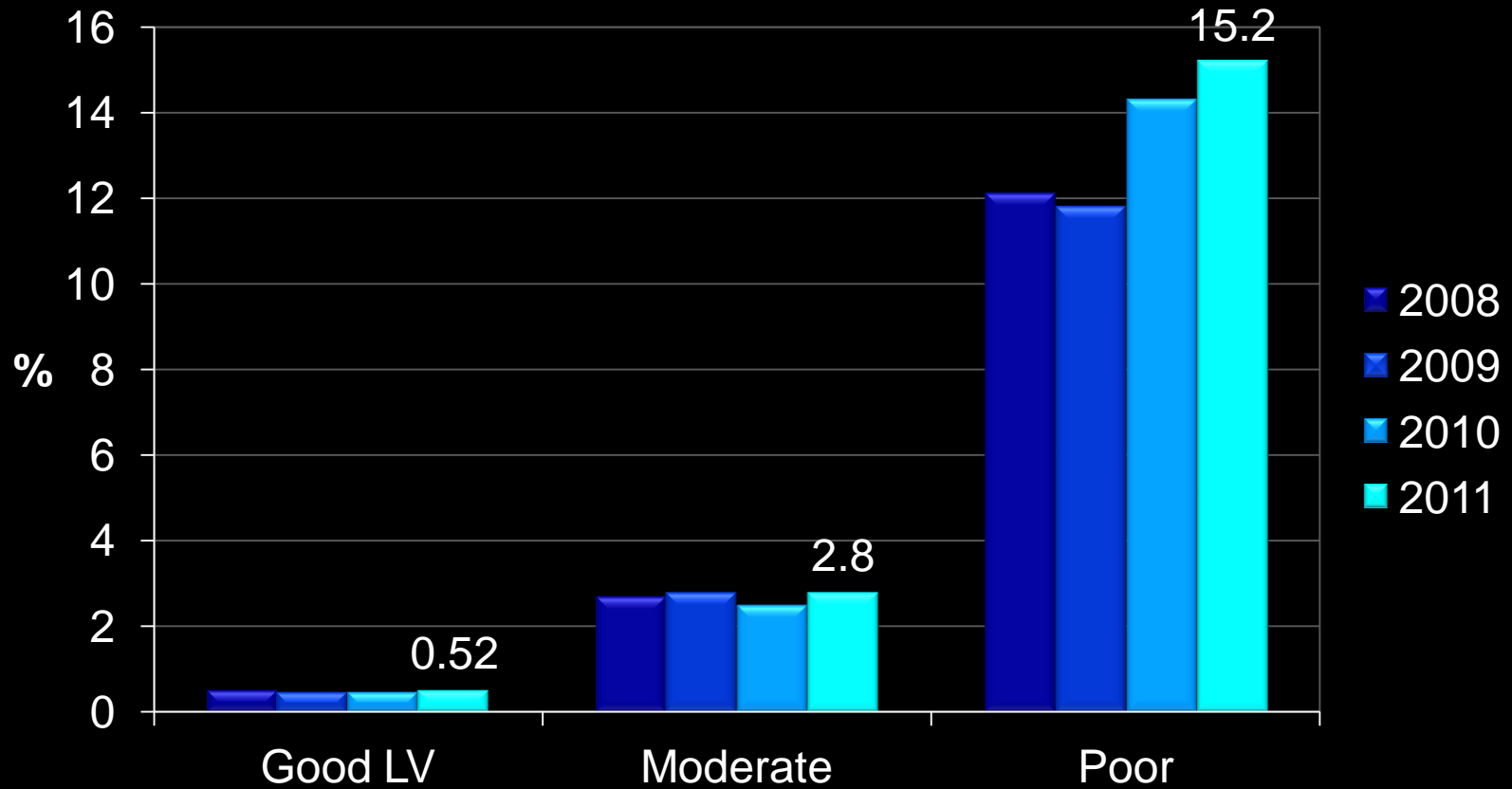
Does not include Impella use

LV Support

% Cases using IABP v LV function



2011 data: Ludman

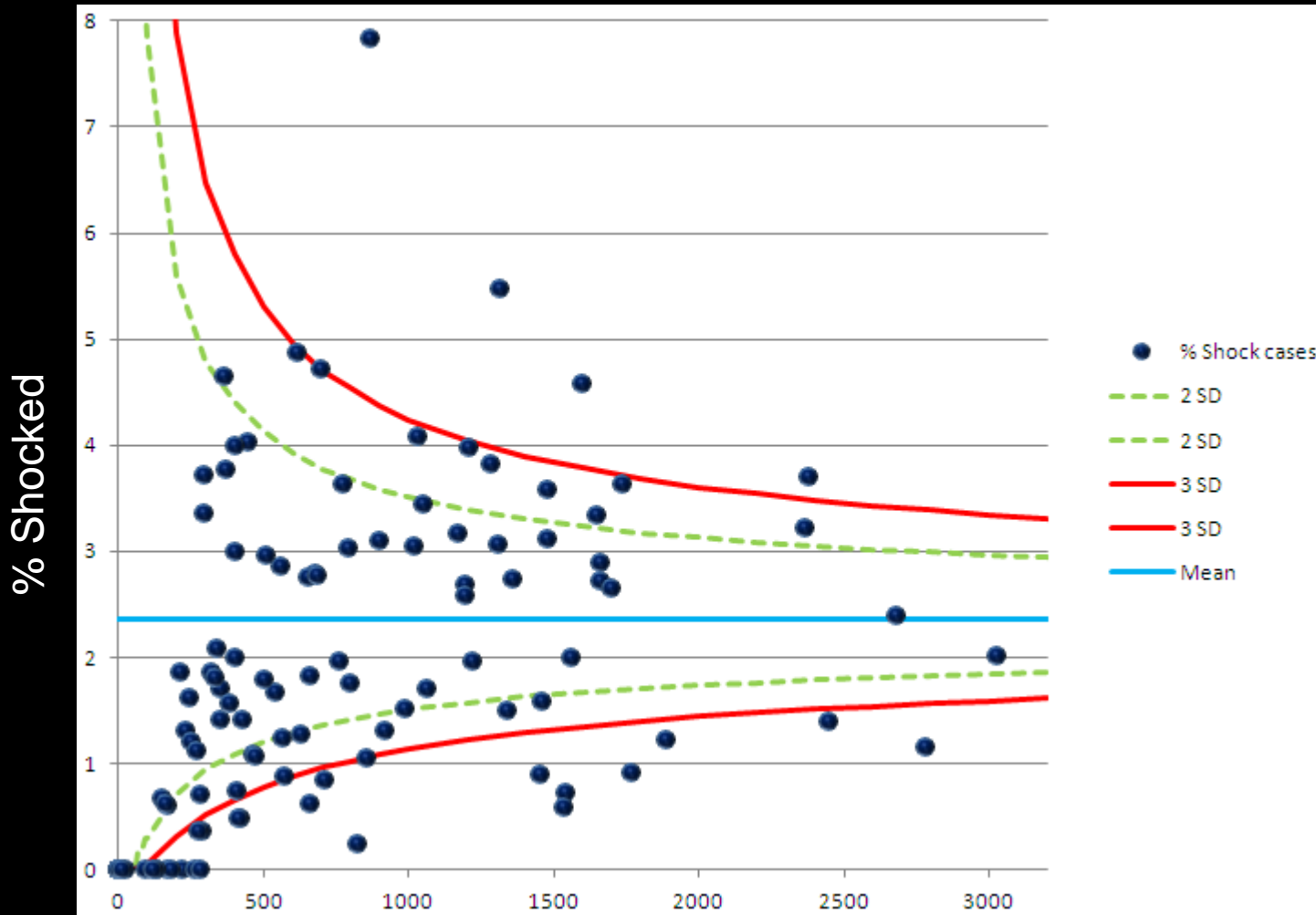


Cardiogenic Shock

% Cases with shock by PCI unit



2011 data: Ludman



2.4 %

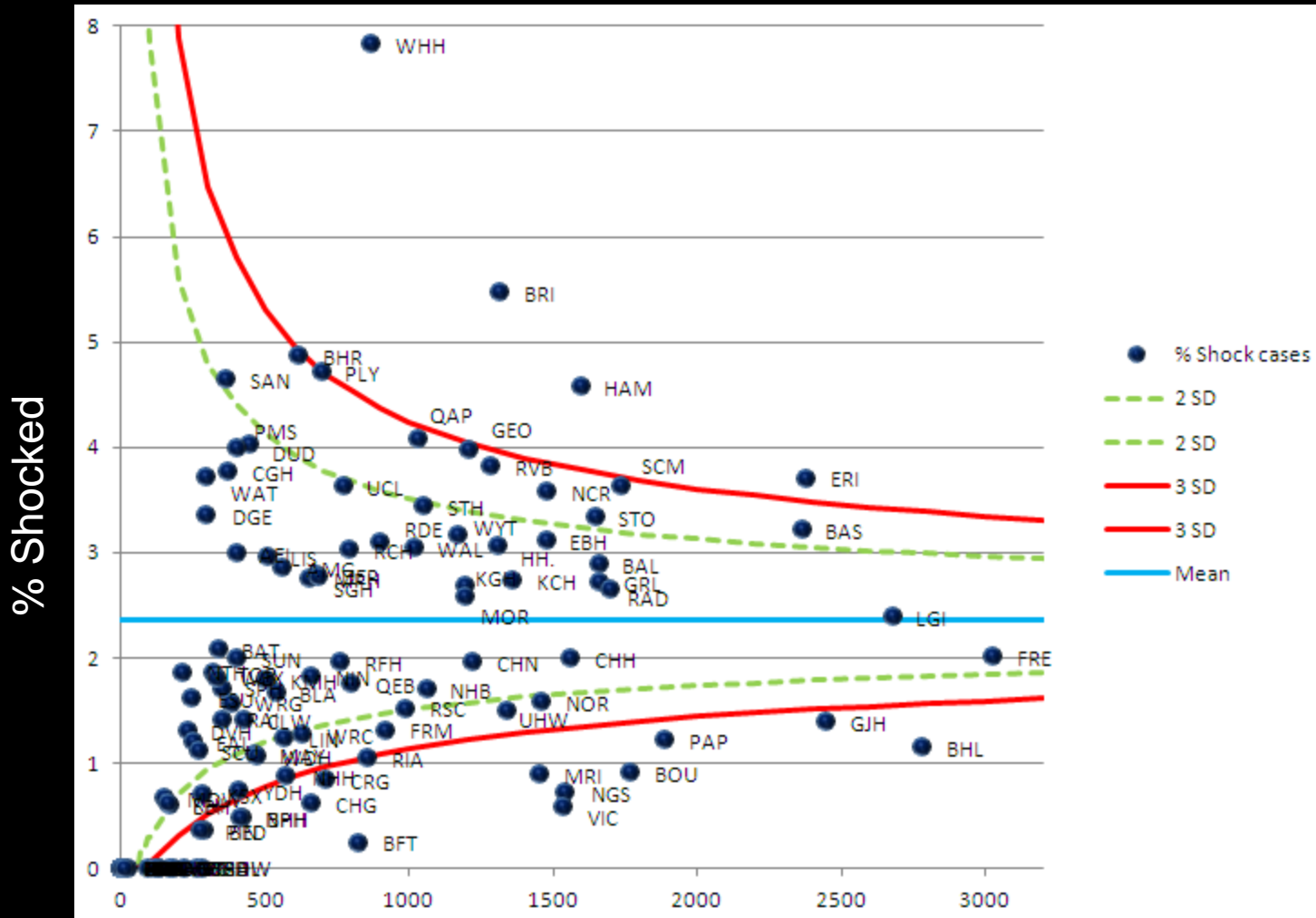
Number of All PCI Procedures

Cardiogenic Shock

% Cases with shock by PCI unit



2011 data: Ludman



2.4 %

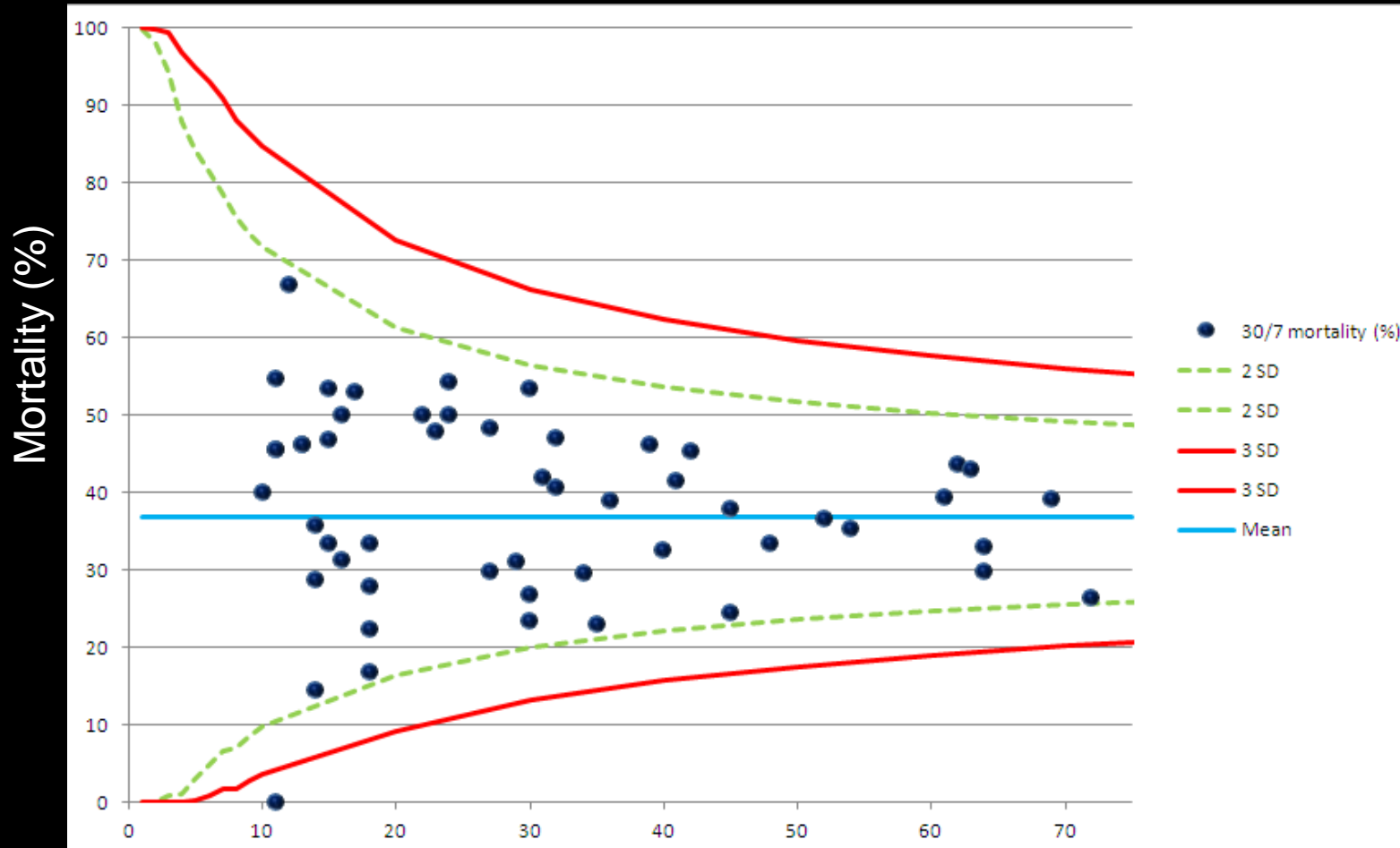
Number of All PCI Procedures

Cardiogenic Shock

30/7 Tracked Mortality by Centre



2011 data: Ludman



36.9 %

Number of All PCI Procedures

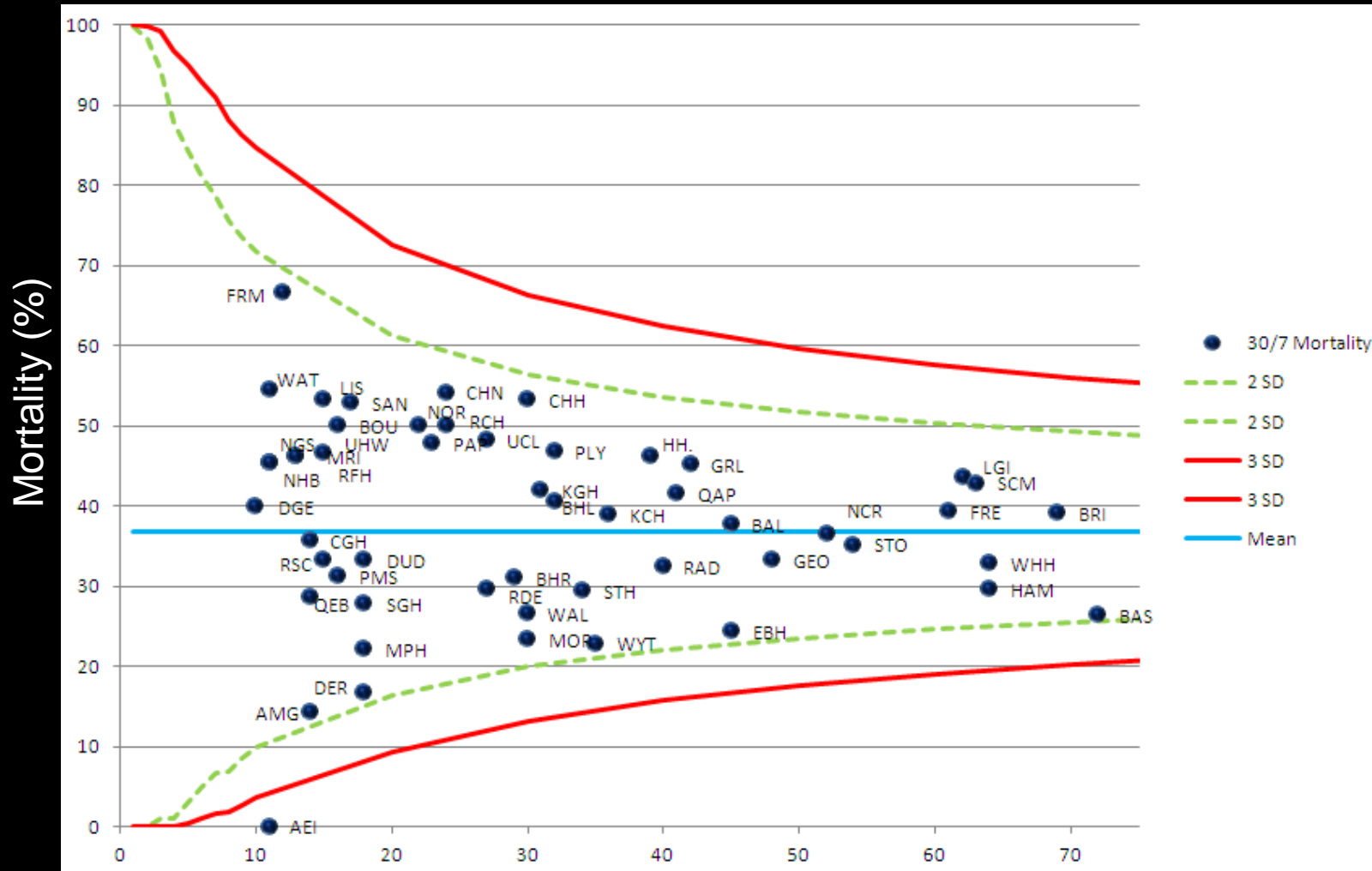
>10 cases

Cardiogenic Shock

30/7 Tracked Mortality by Centre



2011 data: Ludman



36.9 %

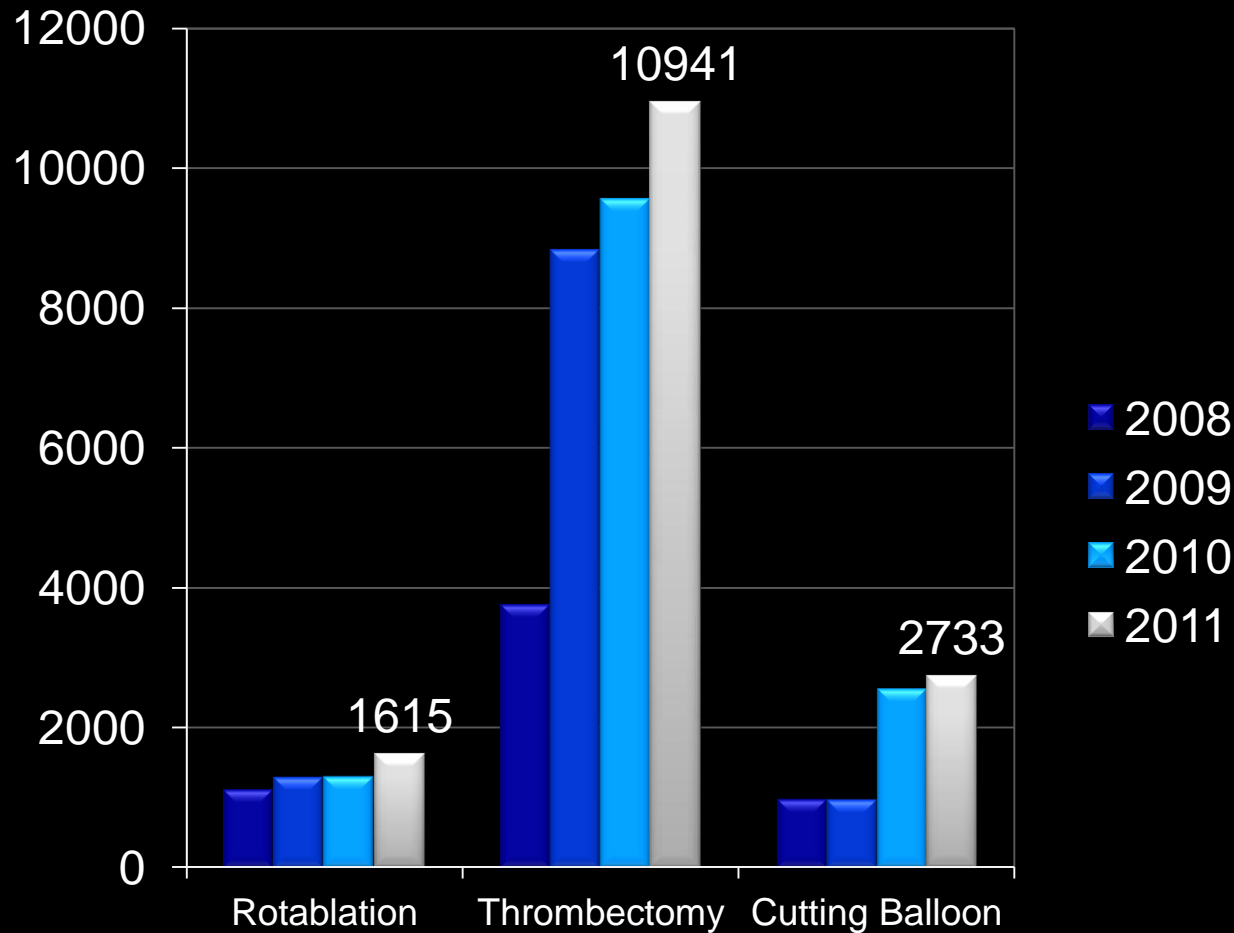
Number of All PCI Procedures

>10 cases

Additional Interventional Coronary Techniques



2011 data: Ludman



Notes:

2010 and 2011 data from NICOR

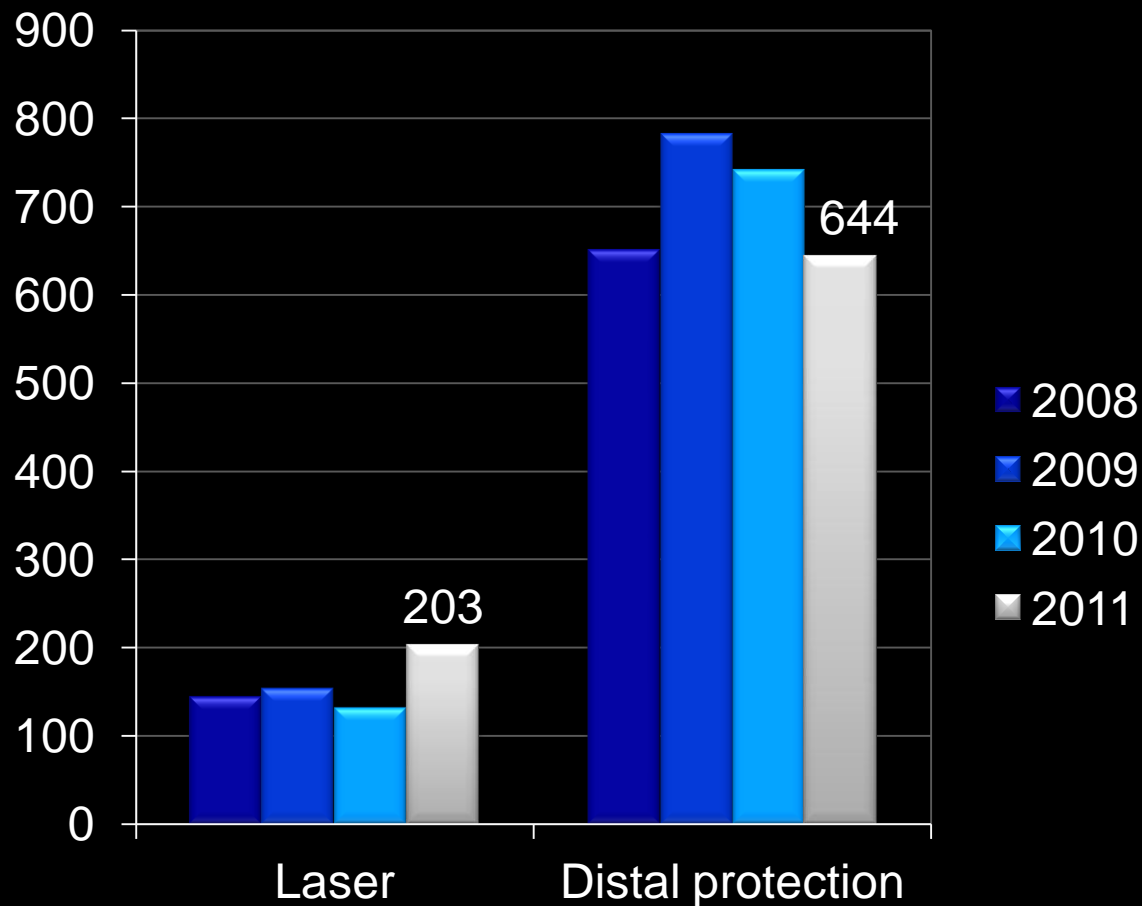
Assume DCA usually is actually rota, therefore DCA and Rota summed to give 'Rotablation'

Laser wire and laser angioplasty summed to give 'laser'

Additional Interventional Coronary Techniques



2011 data: Ludman



Notes:

2010 and 2011 data from NICOR

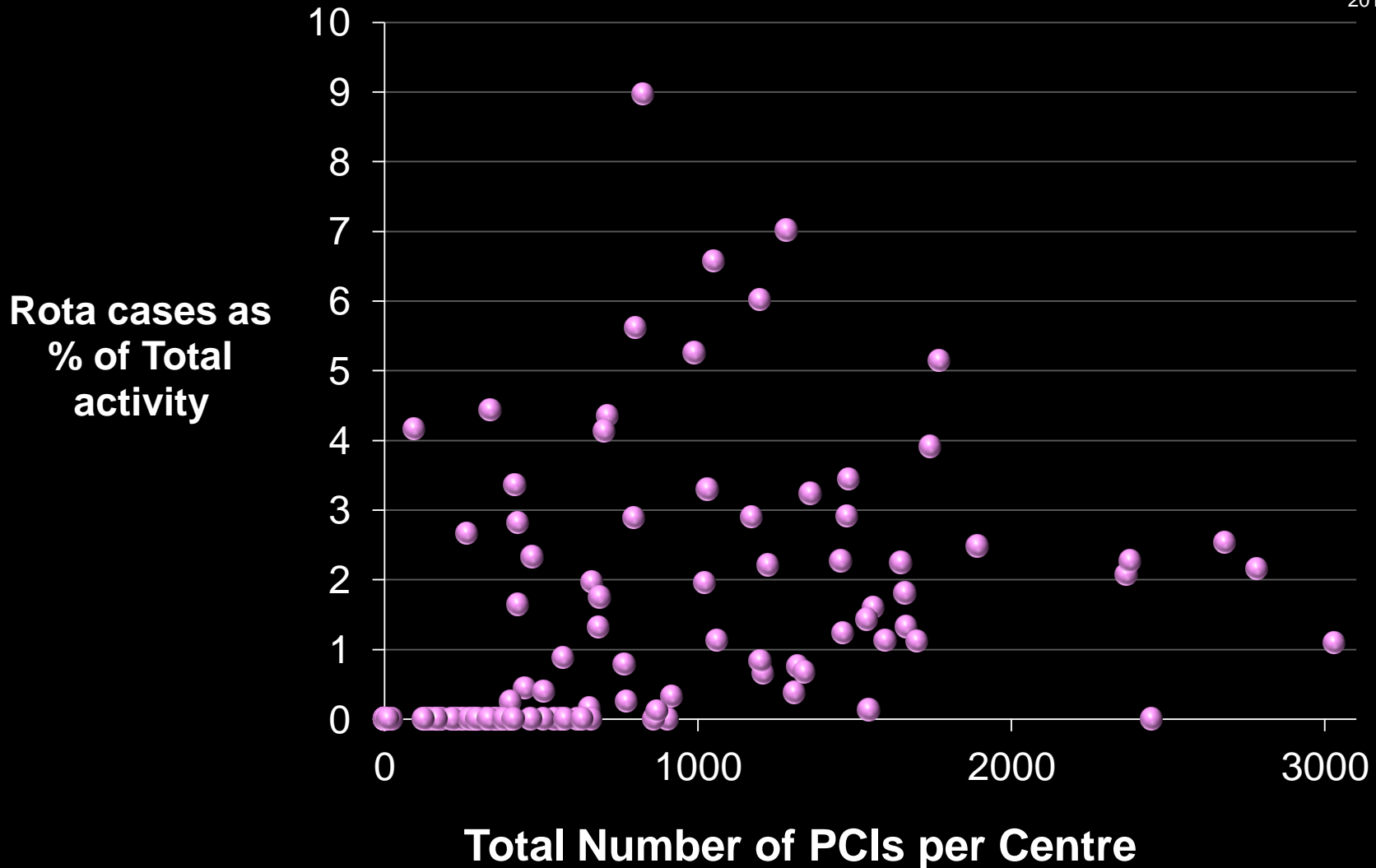
Assume DCA usually is actually rota, therefore DCA and Rota summed to give 'Rotablation'

Laser wire and laser angioplasty summed to give 'laser'

Rotational Atherectomy



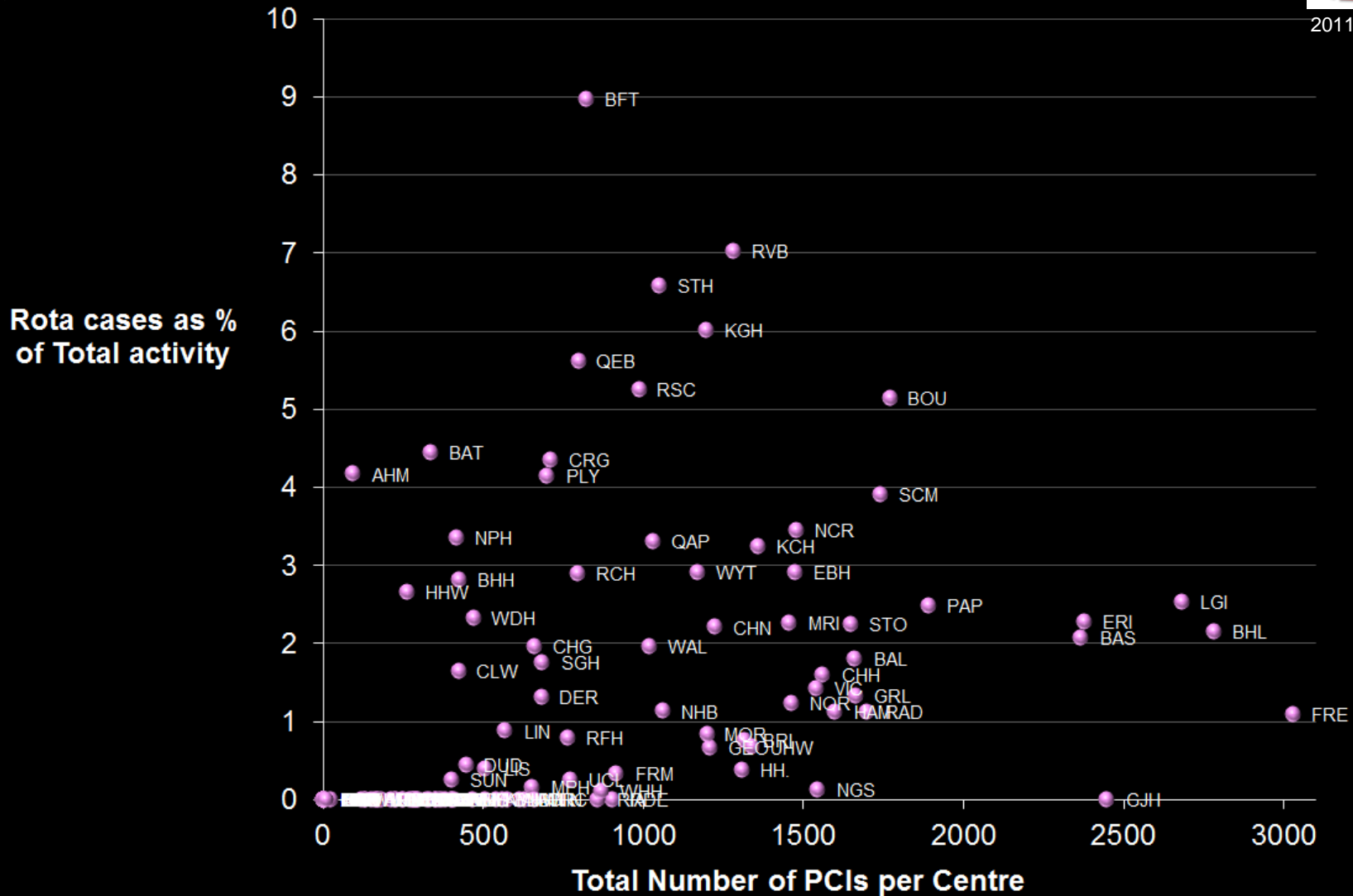
2011 data: Ludman



Rotational Atherectomy



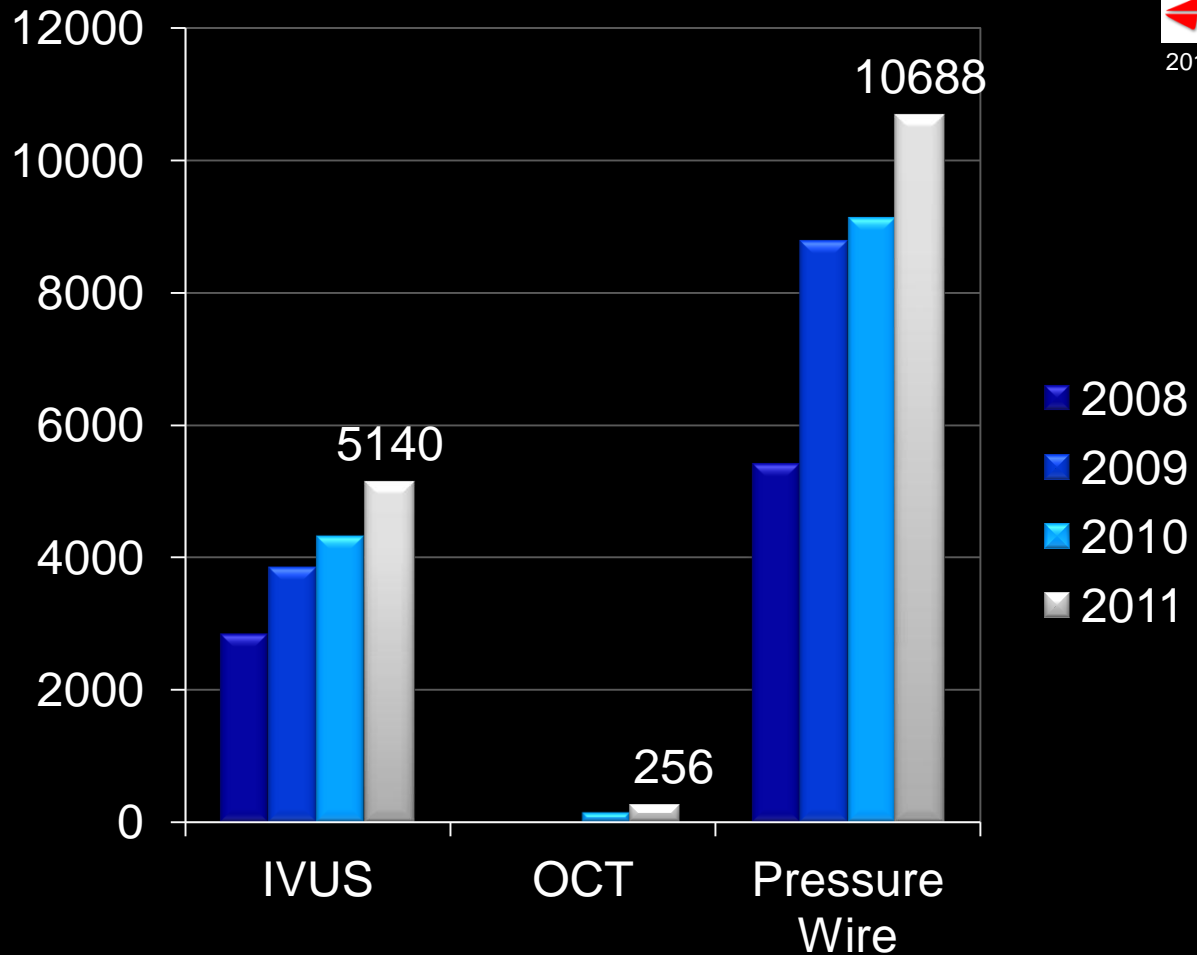
2011 data: Ludman



Additional Interventional Coronary Techniques



2011 data: Ludman



No. of Centres using device

95

13

110

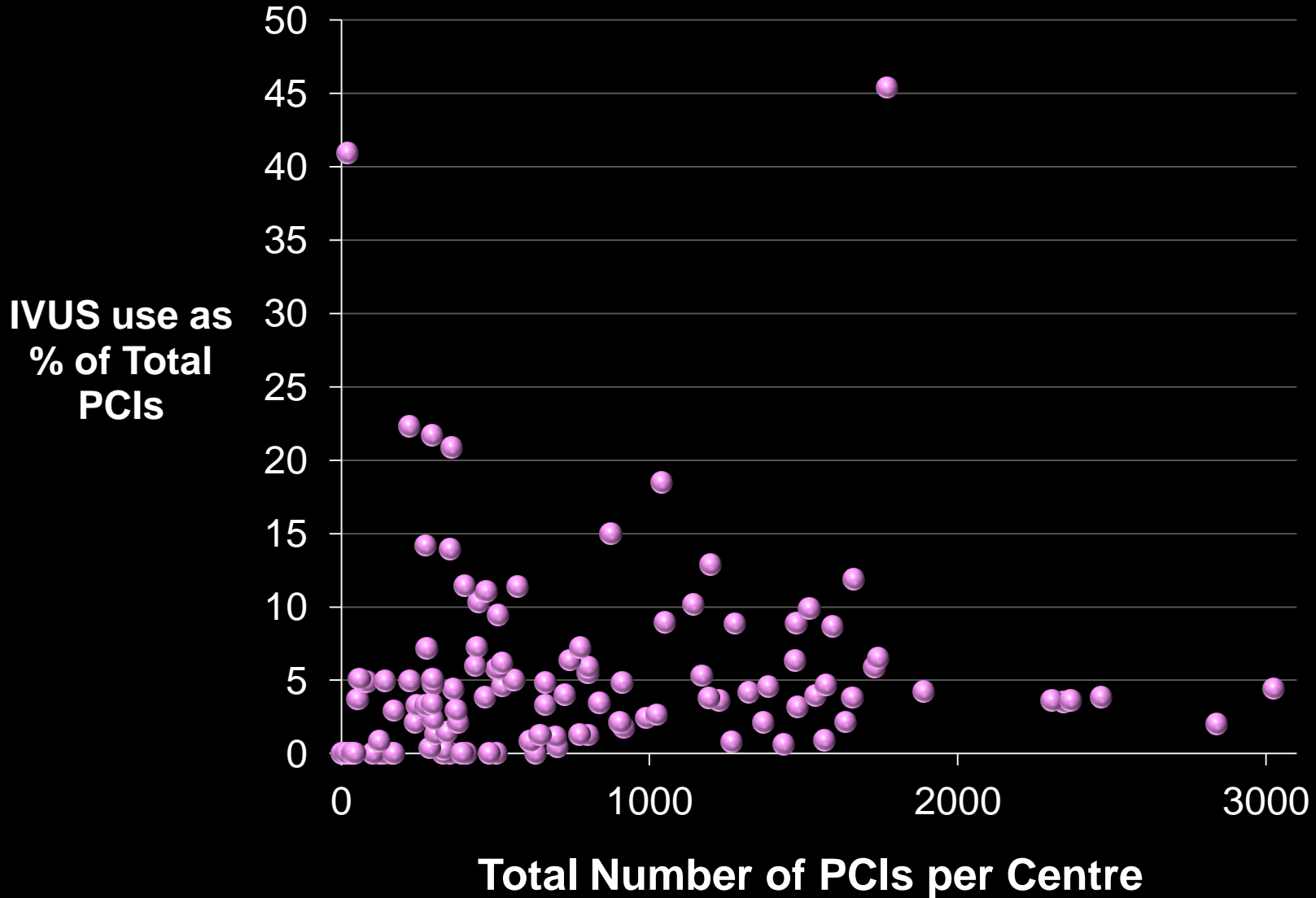
All cases whether or not associated with PCI

IVUS



2011 data: Ludman

All cases whether or not associated with PCI

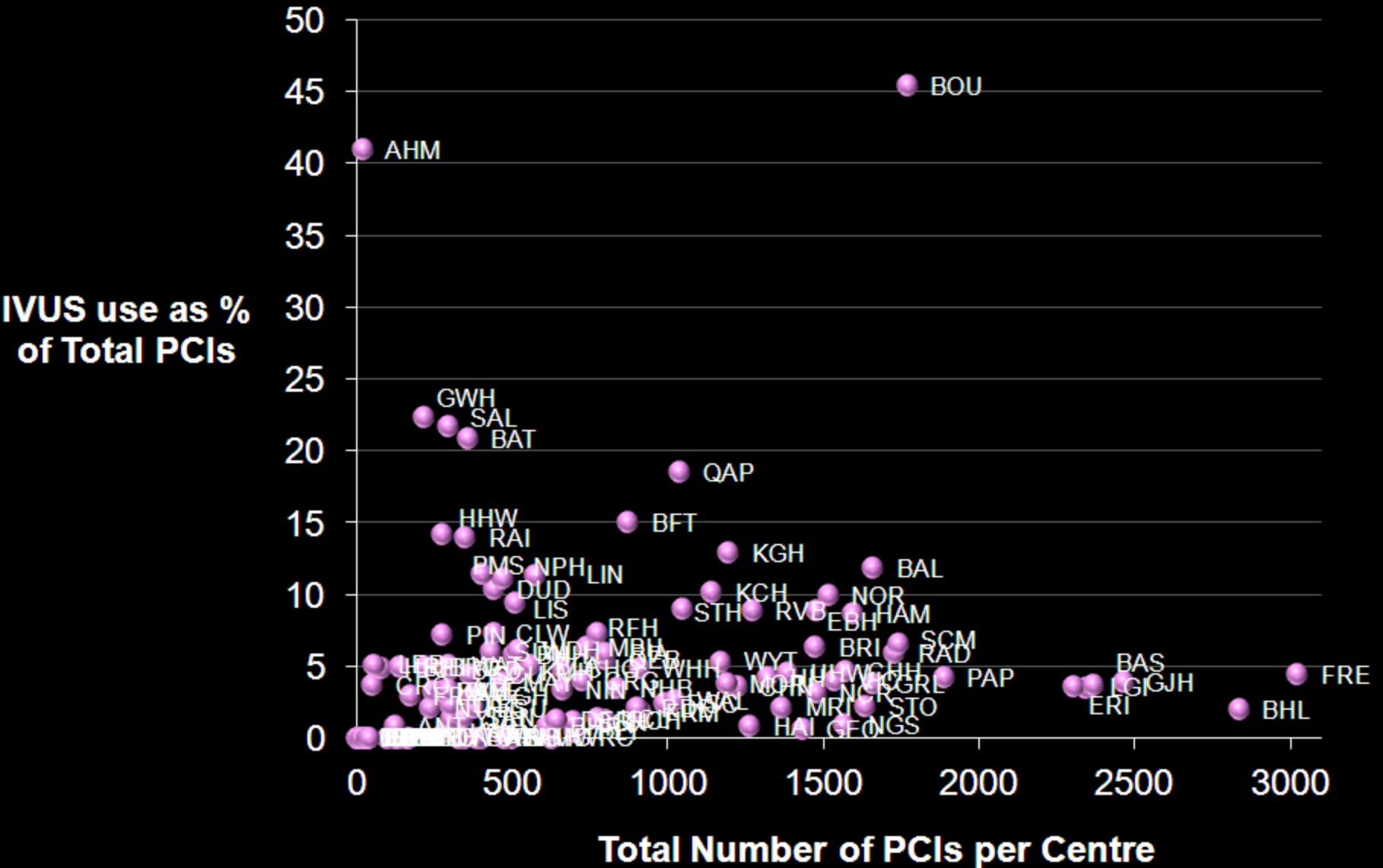


IVUS



2011 data: Ludman

All cases whether or not associated with PCI



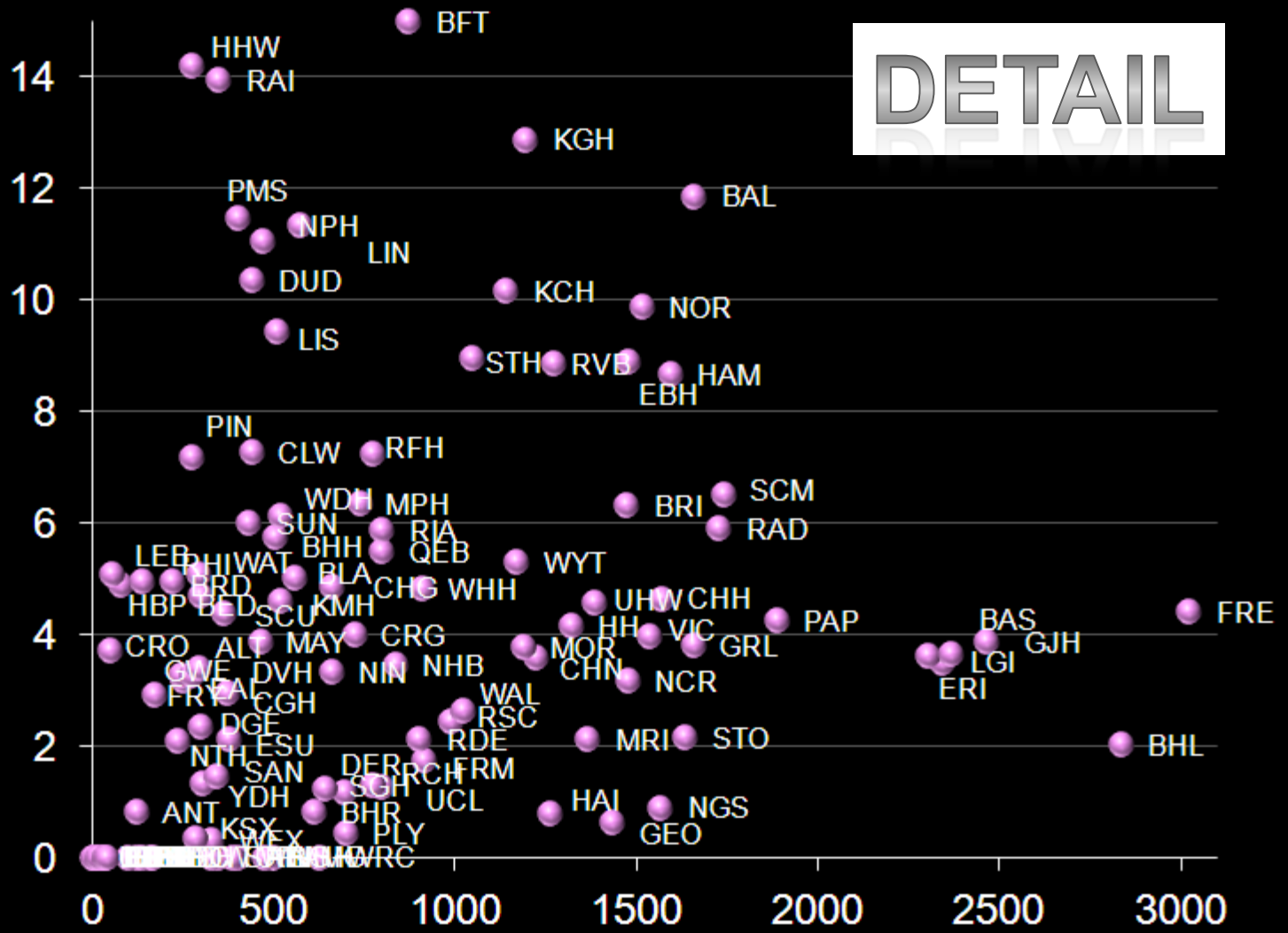
IVUS



2011 data: Ludman

DETAIL

IVUS use as %
of Total PCIs



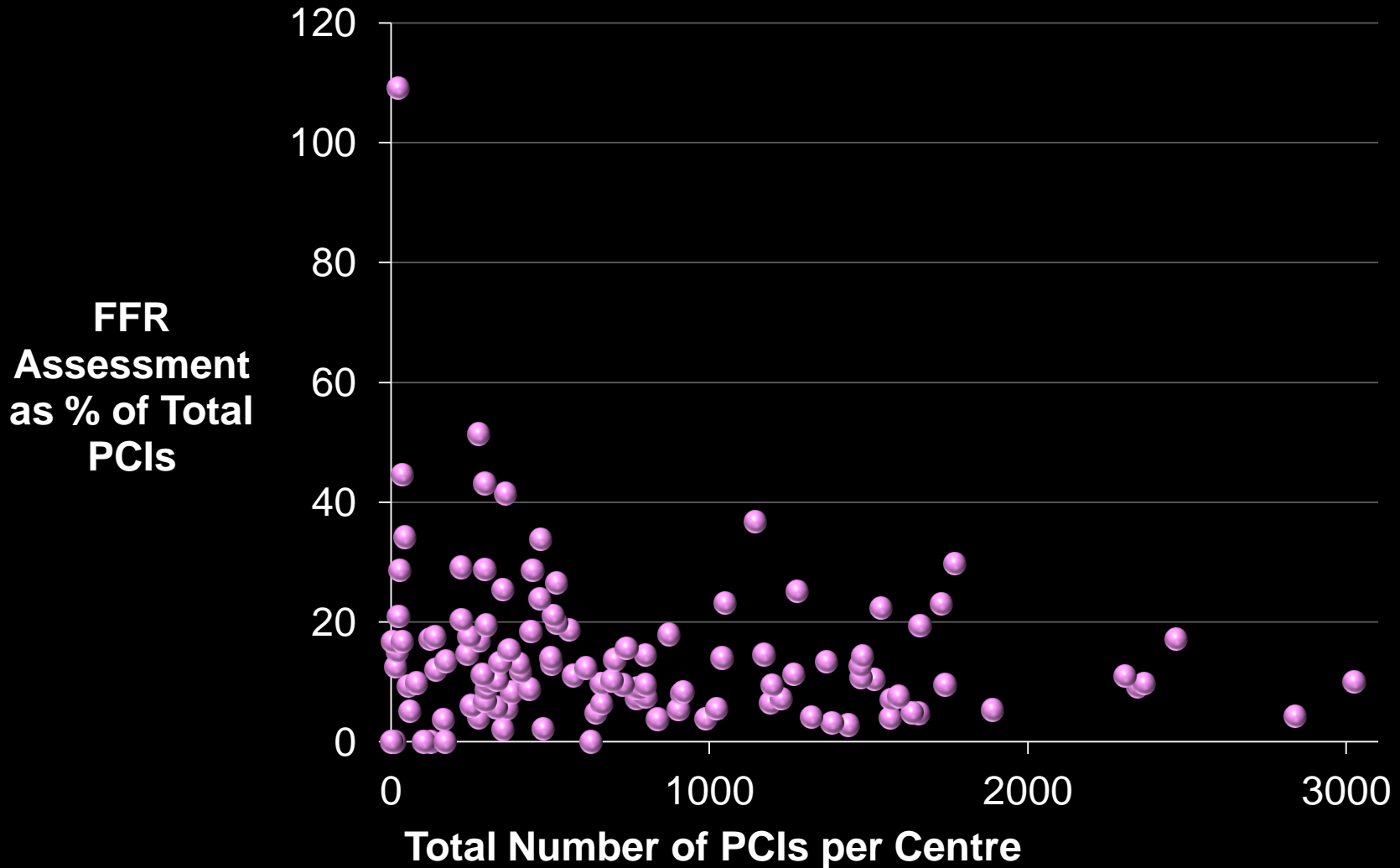
Total Number of PCIs per Centre

Pressure Wire



2011 data: Ludman

All cases whether or not associated with PCI

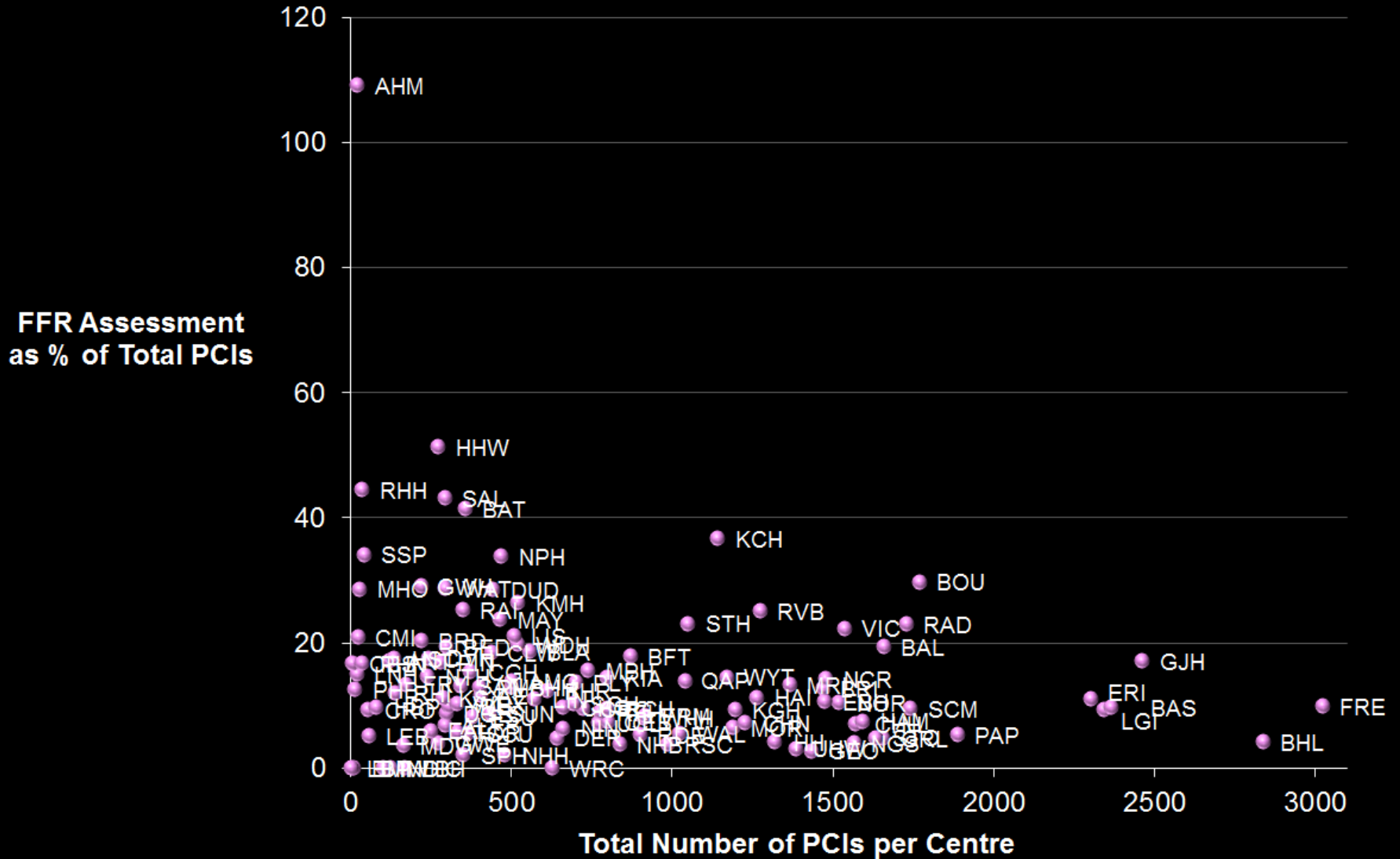


Pressure Wire



2011 data: Ludman

All cases whether or not associated with PCI



Pressure Wire

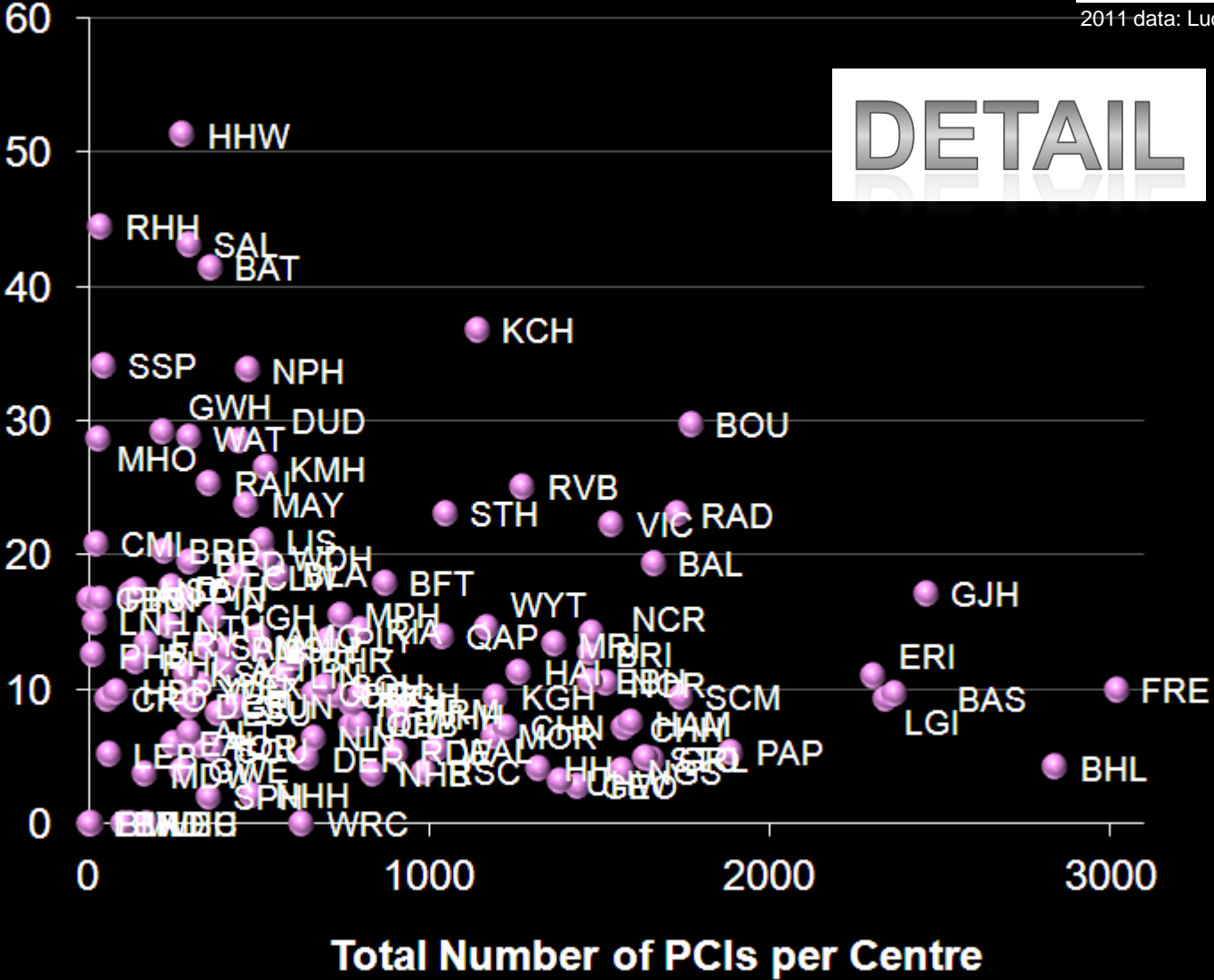


2011 data: Ludman

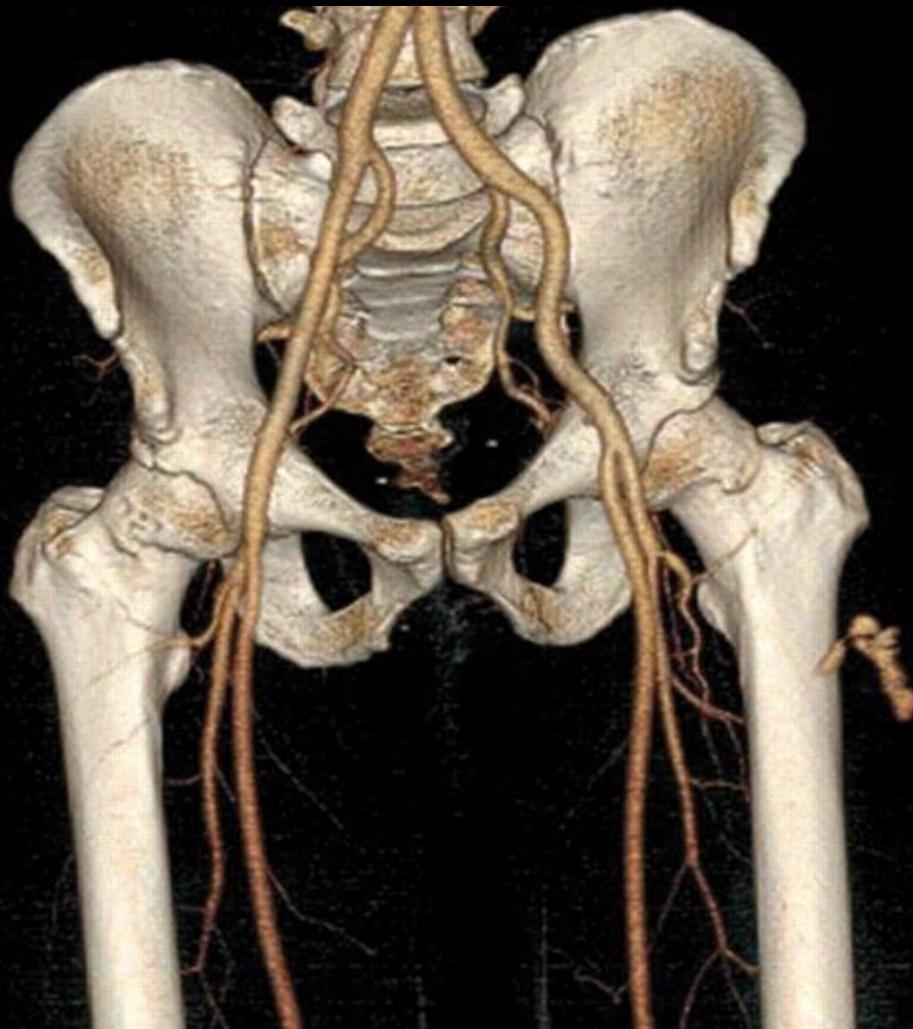
DETAIL

All cases whether or not associated with PCI

FFR
Assessment
as % of Total
PCIs



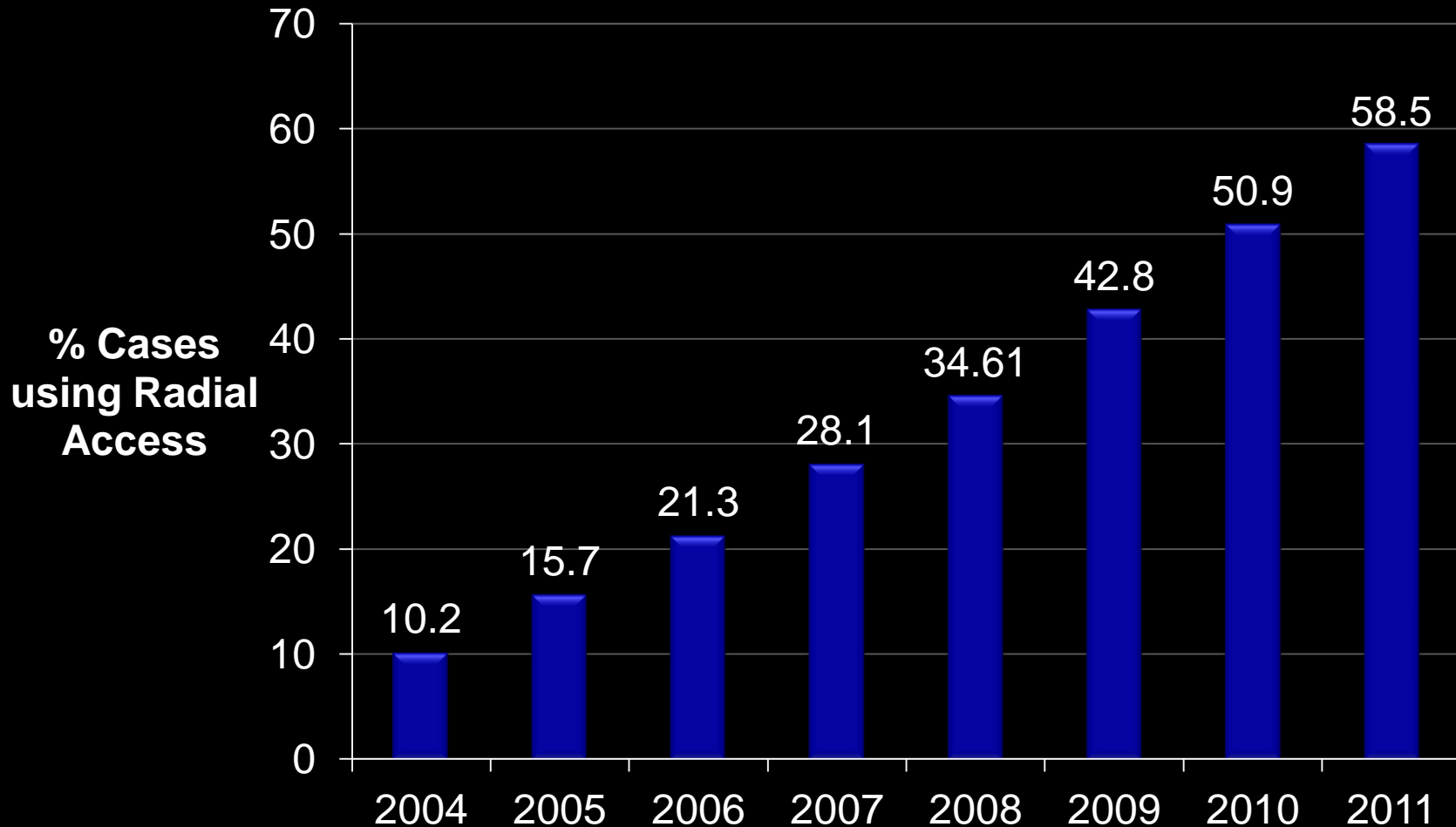
Arterial access



Radial Artery Access



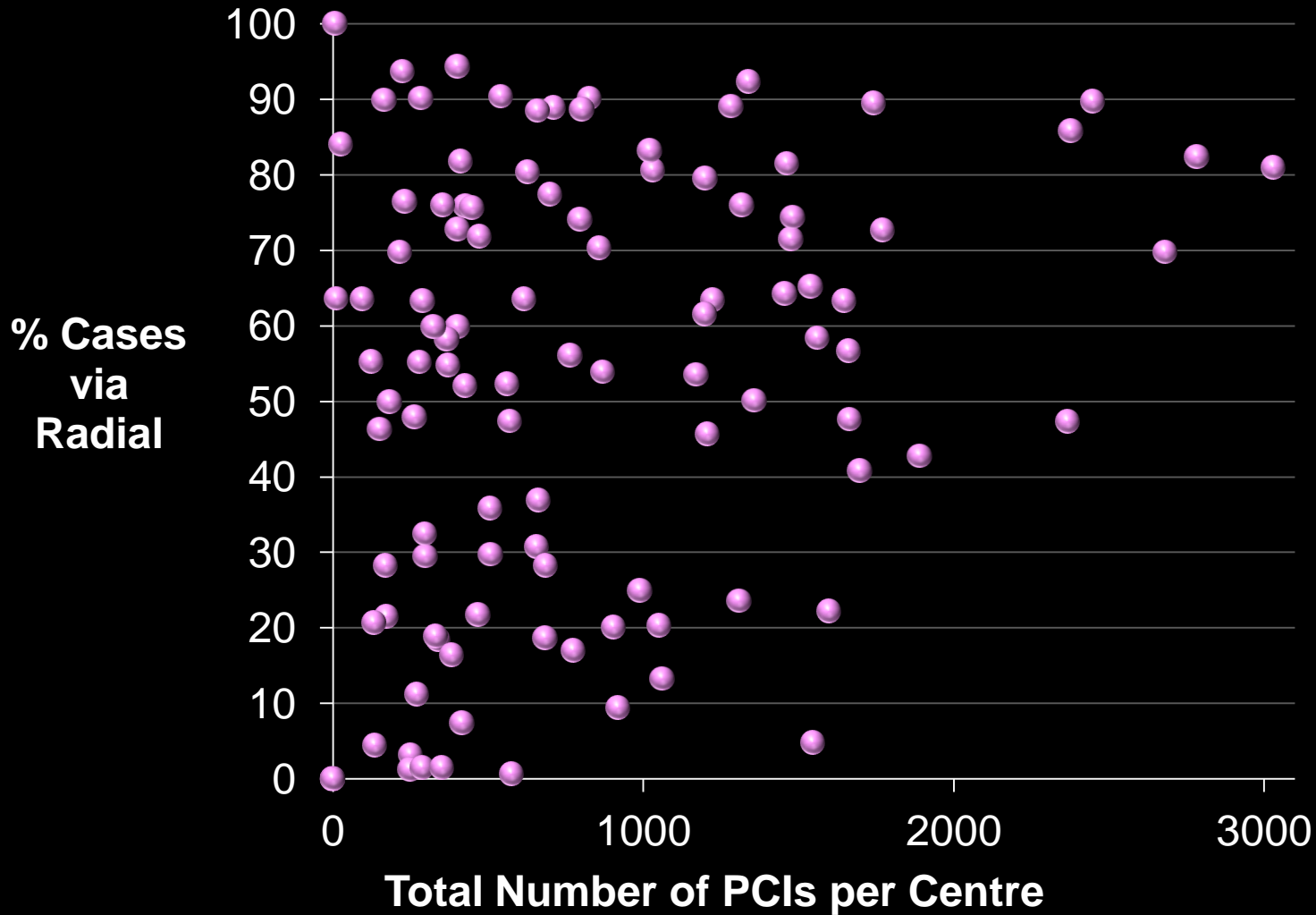
2011 data: Ludman



Radial Artery Access



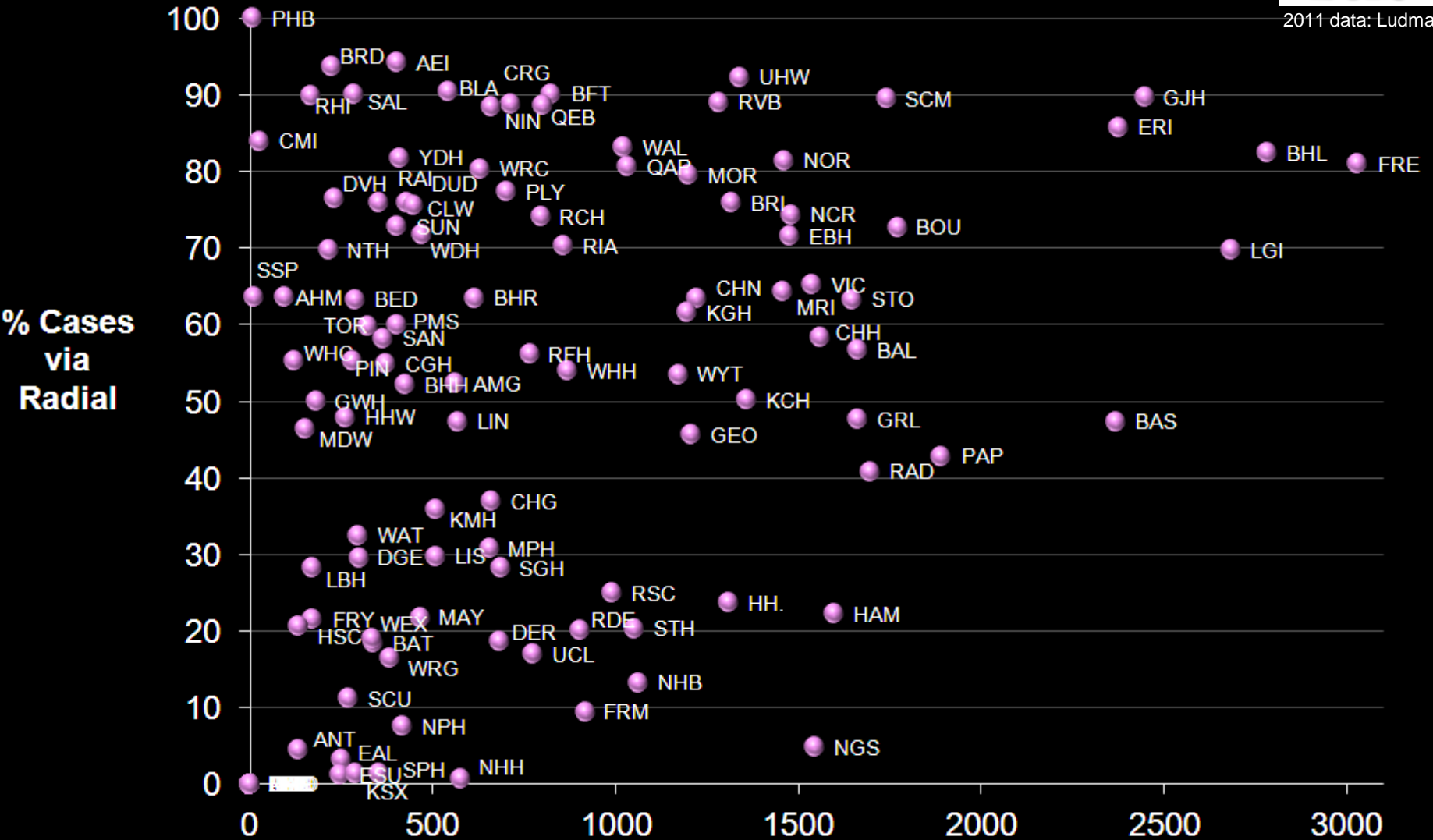
2011 data: Ludman



Radial Artery Access



2011 data: Ludman



Femoral closure devices

Of PCI via FA - % punctures closed with a device



2011 data: Ludman



Contents



2011 data: Ludman

- **Structure**

- New centres
- Total PCI numbers
- No of PCIs per centre and per angio
- PCI pmp and by country
- PCI operators, by centre, by PPCI
- On call rotas for PPCI
- Surgical cover
- Day case activity
- Primary PCI units

- **NICOR data collection**

- Centre participation
- Databases used
- Case ascertainment
- Data completeness
- Data Quality

- **Appropriateness**

- Demographics
- Indication for PCI / Clinical syndrome
- PPCI activity (by unit, pmp, by vessel)
- PCI territories / vessels / lesions
- Stents (BMS and DES)
- Adjunctive pharmacotherapy
- LV support and shock
- Additional interventional techniques, devices
- Arterial access (routes)

- **Process of care**

- Delays data completeness
- Delays to treatment
 - NSTEMI / PPCI
 - IHT versus Direct admission
 - PPCI age > 80 / Length of stay

- **Adult non coronary intervention**

- Septal ablation for HOCM
- PFO / ASD closure / LAA occlusion
- Renal Denervation
- Valve therapies
- Other adult structural intervention

- **Outcome**

- MACCE
- Periprocedural complications and by access
- Tracked 30 day mortality
 - Outcome by syndrome
 - Outcome by lesion subset
- Risk adjusted outcomes
 - 3 year MACCE
 - 1 year MACCE
 - Predicted risk by centre type

Appendix: PCI Centre CCAD codes

Time Delays to Treatment



Time fields

Data completeness

BCIS Field No.	Patients treated for STEMI by Primary PCI	MINAP Field No.
2.07	Date/time of symptom onset	3.01
2.08	Date/time of arrival at first hospital	3.06
5.26	Date/time of arrival at PCI hospital	
3.26	Date/time of first balloon inflation	3.09
4.04	Discharge date	4.01

 > 90% completeness in each

Time fields

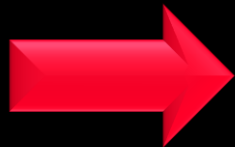
2010

2011



2011 data: Ludman

	2/07 Date#	5/27 date#	2/08 Date#	5/26 Date#	3/26 Date#	4/04 Disch.
AEI Royal Albert Edward Infirmary	100	100	100	100	100	100
FRY Frimley Hospital	100	100	100	100	100	100
VRC Worcestershire Royal Hospital	100	100	100	100	100	100
RCH Royal Cornwall Hospital	100	100	100	100	100	100
NHB Royal Brompton Hospital	100	100	100	100	100	100
SPH St Peter's Hospital	100	100	100	100	100	100
WEX Wexham Park Hospital	100	100	100	100	100	100
FRM Frimley Park Hospital	100	100	100	100	100	100
VYT Wythenshawe Hospital	99.3	100	100	100	100	100
BHR Royal Berkshire and Battle Hospital	100	99.2	100	100	100	100
STH St Thomas' Hospital	100	100	100	100	99	100
SCM James Cook University Hospital	100	99.2	99.8	99.8	99	100
QEB Queen Elizabeth Hospital Edgbaston	99.1	99.1	100	100	98.2	100
GAP Queen Alexandra Hospital	97	100	100	100	100	99.3
SGH Southampton General Hospital	98.7	99.6	99.6	99.6	98.7	100
RSC Royal Sussex County Hospital	99.5	100	98.4	97.8	100	100
BAL Barts and the London	97.8	100	99.2	99.2	100	99.2
DUO City Hospital	97.6	98.9	100	100	98.9	100
EBH Birmingham Heartlands Hospital	99.6	98	100	100	99.3	100
SAN Sandwell District General Hospital	100	98.9	97.9	97.9	100	100
MPH Taunton & Somerset	98.7	100	98.7	99.4	99.4	98.1
CRG Craigavon Area Hospital	97.1	100	100	100	97.1	100
STO North Staffordshire Hospital	98.9	98.9	99.2	99.5	98.1	98.9
DER Derby Royal Infirmary	100	97.3	100	100	99.9	100
RAD John Radcliffe Hospital	94.9	98.9	99.6	99.6	100	100
RFA Royal Free Hospital	100	96.7	97.9	98.9	99.6	100
US Lister Hospital	100	98.5	98.6	98.9	100	100
BHL Liverpool Heart and Chest Hospital	96.1	99.2	98	98.1	98.8	99.5
CHH Castle Hill Hospital	97.8	97.9	98.9	99.3	97.8	100
PLY Denford Hospital	100	100	95.3	95.3	100	100
NCR New Cross Hospital	96.8	99.8	97.7	97.7	98.6	100
PAP Papworth Hospital	99.1	99.3	98.8	97.9	97.7	99.5
CHN Nottingham City Hospital	97.8	97.8	97.8	96.3	100	100
RDE Royal Devon & Exeter Hospital	93.9	96.2	99.4	99.4	96.9	100
BRB Bristol Royal Infirmary	98.5	98.9	96.6	99	98.3	100
VRG Worthing Hospital	100	100	93.8	93.8	100	100
CGH Conquest Hospital	98.2	100	96.4	98.2	94.6	100
VAL Valsgave Hospital	96.7	97	95.7	98.3	100	99.7
FRE Freeman Hospital	98.7	94.4	95.5	100	97.6	100
NOR Norfolk & Norwich Hospital	94.6	98.3	98.3	99.5	98	97.3
DOE Eastbourne DGH	100	100	91.2	94.1	100	100
UCL University College Hospital	97.9	100	93.9	94.5	99.3	99.3
NGS Northern General Hospital	98.3	99.2	94	99.2	97.8	99.7
KGH Kettering General Hospital	93.9	98.5	97	97	98.5	98.5
GRL Glenfield Hospital	99.1	94.3	97.4	97.4	99.6	98.2
ERL Royal Infirmary of Edinburgh	99.7	99.2	92	92	99	100
LGI Yorkshire Heart Centre	97.1	95.4	94.1	94.9	99.3	99.3
VDH Dorset County Hospital	96.9	93.8	100	100	93.8	93.8
MOR Morriston Hospital	98.8	97	99.4	97.1	91.1	100
KCH King's College Hospital	98.2	99.6	96.4	96.4	97.3	100
SUN Sunderland Royal Hospital	100	98.9	98.8	100	100	100
MRL Manchester Royal Infirmary	95.3	94.2	93.9	95.6	98.3	100
VIC Victoria Hospital	95.2	95.2	94	94	99.4	97
BOU Royal Bournemouth General Hospital	98.5	100	99.4	99.9	100	95.5
CHG Cheltenham General Hospital	98.5	79.4	94.1	98.5	98.5	100
TOR Torbay Hospital	81.4	97.7	96.5	96.5	96.5	100
RVB Royal Victoria Hospital	97.5	97	87.9	88.4	96	95.5
BAS Basildon Hospital	98.5	99.5	78.4	86.4	98.8	100
GH Golden Jubilee Hospital	92	83.9	82.4	99.5	97.4	100
BRD Bradford Royal Infirmary	100	80	100	100	100	100
PMS The Great Western Hospital	96.6	86.2	96.6	96.6	79.3	93.1
BAT Royal United Hospital Bath	100	86	83.7	100	74.4	100
VAT Watford General Hospital	89.6	100	79.2	79.2	95.8	97.9
DVH Darent Valley Hospital	100	100	75	75	100	75
HAM Hammersmith Hospital	96.3	94.6	68.2	68.6	97.1	88.3
KSK Keet & Sussex Hospital	100	100	100	100	100	0
BHH Bournemouth Hospital	100	100	100	100	100	0
H4 Hasfield Hospital	98	97.9	42.5	44.4	96.3	99.9
AMG Mymcombe General Hospital	100	100	64.3	64.3	100	59
LN Lincoln County Hospital	100	75	50	50	100	100
MDV Medway Maritime Hospital	75	87.5	75	75	62.5	100
UHV University Hospital of Wales	87.3	80.1	83.1	84.5	45.1	78.9
NTH Northampton General Hospital	78.6	78.6	57.1	57.1	82.1	85.7
VHH William Harvey Hospital	77.8	82.4	73.4	76.6	42.8	75.2
ESU East Surrey Hospital	72.4	98.6	27.6	31	100	100
NHT North Hampshire Hospital	85.7	85.7	14	14	100	100
GEO St George's Hospital	60.9	311	49.4	53.9	93.8	100
MAY Magday University Hospital	57.1	57.1	42.9	42.9	28.8	100
HHV Wellington Hospital	0	0	0	100	100	100
NPH Northwick Park Hospital	40	0	0	40	40	20



Hospital	2/07 Date# of separate onset		5/27 date# of call for help		2/08 Date# of arrival at first hospital		3/8 Date# of arrival at PCH hospital		4/4 Discharge date	
										Total
BRD Bradford Royal Infirmary	100	100	100	100	100	100	100	100	100	600
CGH Conquest Hospital	100	100	100	100	100	100	100	100	100	600
CRG Craigavon Area Hospital	100	100	100	100	100	100	100	100	100	600
FRM Frimley Park Hospital	100	100	100	100	100	100	100	100	100	600
NHB Royal Brompton Hospital	100	100	100	100	100	100	100	100	100	600
SPH St Peter's Hospital	100	100	100	100	100	100	100	100	100	600
WEX Wexham Park Hospital	100	100	100	100	100	100	100	100	100	600
VRG Worthing Hospital	100	100	100	100	100	100	100	100	100	600
WYT Wythenshawe Hospital	99.9	100	100	100	100	100	100	100	100	599.8
QEB Queen Elizabeth Hospital Edgbaston	99.5	100	100	100	100	100	100	100	100	599.5
PLY Denford Hospital	100	100	100	100	100	99.3	100	100	100	599.3
BHR Royal Berkshire and Battle Hospital	100	99.8	100	100	100	100	100	100	100	599.8
MPH Taunton & Somerset	99.4	100	99.4	100	99.4	100	99.4	100	100	599.2
RCH Royal Cornwall Hospital	100	100	99.4	99.4	99.4	100	100	100	100	599.2
WDH Dorset County Hospital	100	100	100	100	100	97.1	99.7	100	100	597.1
RSC Royal Sussex County Hospital	99.6	100	98.7	98.7	100	100	100	100	100	597
VRC Worcestershire Royal Hospital	100	100	98.5	98.5	100	100	100	100	100	597
NCR New Cross Hospital	97.4	99.6	99.6	99.8	99.8	100	100	100	100	596.7
DUO City Hospital	100	97.6	100	100	97.6	100	100	100	100	596.2
SGH Southampton General Hospital	98.5	100	99.2	99.2	98.5	99.2	99.2	99.2	99.2	594.6
SCM James Cook University Hospital	99.8	99.1	99.1	99.3	99.1	100	100	100	100	594.4
KCH King's College Hospital	98.8	98.8	98	98	97.2	100	100	100	100	594.4
BOU Royal Bournemouth General Hospital	96.9	100	98.4	98.4	100	96.9	100	100	100	590.6
EBH Birmingham Heartlands Hospital	96.6	97.9	98.7	98.7	98.3	99.6	98.9	98.9	98.9	589.8
STH St Thomas' Hospital	100	98.9	98.8	98.8	95.7	100	100	100	100	589.3
CHH Castle Hill Hospital	97.5	96.6	97.2	99.2	98.7	100	100	100	100	589.2
NOR Norfolk & Norwich Hospital	96.3	98.1	97.6	98.7	98.7	99.7	98.9	98.9	98.9	589.1
SUN Sunderland Royal Hospital	100	100	100	100	88.9	100	100	100	100	589.9
QUP Queen Alexandra Hospital	97.9	99	99.3	99	99.3	99.7	98.7	98.7	98.7	589.7
WAL University Hospital Coventry	96.8	97.1	96.8	99.1	98.8	100	100	100	100	588.6
DER Derby Royal Infirmary	97.8	99.9	97.8	97.8	100	96.2	98.5	100	100	588.5
SAN Sandwell District General Hospital	97.8	98.9	97.8	97.8	96.5	100	100	100	100	587.8
DOE Eastbourne DGH	99	100	98.2	98.2	98.2	100	100	100	100	587.6
BAL Barts and the London	96.6	99.6	99.2	99.4	99.8	92.4	98.7	98.7	98.7	587
STO North Staffordshire Hospital	97	97.5	97.3	97.9	99.2	98.9	98.8	98.8	98.8	586.8
FRE Freeman Hospital	98.1	99.6	96.3	99.2	99.9	100	100	100	100	586.1
CHC Cheltenham General Hospital	97.1	98.6	95.7	97.1	98.6	98.6	98.6	98.6	98.6	585.7
PAP Papworth Hospital	98.5	98.1	94.3	95.4	99.2	100	100	100	100	585.6
NGS Northern General Hospital	99.9	96.9	95.9	96.3	98.5	99.5	99.5	99.5	99.5	584
TOR Torbay Hospital	87.2	100	100	100	94.9	100	100	100	100	582.1
HAM Hammersmith Hospital	95.2	93.7	97	98.5	98.1	99.3	100	100	100	581.8
BRB Bristol Royal Infirmary	98.1	99.8	92.8	94	96.1	99.8	100	100	100	580.6
LGI Yorkshire Heart Centre	97.5	94.6	96.1	97.2	97.4	96.9	97.9	97.9	97.9	579.7
RDE Royal Devon & Exeter Hospital	89	99.2	95.3	99.6	96.1	100	100	100	100	579.2
CHV Nottingham City Hospital	88.1	97	96.1	97.6	99.4	100	100	100	100	578.9
US Lister Hospital	95.7	97.1	94.3	93.7	97.1	100	100	100	100	578.6
VIC Victoria Hospital	99.5	99.3	99.9	99.9	99.3	99.3	99.3	99.3	99.3	578.2
GRL Glenfield Hospital	98.1	92.4	92.4	94.6	100	100	100	100	100	577.8
PMS The Great Western Hospital	100	90	90	90	97.5	100	100	100	100	577.5
BHL Liverpool Heart and Chest Hospital	97.4	96.2	92.3	93.7	96.7	100	100	100	100	576.3
BAS Basildon Hospital	99.5	99.8	86.3	90.6	98.9	100	100	100	100	575.1
RFA Royal Free Hospital	95.9	91.7	94.1	94.1	97.6	100	100	100	100	574.4
UCL University College Hospital	86.1	97	94	96.3	98.5	96.3	97.2	97.2	97.2	570.2
KGH Kettering General Hospital	93.2	96.1	92.7	93.7	94.2	100	100	100	100	569.9
ERI Royal Infirmary of Edinburgh	98.6	96.4	88.6	91	98.1	100	100	100	100	569.7
RAD John Radcliffe Hospital	90.2	91.4	92.3	94.3	100	100	100	100	100	569.2
DNV Darent Valley Hospital	100	100	83.3	83.3	100	100	100	100	100	568.6
MRL Manchester Royal Infirmary	94.2	92.1	86	88.9	98	99.8	99.8	99.8	99.8	559
RVB Royal Victoria Hospital	98.2	93.4	83.2	84.4	96.4	97.6	97.6	97.6	97.6	553.2
HH Hasfield Hospital	98.5	99.5	73.5	82.1	99.1	99.8	99.8	99.8	99.8	552.5
KSK Keet & Sussex Hospital	100</									

Time fields

2011



2011 data: Ludman



Hospital	2.07 Discharge of emergency cases		5.27 Discharge of cases for help		5.28 Discharge of arrival at firm hospital		3.8 Discharge of arrival at PCH hospital		Total
	2.07	5.27	5.28	3.8	3.8	3.8	3.8		
BRD Bradford Royal Infirmary	100	100	100	100	100	100	100	100	600
CGH Coventry Hospital	100	100	100	100	100	100	100	100	600
CRG Cragavan Area Hospital	100	100	100	100	100	100	100	100	600
FRM Frimley Park Hospital	100	100	100	100	100	100	100	100	600
NRH Royal Brompton Hospital	100	100	100	100	100	100	100	100	600
SAL Salisbury Hospital	100	100	100	100	100	100	100	100	600
SPH St Peter's Hospital	100	100	100	100	100	100	100	100	600
WEX Wexham Park Hospital	100	100	100	100	100	100	100	100	600
WRG Worthing Hospital	100	100	100	100	100	100	100	100	600
WYT Wythenshawe Hospital	99.8	100	100	100	100	100	100	100	599.8
QEB Queen Elizabeth Hospital Edgbaston	99.5	100	100	100	100	100	100	100	599.5
PLY Denford Hospital	100	100	100	100	100	99.3	100	99.3	599.3
BHR Royal Berkshire and Battle Hospital	100	98.8	100	100	100	100	100	100	598.8
MPH Taunton & Somerset	99.4	100	99.4	100	99.4	100	99.4	100	598.2
RCH Royal Cornwall Hospital	100	100	99.4	99.4	99.4	100	99.4	100	598.2
WDH Dorset County Hospital	99.6	100	100	100	100	97.1	100	97.1	597.1
RSC Royal Sussex County Hospital	99.5	100	98.7	98.7	100	100	100	99.7	597
WRC Worcestershire Royal Hospital	100	100	98.5	98.5	100	100	100	100	597
NCR New Cross Hospital	97.4	99.6	99.6	99.8	99.3	100	100	100	595.7
DUD City Hospital	100	97.6	100	100	97.6	100	97.6	100	595.2
SGH Southampton General Hospital	98.5	100	99.2	99.2	98.5	99.2	99.2	99.2	594.6
SCH James Cook University Hospital	98.8	99.1	98.1	98.3	99.1	100	99.1	100	594.4
KCH King's College Hospital	98.8	98.8	98	98	97.2	100	97.2	100	590.8
BOU Royal Bournemouth General Hospital	96.9	100	98.4	98.4	100	96.9	100	96.9	590.6
EBH Birmingham Heartlands Hospital	96.6	97.9	98.7	98.7	98.3	99.6	99.6	99.6	589.8
STH St Thomas Hospital	100	96.9	96.8	96.8	95.7	100	95.7	100	589.3
CHH Castle Hill Hospital	97.5	96.6	97.2	99.2	98.7	100	98.7	100	589.2
NOR Norfolk & Norwich Hospital	96.3	98.1	97.6	98.7	98.7	99.7	99.7	99.7	589.1
SUI Sunderland Royal Hospital	100	100	100	100	88.9	100	88.9	100	588.9
QAP Queen Alexandra Hospital	97.9	99	93.8	99	99.2	99.7	99.7	99.7	588.7
WAL University Hospital Coventry	96.8	97.1	96.8	99.1	98.8	100	98.8	100	588.6
DER Royal Derby Hospital	97.8	98.9	97.8	97.8	100	96.2	98.5	100	588.5
SAN Sandwell District General Hospital	97.8	98.9	97.8	97.8	95.5	100	98.7	100	587.8
DOE Eastbourne DGH	93	100	98.3	98.2	98.2	100	98.2	100	587.6
BAL Barts and the London	96.6	99.6	99.2	99.4	99.8	92.4	98.7	100	587
STO North Staffordshire Hospital	97	97.5	97.3	97.9	98.2	98.9	98.2	98.9	586.8
FRE Freeman Hospital	98.1	93.6	96.3	99.2	98.9	100	98.1	100	586.1
CHK Cheltenham General Hospital	97.1	98.6	95.7	97.1	98.6	98.6	98.6	98.6	585.7
PAP Papworth Hospital	98.5	98.1	94.3	95.4	99.2	100	98.5	100	585.5
NGS Northern General Hospital	96.9	96.9	95.9	96.3	98.5	99.5	98.5	99.5	584
TOR Torbay Hospital	87.2	100	100	100	94.9	100	94.9	100	582.1
HAM Hammerwich Hospital	95.2	93.7	97	98.5	98.1	99.3	98.1	99.3	581.8
BRI Bristol Royal Infirmary	98.1	98.8	92.8	94	96.1	99.8	98.0	99.8	580.6
LGI Yorkshire Heart Centre	97.5	94.6	96.1	97.2	97.4	96.9	97.9	96.9	579.7
RDE Royal Devon & Exeter Hospital	89	99.2	95.3	99.6	96.1	100	97.9	100	579.2
CHV Nottingham City Hospital	98.8	97	96.1	97.6	99.4	100	97.9	100	578.9
LIS Lister Hospital	95.7	97.1	94.3	94.3	97.1	100	97.9	100	578.6
VIC Victoria Hospital	99.5	99.3	90.9	90.9	99.3	98.3	98.3	98.3	578.2
GRL Glenfield Hospital	98.1	92.4	92.4	94.6	100	97.7	100	97.7	577.5
PMS The Great Western Hospital	100	100	98	98	97.5	100	97.5	100	577.5
BHL Liverpool Heart and Chest Hospital	97.4	96.2	92.3	93.7	96.7	100	97.3	100	576.3
BAS Basildon Hospital	99.5	99.8	86.3	90.6	98.9	100	98.9	100	575.1
RFL Royal Free Hospital	95.9	91.7	94.1	94.1	97.6	100	97.6	100	574.4
ULJ University College Hospital	86.1	97	94	96.3	98.5	96.3	98.5	96.3	570.2
KGH Kettering General Hospital	93.2	96.1	92.7	93.7	94.2	100	96.9	100	569.9
ERI Royal Infirmary of Edinburgh	98.6	92.4	88.6	91	98.1	100	98.1	100	569.7
UHV Ulster Valley Hospital	100	100	83.3	83.3	100	100	83.3	100	568.6
MRI Manchester Royal Infirmary	94.2	92.1	86	88.9	98	99.8	88.9	99.8	559
RVB Royal Victoria Hospital	98.2	93.4	83.2	84.4	96.4	97.6	84.4	97.6	553.2
HEH Hatfield Hospital	98.5	99.5	73.5	82.1	99.1	99.8	82.1	99.8	552.5
KSK Kent & Sussex Hospital	100	100	100	100	100	98	100	98	550
GEO St George's Hospital	87.3	86.7	85.9	82.8	95.8	100	85.9	100	548.5
UHW University Hospital of Wales	94.5	96	93	92.5	76.6	90	92.5	90	542.6
MOR Monston Hospital	97.7	95.4	96	89.5	91.7	76.1	95.4	76.1	541.2
GHJ Golden Jubilee Hospital	89.1	81.6	77.4	85	95.4	99.2	81.6	99.2	538.1
BAT Royal United Hospital Bath	100	100	81.5	81.5	96.9	87.7	81.5	87.7	527.6
NTH Northampton General Hospital	88.9	94.4	77.8	77.8	72.2	100	77.8	100	511.1
WAT Watford General Hospital	75.6	95.1	78.7	78.7	92.7	97.6	78.7	97.6	502.4
BFL Belfast City Hospital	100	100	50	50	100	100	50	100	500
MAY Mayday University Hospital	100	80	60	60	100	100	60	100	500
AMG Wycombe General Hospital	97.6	100	65.9	65.9	100	65.9	65.9	100	495.3
LNI Lincoln County Hospital	80.6	42.4	75.8	75.8	100	100	42.4	100	480.6
SCU Scunthorpe General Hospital	100	100	83.5	83.5	100	100	83.5	100	468.6
WHH William Harvey Hospital	69.4	92.2	71	75.5	69.9	87.4	71	87.4	452.4
MDW Medway Maritime Hospital	84.6	84.6	69.2	69.2	61.5	84.6	69.2	84.6	453.7
HHW Hillingdon Hospital	0	90	100	100	100	100	0	100	450
AEL Royal Albert Edward Infirmary	0	100	100	100	100	100	0	100	400
BLA Royal Blackburn Hospital	50	83.3	66.7	66.7	33.3	100	66.7	100	400
KMH Kings Mill Hospital	0	66.7	100	100	33.3	100	66.7	100	400
YDH York District Hospital	100	100	0	0	100	100	0	100	400
NHH North Hampshire Hospital	55	67.3	45.2	45.2	100	100	45.2	100	393.9
NPH Northwick Park Hospital	80	53.3	73.3	73.3	46.7	33.3	73.3	33.3	359.9
ESU East Surrey Hospital	83.3	0	33.3	33.3	100	100	33.3	100	349.9

Time fields

Data completeness



WRC. Worcestershire Royal Hospital	100	100	98.5	98.5	100	100	597
NCR. New Cross Hospital	97.4	99.6	99.6	99.8	99.3	100	595.7
DUD. City Hospital	100	97.6	100	100	97.6	100	595.2
SGH. Southampton General Hospital	98.5	100	99.2	99.2	98.5	99.2	594.6
SCM. James Cook University Hospital	99.8	99.1	98.1	98.3	99.1	100	594.4
KCH. King's College Hospital	98.8	98.8	98	98	97.2	100	590.8
BOU. Royal Bournemouth General Hospital	96.9	100	98.4	98.4	100	96.9	590.6
EBH. Birmingham Heartlands Hospital	96.6	97.9	98.7	98.7	96.3	99.6	589.8
STH. St Thomas Hospital	100	100	96.8	98.9	95.7	100	589.3
CHH. Castle Hill Hospital	97.5	96.6	97.2	99.2	98.7	100	589.2
NOR. Norfolk and Norwich Hospital	96.3	98.1	97.6	98.7	98.7	99.7	589.1
SUR. Sunderland Royal Hospital	100	100	100	100	88.9	100	588.9
QAP. Queen Alexandra Hospital	97.9	99	93.8	99	99.3	99.7	588.7
WAL. University Hospital Coventry	96.8	97.1	96.8	99.1	98.8	100	588.6
DER. Royal Derby Hospital	97.8	98.9	97.8	97.8	100	96.2	588.5
SAN. Sandwell District General Hospital	97.8	98.9	97.8	97.8	95.5	100	587.8
DOE. Eastbourne DGH	95	100	98.2	98.2	98.2	100	587.6
BAL. Barts and the London	96.6	99.6	99.2	99.4	99.8	92.4	587
STO. North Staffordshire Hospital	97	97.5	97.3	97.9	98.2	98.9	586.8
FRE. Freeman Hospital	98.1	93.6	96.3	99.2	98.9	100	586.1
CHG. Cheltenham General Hospital	97.1	98.6	95.7	97.4	98.6	99.6	585.7
PAP. Papworth Hospital	98.5	98.1	94.3	95.4	99.2	100	585.5
NGS. Northern General Hospital	96.9	96.9	95.9	96.3	98.5	99.5	584
TOR. Torbay Hospital	87.2	100	100	100	94.9	100	582.1
HAM. Hammersmith Hospital	95.2	93.7	97	98.5	98.1	99.3	581.8
BRI. Bristol Royal Infirmary	98.1	99.8	92.8	94	96.1	99.8	580.6
LGI. Yorkshire Heart Centre	97.5	94.6	96.1	97.2	97.4	96.9	579.7
RDE. Royal Devon & Exeter Hospital	89	99.2	95.3	99.6	96.1	100	579.2
CHL. Cheltenham City Hospital	98.8	87	96.1	97.6	99.4	100	578.9
LIS. Lister Hospital	95.7	97.1	94.3	94.3	97.1	100	578.5
VIC. Victoria Hospital	99.5	99.3	90.9	90.9	99.3	98.3	578
GR. Glenfield Hospital	98.1	92.4	92.4	94.6	100	100	577
PLS. The Great Western Hospital	100	100	98	98	97.4	100	576
BHL. Liverpool Heart and Chest Hospital	97.4	98.2	92.3	93.7	96.7	100	574.3
BAS. Basildon Hospital	99.5	99.8	86.3	90.6	98	100	575.1
RHF. Royal Free Hospital	95.9	91.7	94.1	94.1	100	100	573.4
LCH. University College Hospital	86.8	97	94	94	95.5	96.3	570.2
KGH. Kettering General Hospital	99.2	96	96.7	97.7	94.2	100	569.9
ERI. Royal Infirmary of Edinburgh	98.6	92.4	94.7	91	98.1	100	569.7

DVH. Darent Valley Hospital	100	100	83.3	83.3	100	100	566.6
MRI. Manchester Royal Infirmary	94.2	92.1	86	88.9	98	99.8	559
RVB. Royal Victoria Hospital	98.2	93.4	83.2	84.4	96.4	97.6	553.2
HH. Harefield Hospital	98.5	99.5	73.5	82.1	99.1	99.8	552.5
KSX. Kent & Sussex Hospital	100	100	100	100	100	100	550
GEO. St George's Hospital	87.3	86.7	85.9	92.8	95.8	100	548.5
UHW. University Hospital of Wales	94.5	96	93	92.5	76.6	90	542.6
MOR. Morriston Hospital	97.7	95.4	96.8	83.5	91.7	76.1	541.2
GJH. Golden Jubilee Hospital	89.1	81.6	77.8	95	95.4	99.2	538.1
BAT. Royal United Hospital Bath	100	100	81.5	81.5	96.9	67.7	527.6
NTH. Northampton General Hospital	88.9	94.4	77.8	77.8	72.2	100	511.1
WAT. Watford General Hospital	75.6	95.1	70.7	70.7	92.7	97.6	502.4
BFT. Belfast City Hospital	100	75	50	75	100	100	500
MAY. Mayday University Hospital	100	80	60	60	100	100	500
AMG. Wycombe General Hospital	97.6	100	65.9	65.9	100	65.9	495.3
LIN. Lincoln County Hospital	80.6	48.4	75.8	75.8	100	100	480.6
SCU. Scunthorpe General Hospital	100	100	33.3	33.3	100	100	466.6
WHH. William Harvey Hospital	69.4	92.2	73	79.5	60.9	87.4	462.4
MDW. Medway Maritime Hospital	84.6	84.6	69.2	69.2	61.5	84.6	453.7
HHW. Wellington Hospital	0	50	100	100	100	100	450
AEI. Royal Albert Edward Infirmary	0	100	100	100	0	100	400
BLA. Royal Blackburn Hospital	50	83.3	66.7	66.7	33.3	100	400
KMH. Kings Mill Hospital	0	66.7	100	100	33.3	100	400
YDH. York District Hospital	100	100	0	0	100	100	400
NHH. North Hampshire Hospital	95	67.3	15.8	15.8	100	100	393.9
NPH. Northwick Park Hospital	80	53.3	73.3	73.3	46.7	33.3	359.9
ESU. East Surrey Hospital	83.3	0	33.3	33.3	100	100	349.9

	2.07 Date/time of symptom on set	5.27 date/time of call for help	2.08 Date/time of arrival at first hospital	5.26 Date/time of arrival at first hospital	3.26 Date/time of arrival at PCI hospital	4.04 Discharge date	Total
DVH. Darent Valley Hospital	100	100	83.3	83.3	100	100	566.6
MRI. Manchester Royal Infirmary	94.2	92.1	86	88.9	98	99.8	559
RVB. Royal Victoria Hospital	98.2	93.4	83.2	84.4	96.4	97.6	553.2
HH. Harefield Hospital	98.5	99.5	73.5	82.1	99.1	99.8	552.5
KSX. Kent & Sussex Hospital	100	100	100	100	100	50	550
GEO. St George's Hospital	87.3	86.7	85.9	92.8	95.8	100	548.5
UHW. University Hospital of Wales	94.5	96	93	92.5	76.6	90	542.6
MOR. Morriston Hospital	97.7	95.4	96.8	83.5	91.7	76.1	541.2
GJH. Golden Jubilee Hospital	89.1	81.6	77.8	95	95.4	99.2	538.1
BAT. Royal United Hospital Bath	100	100	81.5	81.5	96.9	67.7	527.6
NTH. Northampton General Hospital	88.9	94.4	77.8	77.8	72.2	100	511.1
WAT. Watford General Hospital	75.6	95.1	70.7	70.7	92.7	97.6	502.4
BFT. Belfast City Hospital	100	75	50	75	100	100	500
MAY. Mayday University Hospital	100	80	60	60	100	100	500
AMG. Wycombe General Hospital	97.6	100	65.9	65.9	100	65.9	495.3
LIN. Lincoln County Hospital	80.6	48.4	75.8	75.8	100	100	480.6
SCU. Scunthorpe General Hospital	100	100	33.3	33.3	100	100	466.6
WHH. William Harvey Hospital	69.4	92.2	73	79.5	60.9	87.4	462.4
MDW. Medway Maritime Hospital	84.6	84.6	69.2	69.2	61.5	84.6	453.7
HHW. Wellington Hospital	0	50	100	100	100	100	450
AEI. Royal Albert Edward Infirmary	0	100	100	100	0	100	400
BLA. Royal Blackburn Hospital	50	83.3	66.7	66.7	33.3	100	400
KMH. Kings Mill Hospital	0	66.7	100	100	33.3	100	400
YDH. York District Hospital	100	100	0	0	100	100	400
NHH. North Hampshire Hospital	95	67.3	15.8	15.8	100	100	393.9
NPH. Northwick Park Hospital	80	53.3	73.3	73.3	46.7	33.3	359.9
ESU. East Surrey Hospital	83.3	0	33.3	33.3	100	100	349.9

2011 Details

Hospital	2.07 Date/time of symptom on set	5.27 date/time of call for help	2.08 Date/time of arrival at first hospital	5.26 Date/time of arrival at first hospital	3.26 Date/time of arrival at PCI hospital	4.04 Discharge date	Total
BRD. Bradford Royal Infirmary	100	100	100	100	100	100	600
CGH. Conquest Hospital	100	100	100	100	100	100	600
CRG. Craigavon Area Hospital	100	100	100	100	100	100	600
FRM. Frimley Park Hospital	100	100	100	100	100	100	600
NHB. Royal Brompton Hospital	100	100	100	100	100	100	600
SAL. Salisbury Hospital	100	100	100	100	100	100	600
SPH. St Peter's Hospital	100	100	100	100	100	100	600
WEX. Wexham Park Hospital	100	100	100	100	100	100	600
WRG. Worthing Hospital	100	100	100	100	100	100	600
WYT. Wythenshawe Hospital	99.8	100	100	100	100	100	599.8
QEB. Queen Elizabeth Hospital Edgbaston	99.5	100	100	100	100	100	599.5
PLY. Derriford Hospital	100	100	100	100	99.3	100	599.3
BHR. Royal Berkshire and Battle Hospital	100	98.8	100	100	100	100	598.8
MPH. Taunton & Somerset	99.4	100	99.4	100	99.4	100	598.2
RCH. Royal Cornwall Hospital	100	100	99.4	99.4	99.4	100	598.2
WDH. Dorset County Hospital	100	100	100	100	100	97.1	597.1
RSC. Royal Sussex County Hospital	99.6	100	98.7	98.7	100	100	597
WRC. Worcestershire Royal Hospital	100	100	98.5	98.5	100	100	597
NCR. New Cross Hospital	97.4	99.6	99.6	99.8	99.3	100	595.7
DUD. City Hospital	100	97.6	100	100	97.6	100	595.2
SGH. Southampton General Hospital	98.5	100	99.2	99.2	98.5	99.2	594.6
SCM. James Cook University Hospital	99.8	99.1	98.1	98.3	99.1	100	594.4
KCH. King's College Hospital	98.8	98.8	98	98	97.2	100	590.8
BOU. Royal Bournemouth General Hospital	96.9	100	98.4	98.4	100	96.9	590.6
EBH. Birmingham Heartlands Hospital	96.6	97.9	98.7	98.7	98.3	99.6	589.8
STH. St Thomas' Hospital	100	100	96.8	96.8	95.7	100	589.3

2011 Details

STH. St Thomas' Hospital		100	100	96.8	96.8	95.7	100	589.3
CHH. Castle Hill Hospital		97.5	96.6	97.2	99.2	98.7	100	589.2
NOR. Norfolk & Norwich Hospital		96.3	98.1	97.6	98.7	98.7	99.7	589.1
SUN. Sunderland Royal Hospital		100	100	100	100	88.9	100	588.9
QAP. Queen Alexandra Hospital		97.9	99	93.8	99	99.3	99.7	588.7
WAL. University Hospital Coventry		96.8	97.1	96.8	99.1	98.8	100	588.6
DER. Royal Derby Hospital		97.8	98.9	97.8	97.8	100	96.2	588.5
SAN. Sandwell District General Hospital		97.8	98.9	97.8	97.8	95.5	100	587.8
DGE. Eastbourne DGH		93	100	98.2	98.2	98.2	100	587.6
BAL. Barts and the London		96.6	99.6	99.2	99.4	99.8	92.4	587
STO. North Staffordshire Hospital		97	97.5	97.3	97.9	98.2	98.9	586.8
FRE. Freeman Hospital		98.1	93.6	96.3	99.2	98.9	100	586.1
CHG. Cheltenham General Hospital		97.1	98.6	95.7	97.1	98.6	98.6	585.7
PAP. Papworth Hospital		98.5	98.1	94.3	95.4	99.2	100	585.5
NGS. Northern General Hospital		96.9	96.9	95.9	96.3	98.5	99.5	584
TOR. Torbay Hospital		87.2	100	100	100	94.9	100	582.1
HAM. Hammersmith Hospital		95.2	93.7	97	98.5	98.1	99.3	581.8
BRI. Bristol Royal Infirmary		98.1	99.8	92.8	94	96.1	99.8	580.6
LGI. Yorkshire Heart Centre		97.5	94.6	96.1	97.2	97.4	96.9	579.7
RDE. Royal Devon & Exeter Hospital		89	99.2	95.3	99.6	96.1	100	579.2
CHN. Nottingham City Hospital		98.8	87	96.1	97.6	99.4	100	578.9
LIS. Lister Hospital		95.7	97.1	94.3	94.3	97.1	100	578.5
VIC. Victoria Hospital		99.5	99.3	90.9	90.9	99.3	98.3	578.2
GRL. Glenfield Hospital		98.1	92.4	92.4	94.6	100	100	577.5
PMS. The Great Western Hospital		100	100	90	90	97.5	100	577.5
BHL. Liverpool Heart and Chest Hospital		97.4	96.2	92.3	93.7	96.7	100	576.3
BAS. Basildon Hospital		99.5	99.8	86.3	90.6	98.9	100	575.1
RFH. Royal Free Hospital		95.9	91.7	94.1	94.1	97.6	100	573.4
UCL. University College Hospital		88.1	97	94	96.3	98.5	96.3	570.2
KGH. Kettering General Hospital		93.2	96.1	92.7	93.7	94.2	100	569.9
ERI. Royal infirmary of Edinburgh		98.6	92.4	89.6	91	98.1	100	569.7
RAD. John Radcliffe Hospital		90.2	91.4	92.3	94.3	100	100	568.2

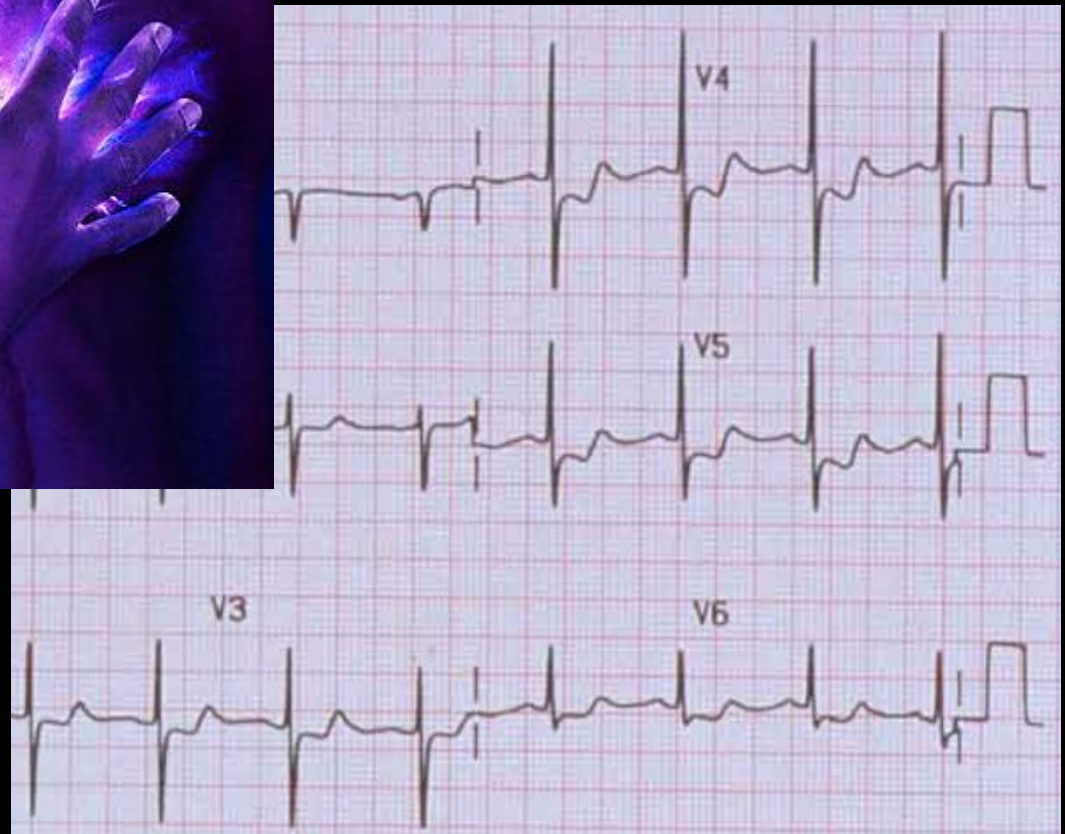
2011 Details

	2.07 Date/time of symptom onset	5.27 date/time of call for help	2.08 Date/time of arrival at first hospital	5.26 Date/time of arrival at first hospital	3.26 Date/time of arrival at PCI hospital	4.04 Discharge date	Total
DVH. Darent Valley Hospital	100	100	83.3	83.3	100	100	566.6
MRI. Manchester Royal Infirmary	94.2	92.1	86	88.9	98	99.8	559
RVB. Royal Victoria Hospital	98.2	93.4	83.2	84.4	96.4	97.6	553.2
HH. Harefield Hospital	98.5	99.5	73.5	82.1	99.1	99.8	552.5
KSX. Kent & Sussex Hospital	100	100	100	100	100	50	550
GEO. St George's Hospital	87.3	86.7	85.9	92.8	95.8	100	548.5
UHW. University Hospital of Wales	94.5	96	93	92.5	76.6	90	542.6
MOR. Morriston Hospital	97.7	95.4	96.8	83.5	91.7	76.1	541.2
GJH. Golden Jubilee Hospital	89.1	81.6	77.8	95	95.4	99.2	538.1
BAT. Royal United Hospital Bath	100	100	81.5	81.5	96.9	67.7	527.6
NTH. Northampton General Hospital	88.9	94.4	77.8	77.8	72.2	100	511.1
WAT. Watford General Hospital	75.6	95.1	70.7	70.7	92.7	97.6	502.4
BFT. Belfast City Hospital	100	75	50	75	100	100	500
MAY. Mayday University Hospital	100	80	60	60	100	100	500
AMG. Wycombe General Hospital	97.6	100	65.9	65.9	100	65.9	495.3
LIN. Lincoln County Hospital	80.6	48.4	75.8	75.8	100	100	480.6
SCU. Scunthorpe General Hospital	100	100	33.3	33.3	100	100	466.6
WHH. William Harvey Hospital	69.4	92.2	73	79.5	60.9	87.4	462.4
MDW. Medway Maritime Hospital	84.6	84.6	69.2	69.2	61.5	84.6	453.7
HHW. Wellington Hospital	0	50	100	100	100	100	450
AEI. Royal Albert Edward Infirmary	0	100	100	100	0	100	400
BLA. Royal Blackburn Hospital	50	83.3	66.7	66.7	33.3	100	400
KMH. Kings Mill Hospital	0	66.7	100	100	33.3	100	400
YDH. York District Hospital	100	100	0	0	100	100	400
NHH. North Hampshire Hospital	95	67.3	15.8	15.8	100	100	393.9
NPH. Northwick Park Hospital	80	53.3	73.3	73.3	46.7	33.3	359.9
ESU. East Surrey Hospital	83.3	0	33.3	33.3	100	100	349.9

Delays to PCI in NSTEMI



2011 data: Ludman



Delays to PCI in NSTEMI



2011 data: Ludman

Note:

- For NSTEMI overall delays are calculated from FIRST hospital arrival to treatment
- For PPCI the timing for the 'Direct' admissions is from PCI door (which in transferred patients is door 2)

Delays to PCI in NSTEMI

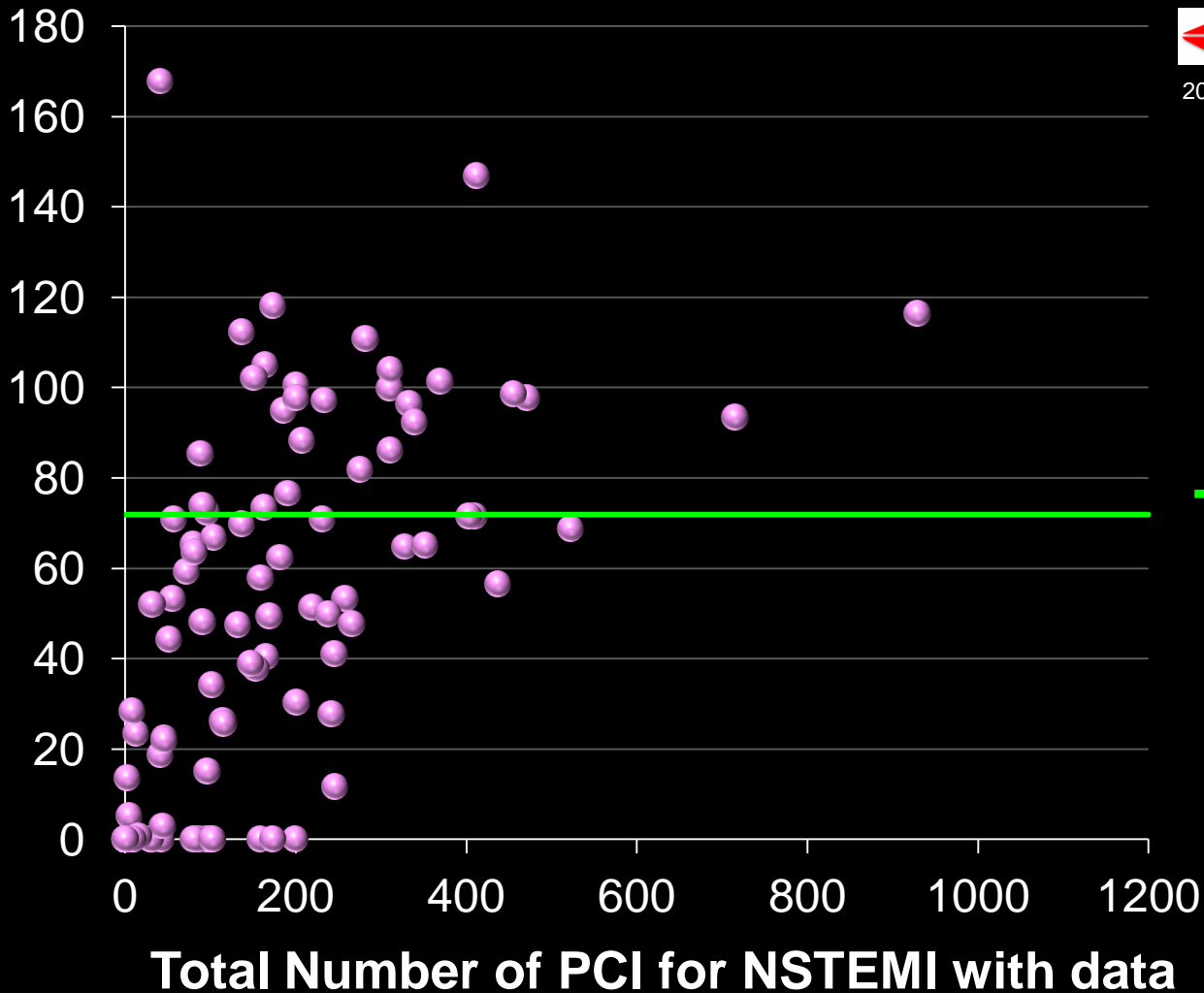
All (direct and IHT) 2011 Data



2011 data: Ludman



Median Delay (hrs)

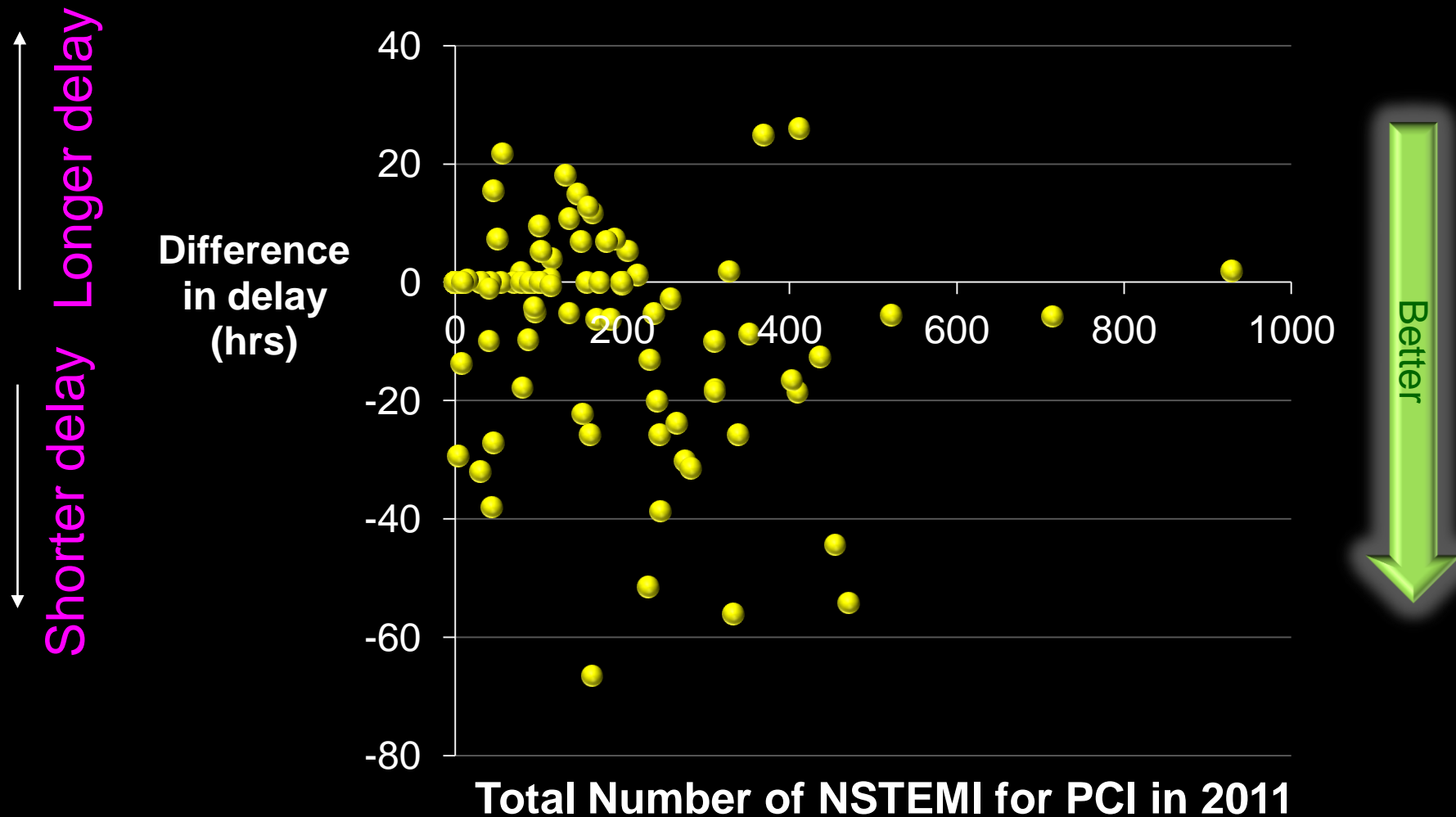


71.9

Note: IHD Delays are from Door 1 to PCI

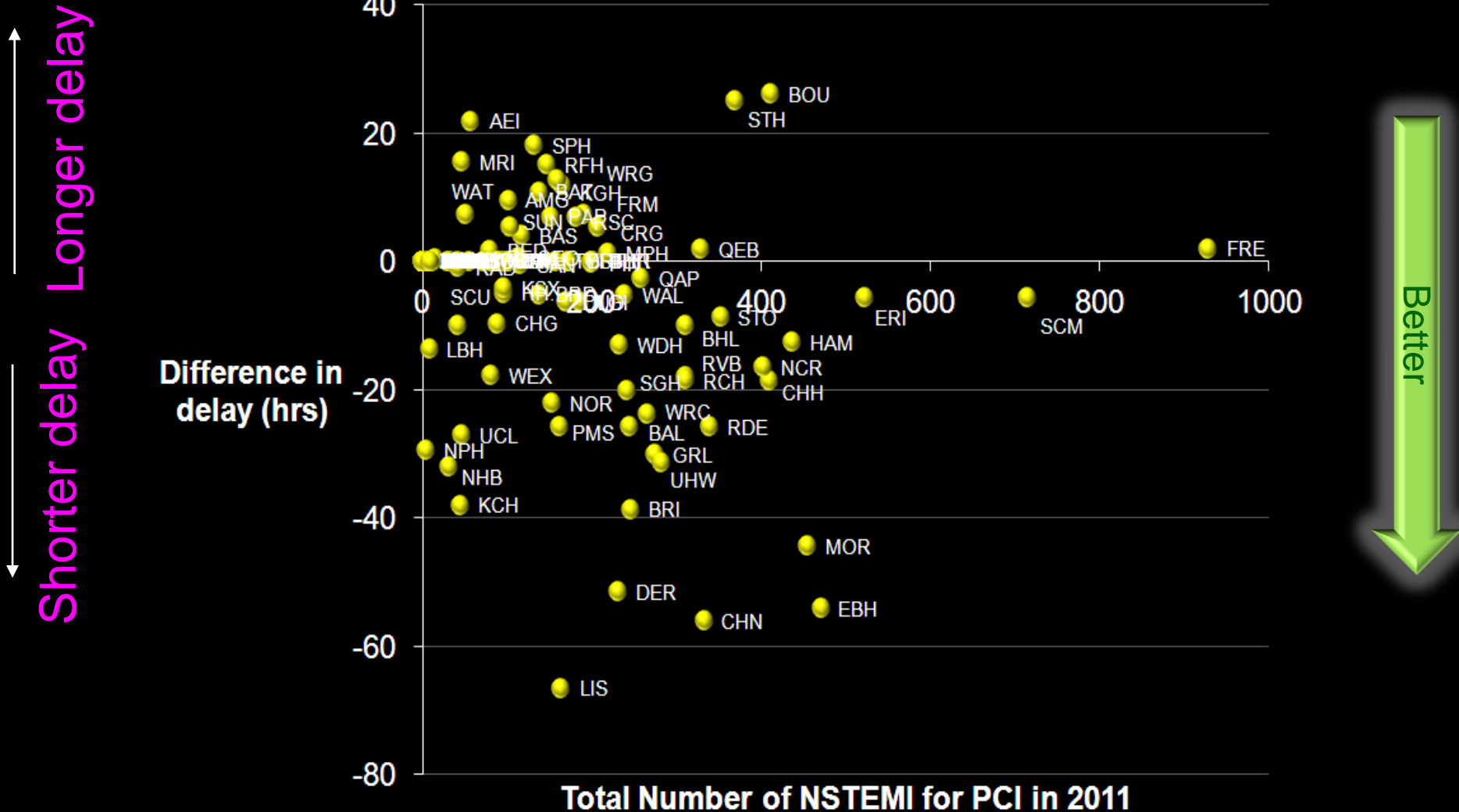
Delays to PCI in NSTEMI

2011 compared with 2010 by Centre



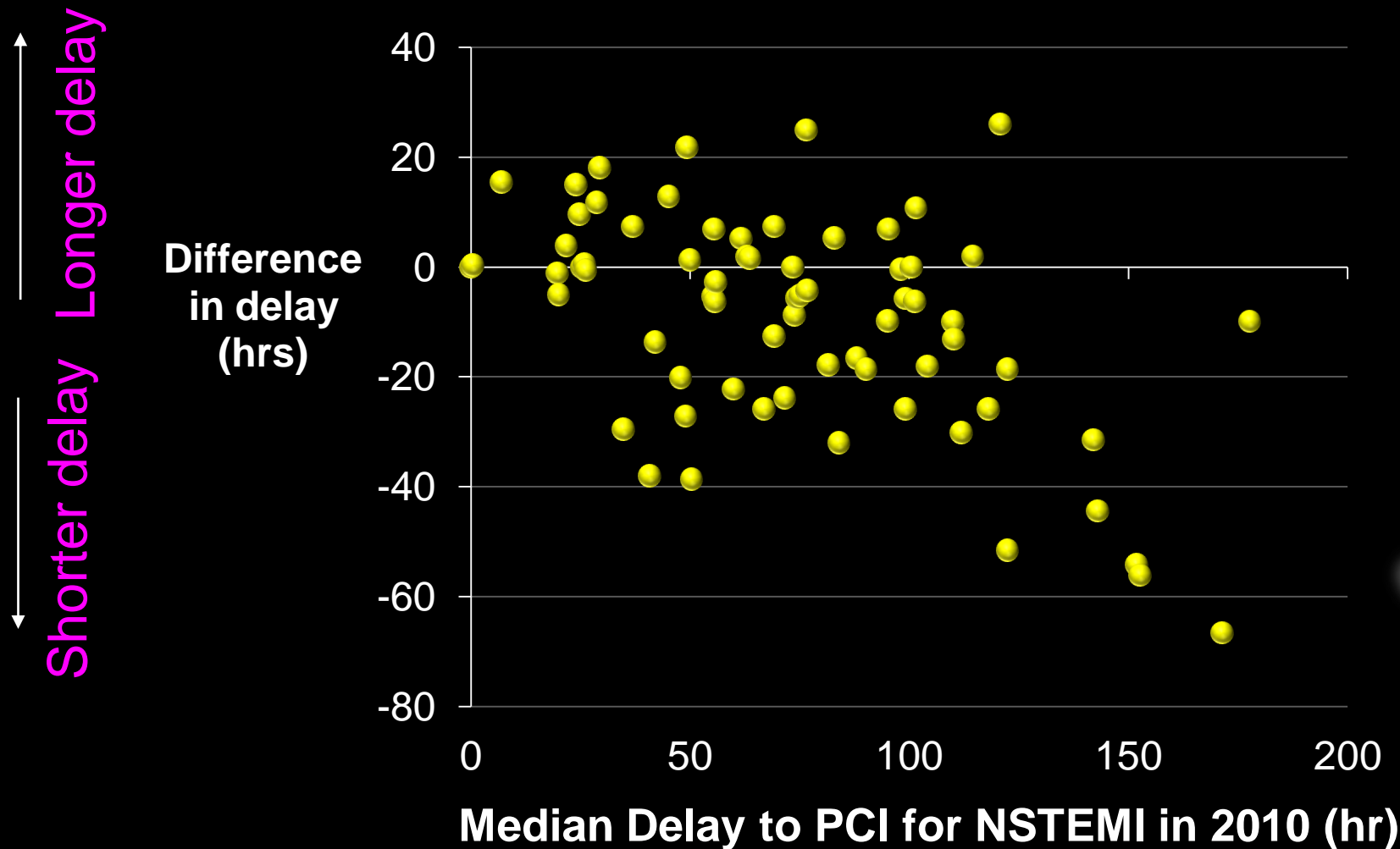
Delays to PCI in NSTEMI

2011 compared with 2010 by Centre



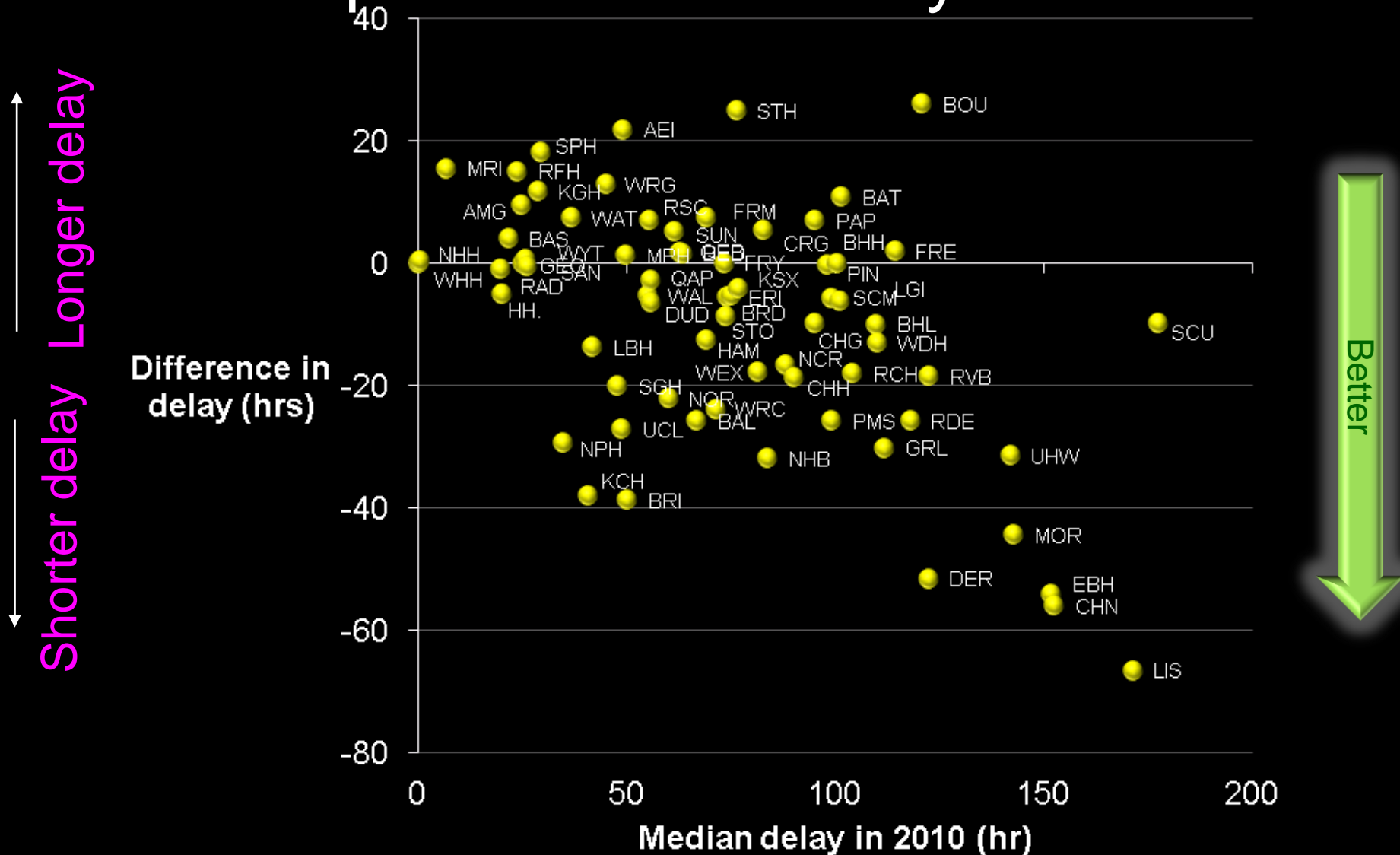
Delays to PCI in NSTEMI

2011 compared with 2010 by Centre



Delays to PCI in NSTEMI

2011 compared with 2010 by Centre



Delays to PCI in NSTEMI

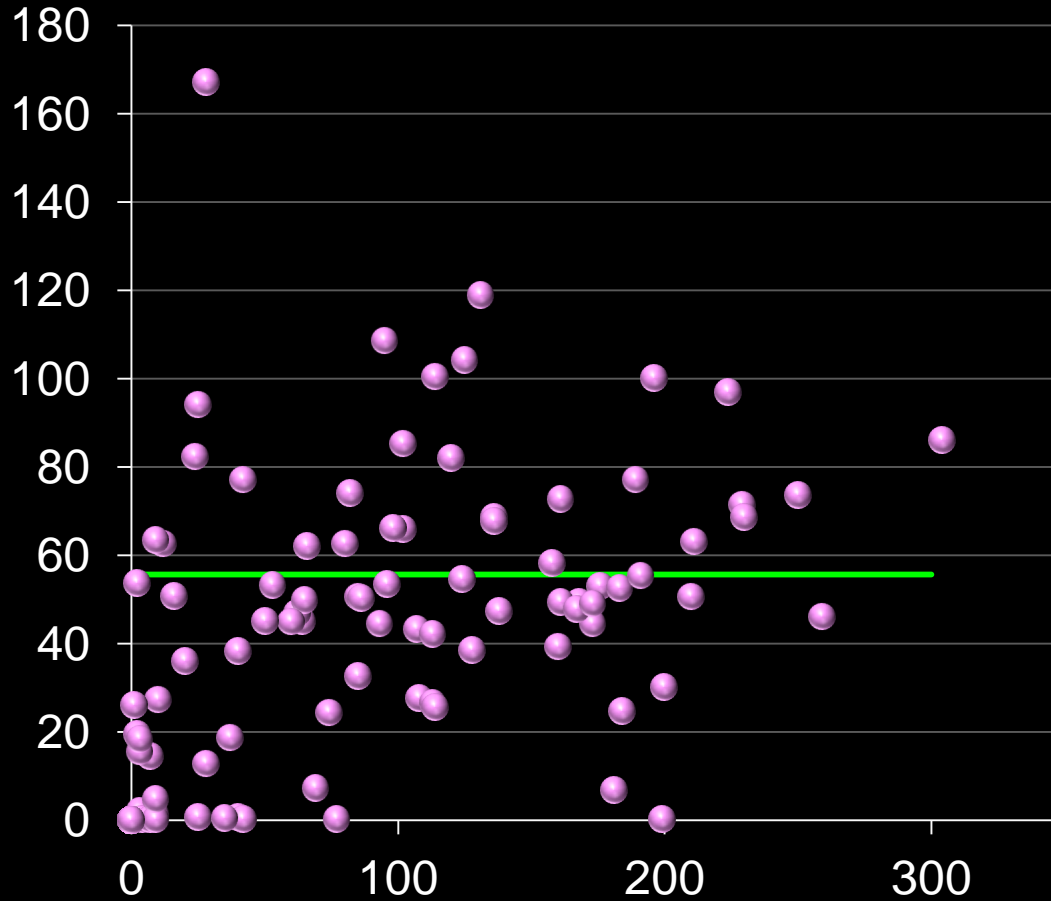
Admission Route – Direct to PCI Centre



2011 data: Ludman



Median
Delay (hrs)



55.6

Total Number of PCI for NSTEMI direct with data

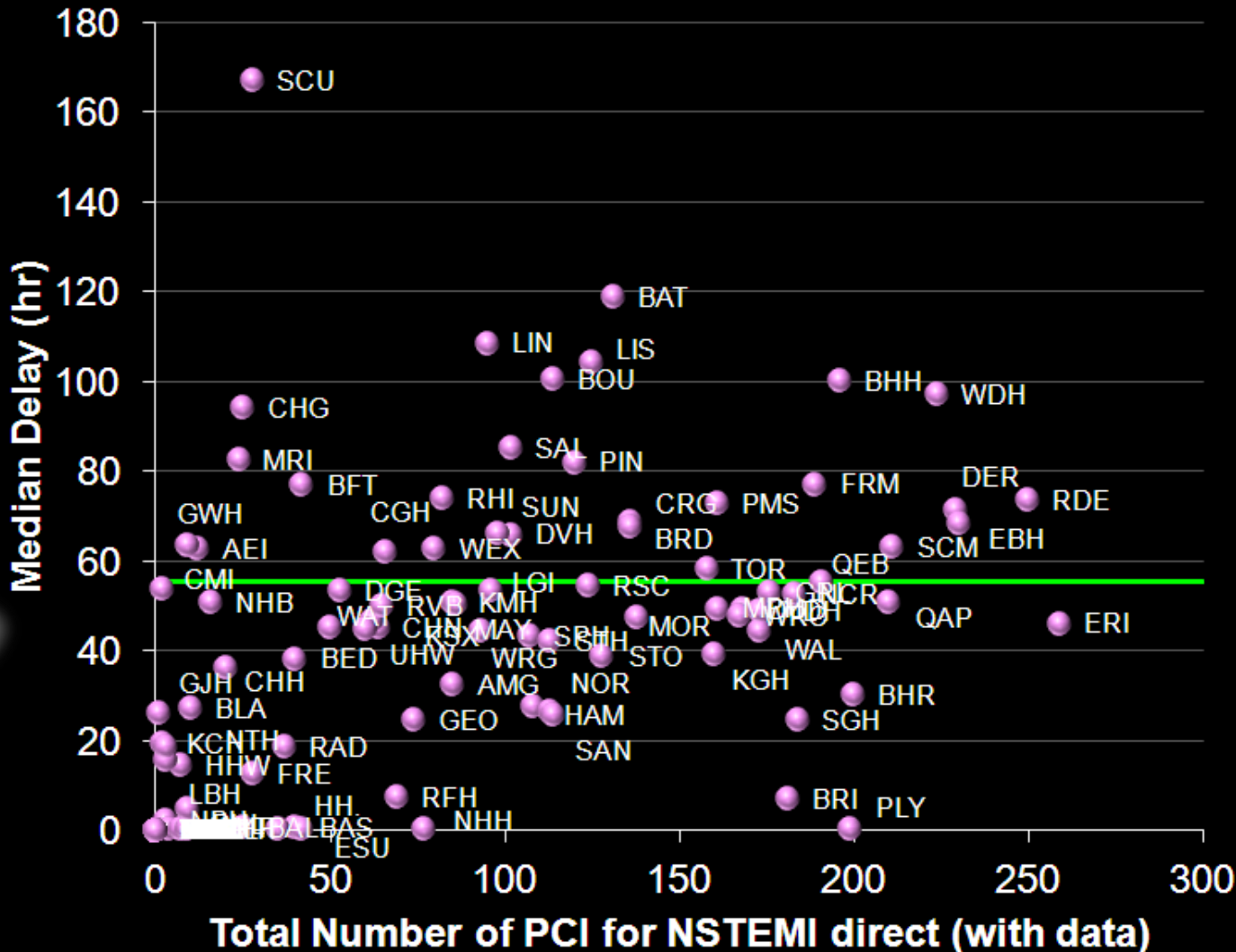
Note: IHD Delays are from Door 1 to PCI

Delays to PCI in NSTEMI

Admission Route – Direct to PCI Centre



2011 data: Ludman



55.6

Note: IHD Delays are from Door 1 to PCI

Delays to PCI in NSTEMI

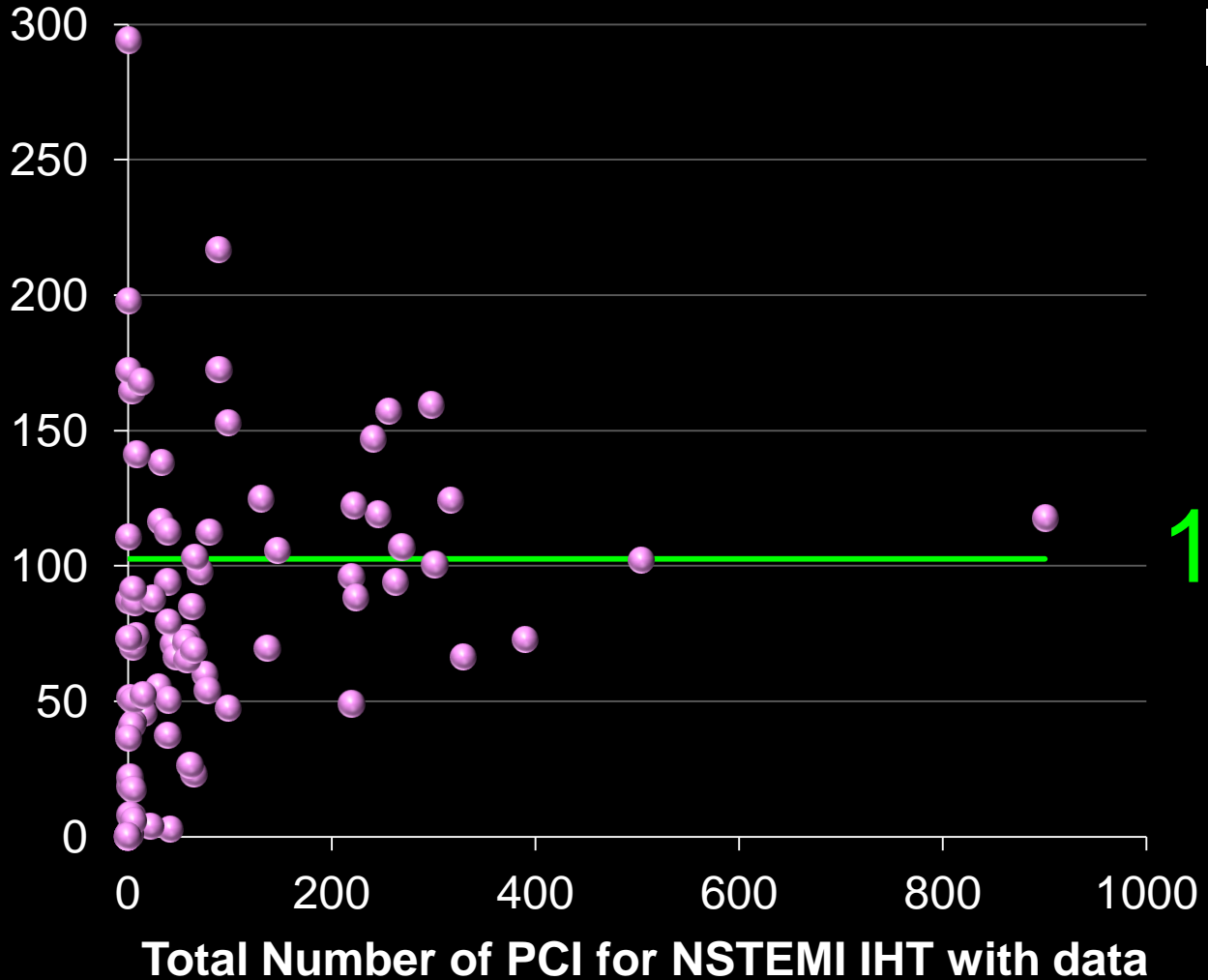
Admission Route – Interhospital Transfer



2011 data: Ludman



Median
Delay (hrs)



102.5

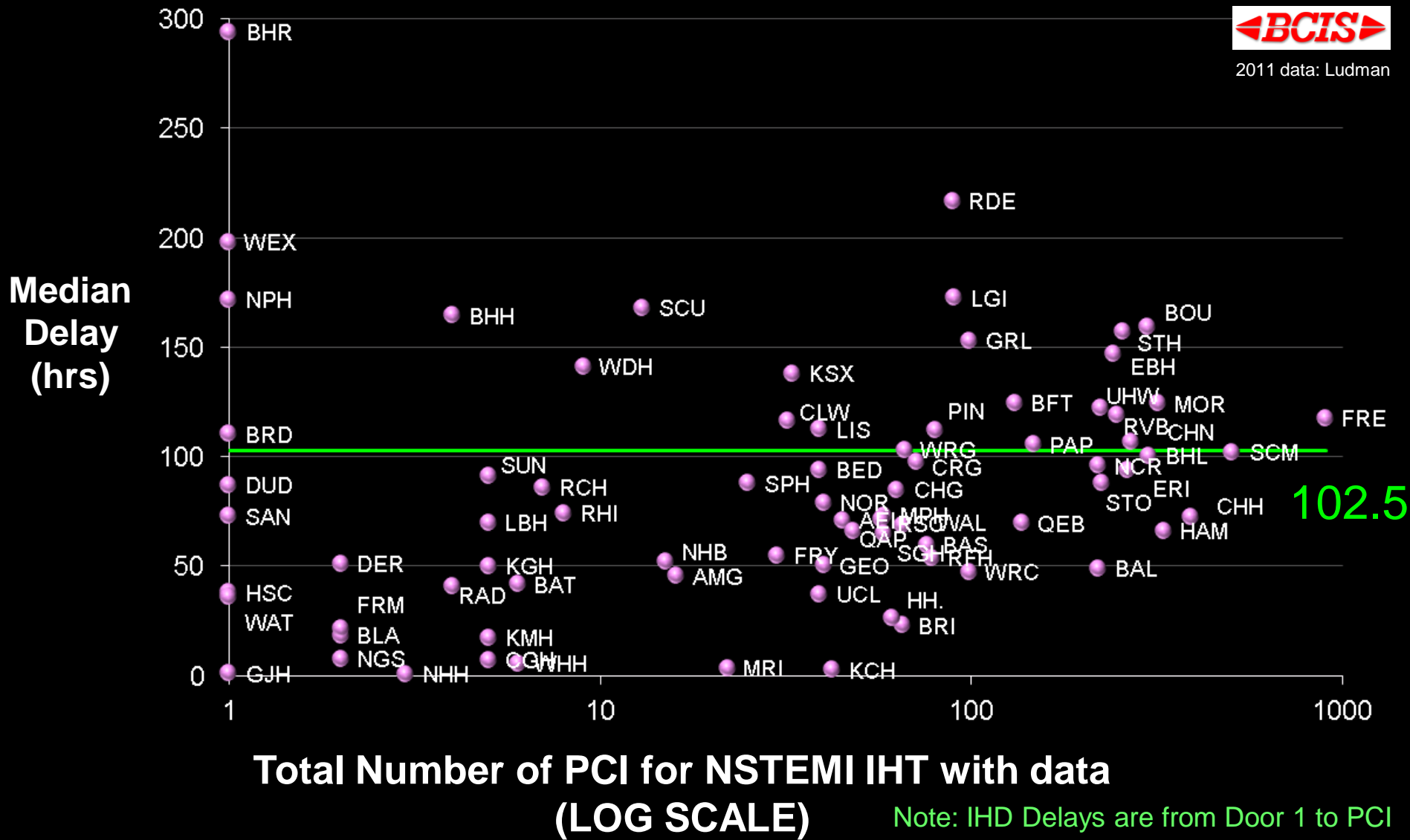
Note: IHD Delays are from Door 1 to PCI

Delays to PCI in NSTEMI

Admission Route – Interhospital Transfer



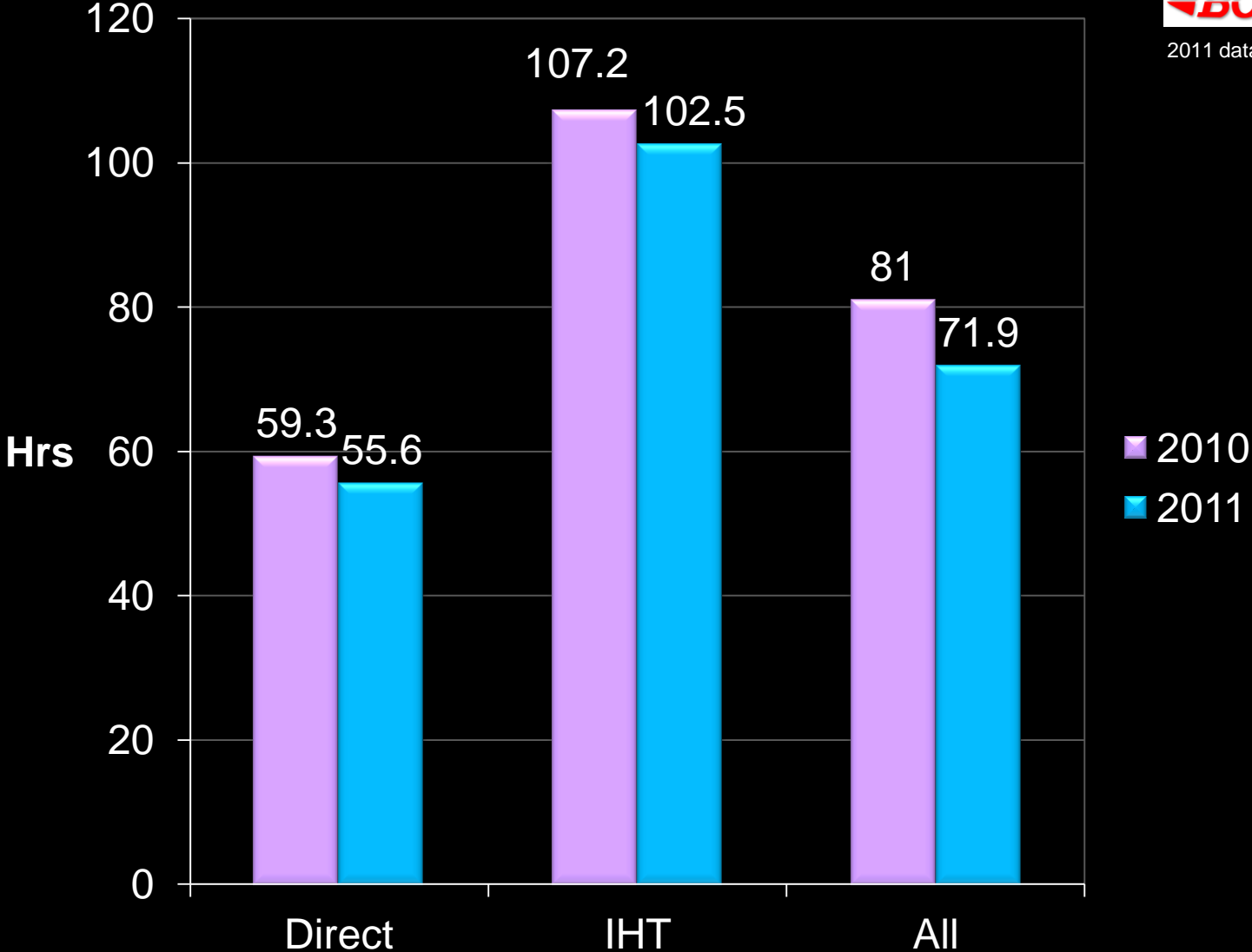
2011 data: Ludman



Delays to PCI in NSTEMI



2011 data: Ludman

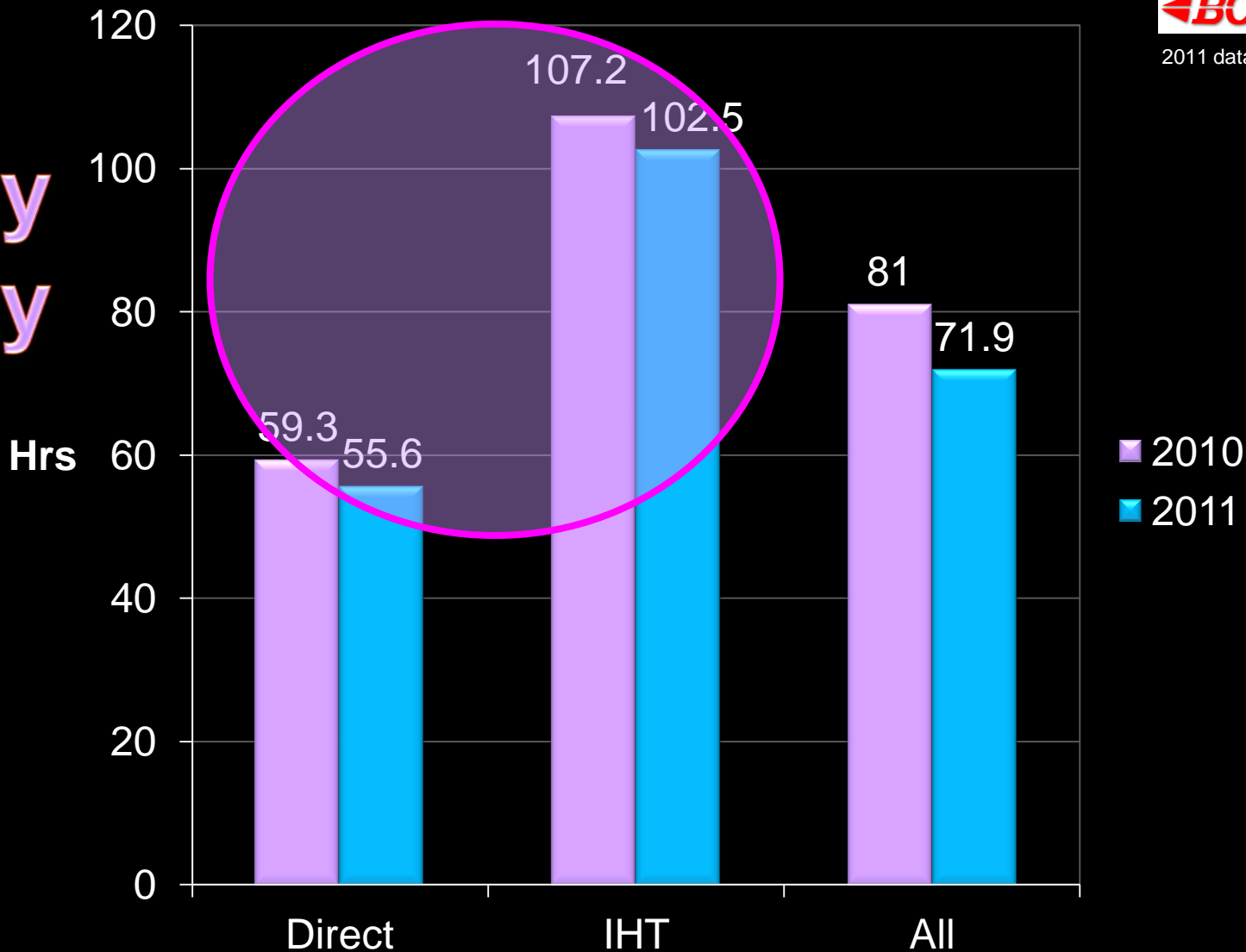


Delays to PCI in NSTEMI



2011 data: Ludman

2 Day Delay



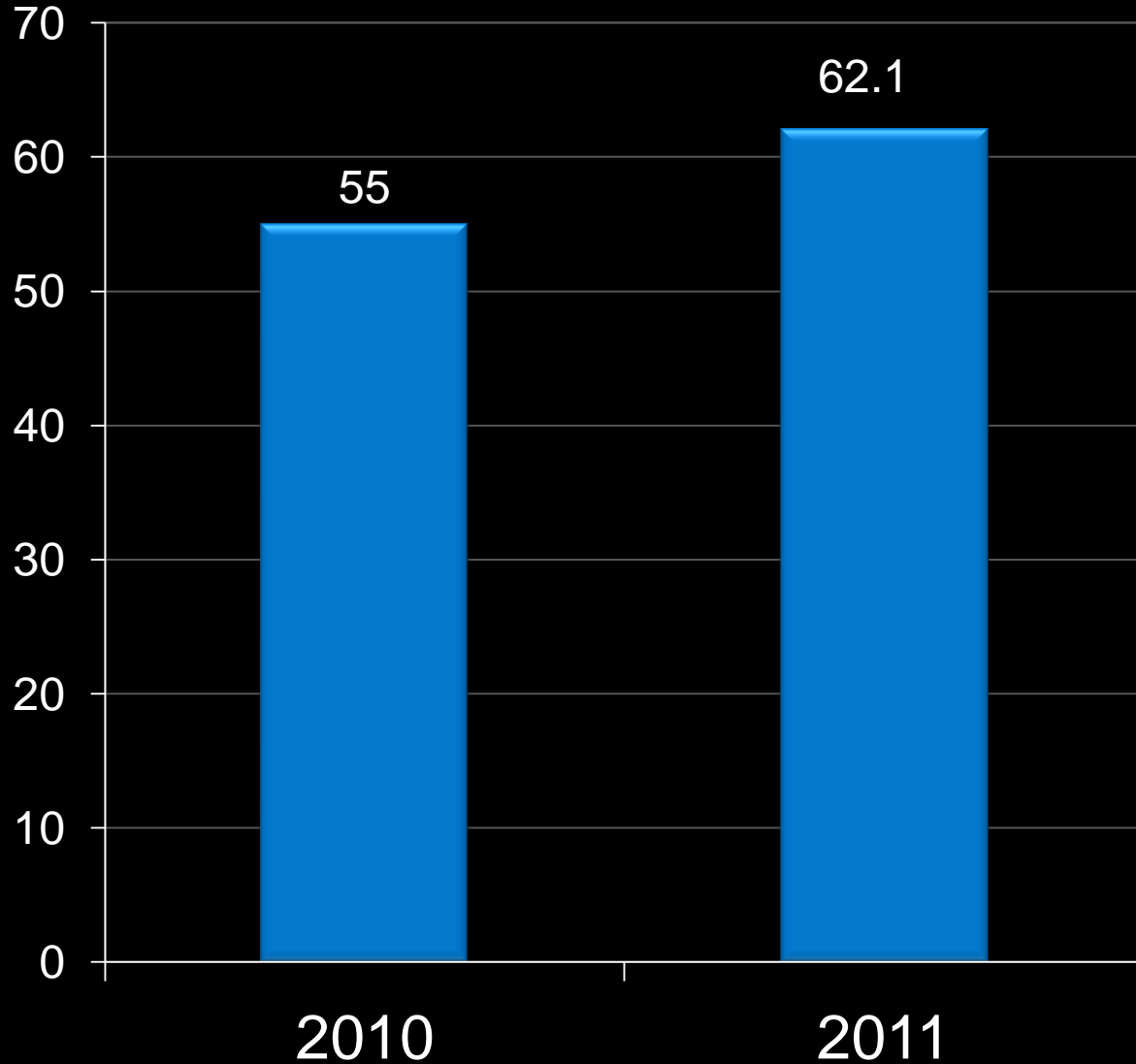
Delays to PCI in NSTEMI



2011 data: Ludman



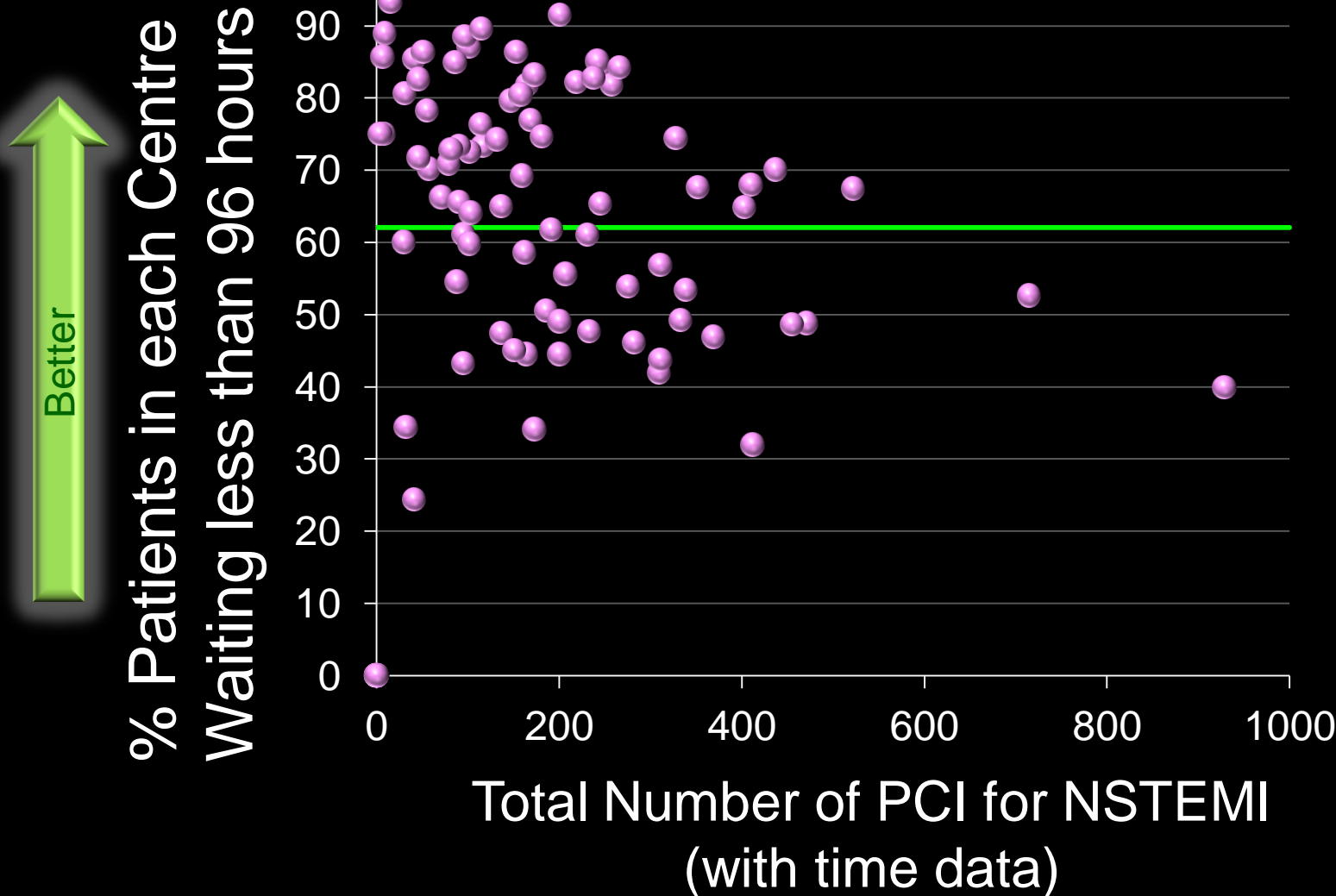
**% Waiting
less than
96 hrs**



Delays to PCI in NSTEMI



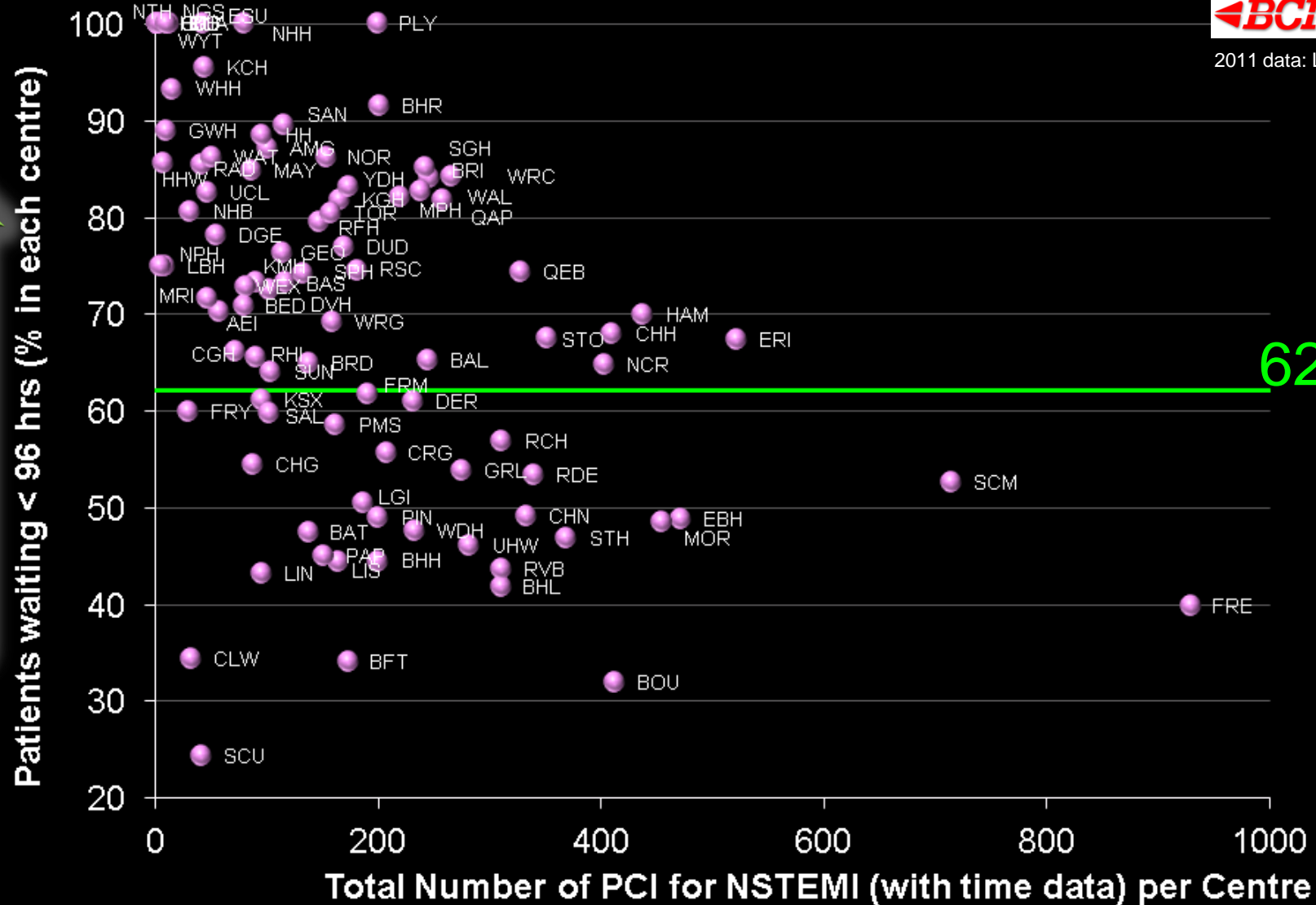
2011 data: Ludman



Delays to PCI in NSTEMI



2011 data: Ludman



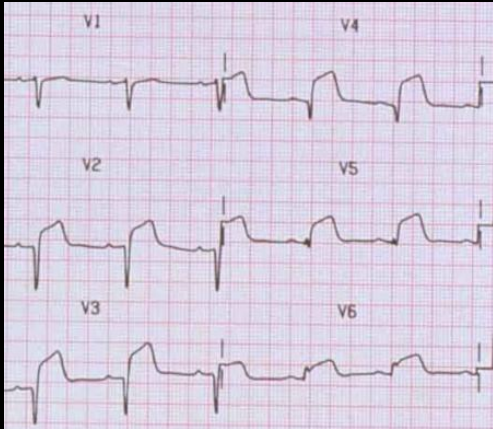
Delays to PCI in NSTEMI



2010 data: Ludman

- Caveats
 - Time delay is from First hospital admission to PCI
 - NOT admission to angiography
 - Centres have differing proportions of patients treated after inter-hospital transfer versus direct admission
 - This proportion changes over time
 - Only procedures with time / date data are displayed
 - At left of graph are low volume centres and high volume centres with missing / incorrectly coded data

Primary PCI



Primary PCI

Rx for STEMI (NHS centres)



2011 data: Ludman

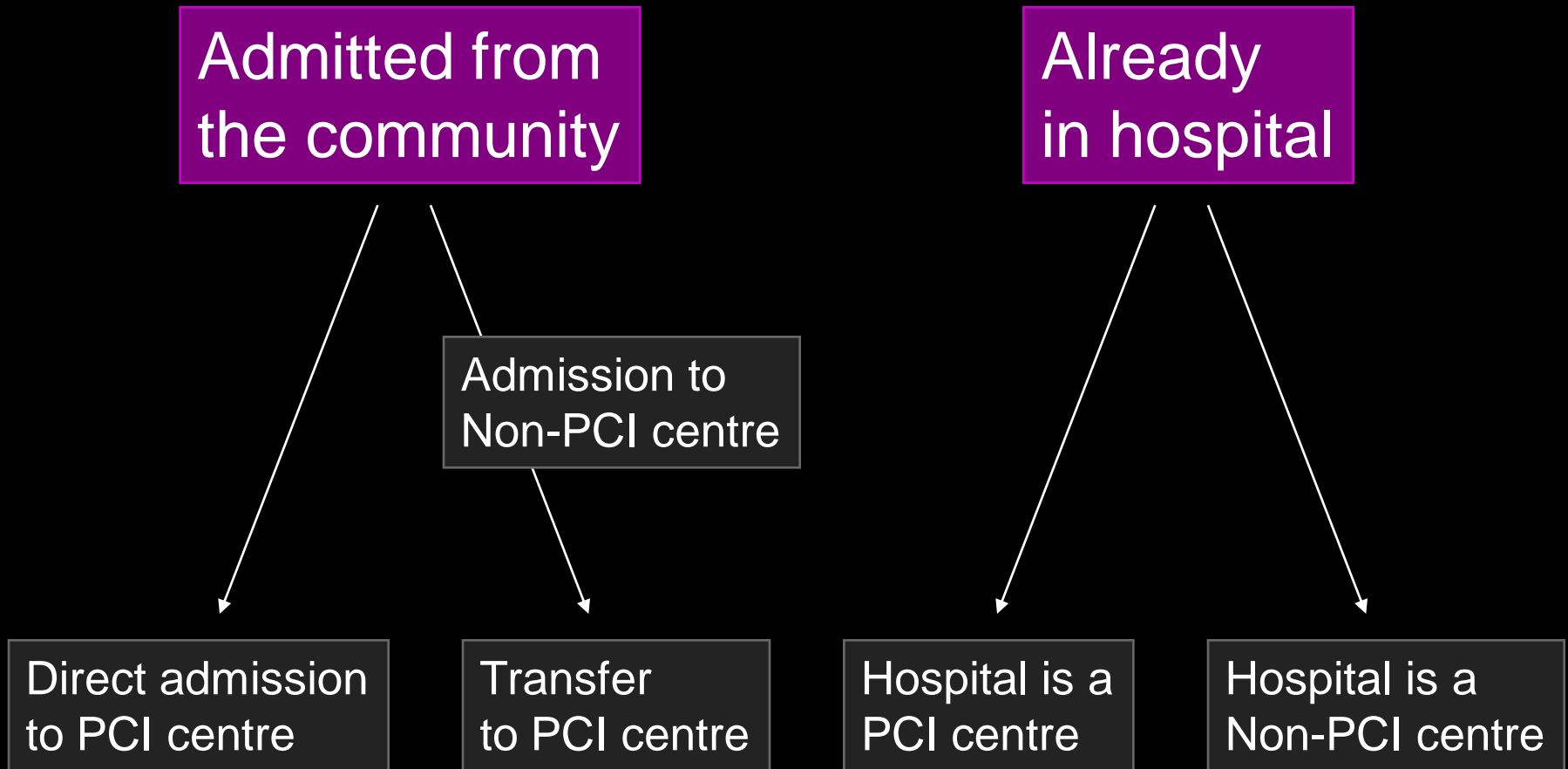
- Funnel analysis for **TIMING DELAYS**
 - All units performing > 10 cases of PPCI
 - Patients with onset of symptoms in the community
 - Excludes patients in cardiogenic shock
 - Excludes those needing pre-PCI ventilation

PCI for Acute Sx

Four admission scenarios



2011 data: Ludman



PCI for Acute Sx

Four admission scenarios



2011 data: Ludman

Admitted from
the community

Admission to
Non-PCI centre

Direct admission
to PCI centre

Transfer
to PCI centre



PCI for Acute Sx

Four admission scenarios

Admitted from
the community

Admission to
Non-PCI centre

Direct admission
to PCI centre

Transfer
to PCI centre

CTB



D1

D2

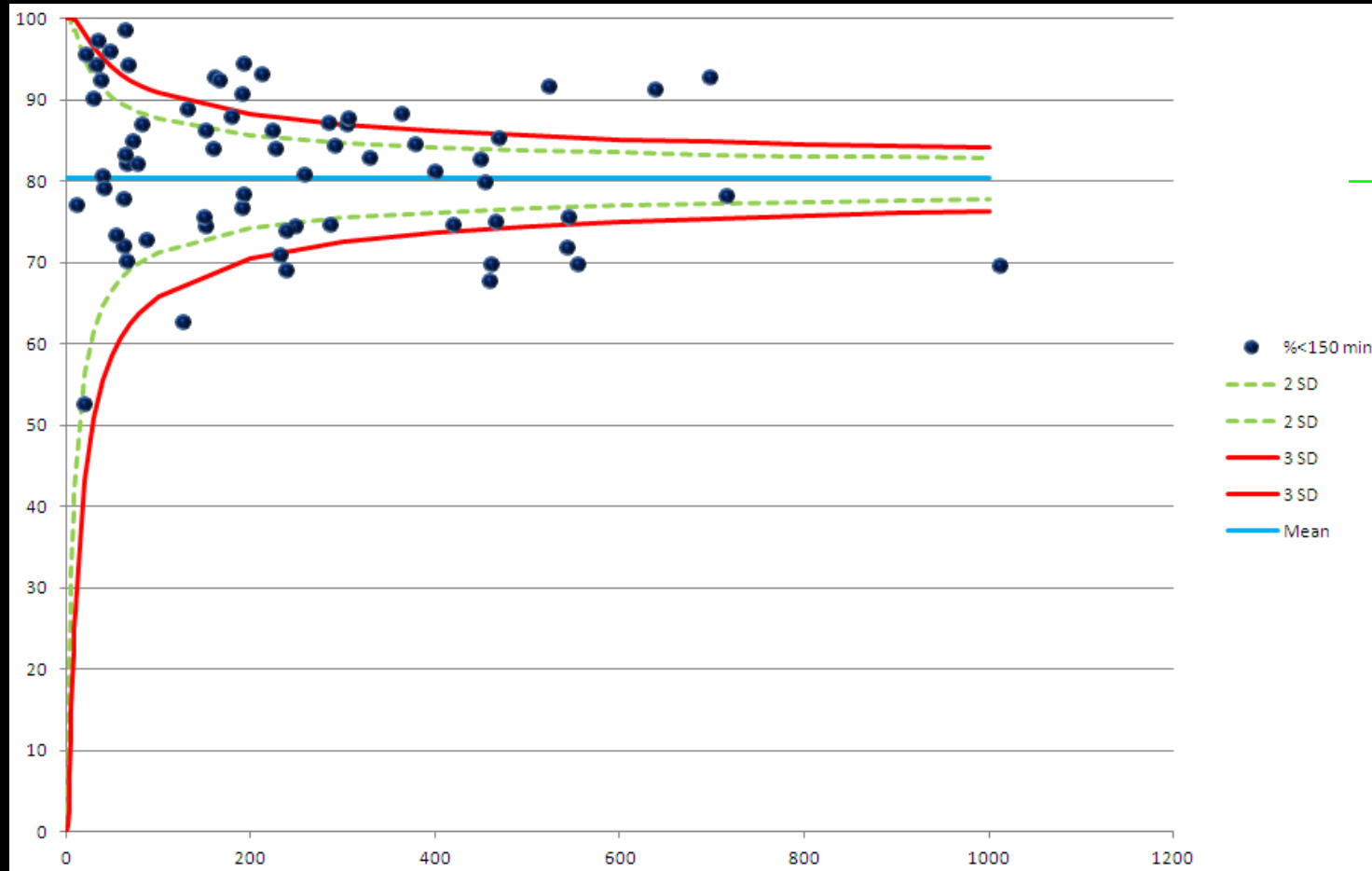
device

Primary PCI (excl shock/vent)

Direct and IHT: Call to Balloon times < 150 min



2011 data: Ludman



Better

% CTB < 150 min

Number of Cases

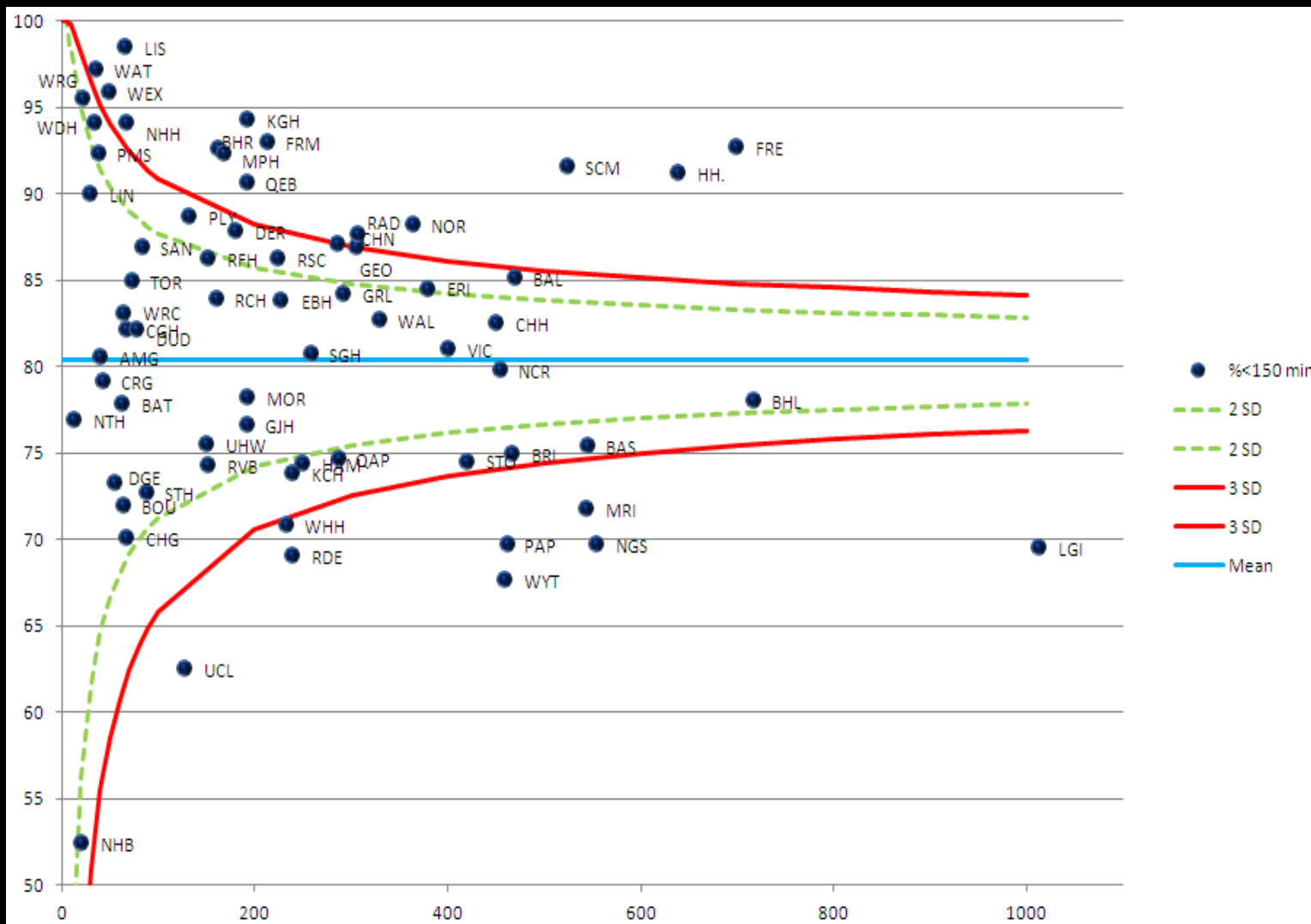
80.4%

Primary PCI (excl shock/vent)

Direct and IHT: Call to Balloon times < 150 min



% CTB < 150 min



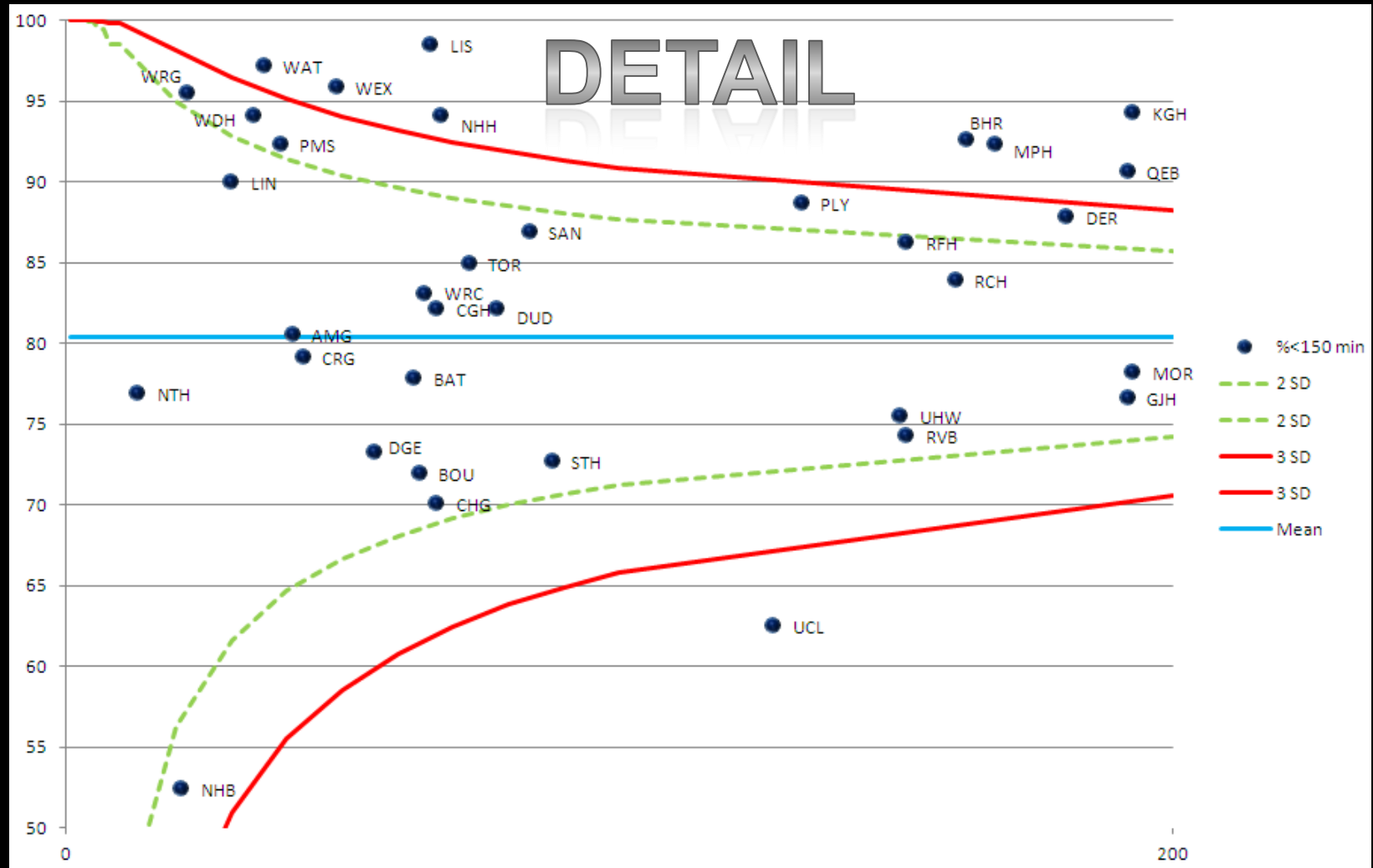
80.4%

Number of Cases

Primary PCI (excl shock/vent)

Direct and IHT: Call to Balloon times < 150 min

Better
↑
% CTB < 150 min



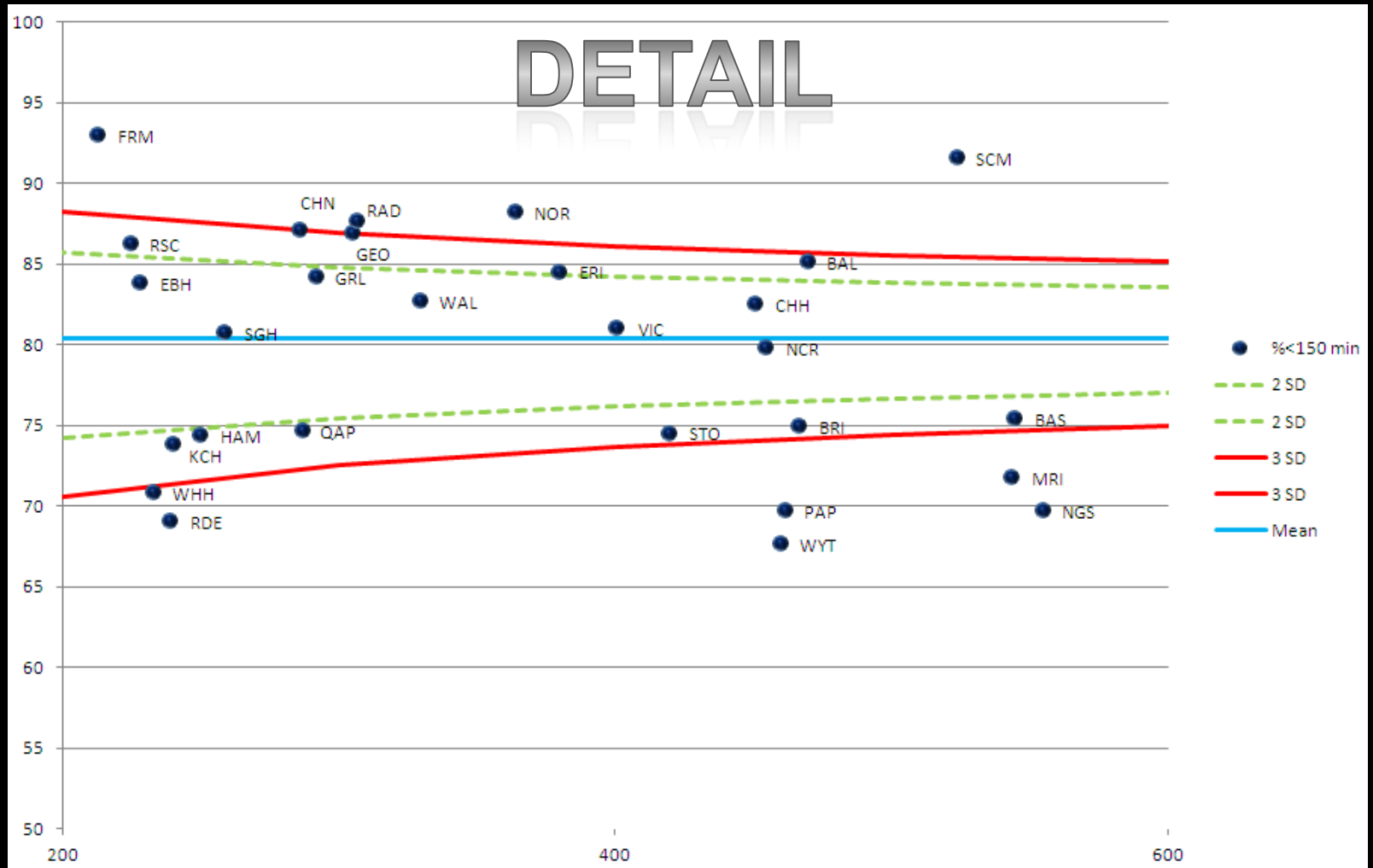
Number of Cases

Primary PCI (excl shock/vent)

Direct and IHT: Call to Balloon times < 150 min



% CTB < 150 min



Number of Cases

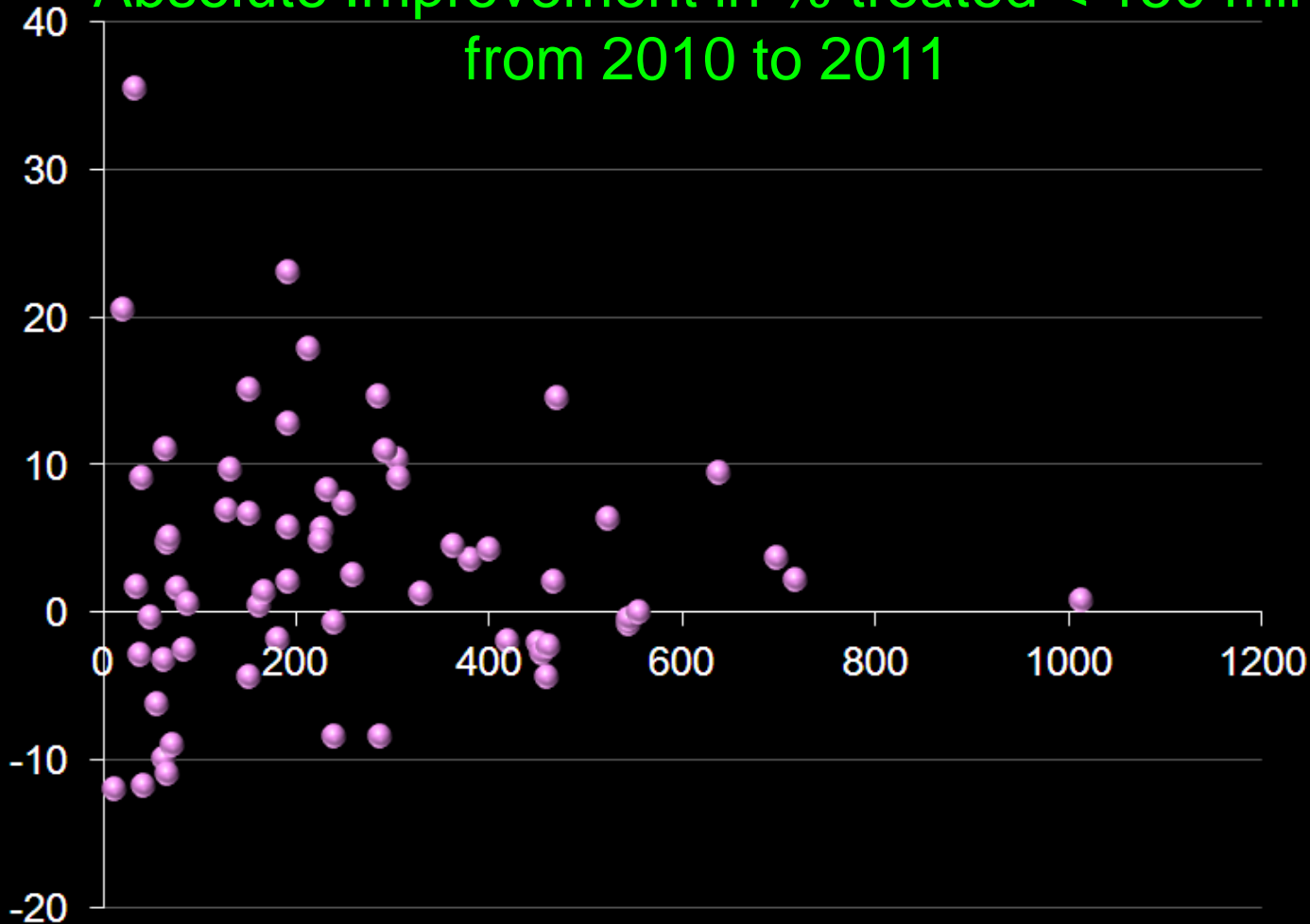
Primary PCI 2010 v 2011 (excl shock/vent)

Direct and IHT: CTB < 150 min

Absolute Improvement in % treated < 150 min from 2010 to 2011



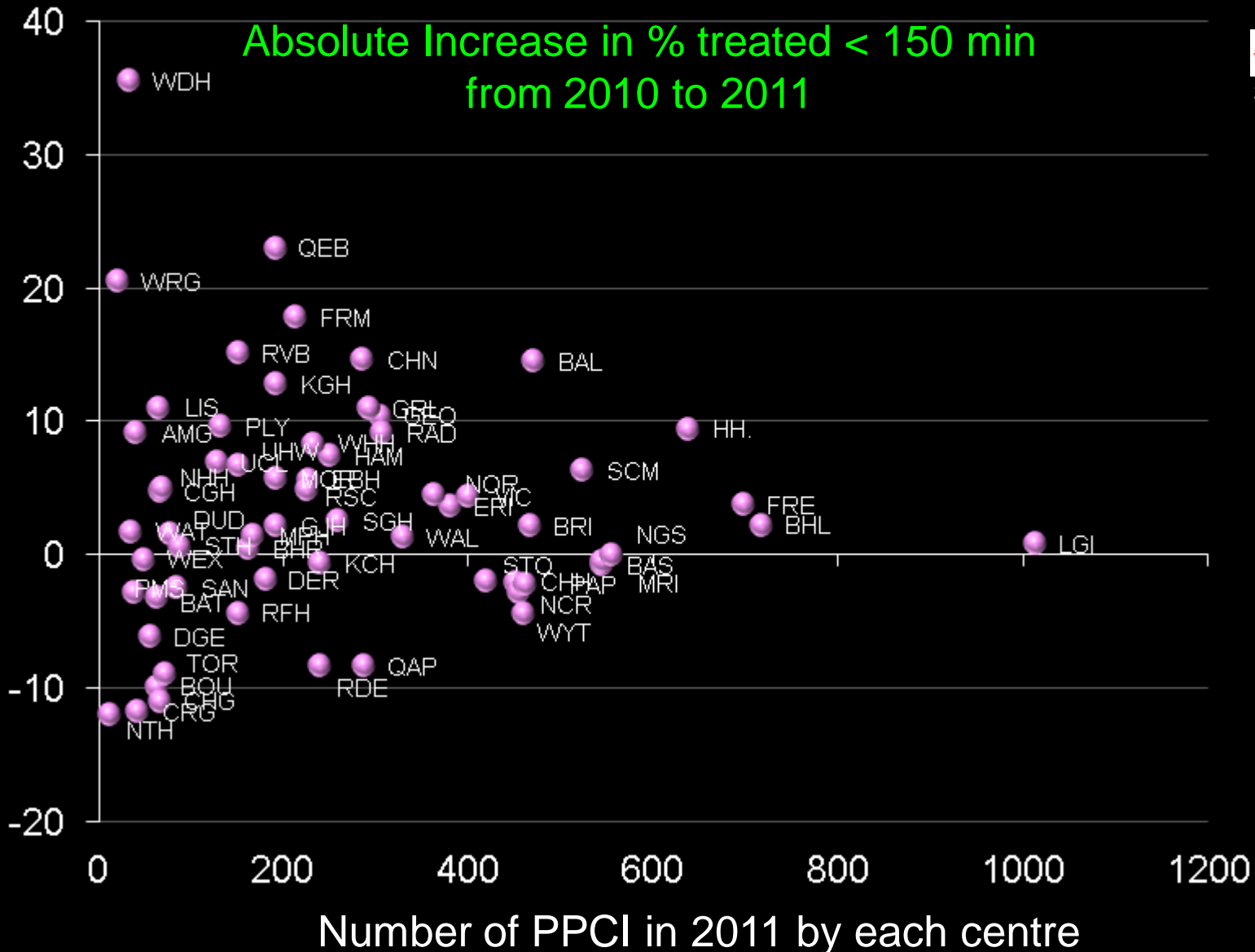
2011 data: Ludman



Number of PPCI in 2011 by each centre

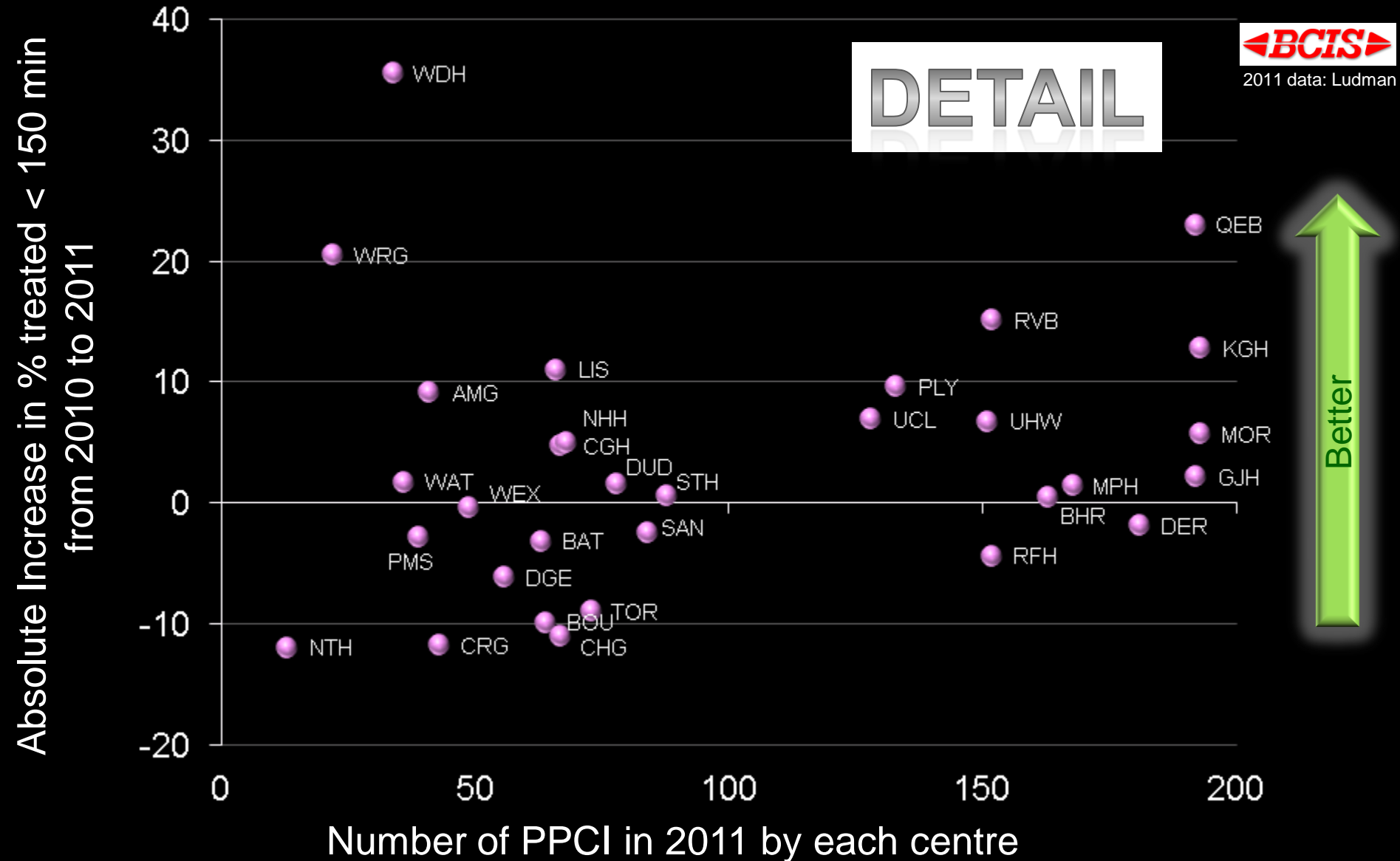
Primary PCI 2010 v 2011 (excl shock/vent)

Direct and IHT: CTB < 150 min



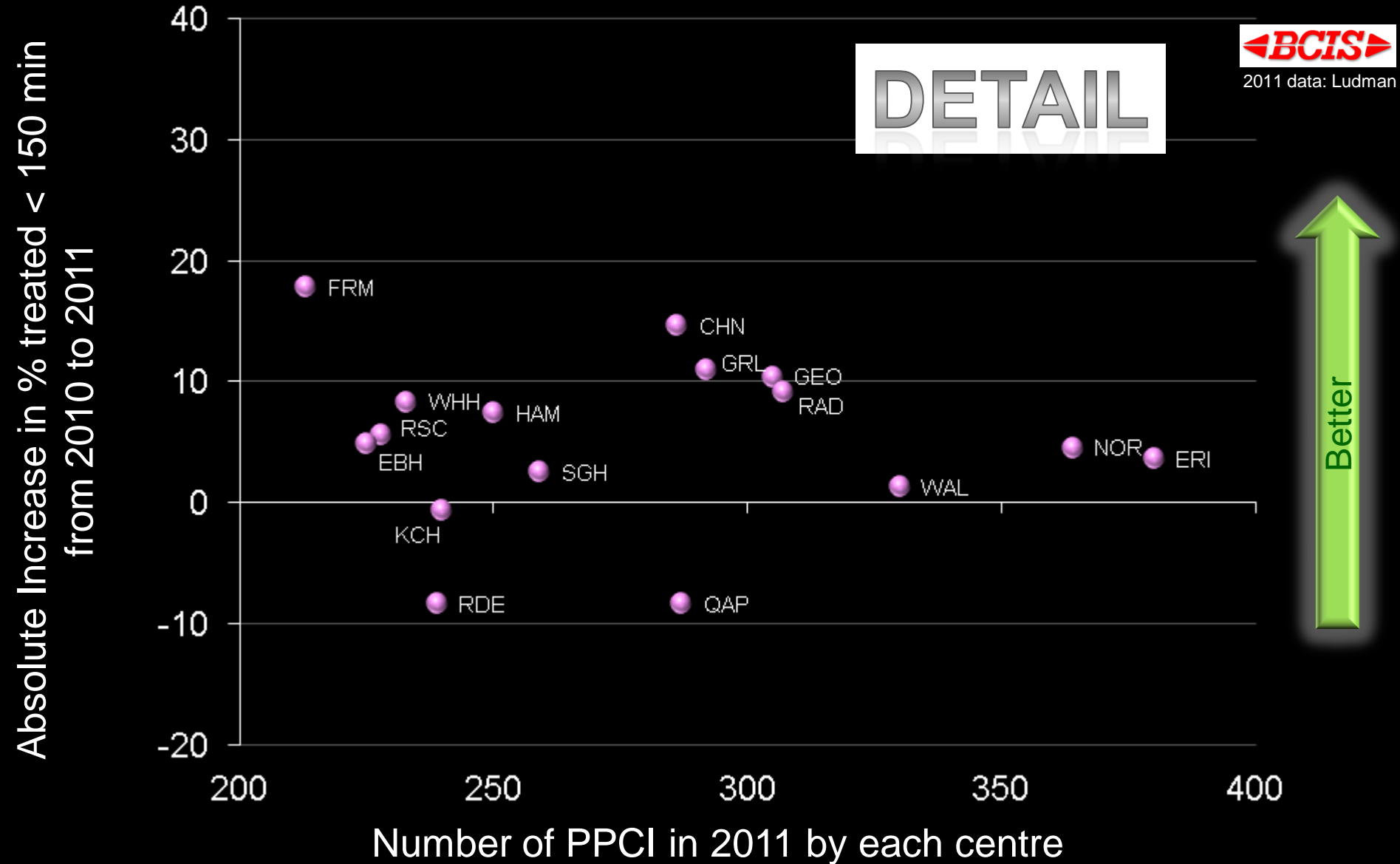
Primary PCI 2010 v 2011 (excl shock/vent)

Direct and IHT: CTB < 150 min



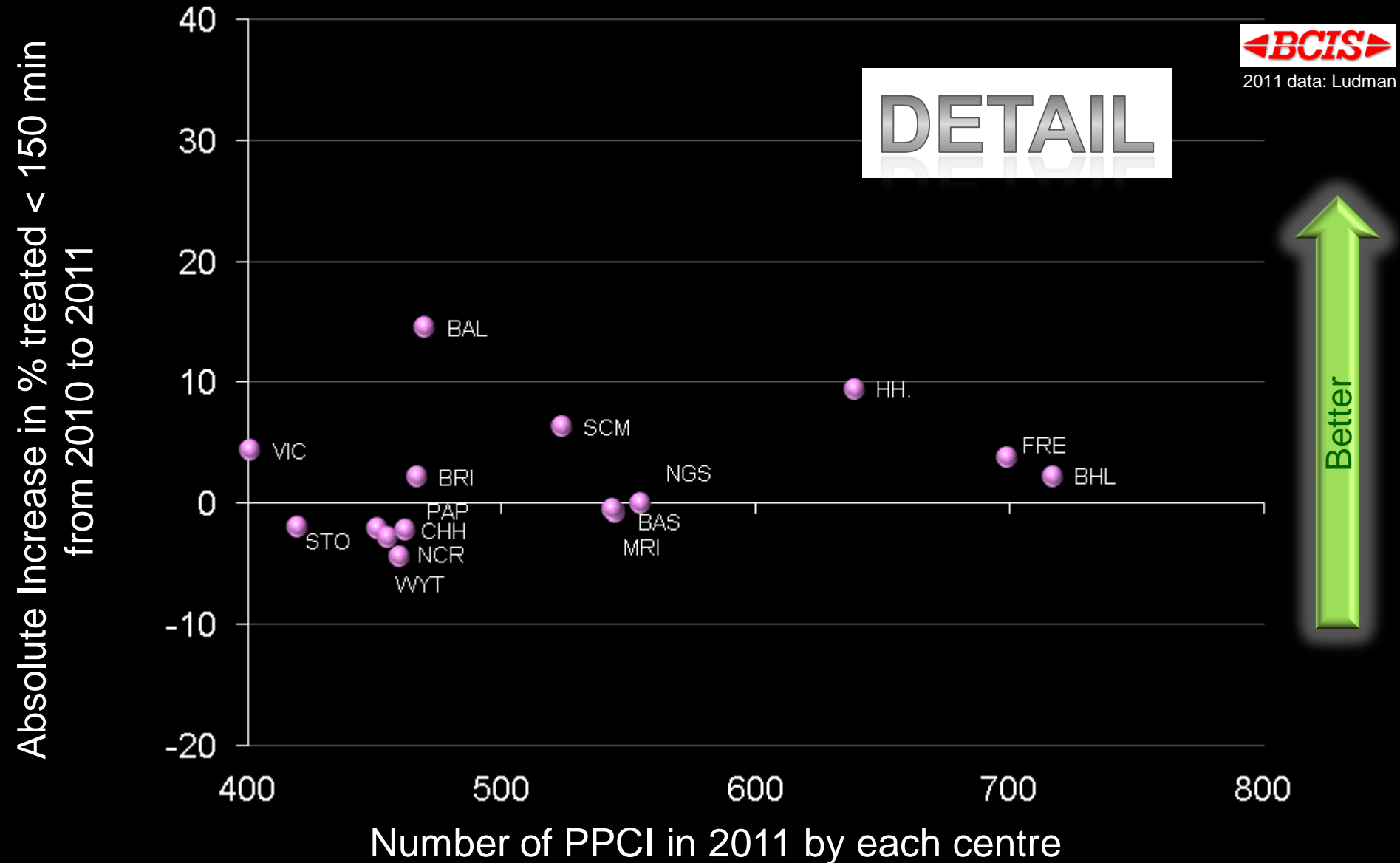
Primary PCI 2010 v 2011 (excl shock/vent)

Direct and IHT: CTB < 150 min



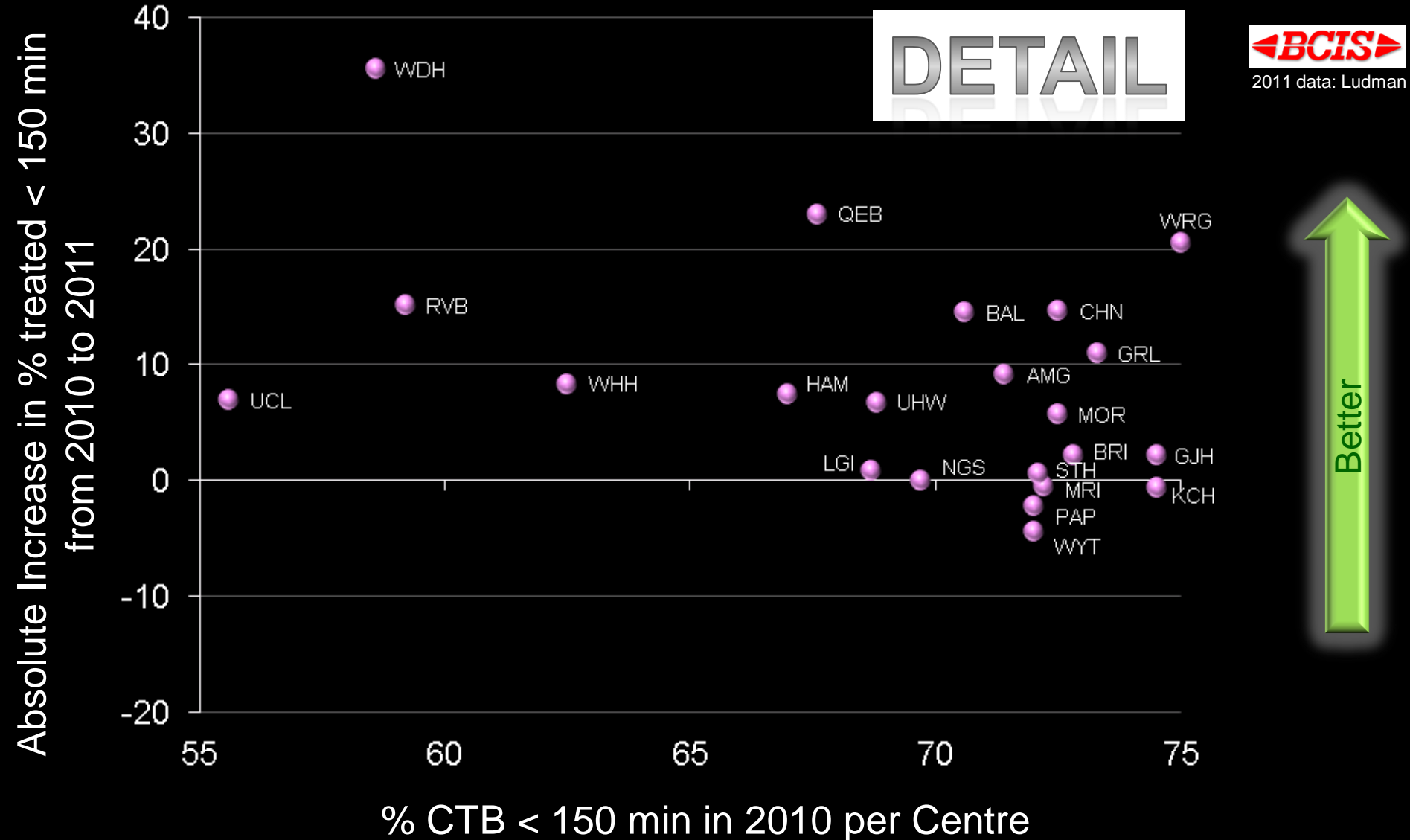
Primary PCI 2010 v 2011 (excl shock/vent)

Direct and IHT: CTB < 150 min



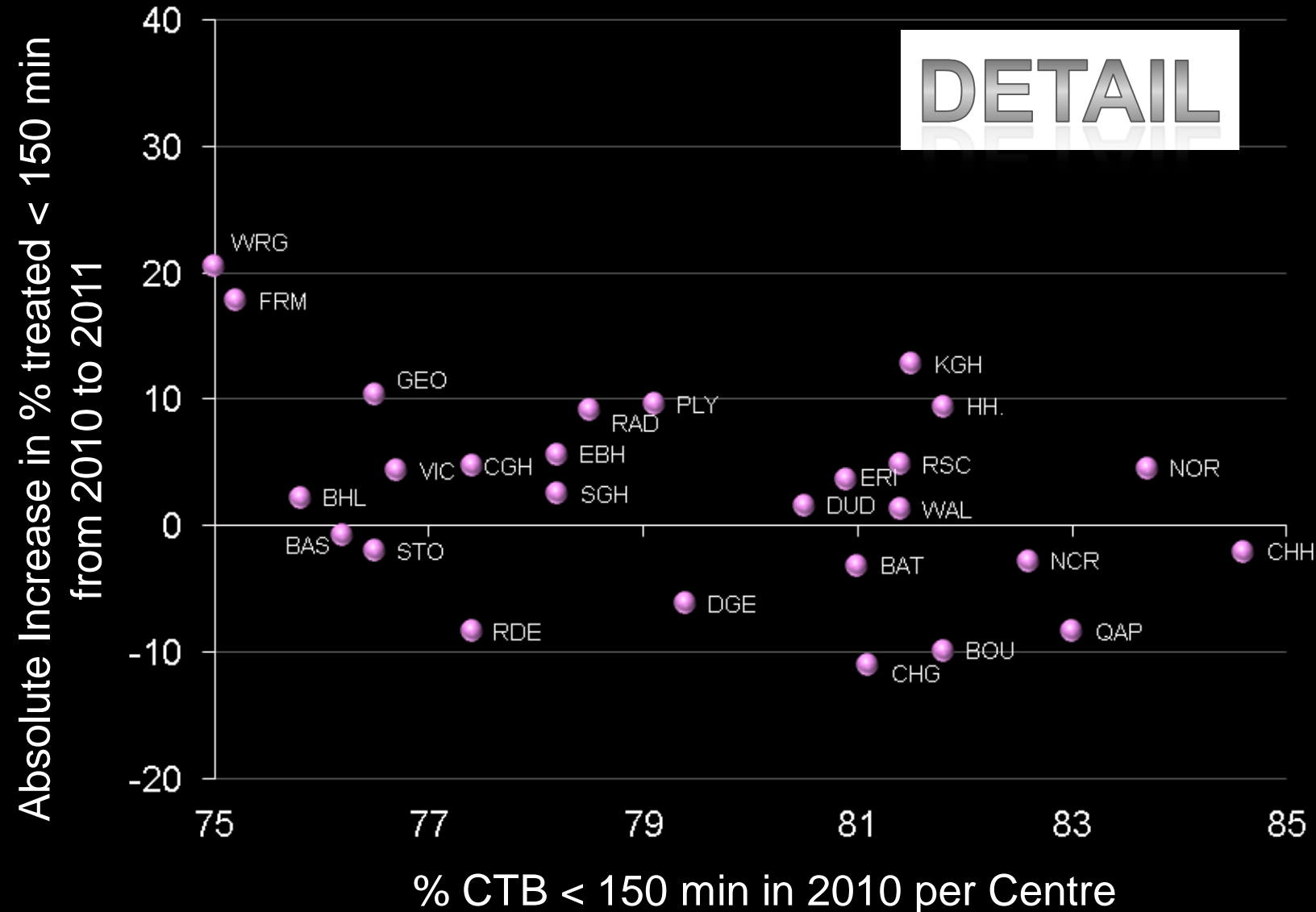
Primary PCI 2010 v 2011 (excl shock/vent)

Direct and IHT: CTB < 150 min



Primary PCI 2010 v 2011 (excl shock/vent)

Direct and IHT: CTB < 150 min



2011 data: Ludman

Better

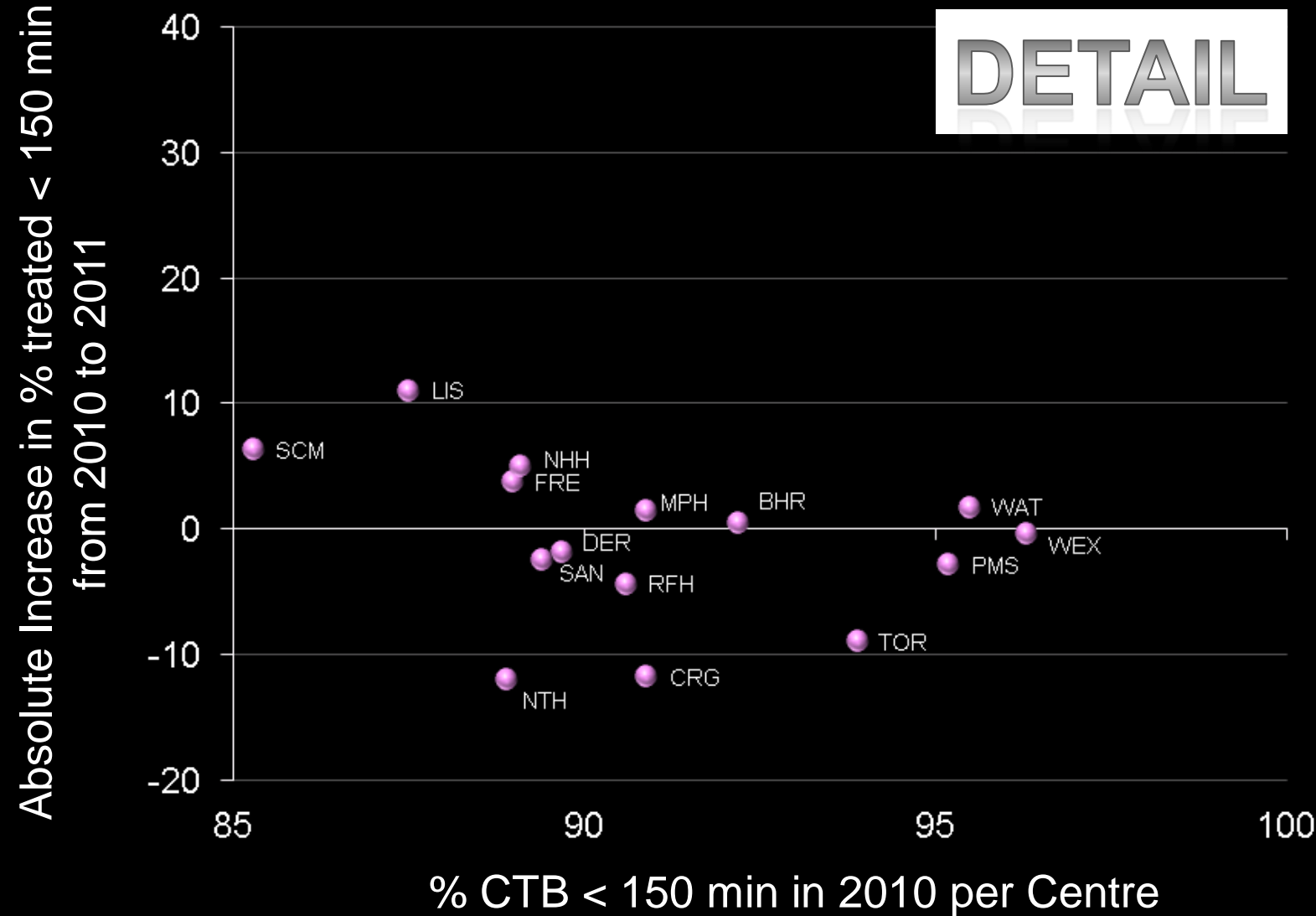
Primary PCI 2010 v 2011 (excl shock/vent)

Direct and IHT: CTB < 150 min



2011 data: Ludman

DETAIL



PCI for Acute Sx

Four admission scenarios

Admitted from
the community

Admission to
Non-PCI centre

Direct admission
to PCI centre

Transfer
to PCI centre



D1

D2

device

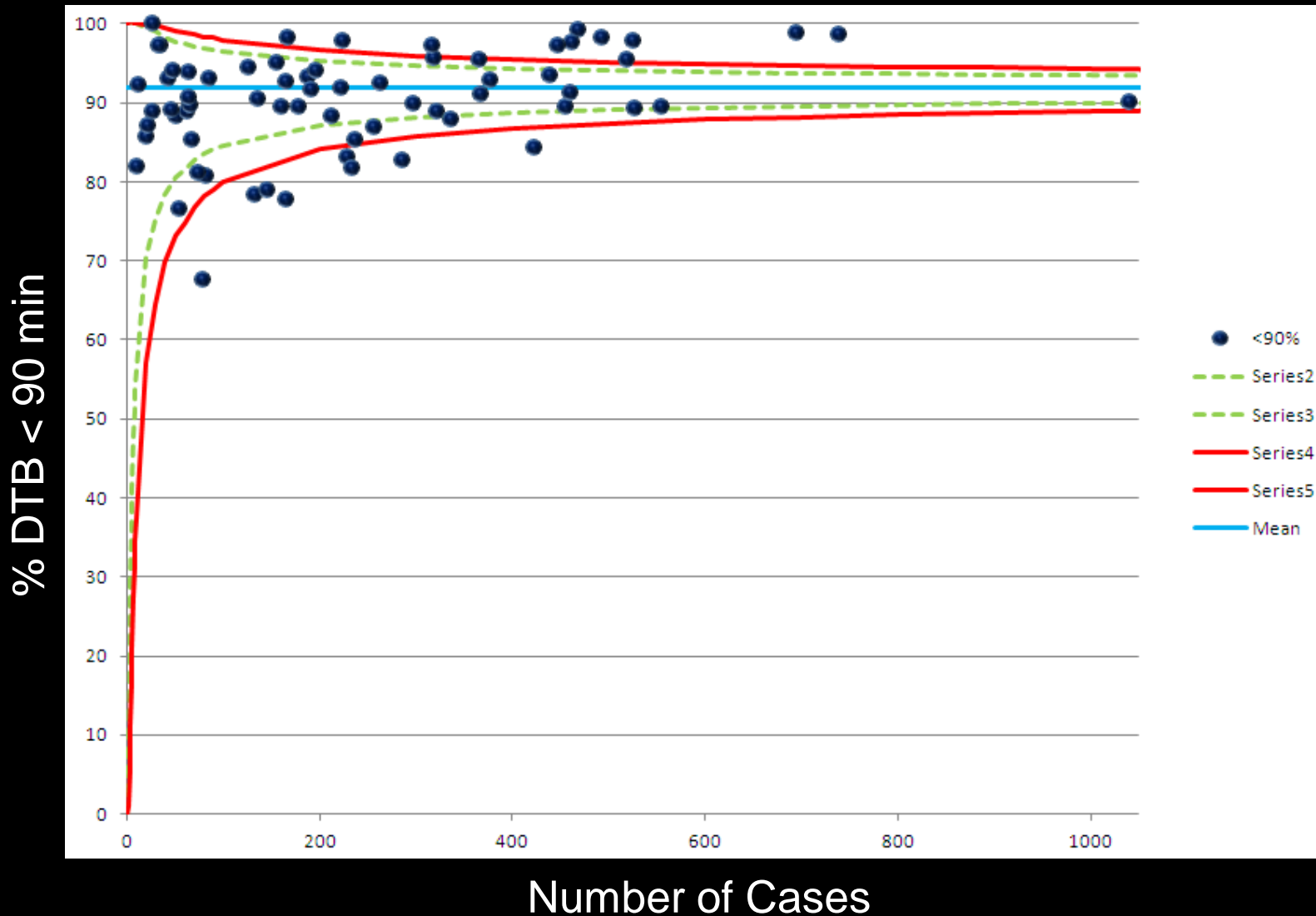
DTB

Primary PCI (excl shock/vent)

Direct and IHT: **PCI Door to Balloon < 90 min**



2011 data: Ludman



91.9%

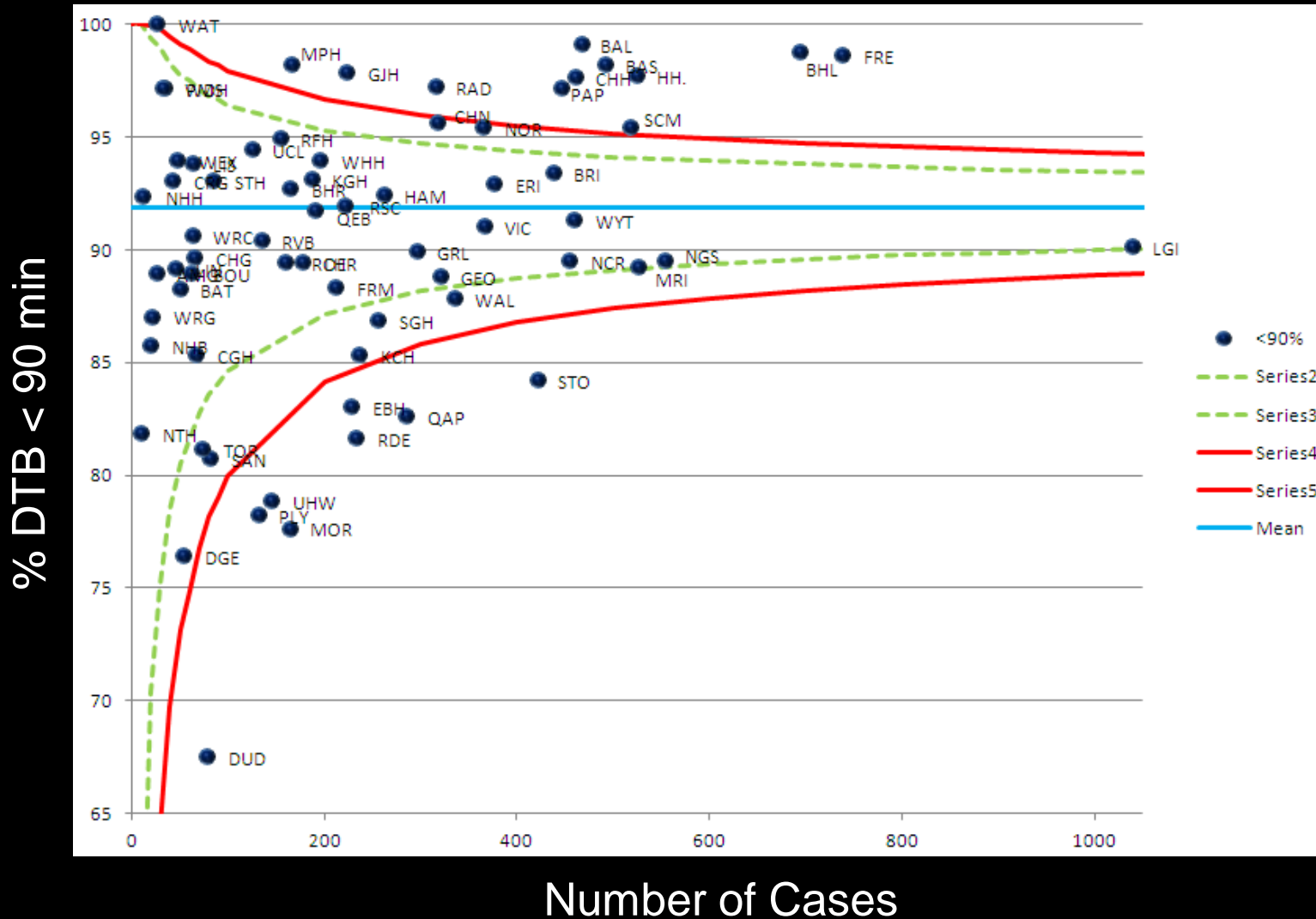


Primary PCI (excl shock/vent)

Direct and IHT: PCI Door to Balloon < 90 min



2011 data: Ludman



91.9%

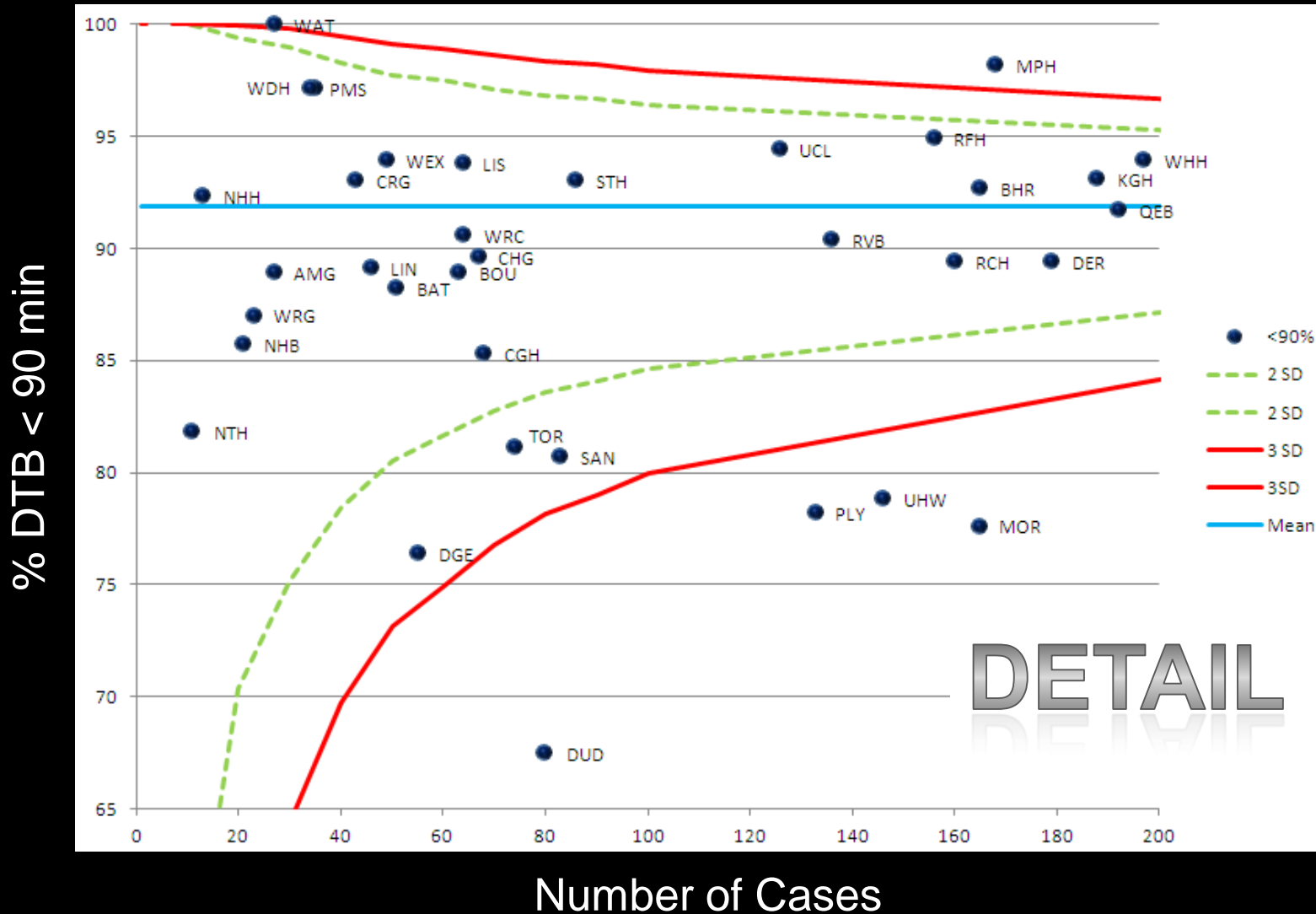


Primary PCI (excl shock/vent)

Direct and IHT: PCI Door to Balloon < 90 min



2011 data: Ludman



91.9%



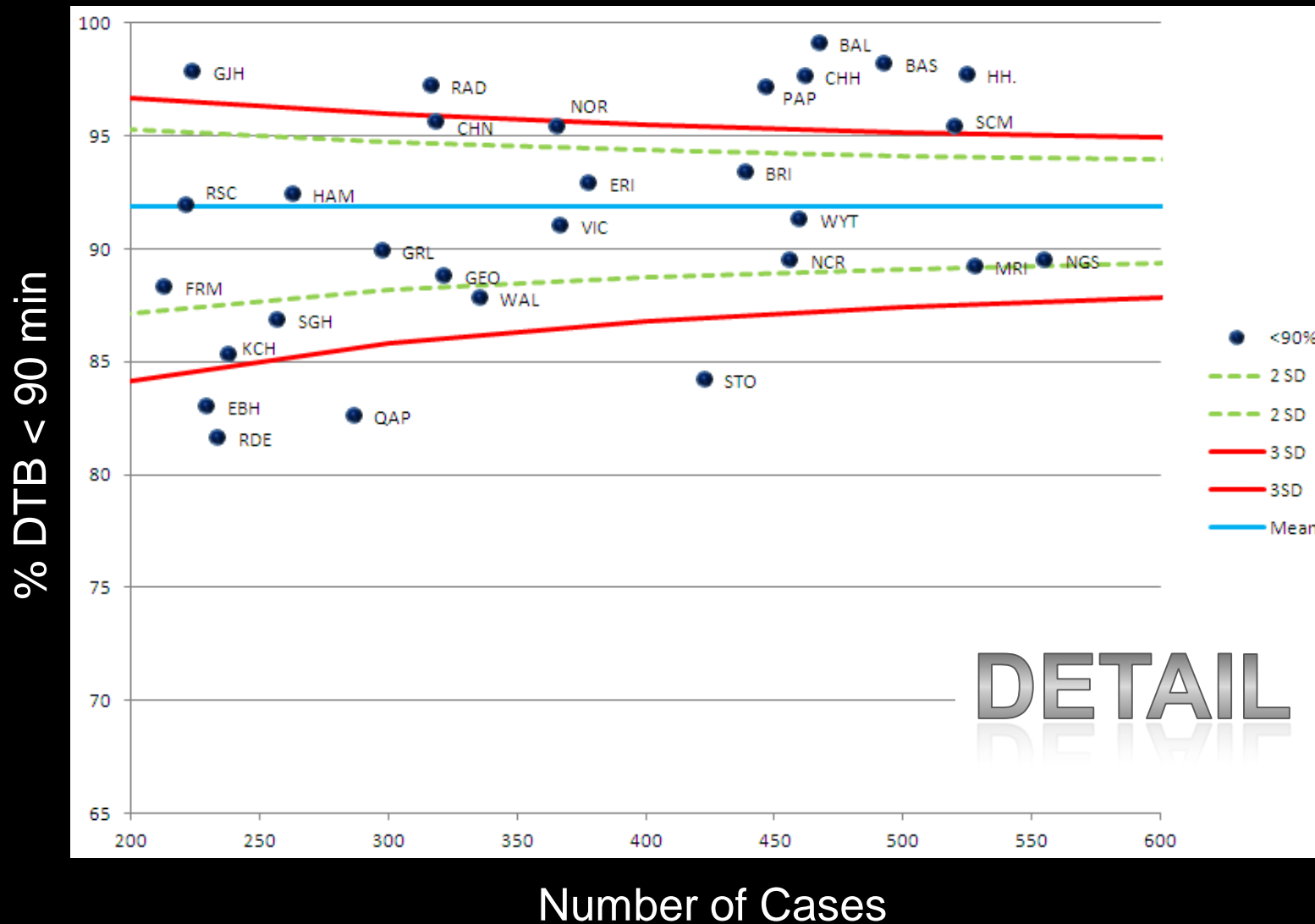
DETAIL

Primary PCI (excl shock/vent)

Direct and IHT: PCI Door to Balloon < 90 min



2011 data: Ludman



91.9%

Better

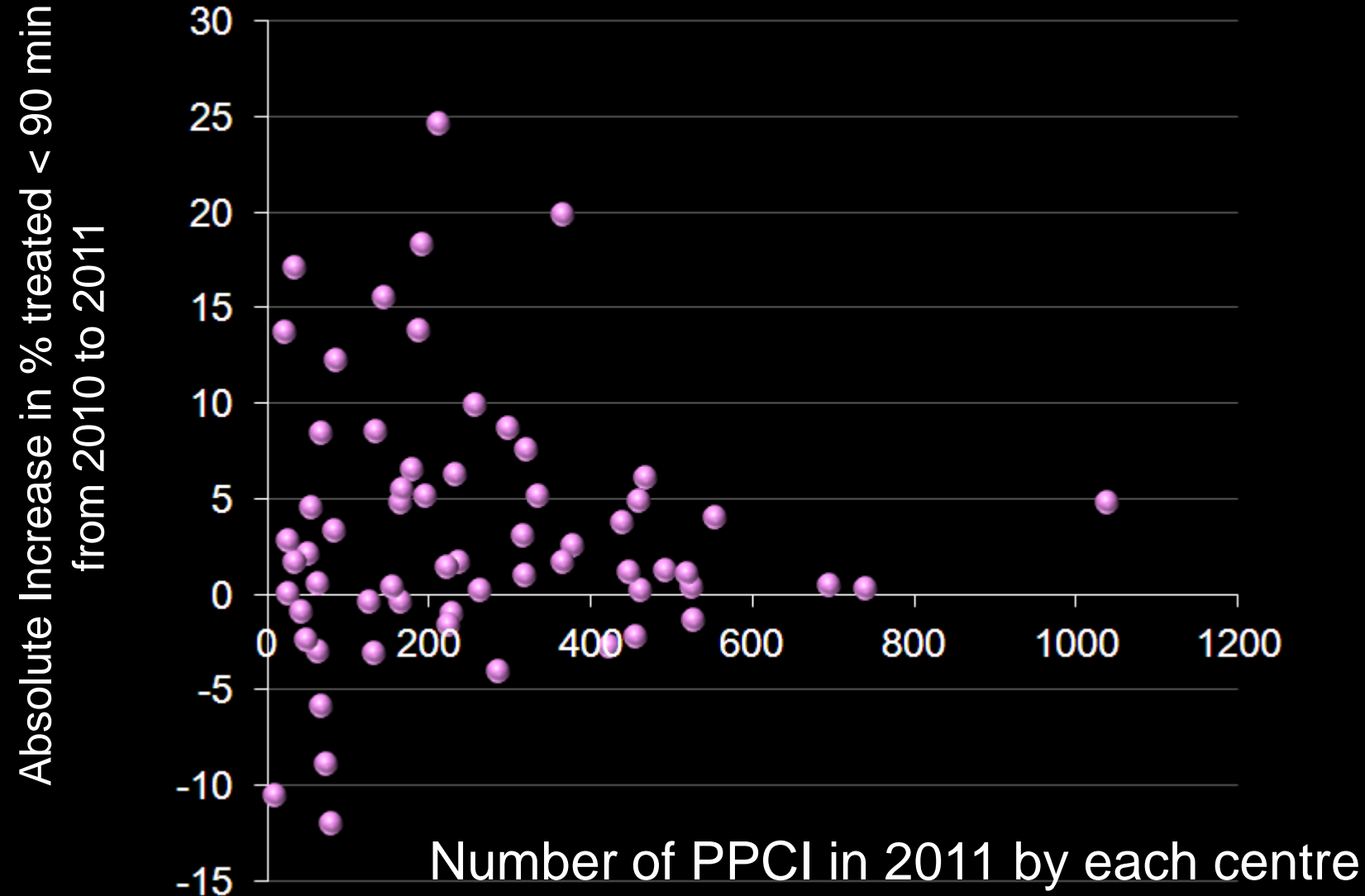
DETAIL

Primary PCI 2010 v 2011 (excl shock/vent)

Direct and IHT: PCI Door to Balloon < 90 min



2011 data: Ludman

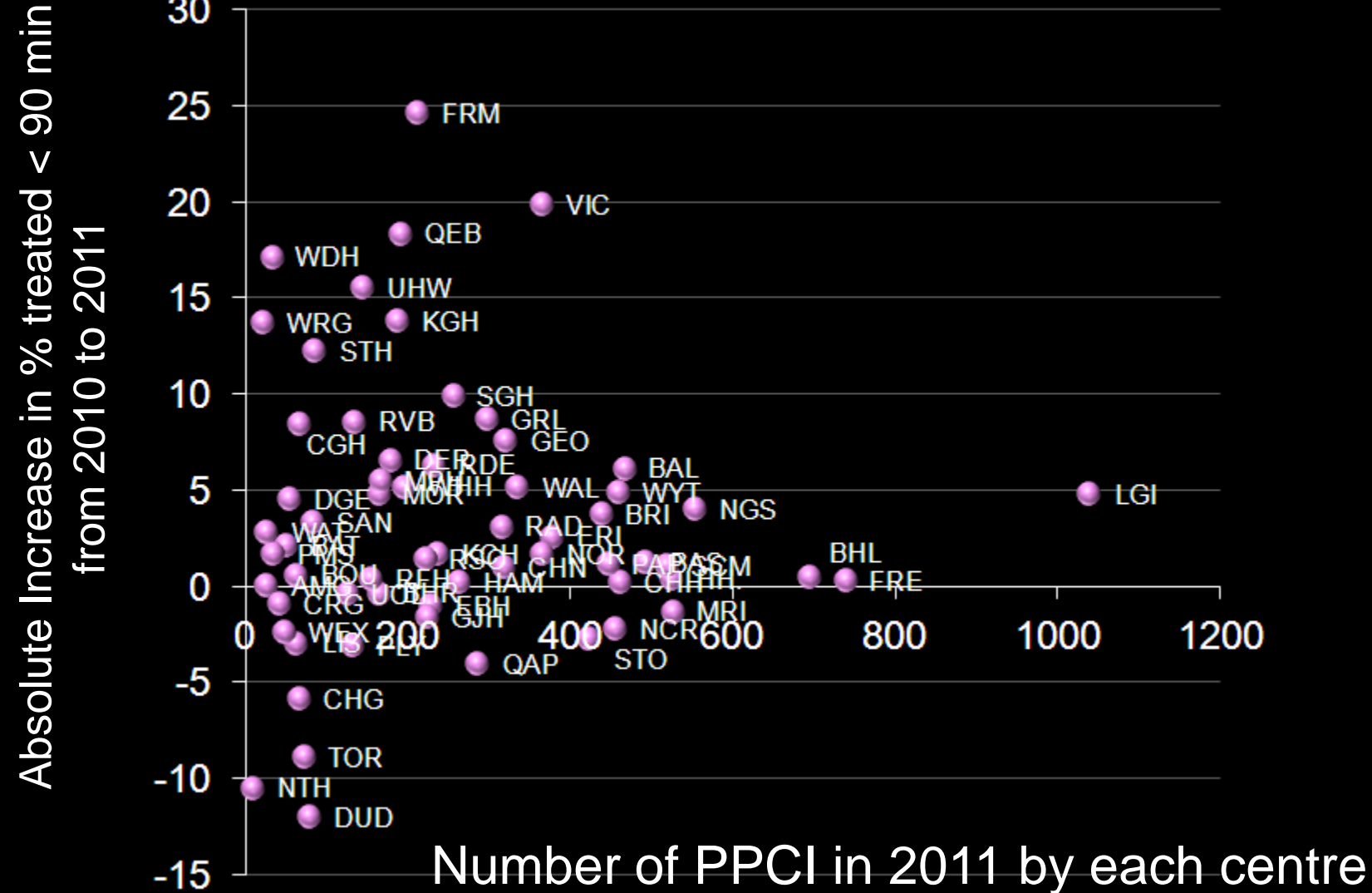


Primary PCI 2010 v 2011

Direct and IHT: **PCI Door to Balloon < 90 min**



2011 data: Ludman



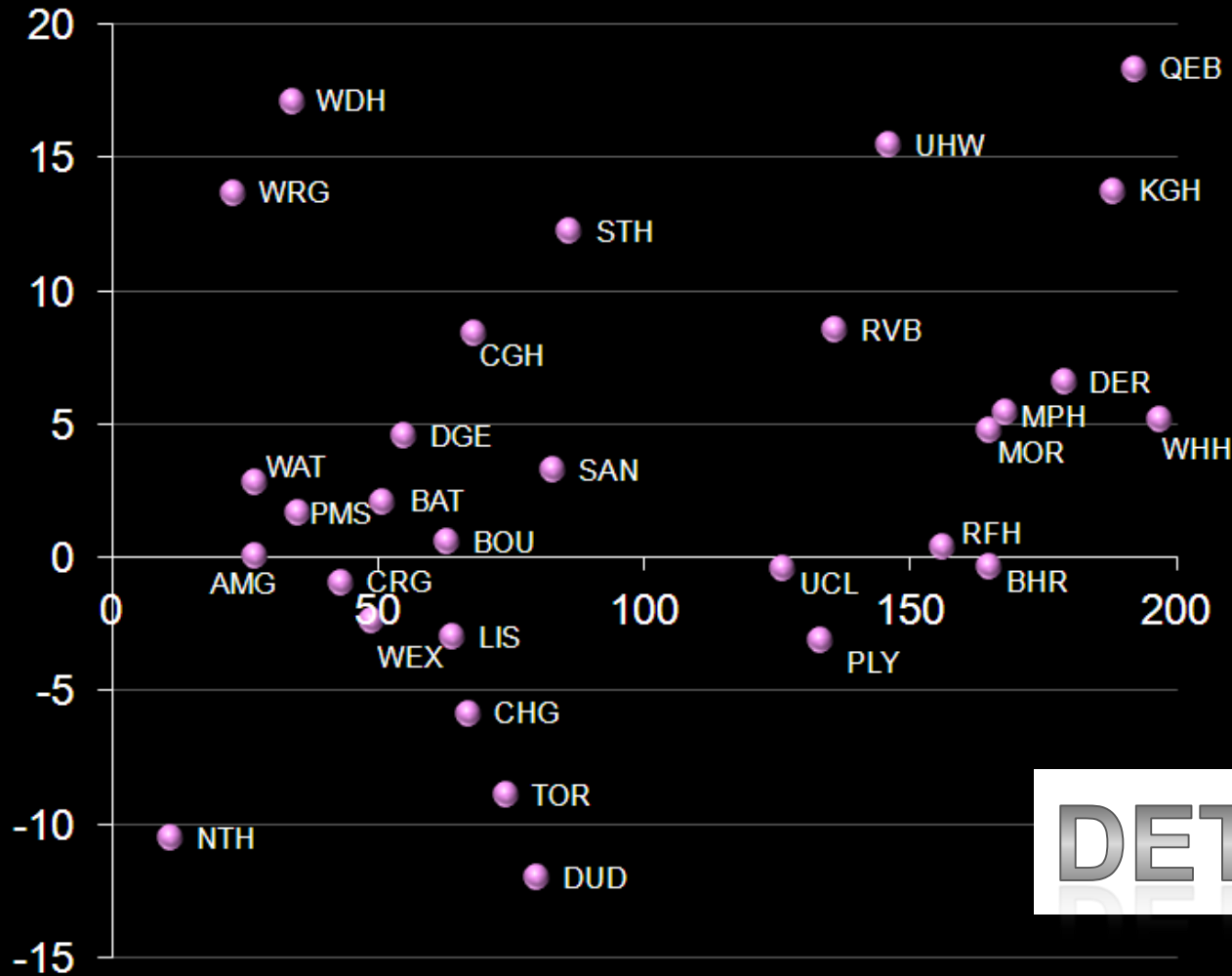
Primary PCI 2010 v 2011

Direct and IHT: **PCI Door to Balloon < 90 min**



2011 data: Ludman

Absolute Increase in % treated < 90 min
from 2010 to 2011



DETAIL

Number of PPCI in 2011 by each centre

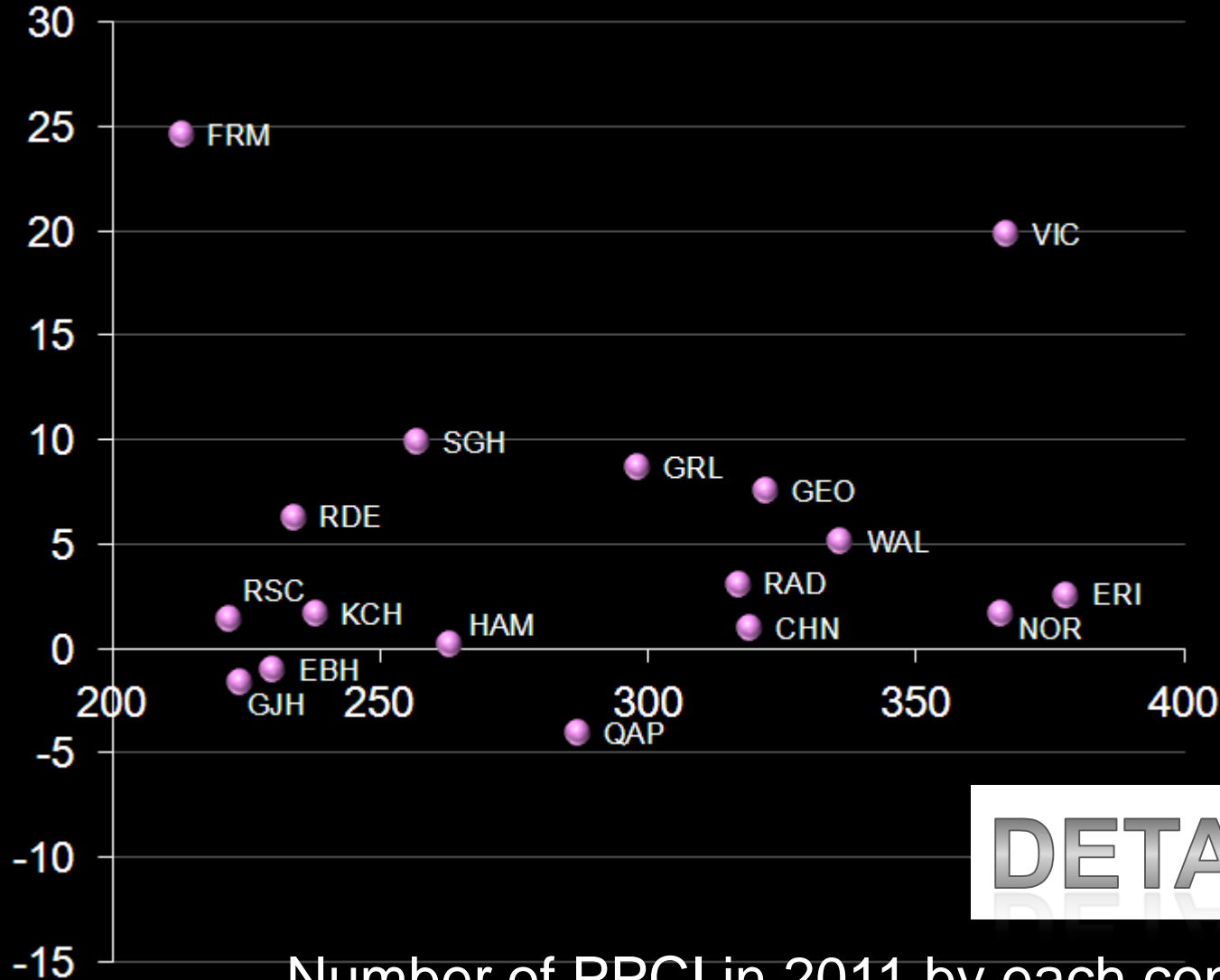
Primary PCI 2010 v 2011

Direct and IHT: **PCI Door to Balloon < 90 min**



2011 data: Ludman

Absolute Increase in % treated < 90 min
from 2010 to 2011



DETAIL

Number of PPCI in 2011 by each centre

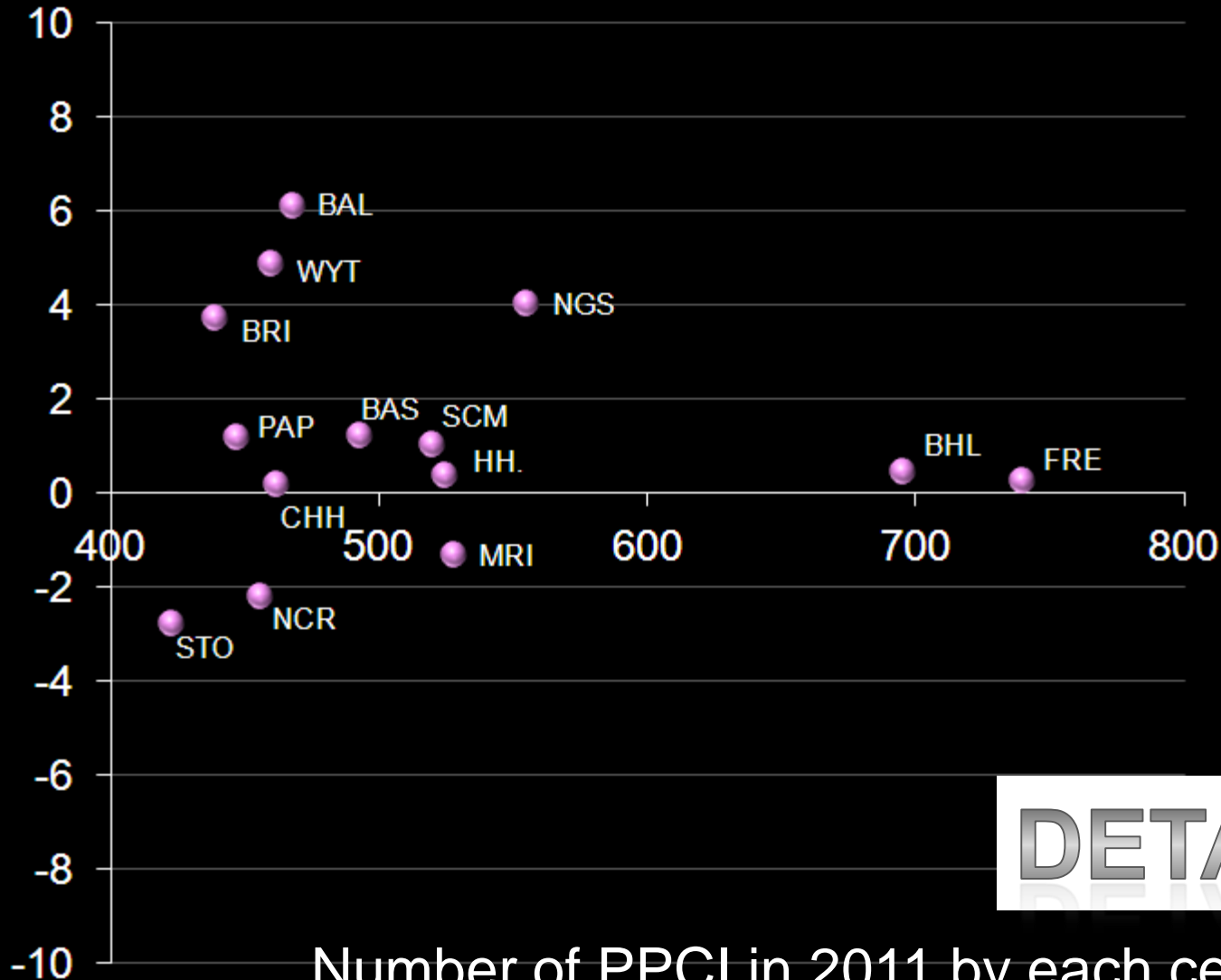
Primary PCI 2010 v 2011

Direct and IHT: **PCI Door to Balloon < 90 min**



2011 data: Ludman

Absolute Increase in % treated < 90 min
from 2010 to 2011



Better

DETAIL

Number of PPCI in 2011 by each centre

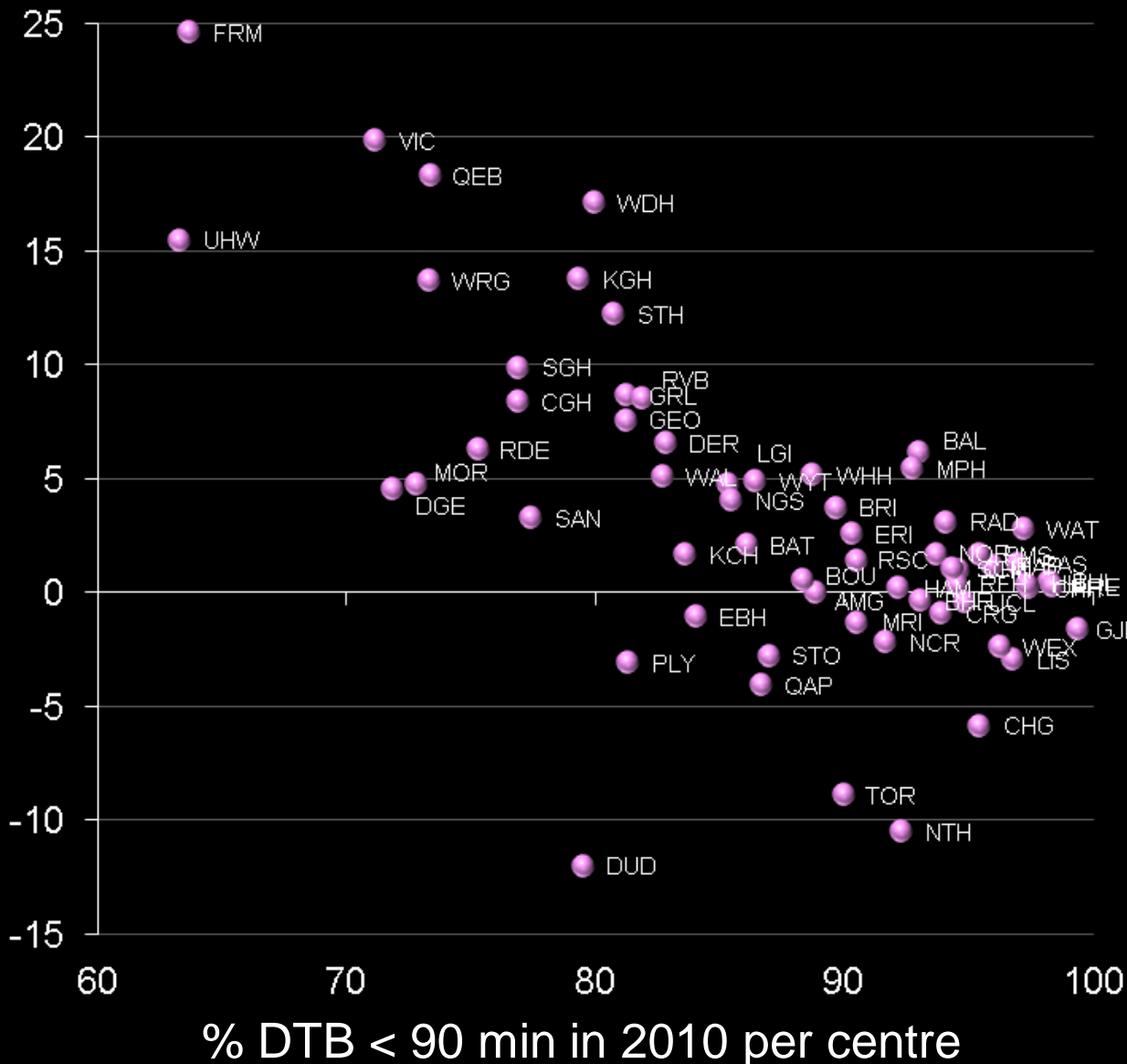
Primary PCI 2010 v 2011 (excl shock/vent)

Direct and IHT: PCI Door to Balloon < 90 min



2011 data: Ludman

Absolute Increase in % treated < 90 min
from 2010 to 2011

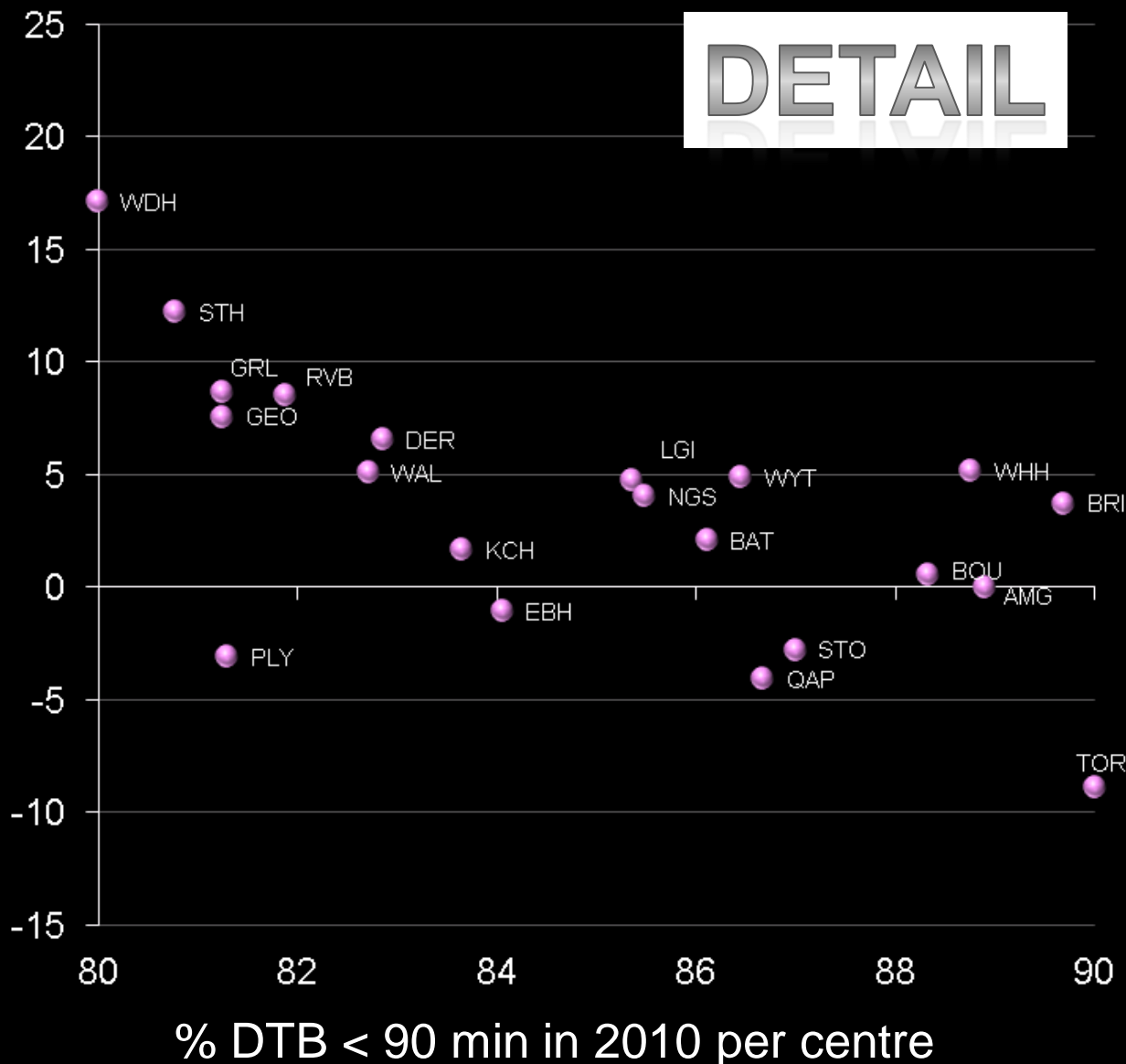


Better

Primary PCI 2010 v 2011 (excl shock/vent)

Direct and IHT: PCI Door to Balloon < 90 min

Absolute Increase in % treated < 90 min
from 2010 to 2011



Primary PCI 2010 v 2011 (excl shock/vent)

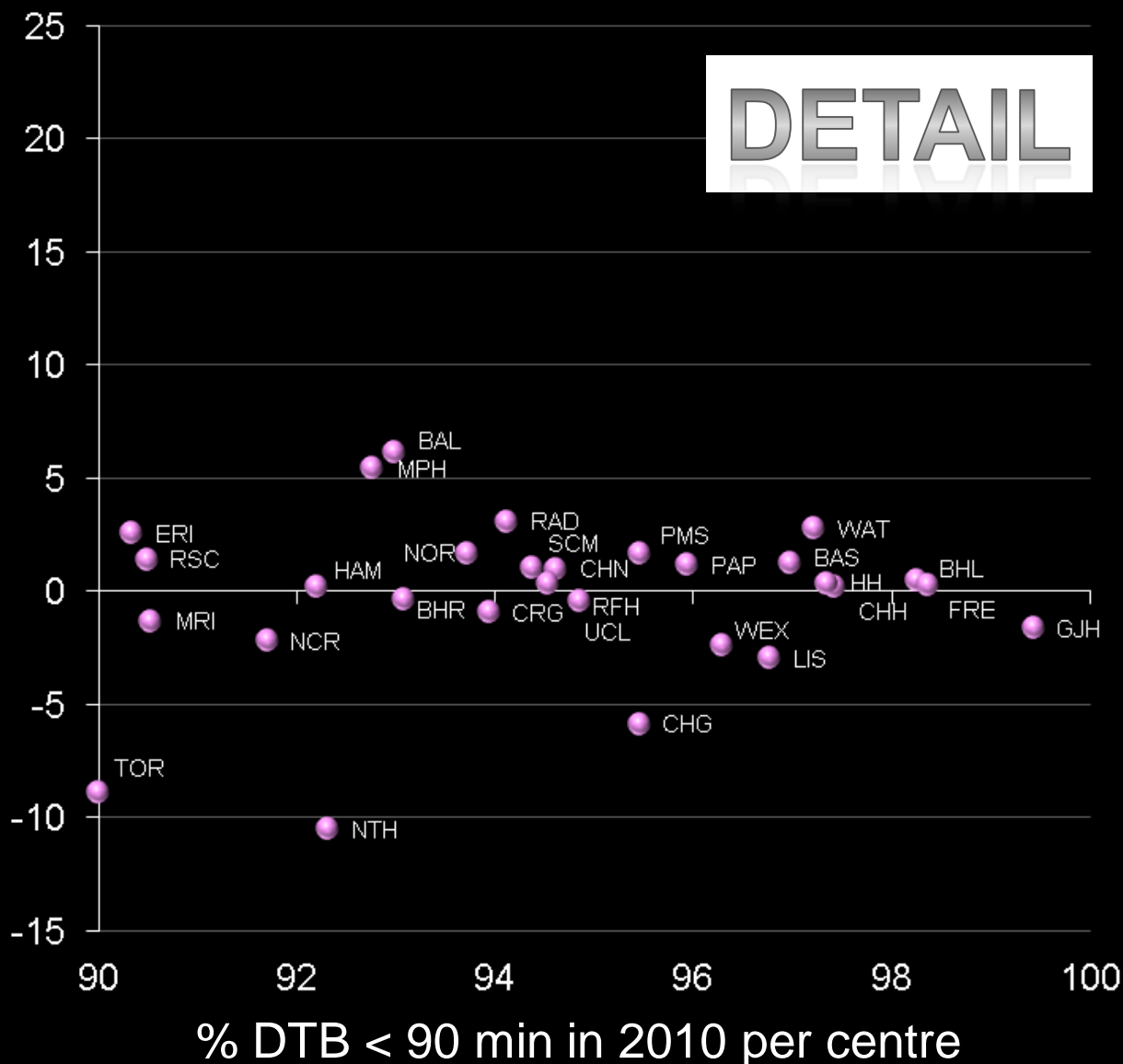
Direct and IHT: PCI Door to Balloon < 90 min



2011 data: Ludman

DETAIL

Absolute Increase in % treated < 90 min from 2010 to 2011



PCI for Acute Sx

Four admission scenarios

Admitted from
the community

Admission to
Non-PCI centre

Direct admission
to PCI centre

Transfer
to PCI centre

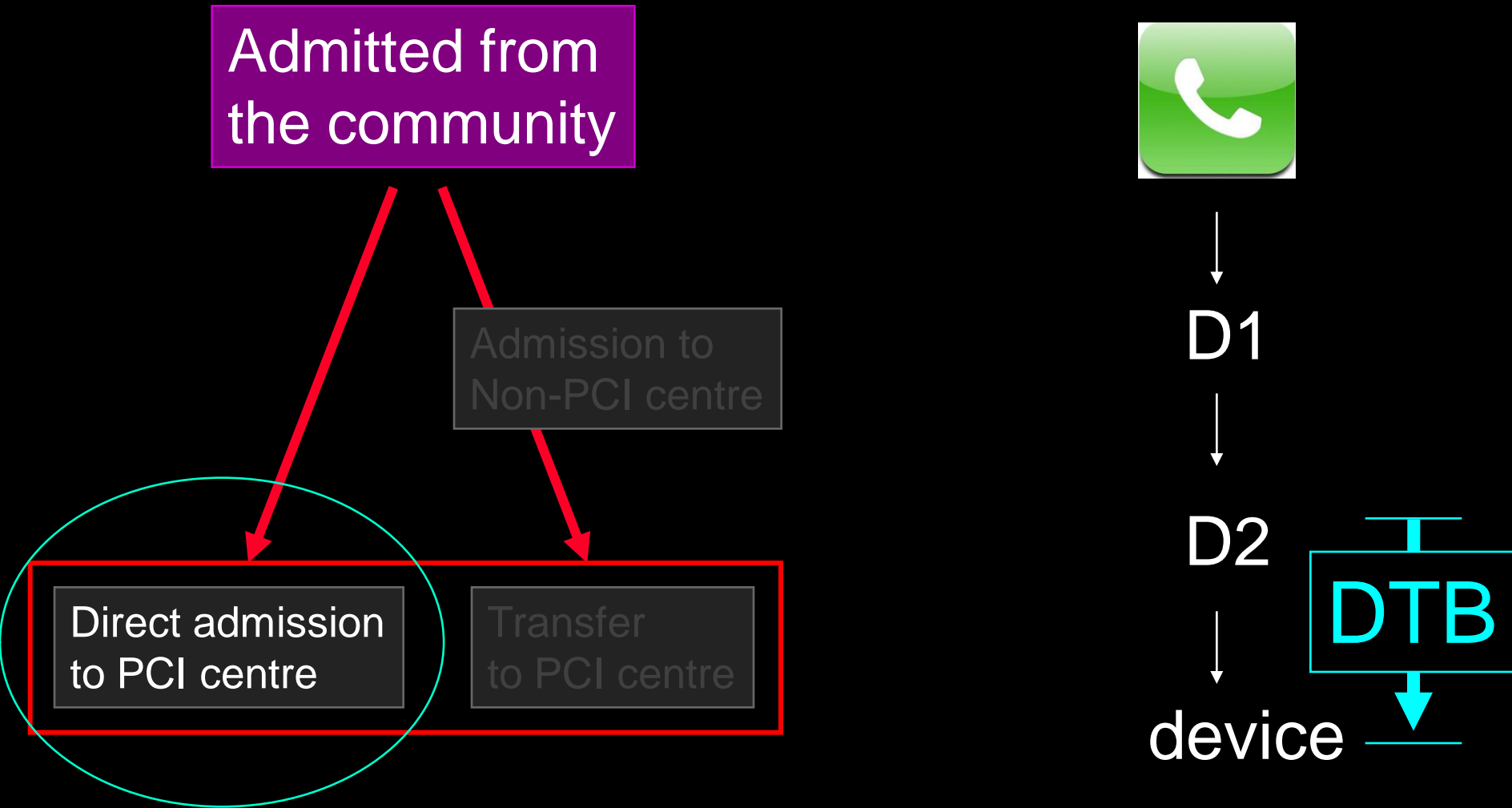


D1

D2

device

DTB

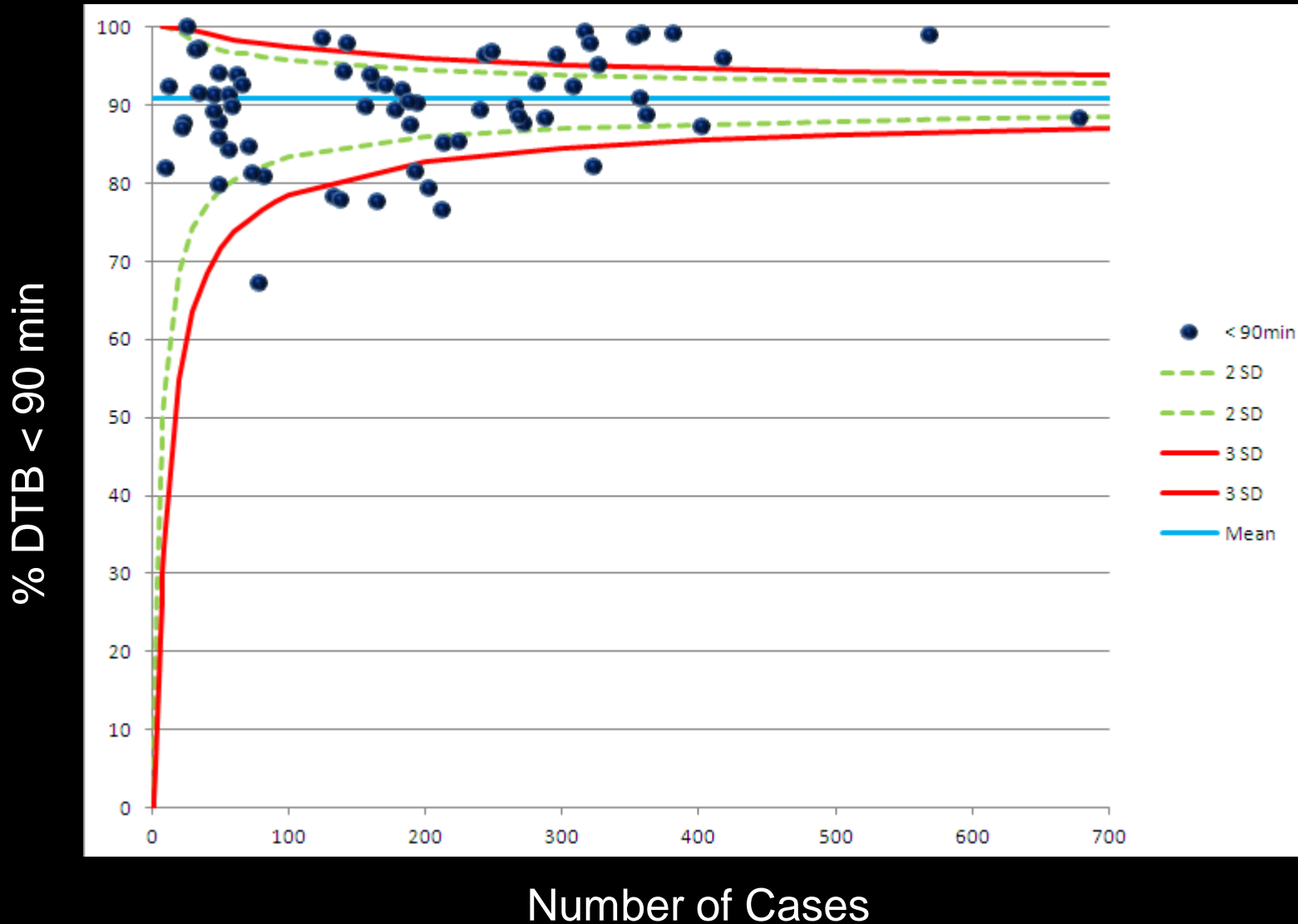


Primary PCI (excl shock/vent)

Direct ONLY: PCI Door to Balloon < 90 min



2011 data: Ludman



90.8%

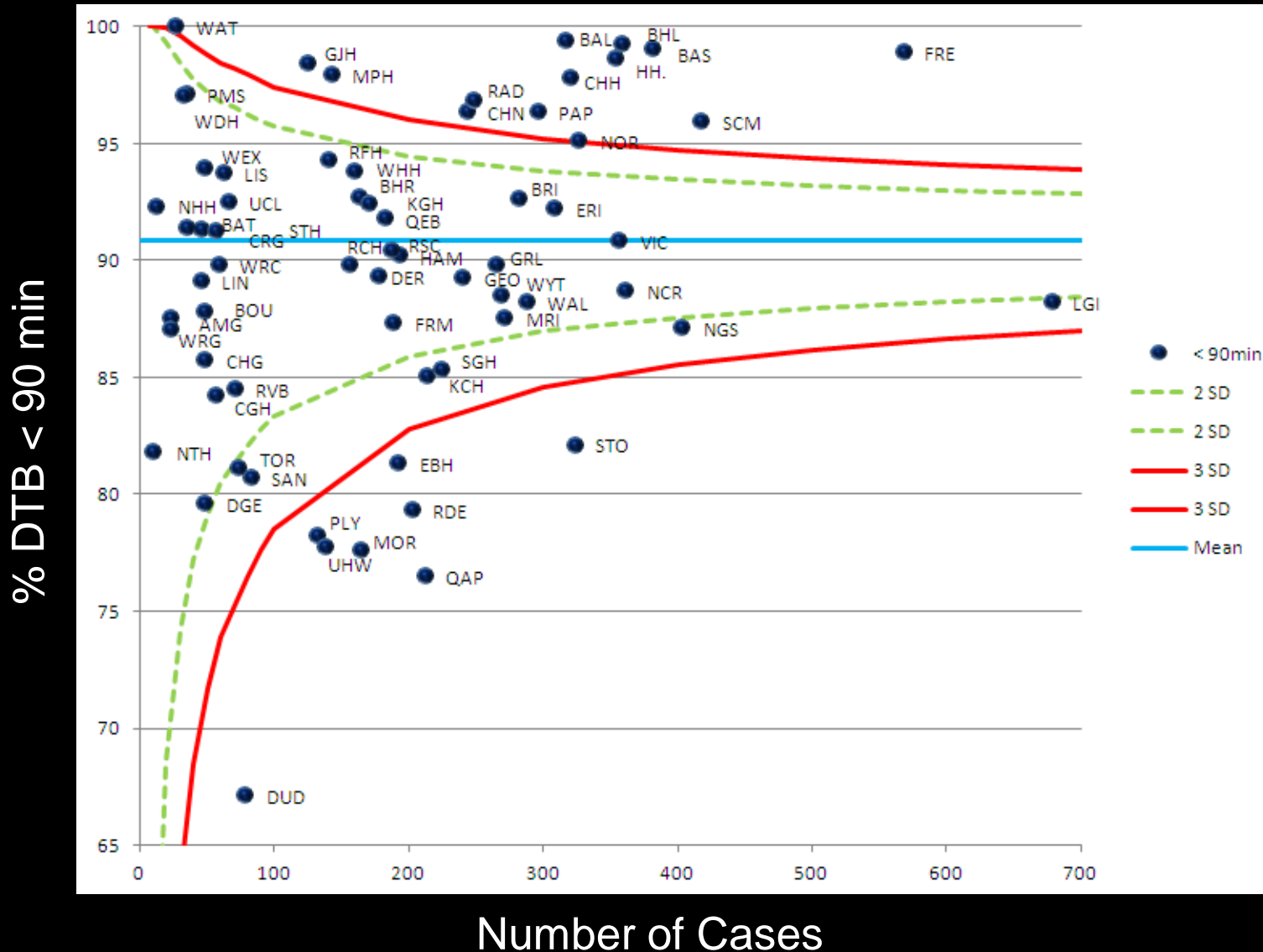
Better

Primary PCI (excl shock/vent)

Direct ONLY: PCI Door to Balloon < 90 min



2011 data: Ludman



PCI for Acute Sx

Four admission scenarios

Admitted from
the community

Admission to
Non-PCI centre

Direct admission
to PCI centre

Transfer
to PCI centre

CTB

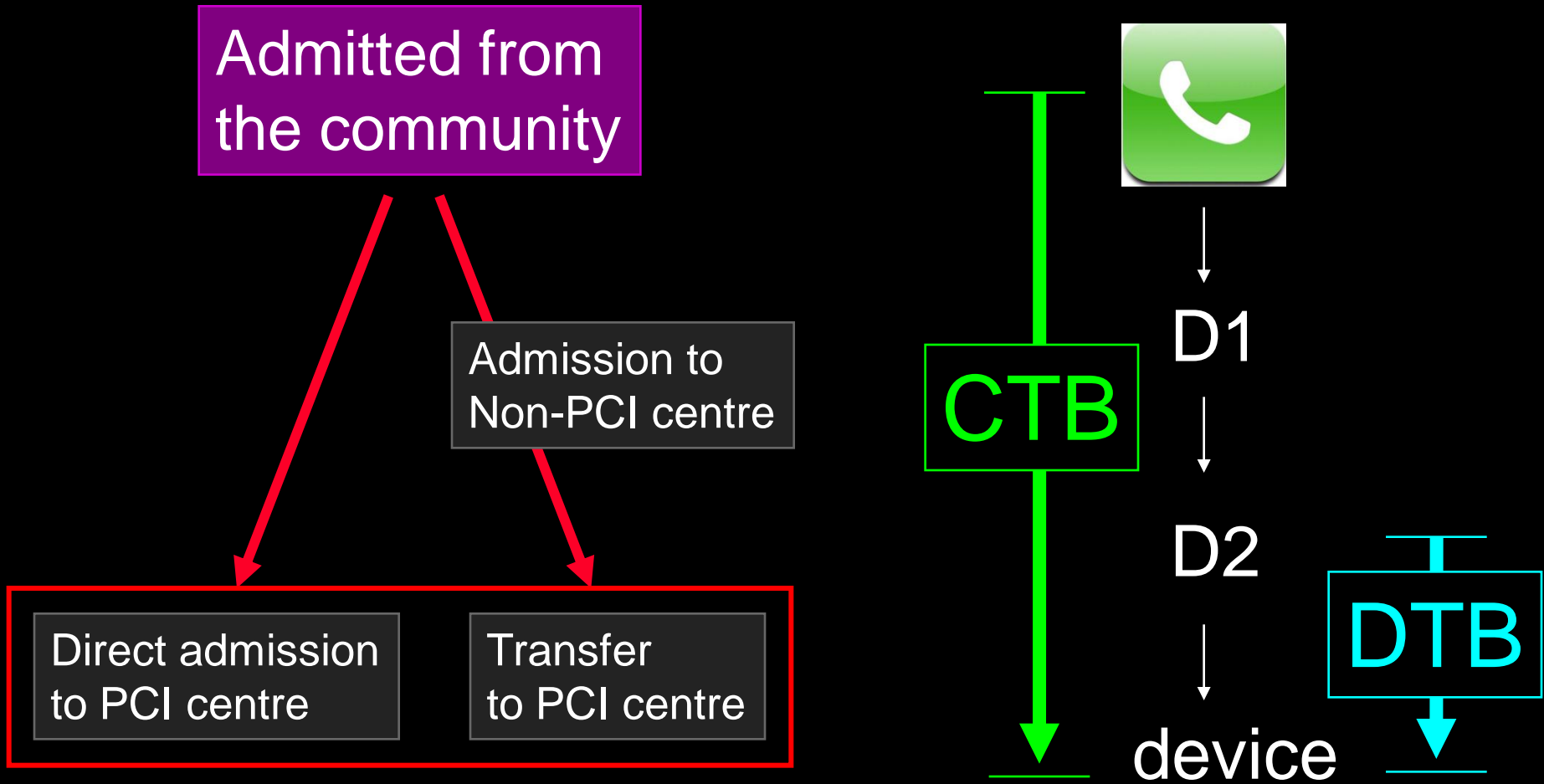


D1

D2

device

DTB

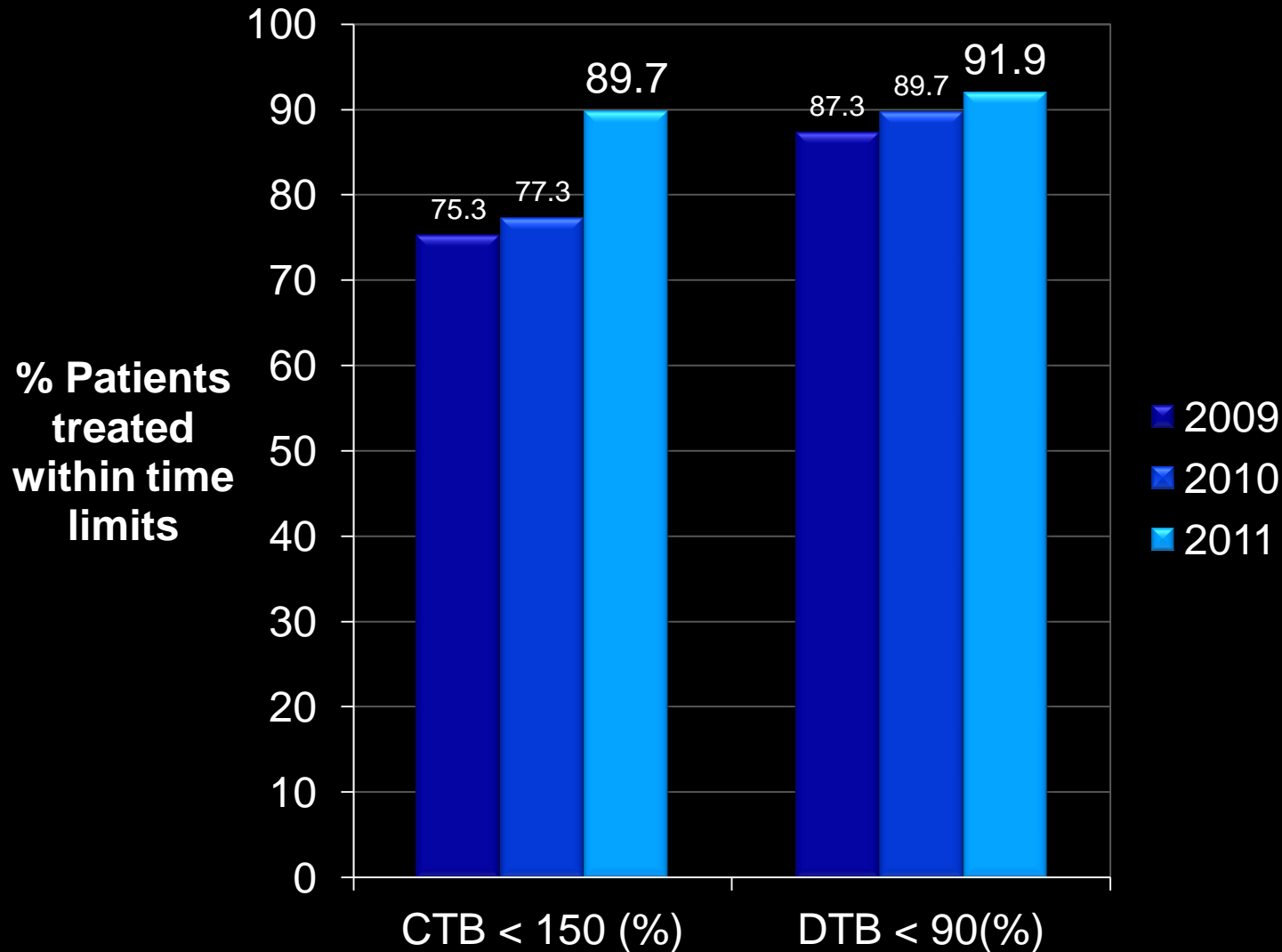


Primary PCI (excl'd shock/vent)

Direct and IHT



2011 data: Ludman



PCI for Acute Sx

Four admission scenarios

Admitted from
the community

Admission to
Non-PCI centre

Direct admission
to PCI centre

Transfer
to PCI centre

CTB

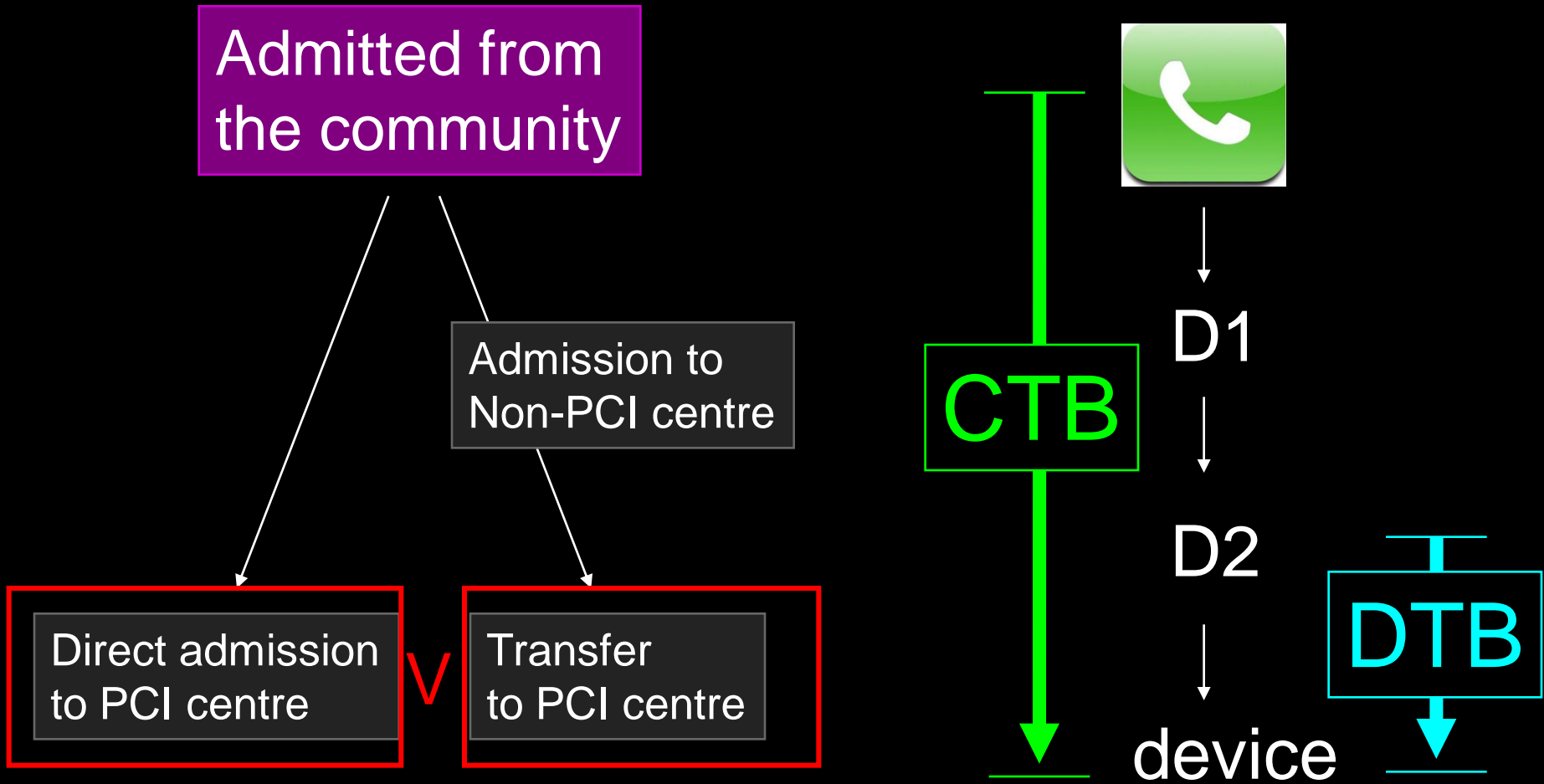


D1

D2

device

DTB

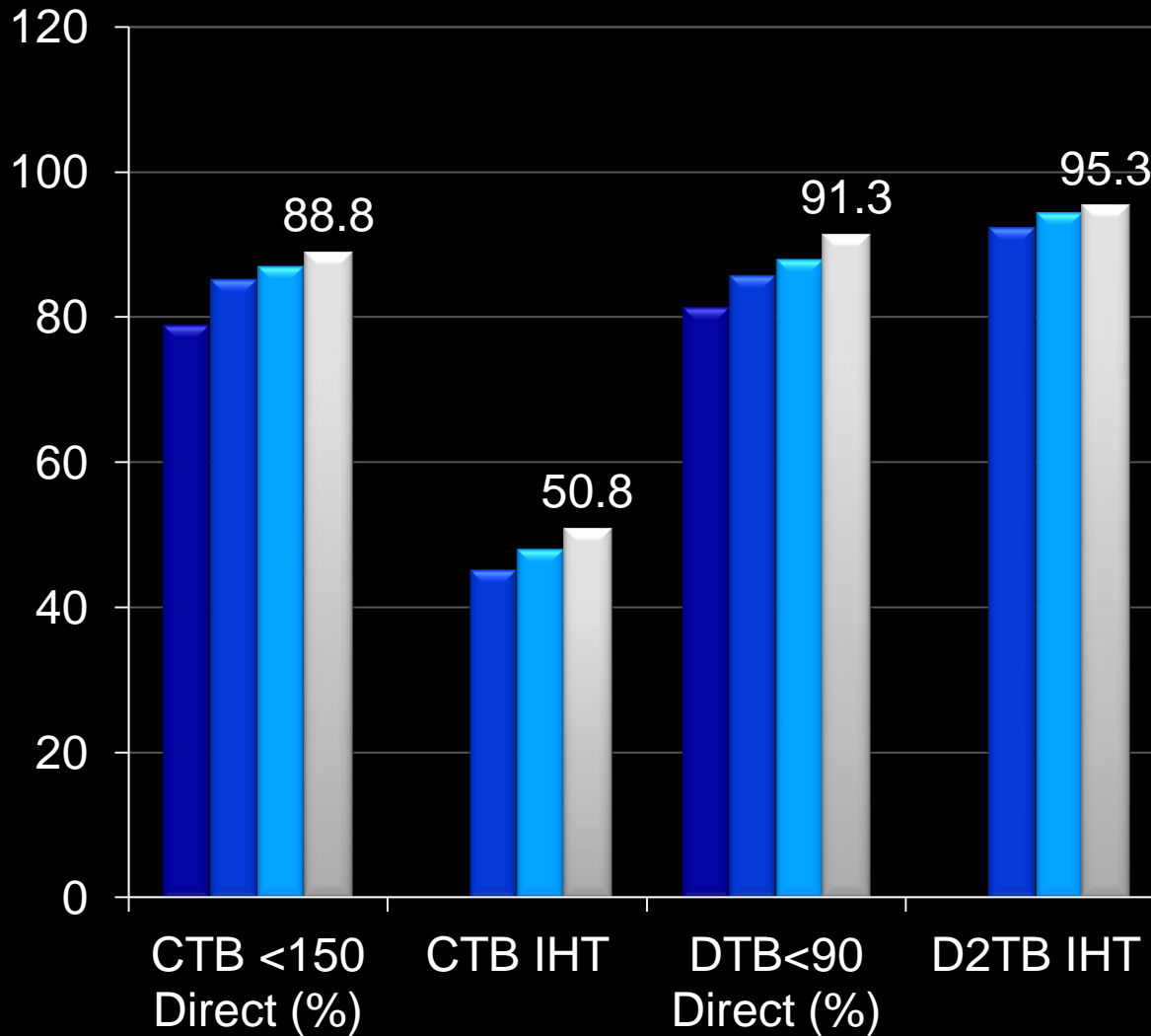


Primary PCI (excl'd shock/vent)

According to admission route



2011 data: Ludman

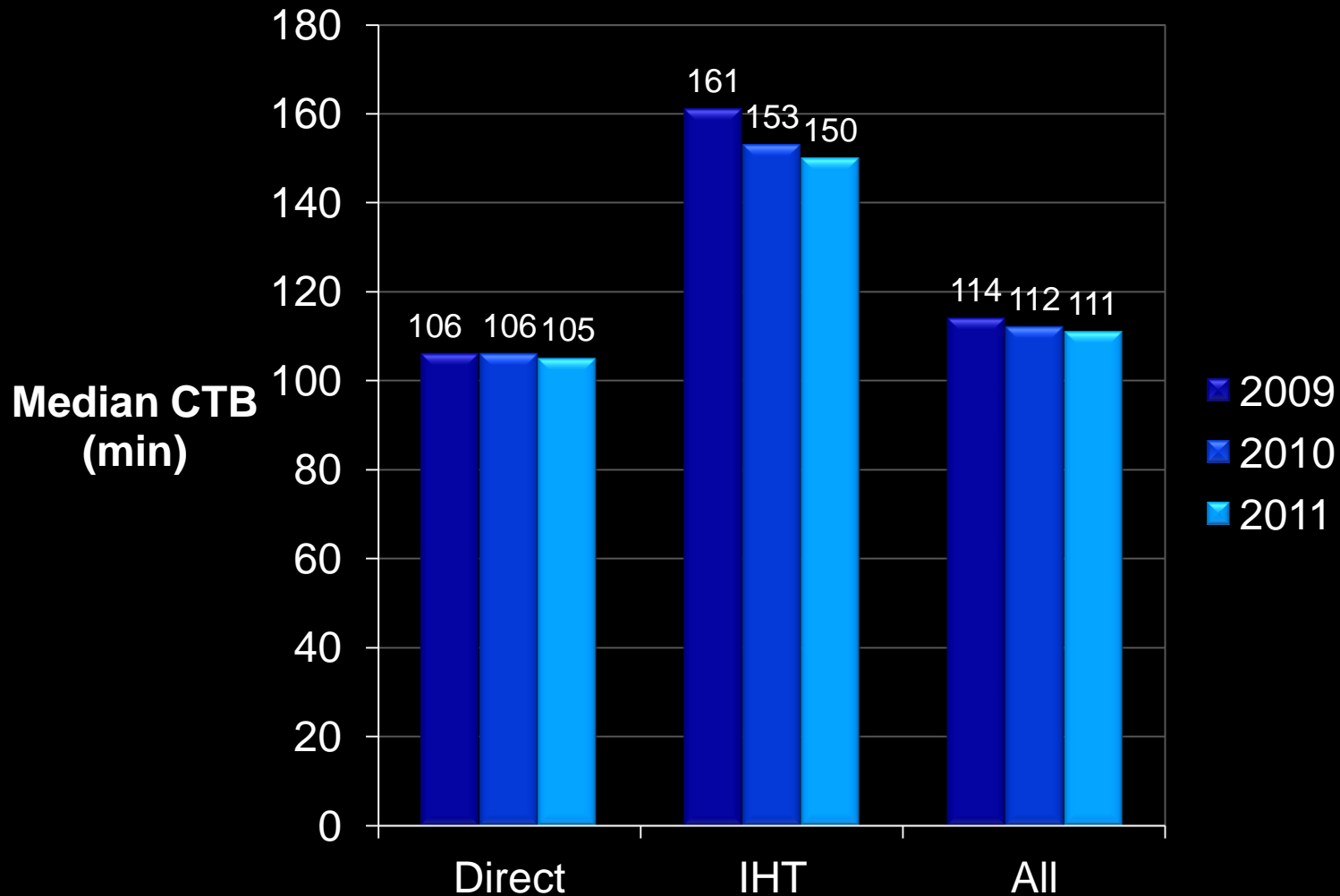


PPCI Call to Balloon time (excl'd shock/vent)

By Admission Route



2011 data: Ludman



PPCI Call to Balloon time (excl'd shock/vent)

By Admission Route



2011 data: Ludman

50 minute delay

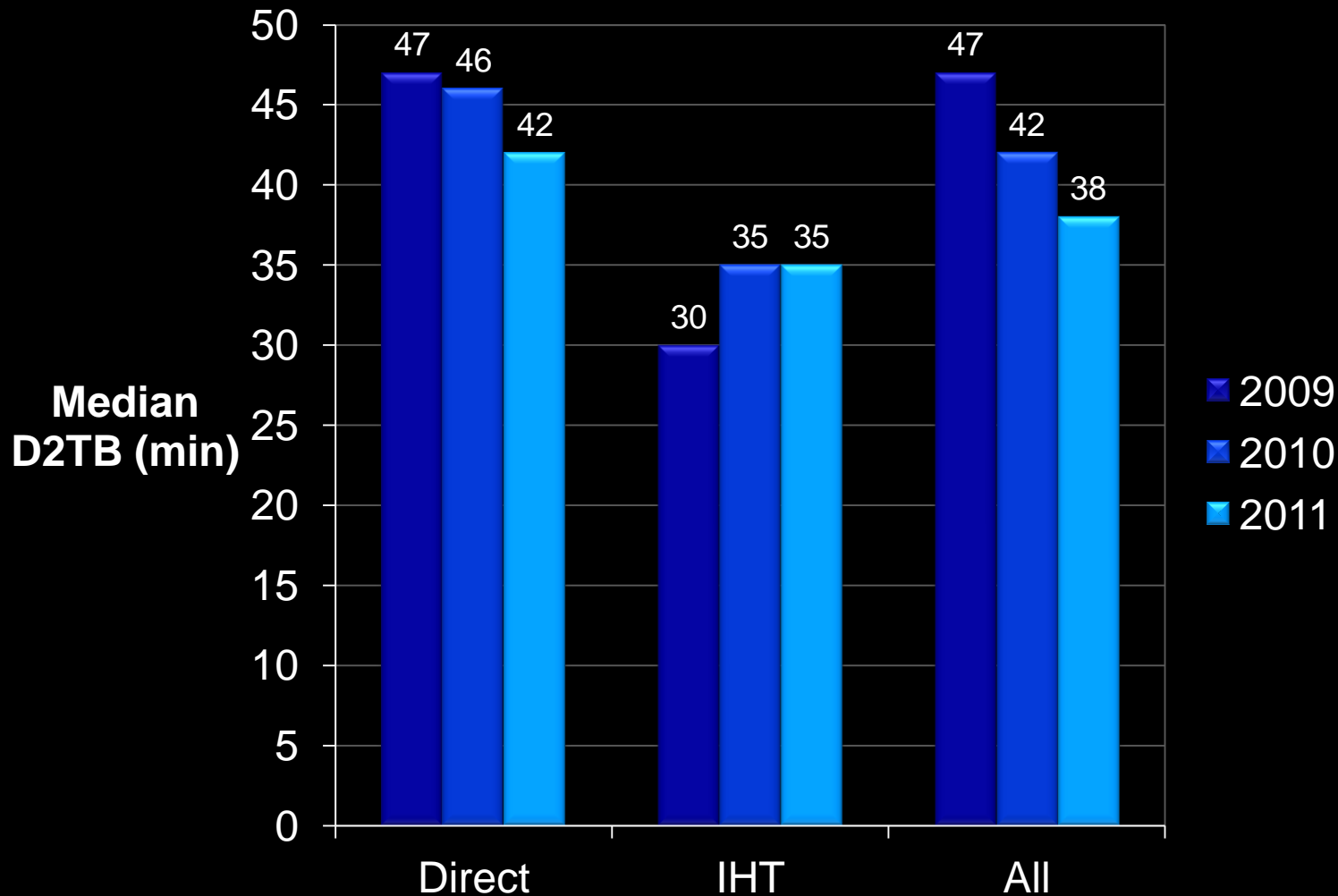


PPCI Door to Balloon time (excl'd shock/vent)

By Admission Route



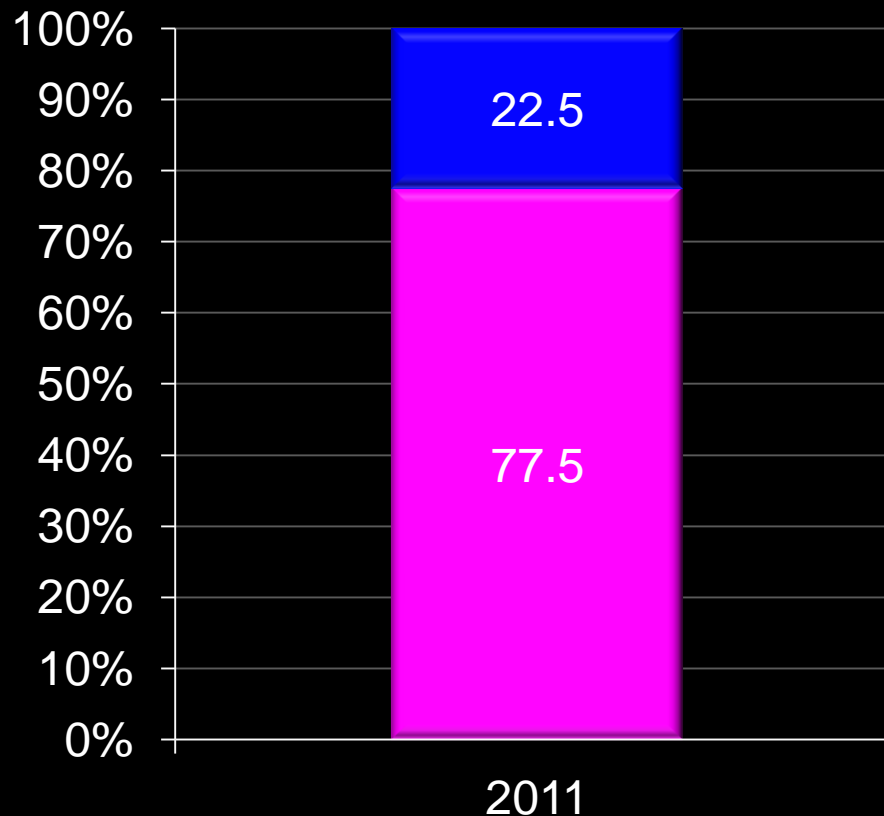
2011 data: Ludman



Primary PCI

Admission routes

% Patients admitted directly or by IHT for PPCI



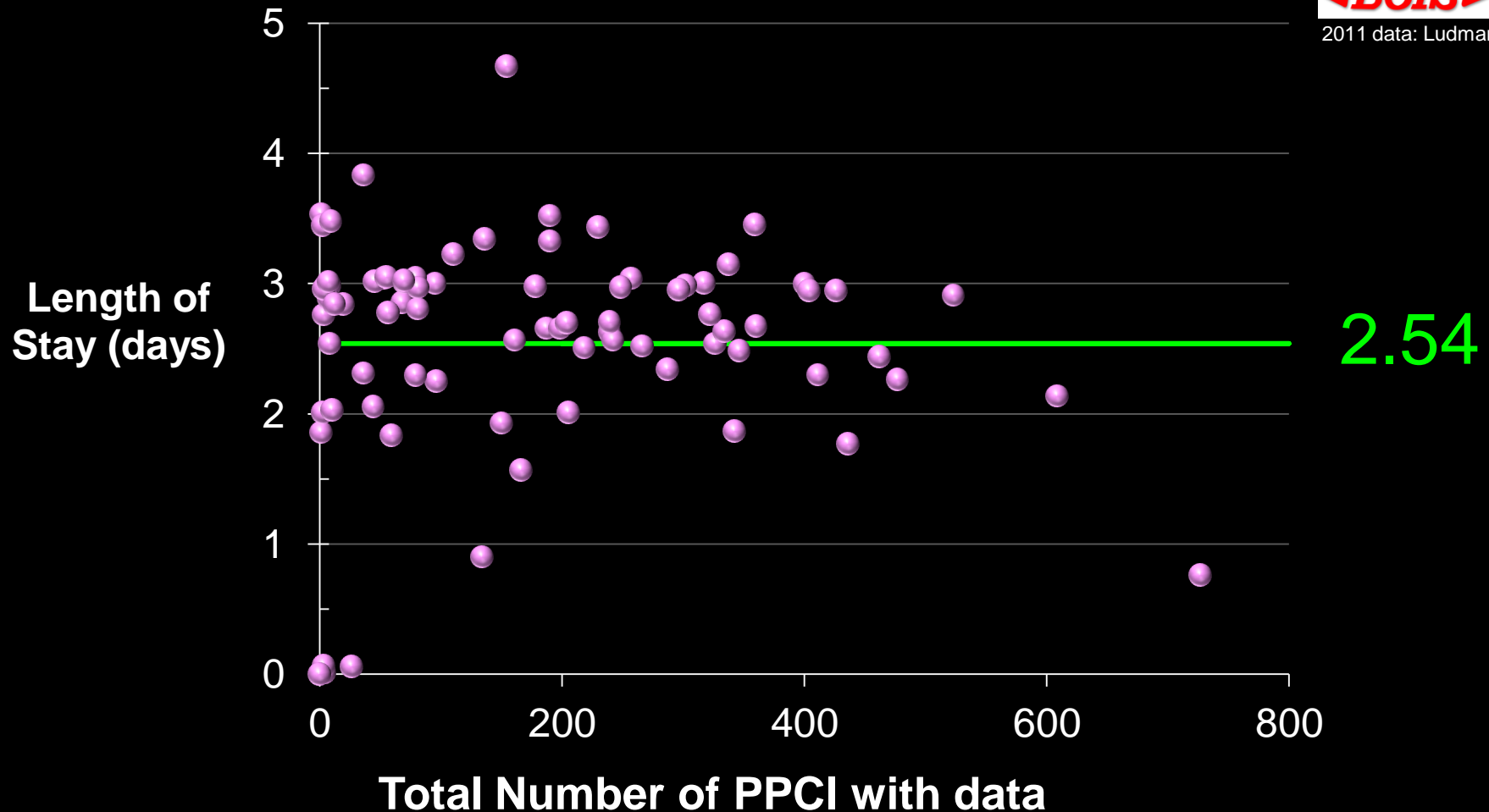
Note: Slightly different denominators from 2009/2010 calculation

PPCI Direct from Community

Median Length of stay in PCI Centre (exc shock and vent)



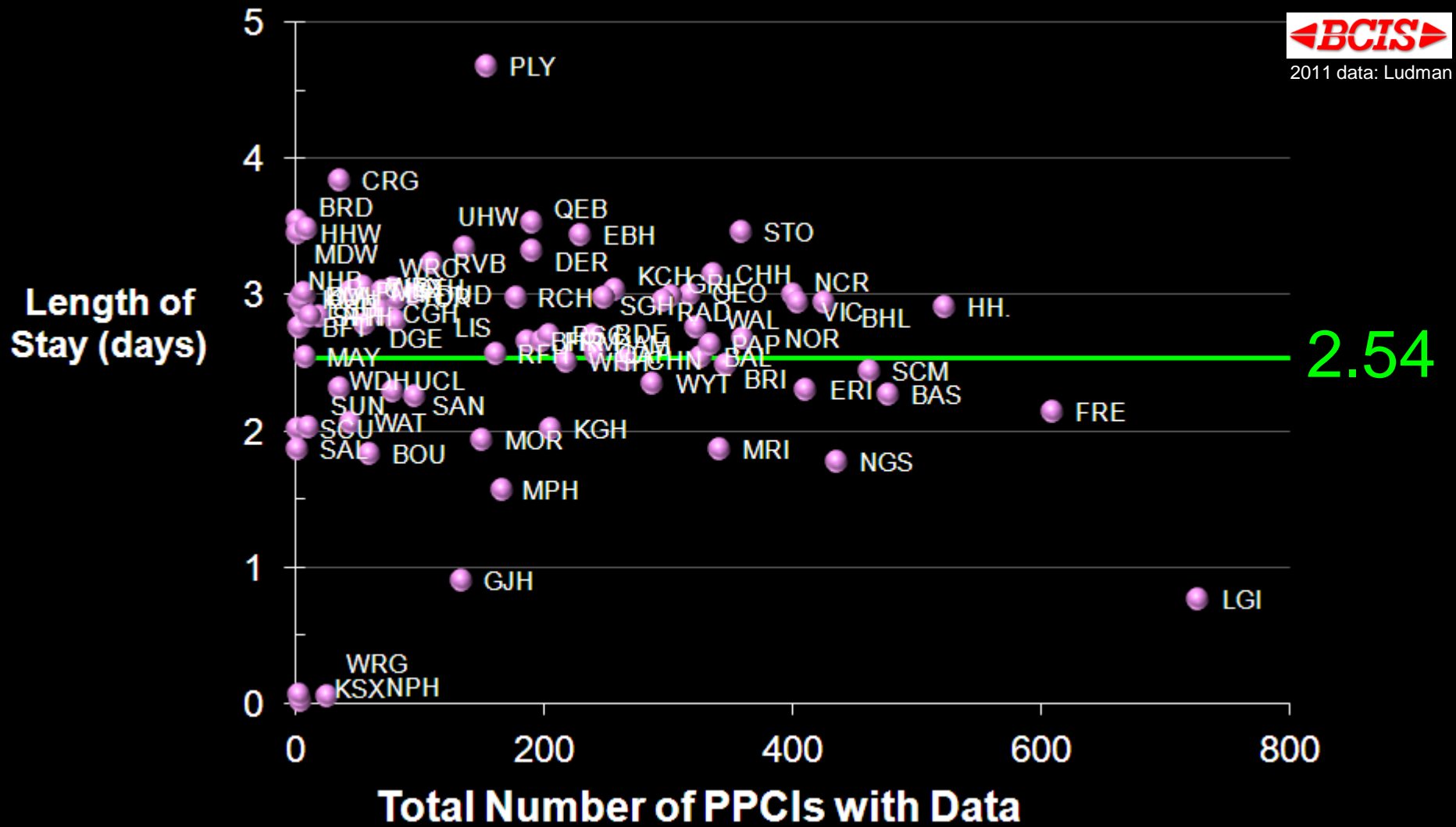
2011 data: Ludman



LOS = First device time to discharge (assuming discharge at midday)

PPCI Direct from Community

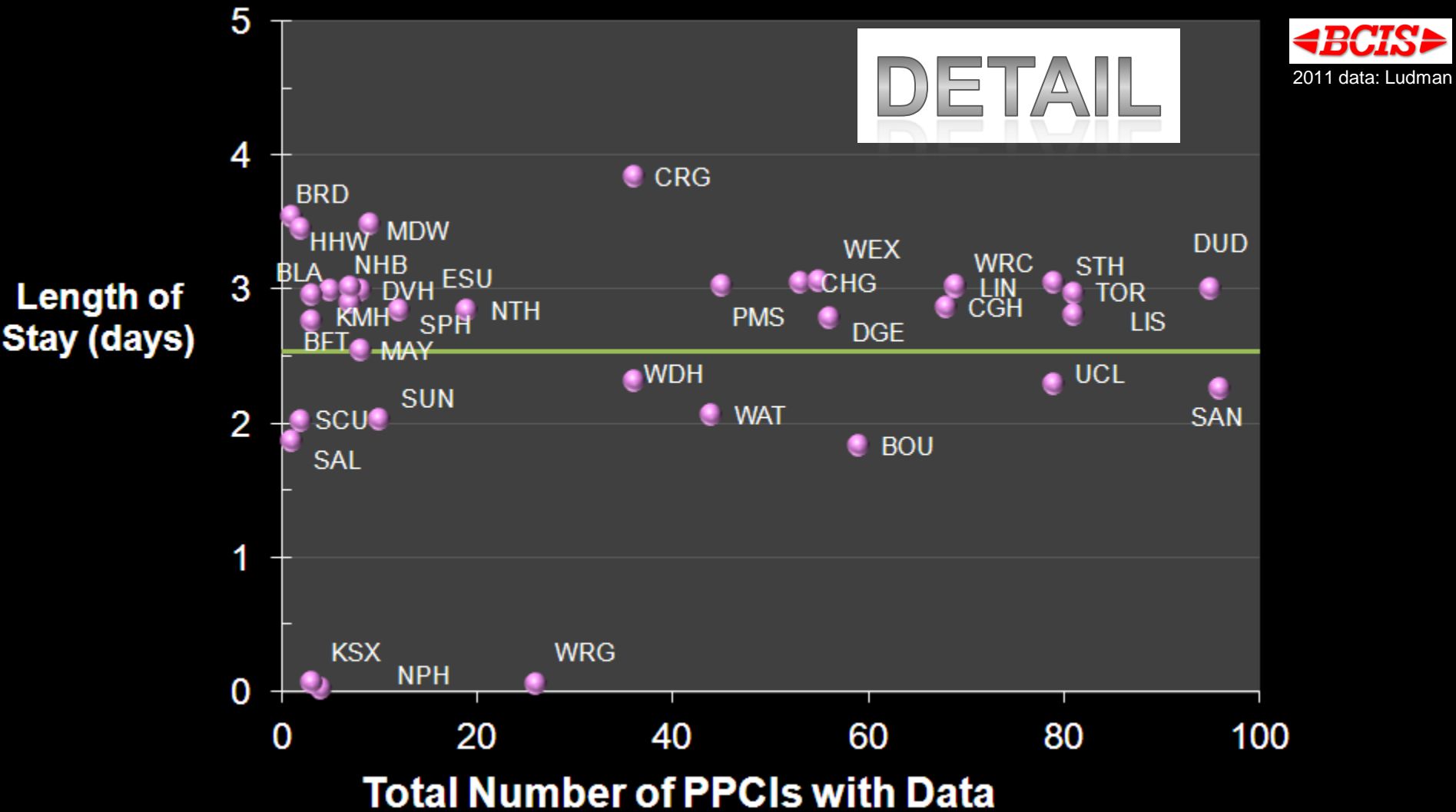
Median Length of stay in PCI Centre (exc shock and vent)



LOS = First device time to discharge (assuming discharge at midday)

PPCI Direct from Community

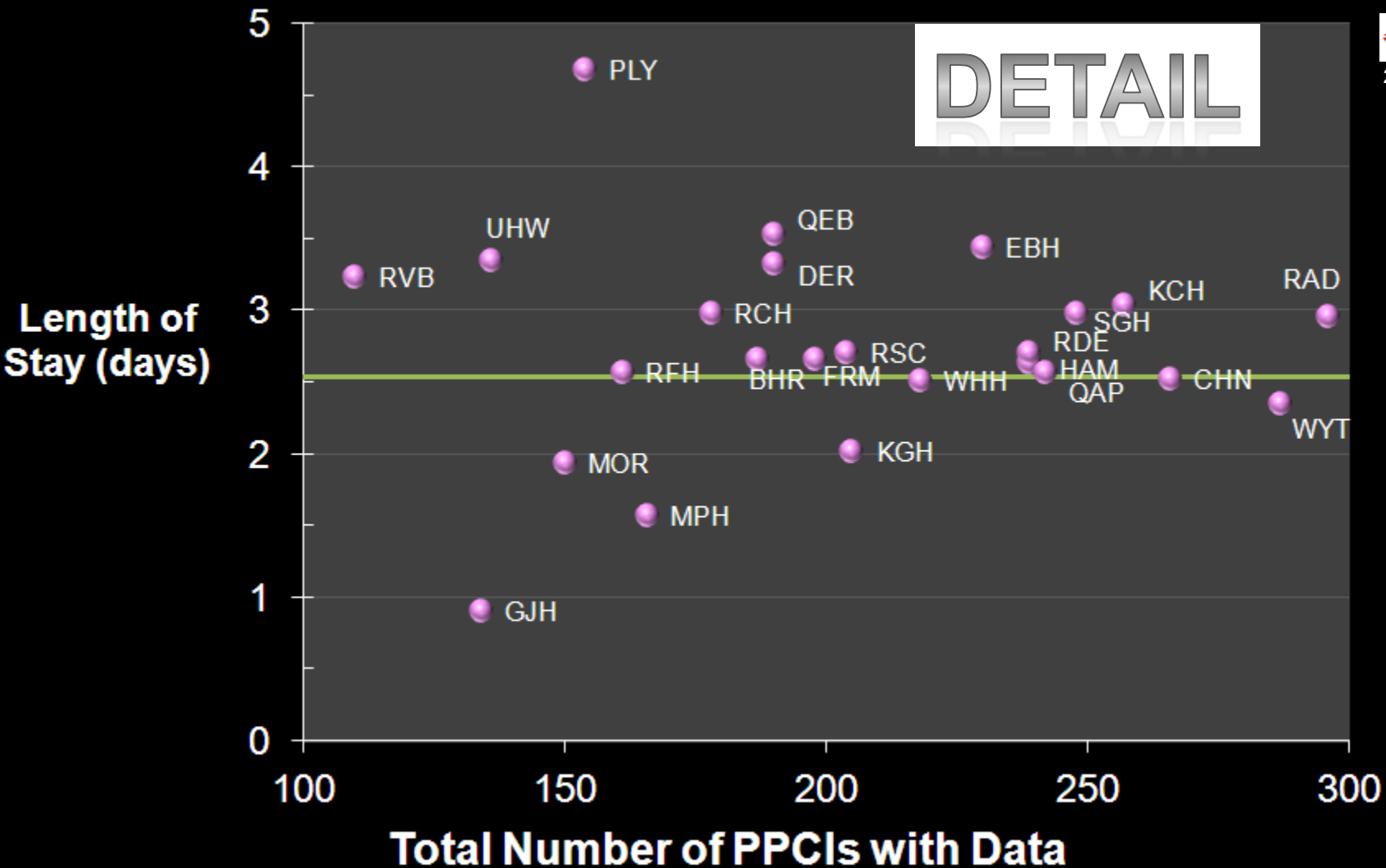
Median Length of stay in PCI Centre (exc shock and vent)



LOS = First device time to discharge (assuming discharge at midday)

PPCI Direct from Community

Median Length of stay in PCI Centre (exc shock and vent)

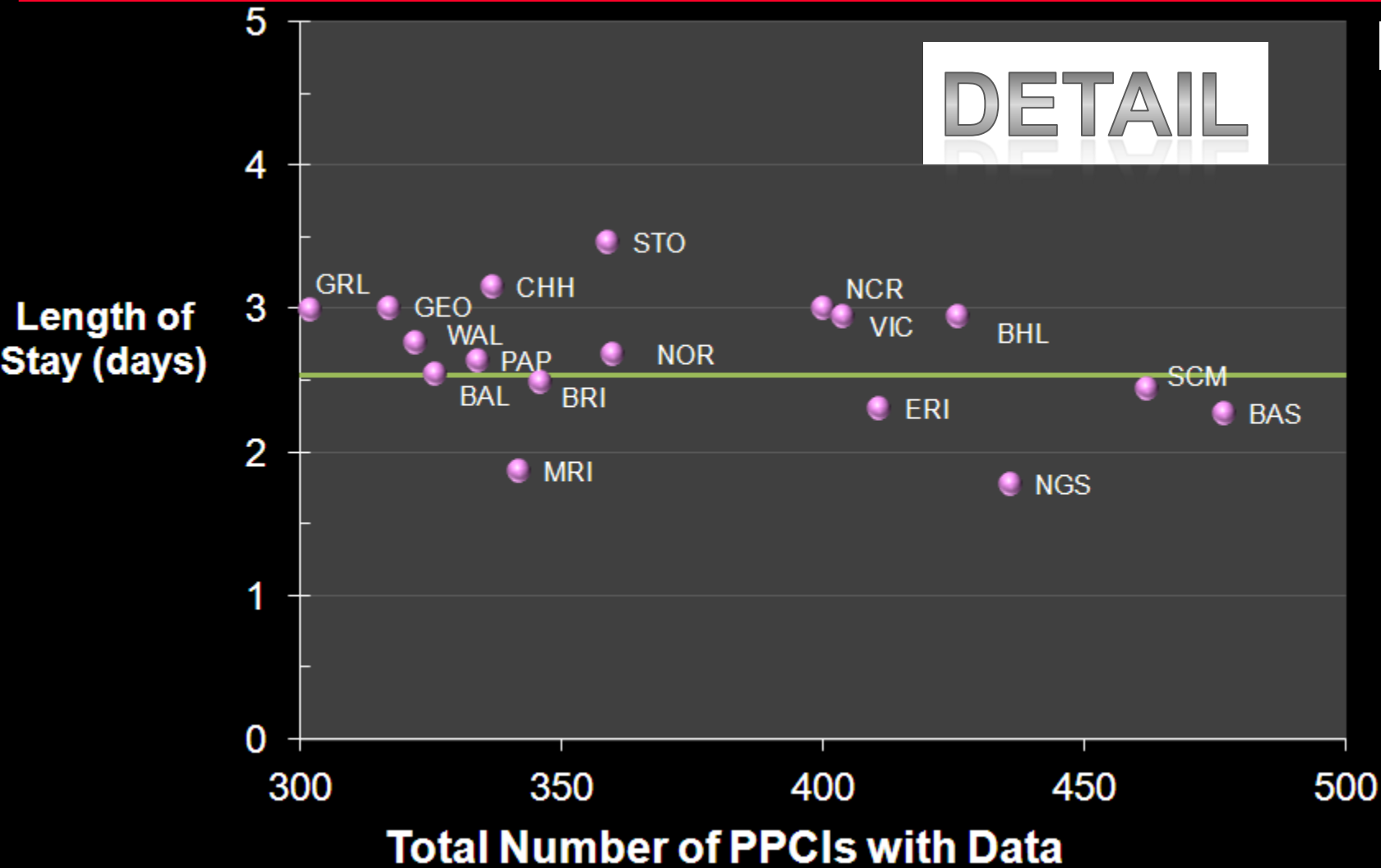


BCIS
2011 data: Ludman

LOS = First device time to discharge (assuming discharge at midday)

PPCI Direct from Community

Median Length of stay in PCI Centre (exc shock and vent)



2011 data: Ludman

LOS = First device time to discharge (assuming discharge at midday)

Primary PCI

% cases over 80

Case selection for PPCI?



2011 data: Ludman

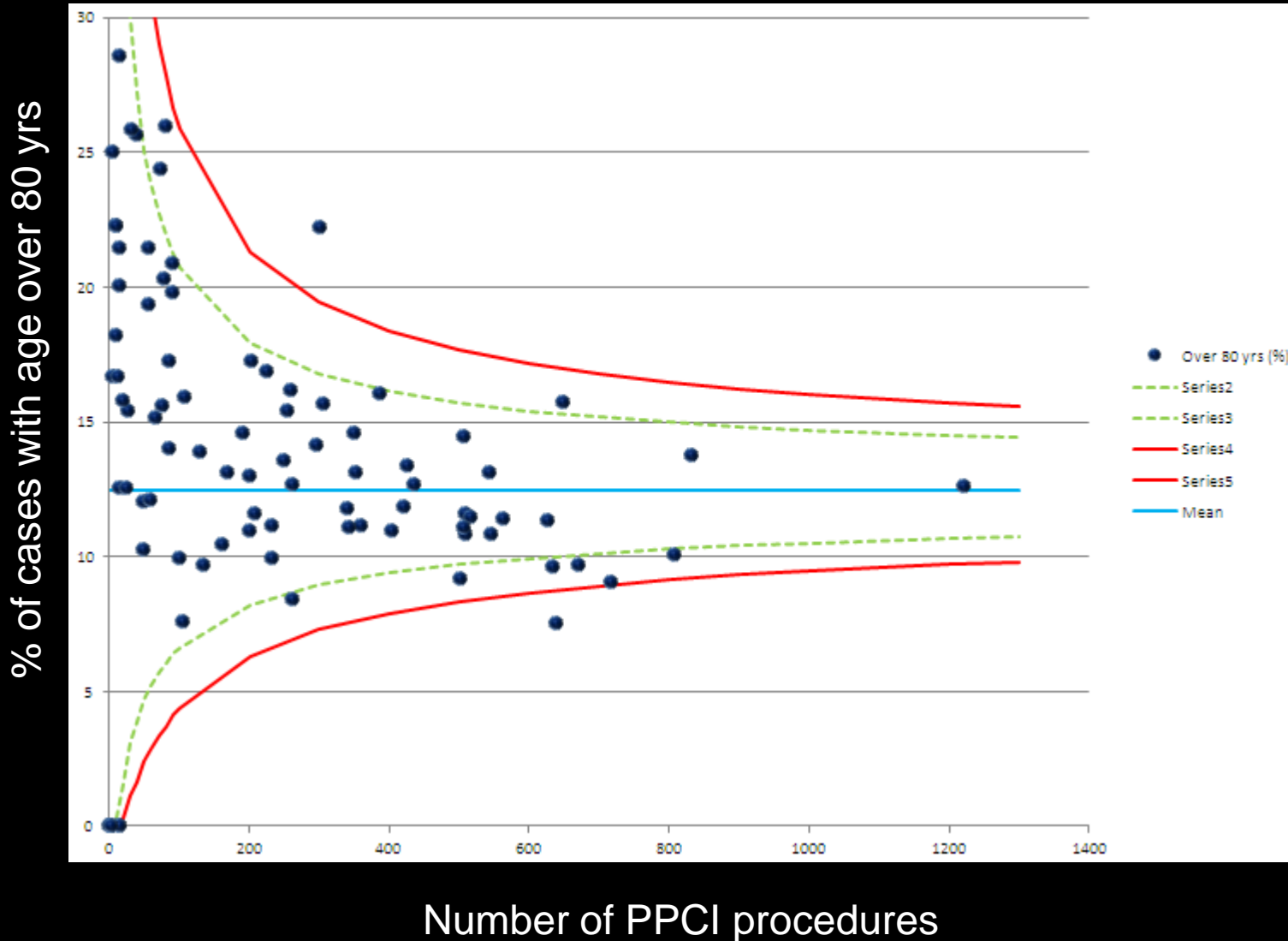


Primary PCI

% cases over 80 (2011 data)



2011 data: Ludman



12.5%

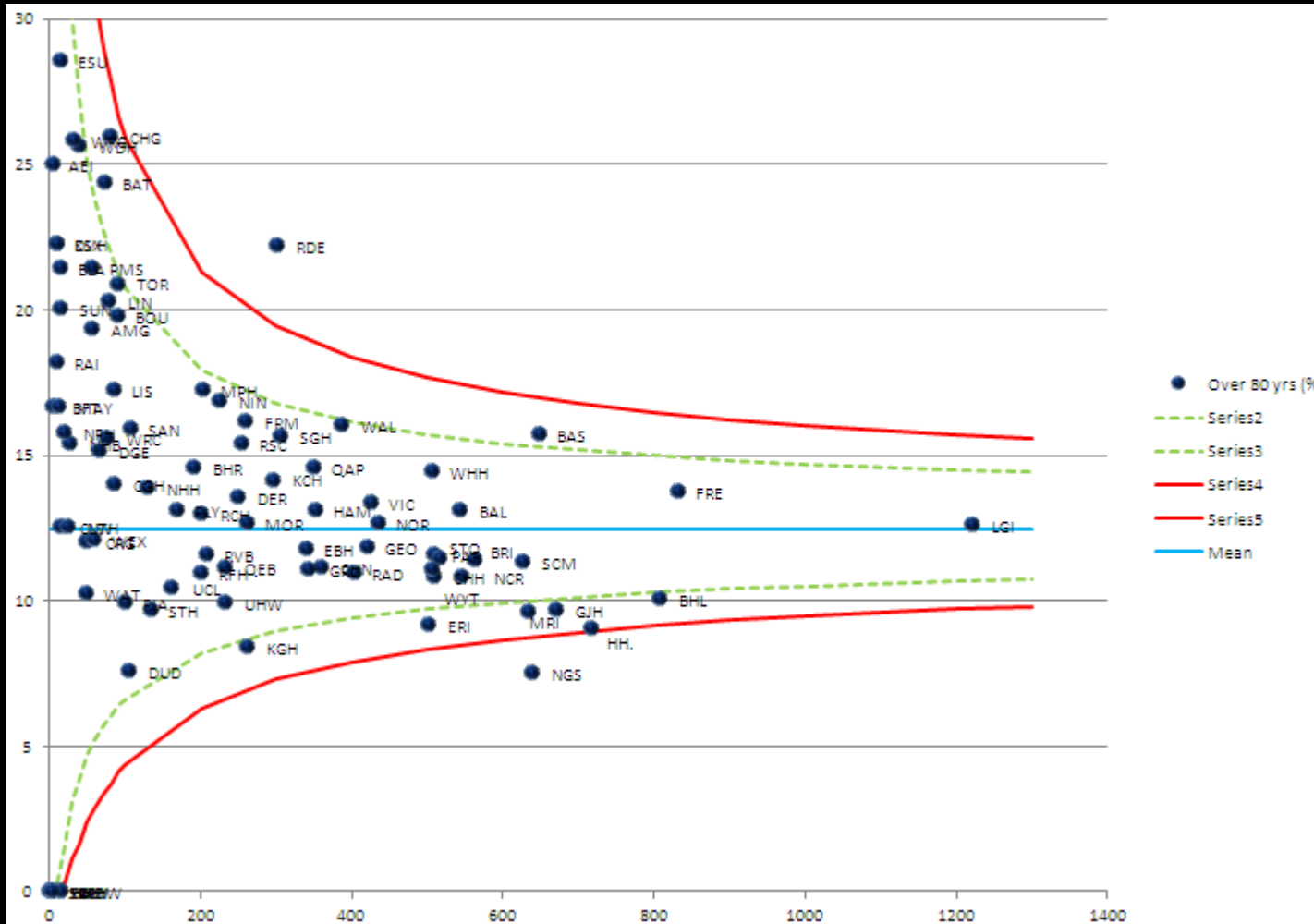
Primary PCI

% cases over 80 (2011 data)



2011 data: Ludman

% of cases with age over 80 yrs



12.5%

Number of PPCI procedures

Unadjusted for popn demographics

Contents

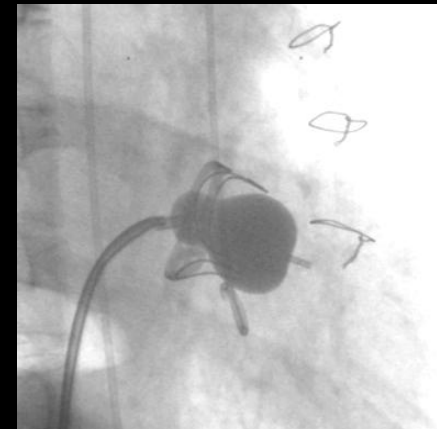
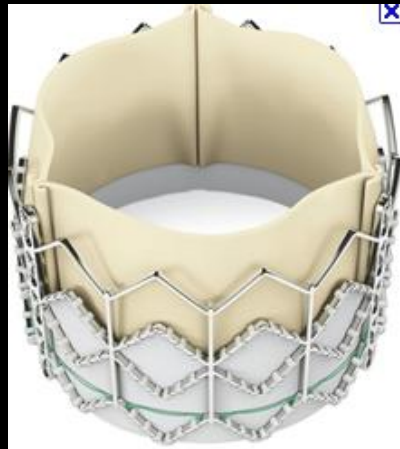


2011 data: Ludman

- **Structure**
 - New centres
 - Total PCI numbers
 - No of PCIs per centre and per angio
 - PCI pmp and by country
 - PCI operators, by centre, by PPCI
 - On call rotas for PPCI
 - Surgical cover
 - Day case activity
 - Primary PCI units
- **NICOR data collection**
 - Centre participation
 - Databases used
 - Case ascertainment
 - Data completeness
 - Data Quality
- **Appropriateness**
 - Demographics
 - Indication for PCI / Clinical syndrome
 - PPCI activity (by unit, pmp, by vessel)
 - PCI territories / vessels / lesions
 - Stents (BMS and DES)
 - Adjunctive pharmacotherapy
 - LV support and shock
 - Additional interventional techniques, devices
 - Arterial access (routes)
- **Process of care**
 - Delays data completeness
 - Delays to treatment
 - NSTEMI / PPCI
 - IHT versus Direct admission
 - PPCI age > 80 / Length of stay
- **Adult non coronary intervention**
 - Septal ablation for HOCM
 - PFO / ASD closure / LAA occlusion
 - Renal Denervation
 - Valve therapies
 - Other adult structural intervention
- **Outcome**
 - MACCE
 - Periprocedural complications and by access
 - Tracked 30 day mortality
 - Outcome by syndrome
 - Outcome by lesion subset
 - Risk adjusted outcomes
 - 3 year MACCE
 - 1 year MACCE
 - Predicted risk by centre type

Appendix: PCI Centre CCAD codes

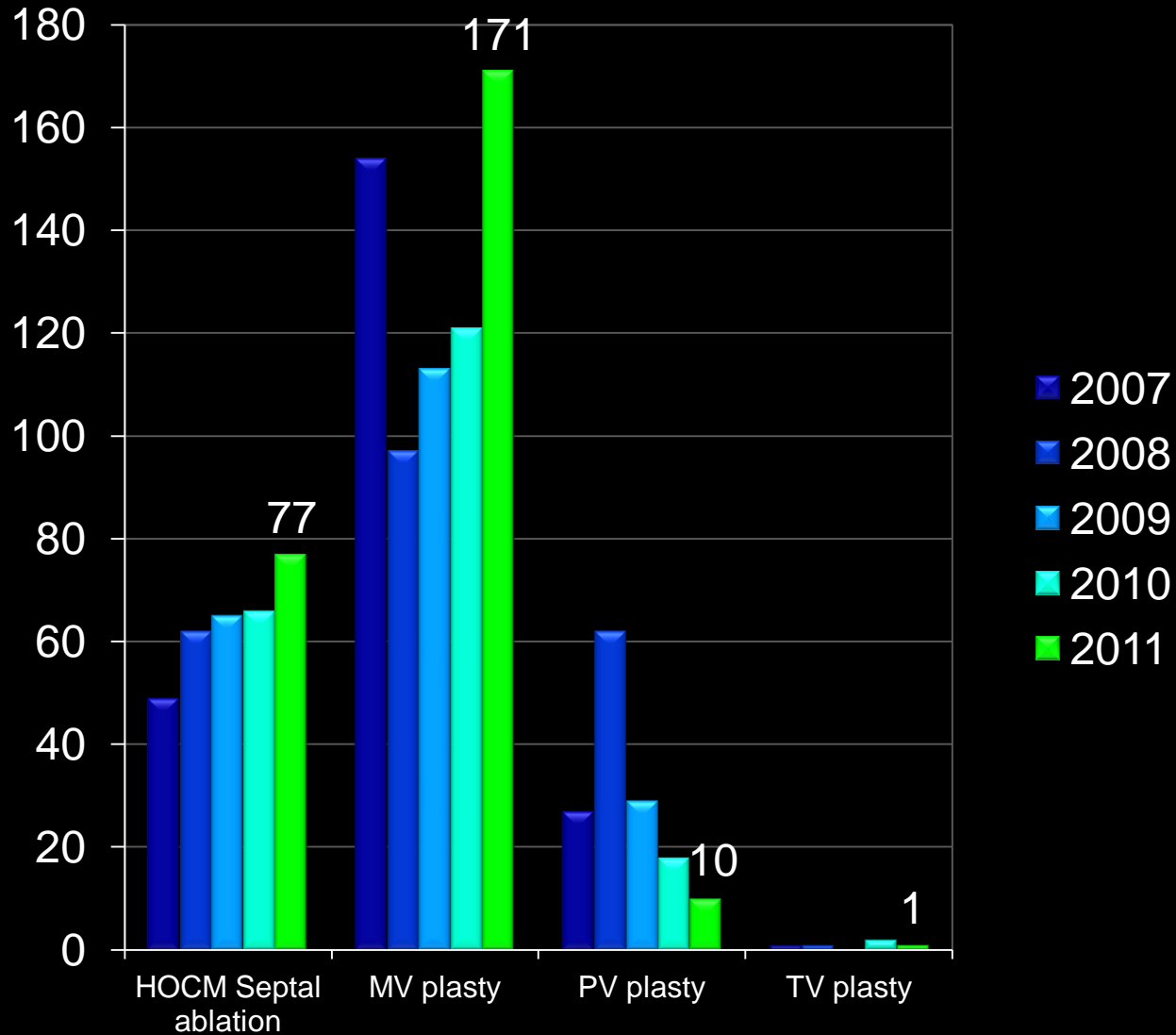
Adult Non Coronary Intervention



Adult Non-Coronary Intervention



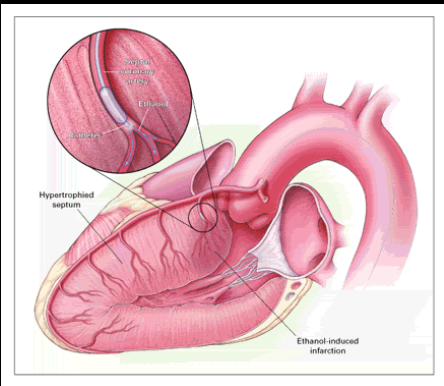
2011 data: Ludman



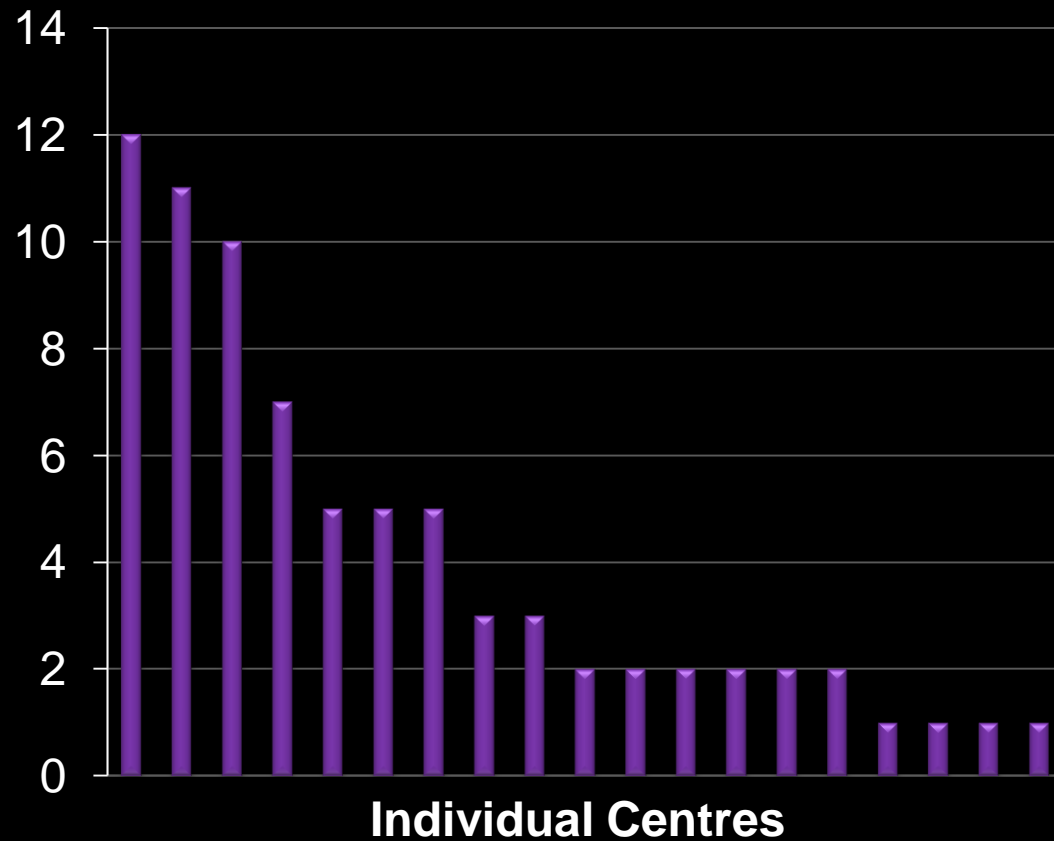
Alcohol Mediated Septal Ablation



2011 data: Ludman



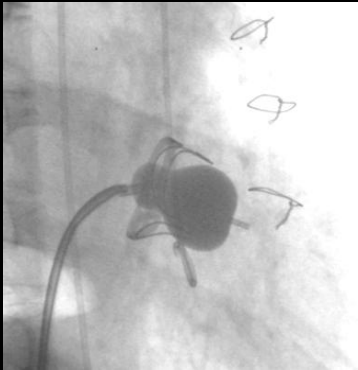
Number of
procedures
2011



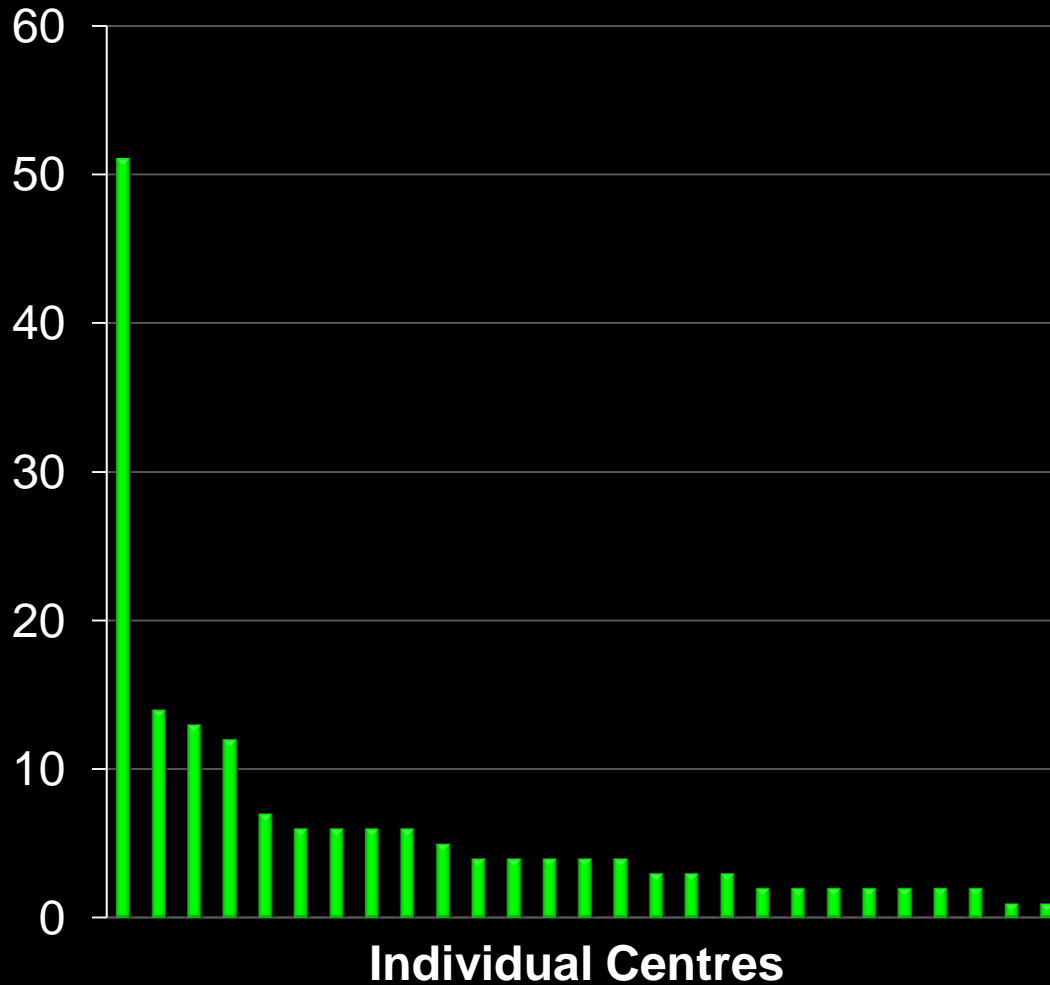
Mitral Balloon Valvuloplasty



2011 data: Ludman



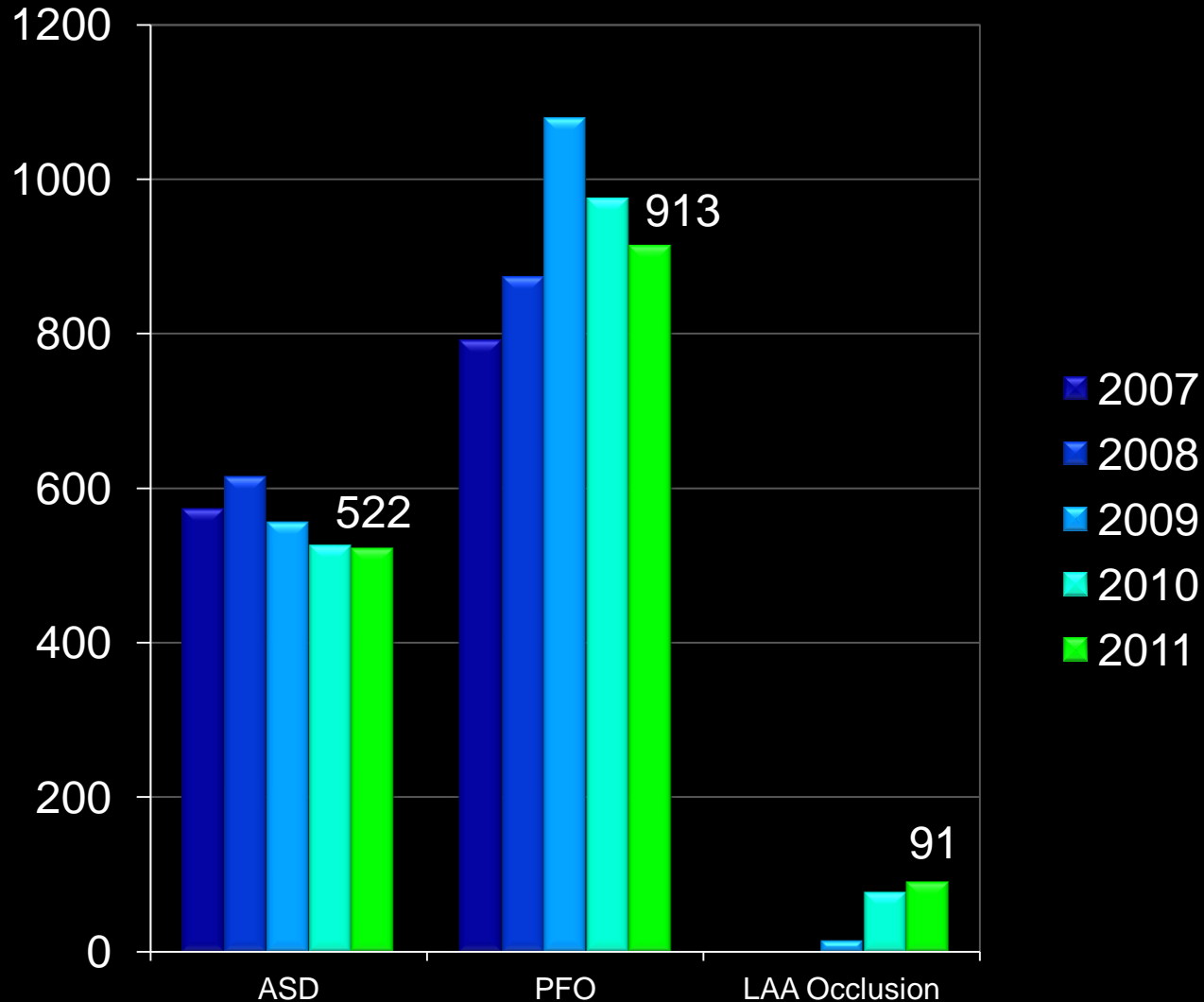
Number of
procedures
2011



Adult Non-Coronary Intervention



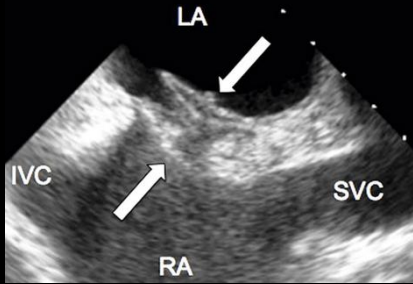
2011 data: Ludman



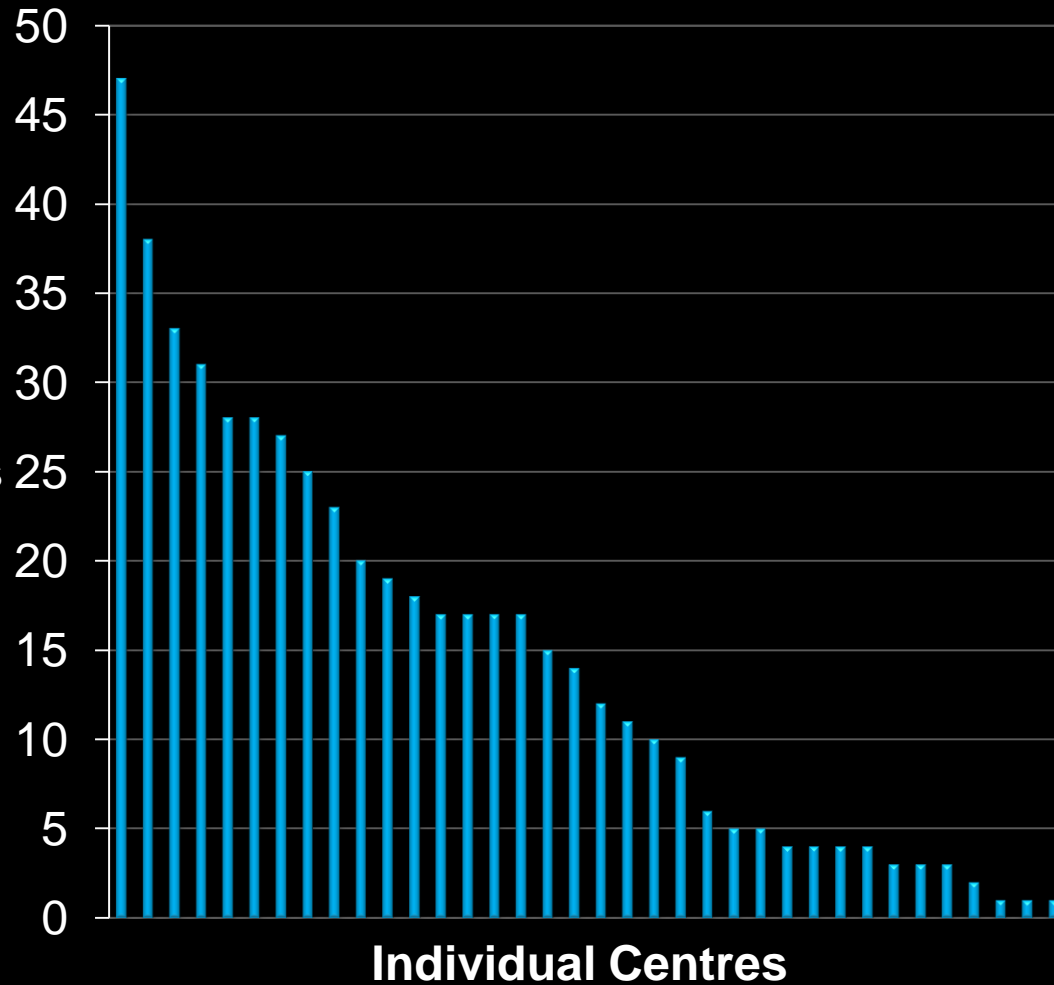
ASD Closure



2011 data: Ludman



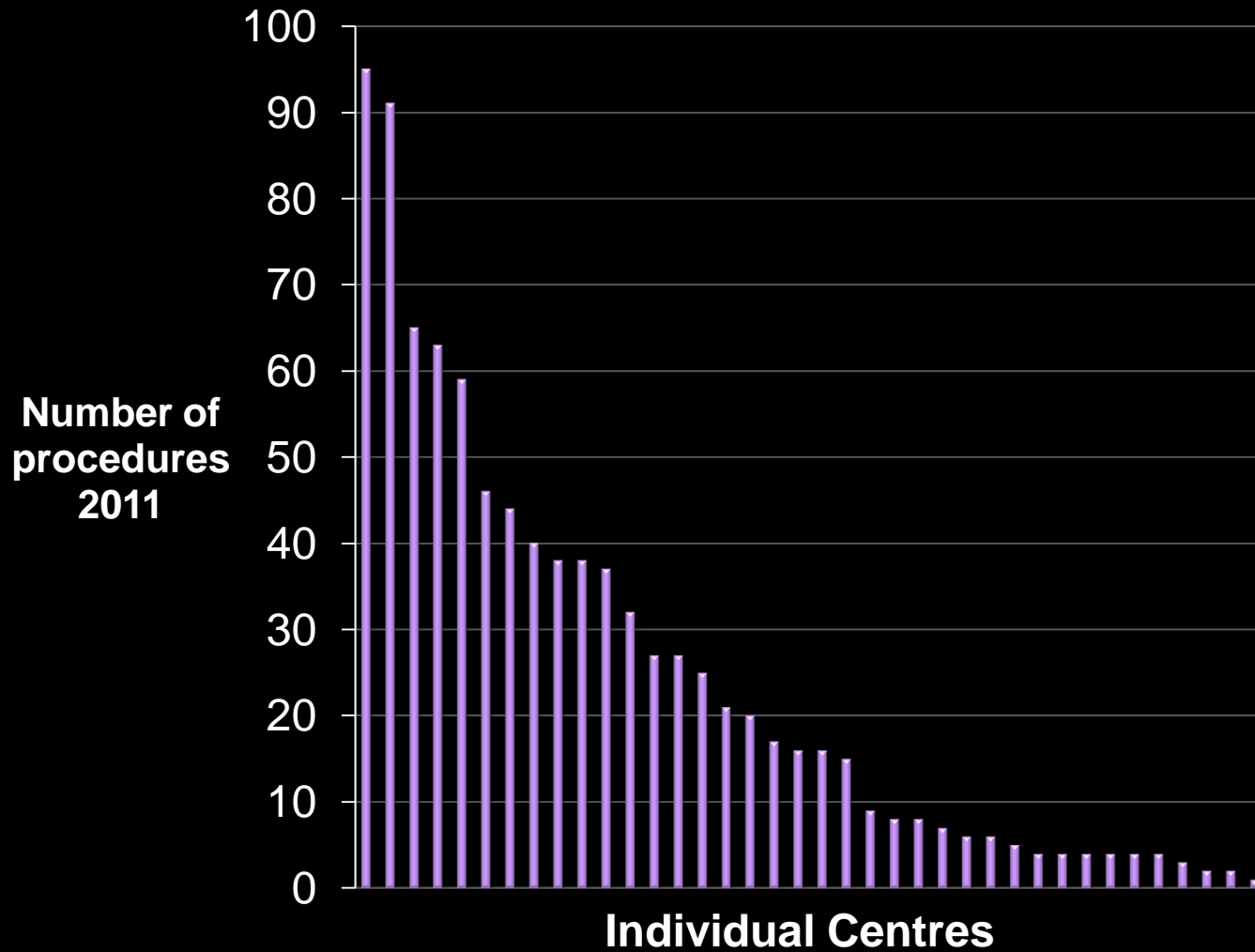
Number of
procedures
2011



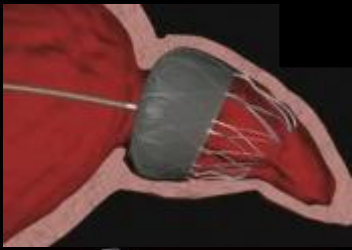
PFO Closure



2011 data: Ludman

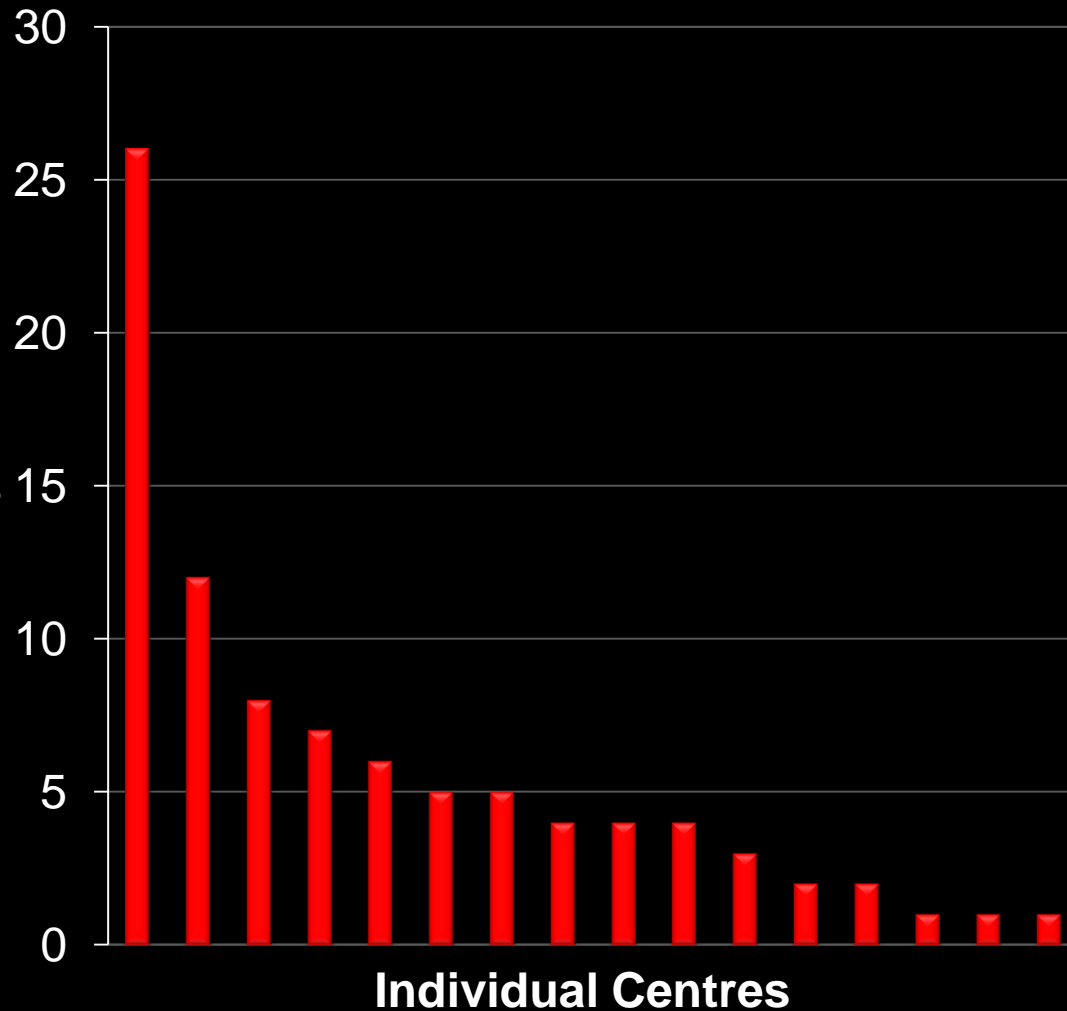


LAA Closure



2011 data: Ludman

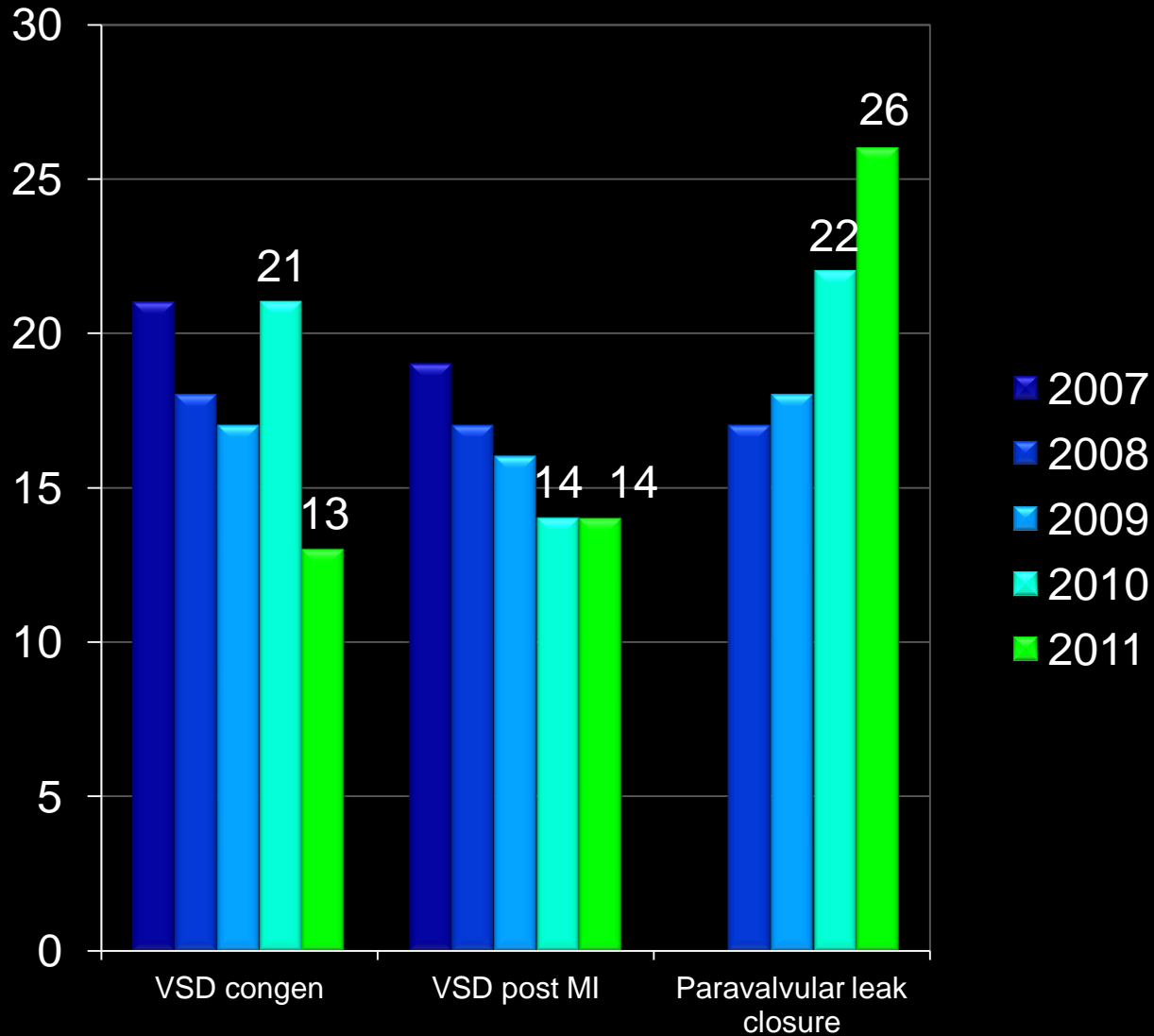
Number of
procedures
2011



Adult Non-Coronary Intervention



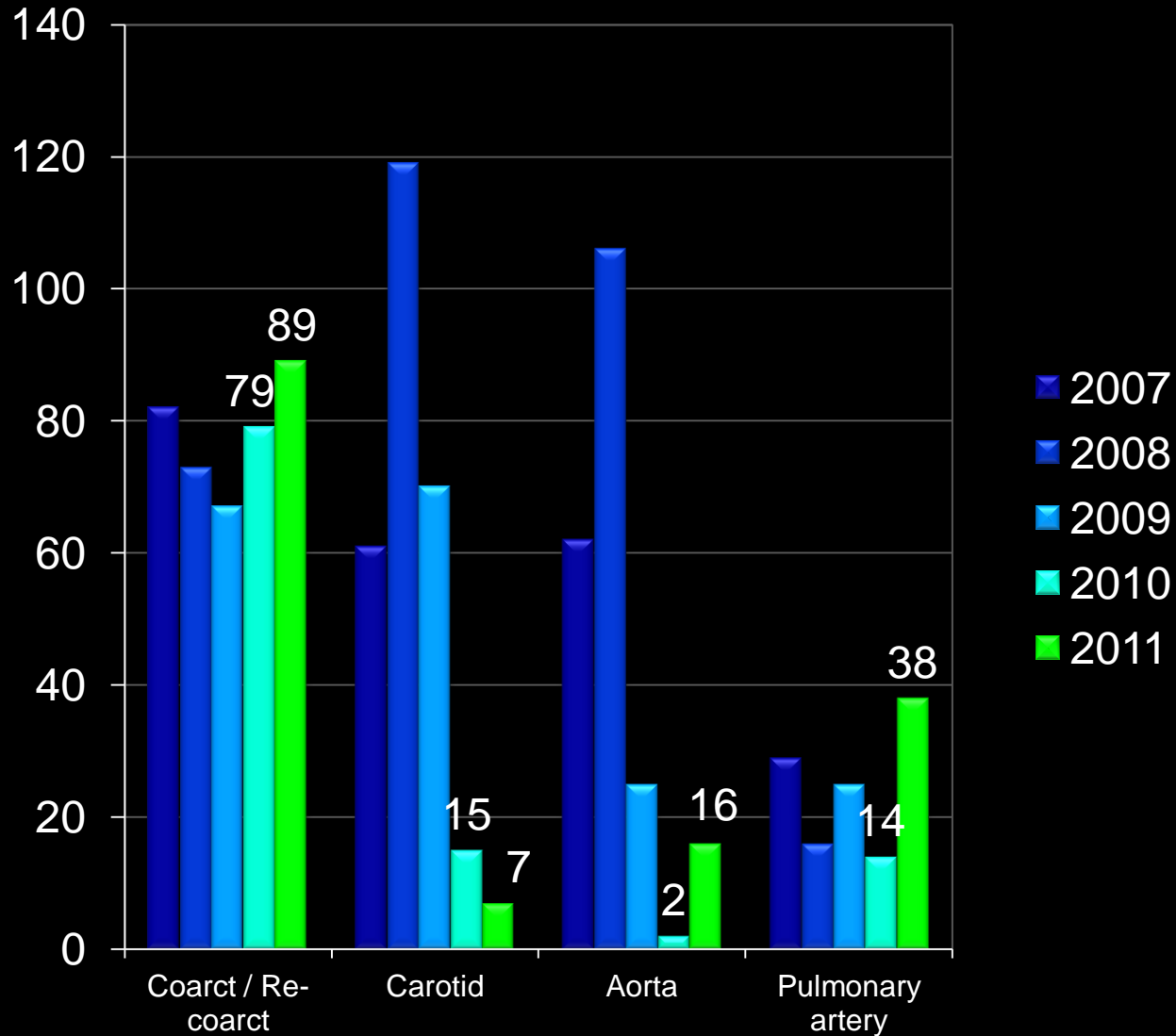
2011 data: Ludman



Adult Great Vessel Intervention



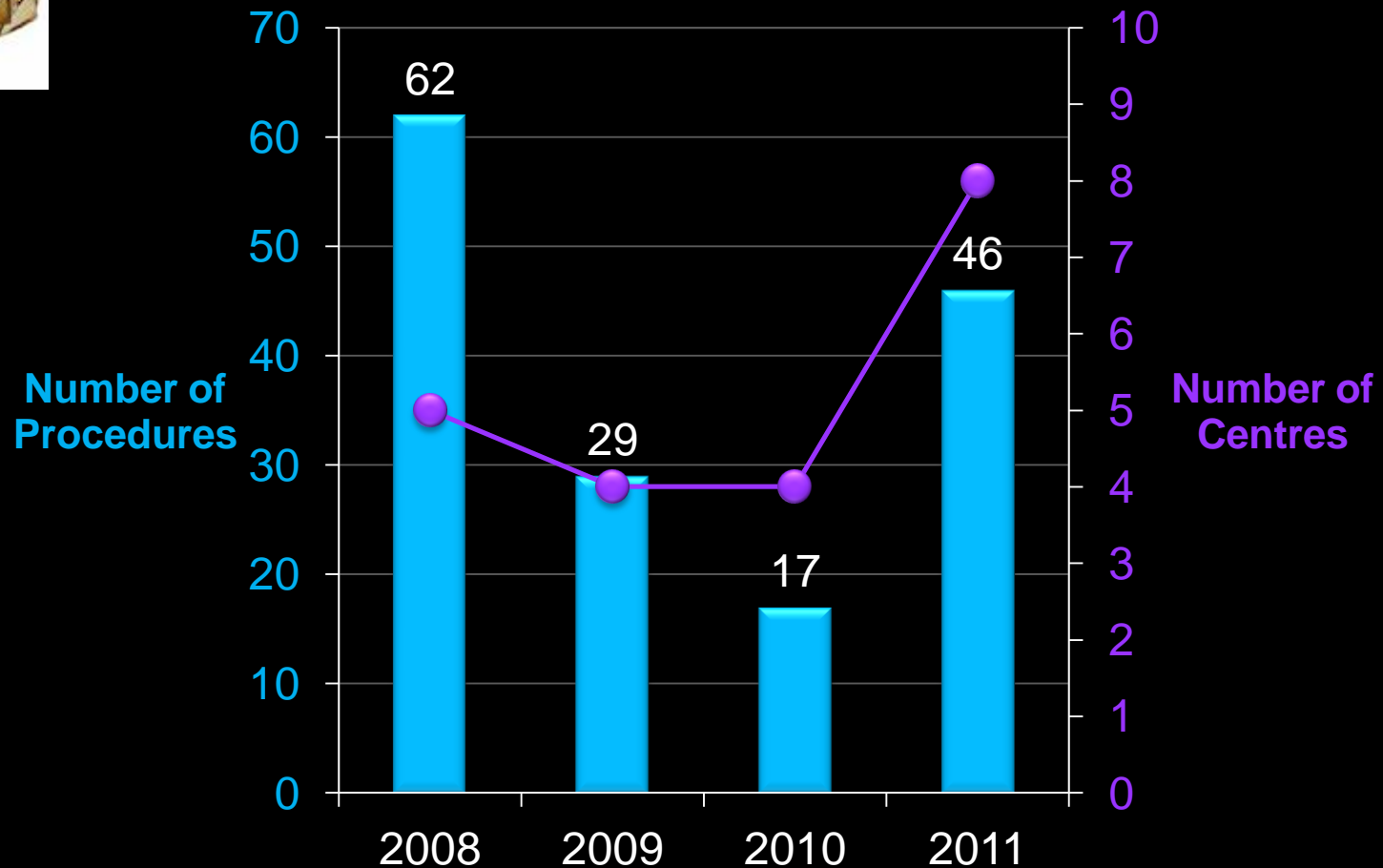
2011 data: Ludman



Percutaneous Pulmonary Valves



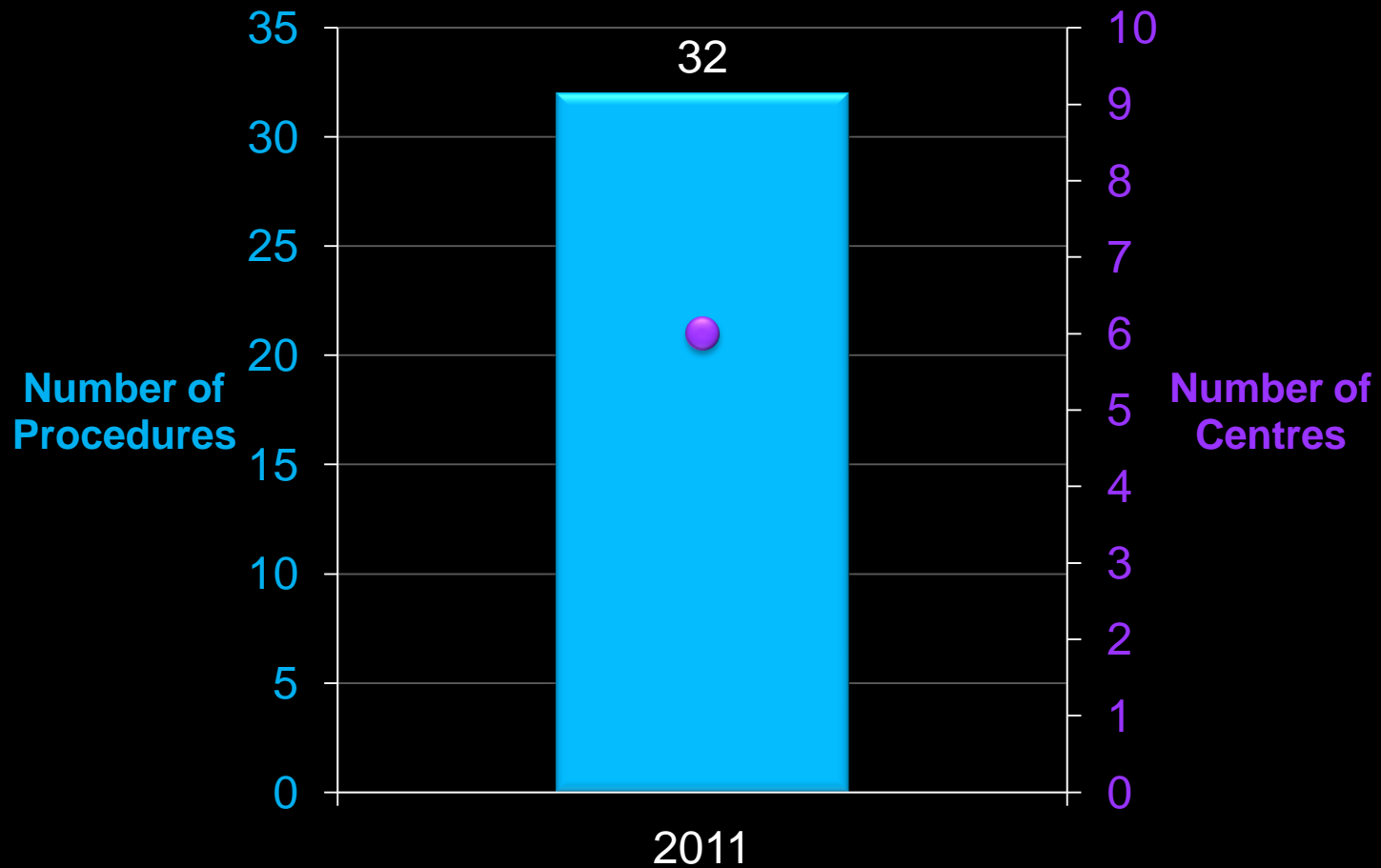
2011 data: Ludman



Renal Denervation



2011 data: Ludman





Transcatheter Valves

Data from aggregate sheets



2011 data: Ludman

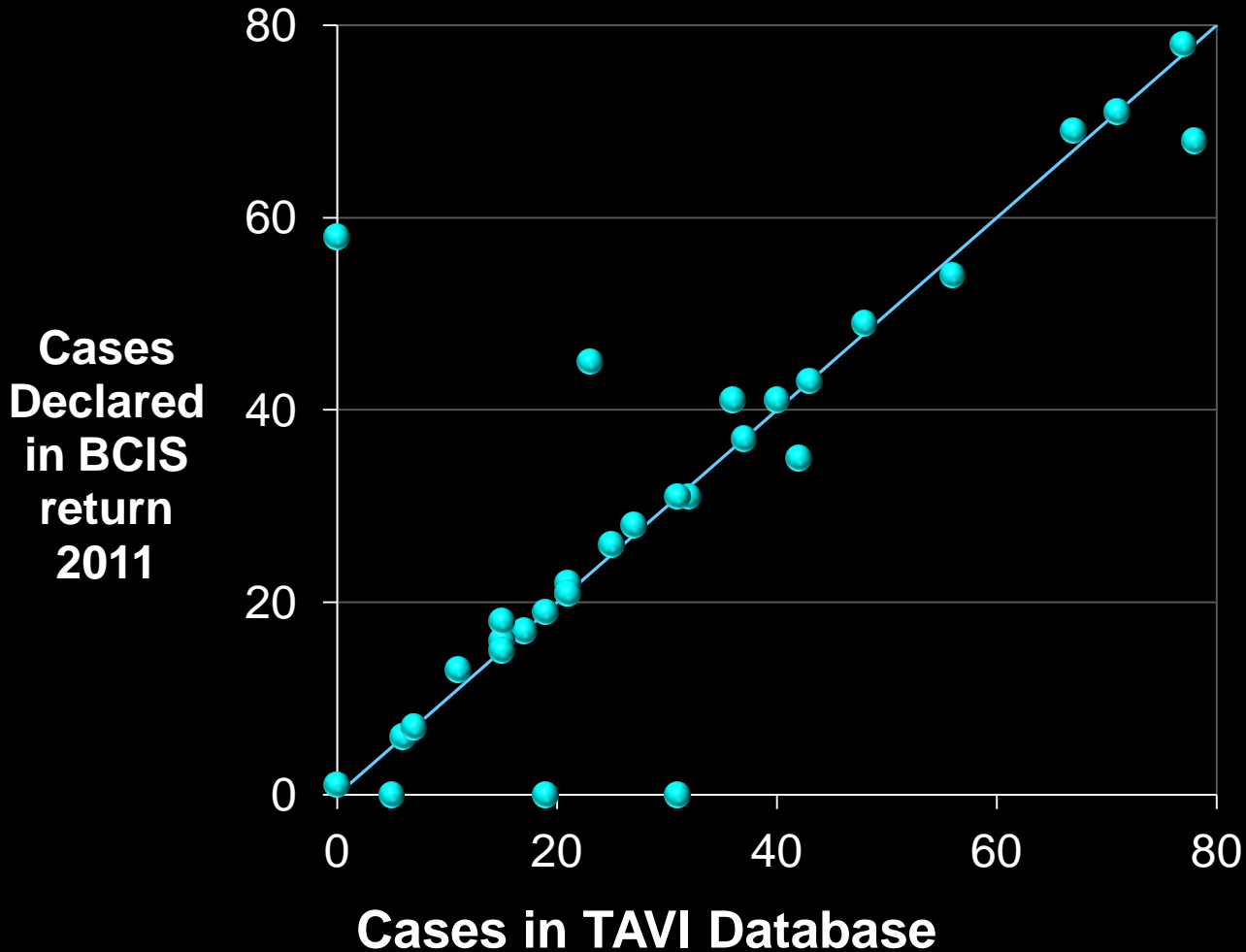
		Units	No	Max Cases
CoreValve: Femoral		15	373	61
CoreValve: Subclavian		11	46	9
CoreValve: Other		7	26	26
Edwards: Femoral		22	300	42
Edwards: Apical		23	178	30
Edwards Other (direct aortic):		8	47	25
Other Aortic device		1	13	13
Total = 983				

Transcatheter Valves

Case ascertainment 2011



2011 data: Ludman

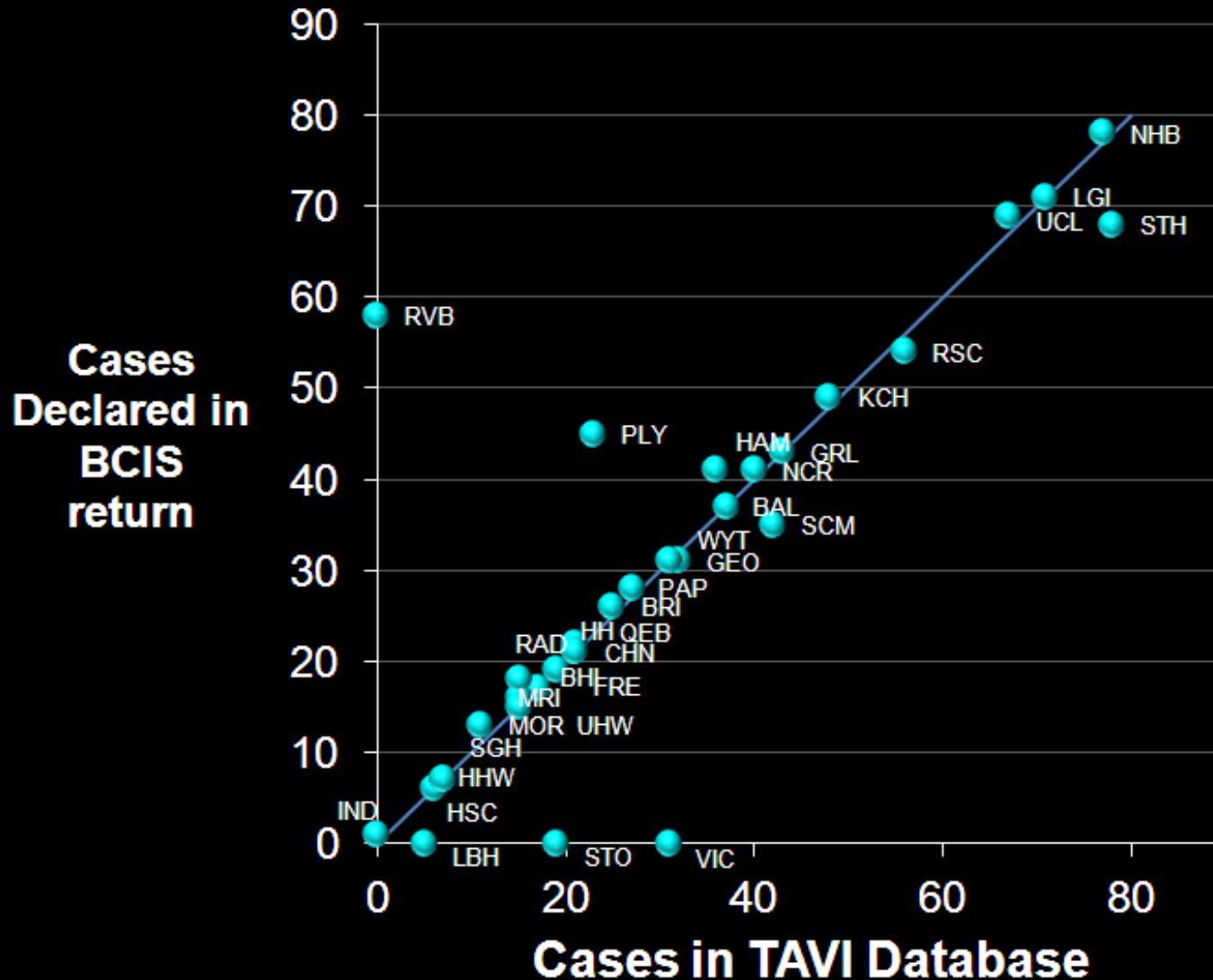


Transcatheter Valves

Case ascertainment 2011



2011 data: Ludman

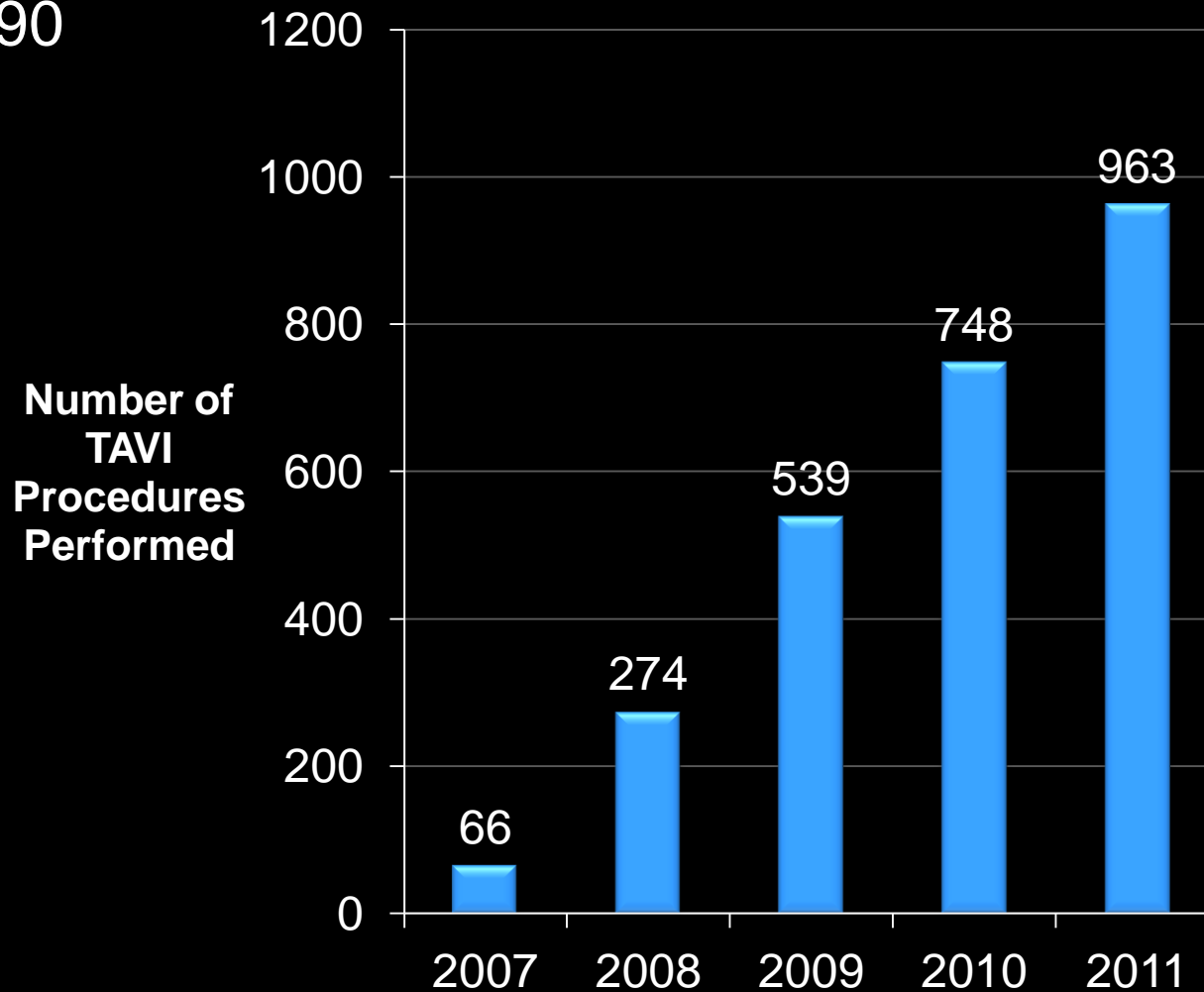


TAVI

Total = 2590



2011 data: Ludman



From TAVI registry as August 2012

Percutaneous Valves - Mitral



2011 data: Ludman

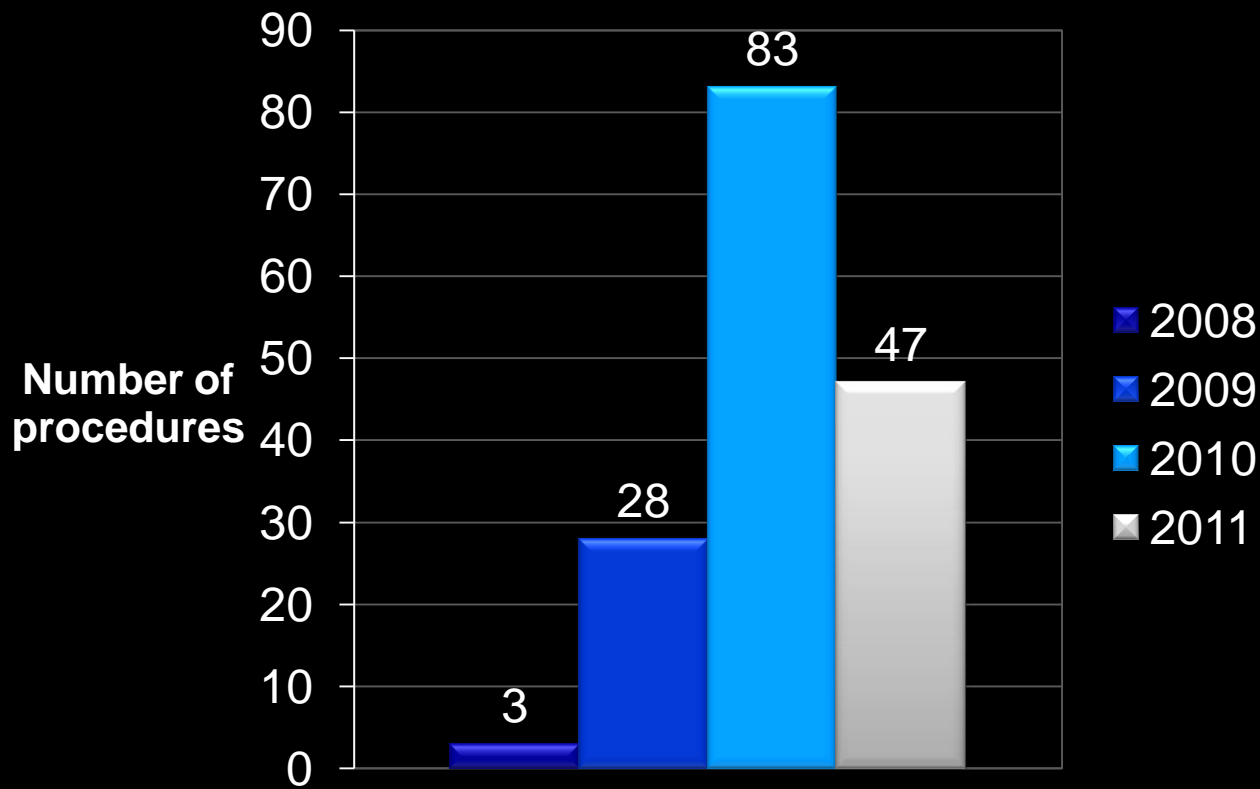
	Units	No	Max Cases
Mitra-clip	5	47	19
Viacor	0		
Carillon	0		
Monarch	0		
Total = 47			

Percutaneous Valves

Mitra-Clip



2011 data: Ludman



TAVI to treat other valves



2011 data: Ludman

	Units	No	Max Cases
Degenerate Prosthetic Mitral Valve	1	4	4
Degenerate Prosthetic Tricuspid Valve	1	1	1

Contents



2011 data: Ludman

- **Structure**

- New centres
- Total PCI numbers
- No of PCIs per centre and per angio
- PCI pmp and by country
- PCI operators, by centre, by PPCI
- On call rotas for PPCI
- Surgical cover
- Day case activity
- Primary PCI units

- **NICOR data collection**

- Centre participation
- Databases used
- Case ascertainment
- Data completeness
- Data Quality

- **Appropriateness**

- Demographics
- Indication for PCI / Clinical syndrome
- PPCI activity (by unit, pmp, by vessel)
- PCI territories / vessels / lesions
- Stents (BMS and DES)
- Adjunctive pharmacotherapy
- LV support and shock
- Additional interventional techniques, devices
- Arterial access (routes)

- **Process of care**

- Delays data completeness
- Delays to treatment
 - NSTEMI / PPCI
 - IHT versus Direct admission
 - PPCI age > 80 / Length of stay

- **Adult non coronary intervention**

- Septal ablation for HOCM
- PFO / ASD closure / LAA occlusion
- Renal Denervation
- Valve therapies
- Other adult structural intervention

- **Outcome**

- MACCE
- Periprocedural complications and by access
- Tracked 30 day mortality
 - Outcome by syndrome
 - Outcome by lesion subset
- Risk adjusted outcomes
 - 3 year MACCE
 - 1 year MACCE
 - Predicted risk by centre type

Appendix: PCI Centre CCAD codes

Data sources

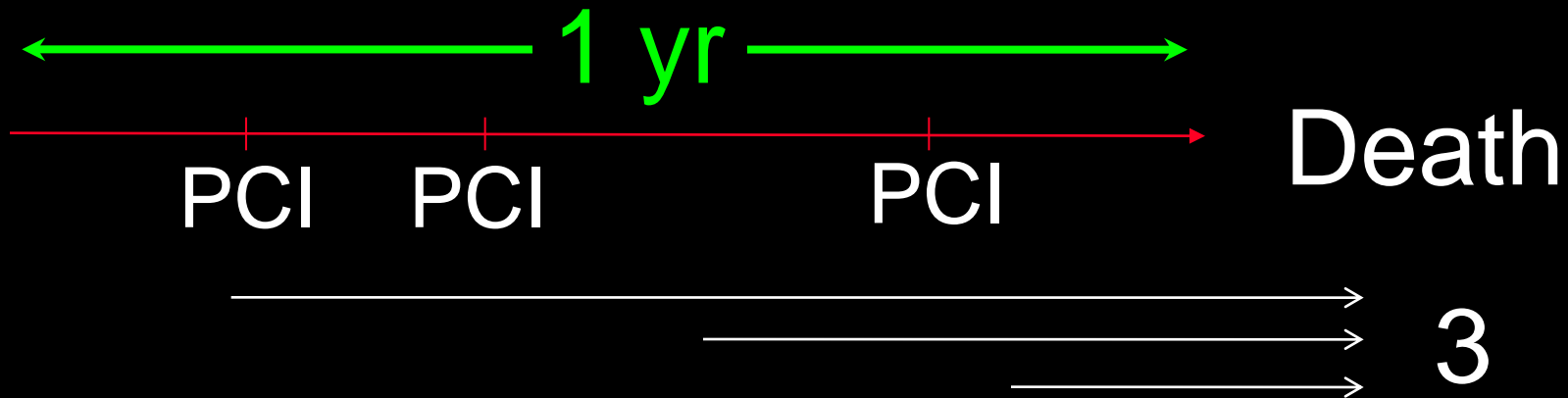


2010 data: Ludman

-
- Success, Mortality CVA and Emergency CABG
 - QMI
 - Denominator: Total PCI procedures except PCI for STEMI
 - NQMI
 - Denominator: Total PCIs for stable symptoms

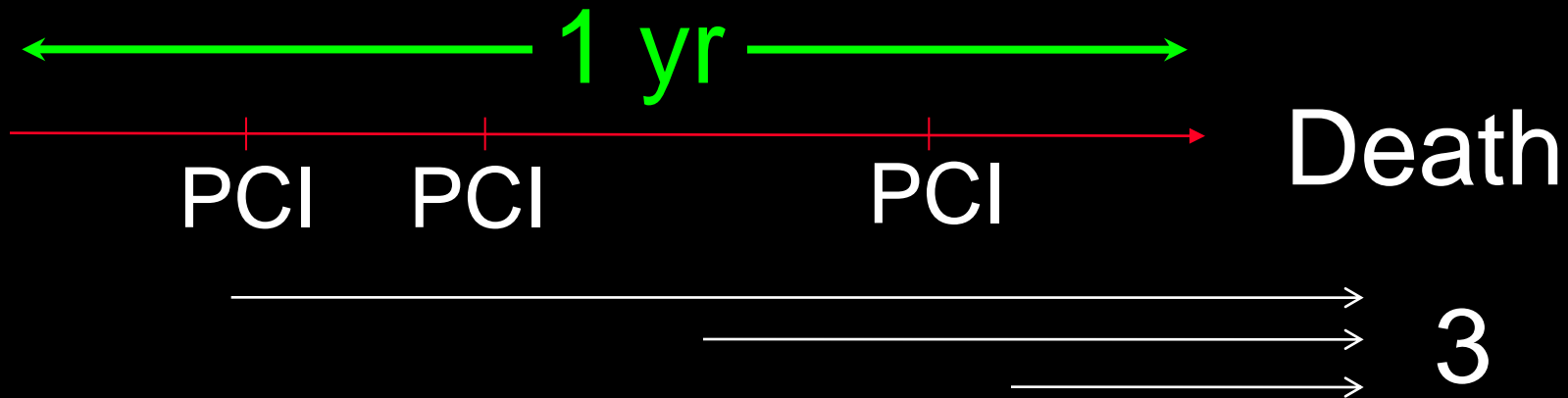
Methodology

- Multiple procedures → mortality



Methodology

- Multiple procedures → mortality

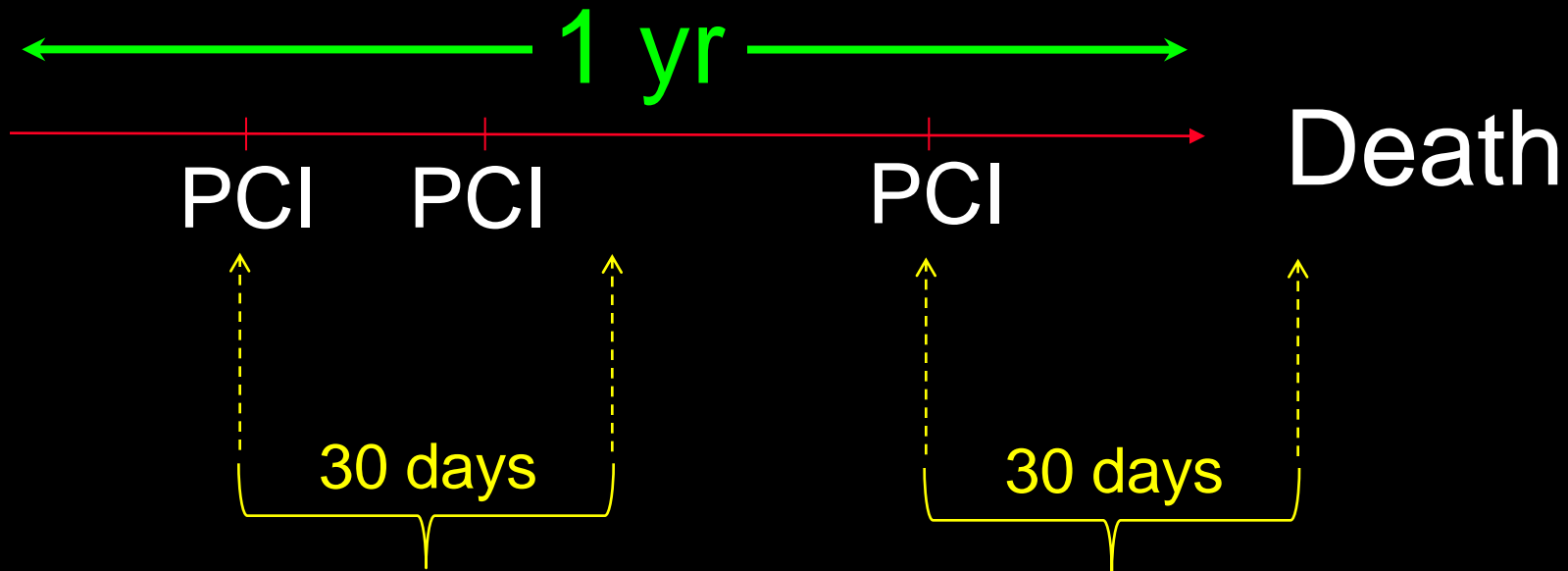


NICOR mortality counts

Identifies multiple procedures and only counts one death

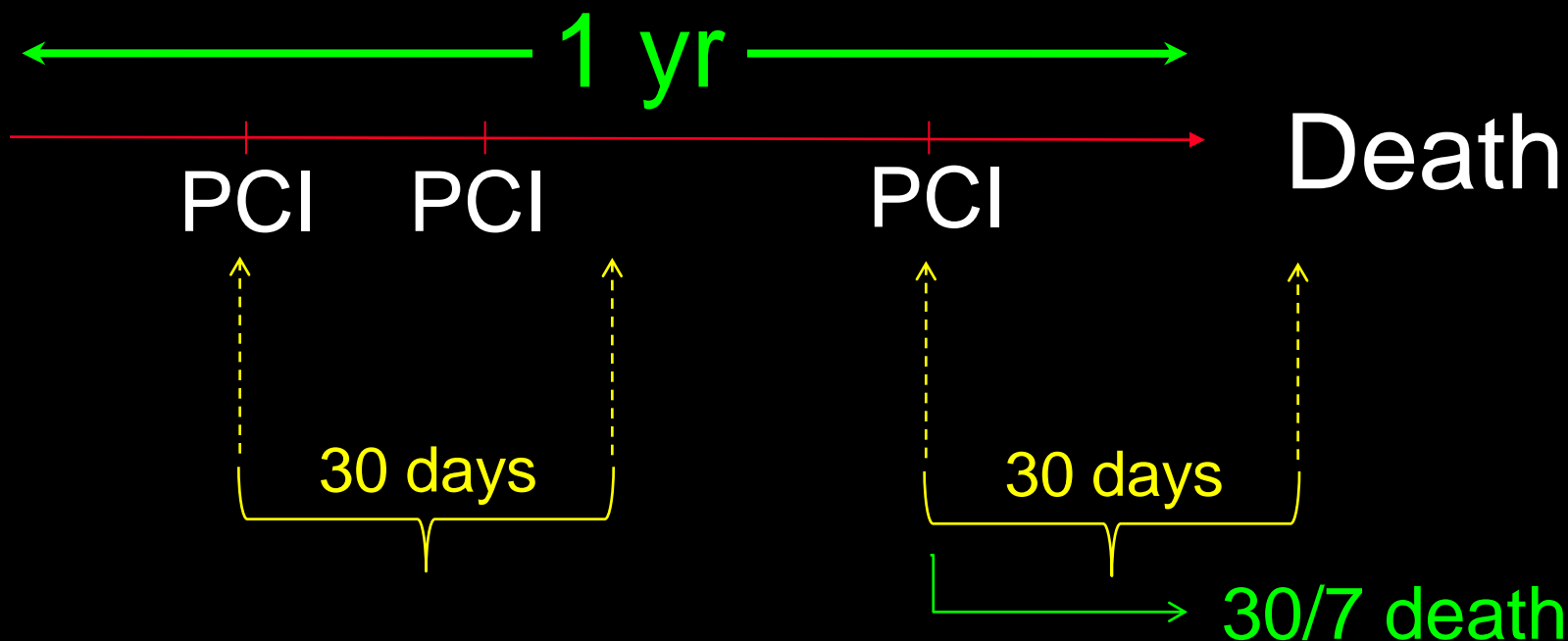
Methodology

- Multiple procedures → mortality



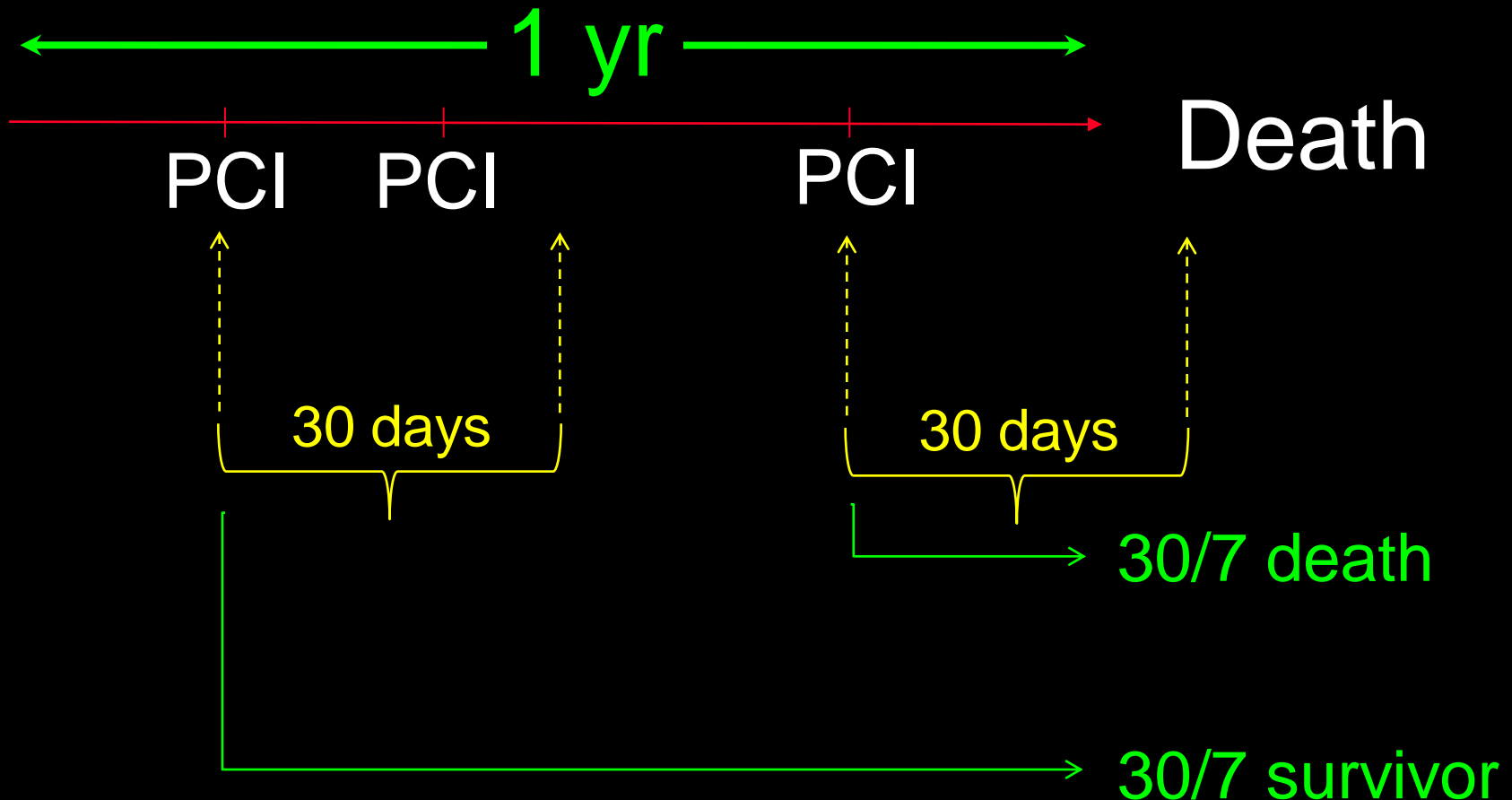
Methodology

- Multiple procedures → mortality



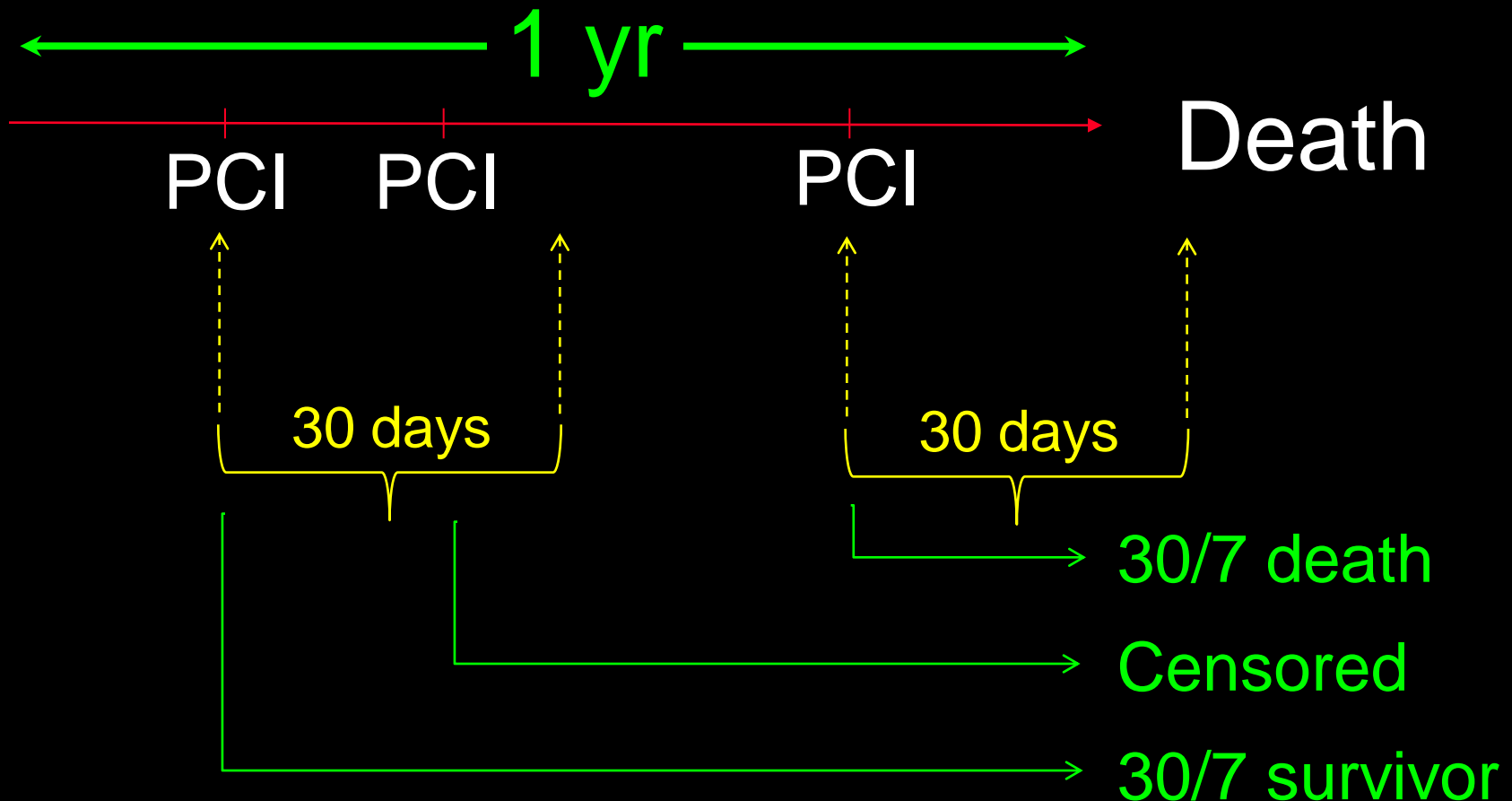
Methodology

- Multiple procedures → mortality



Methodology

- Multiple procedures → mortality



MACE - All PCIs



2011 data: Ludman

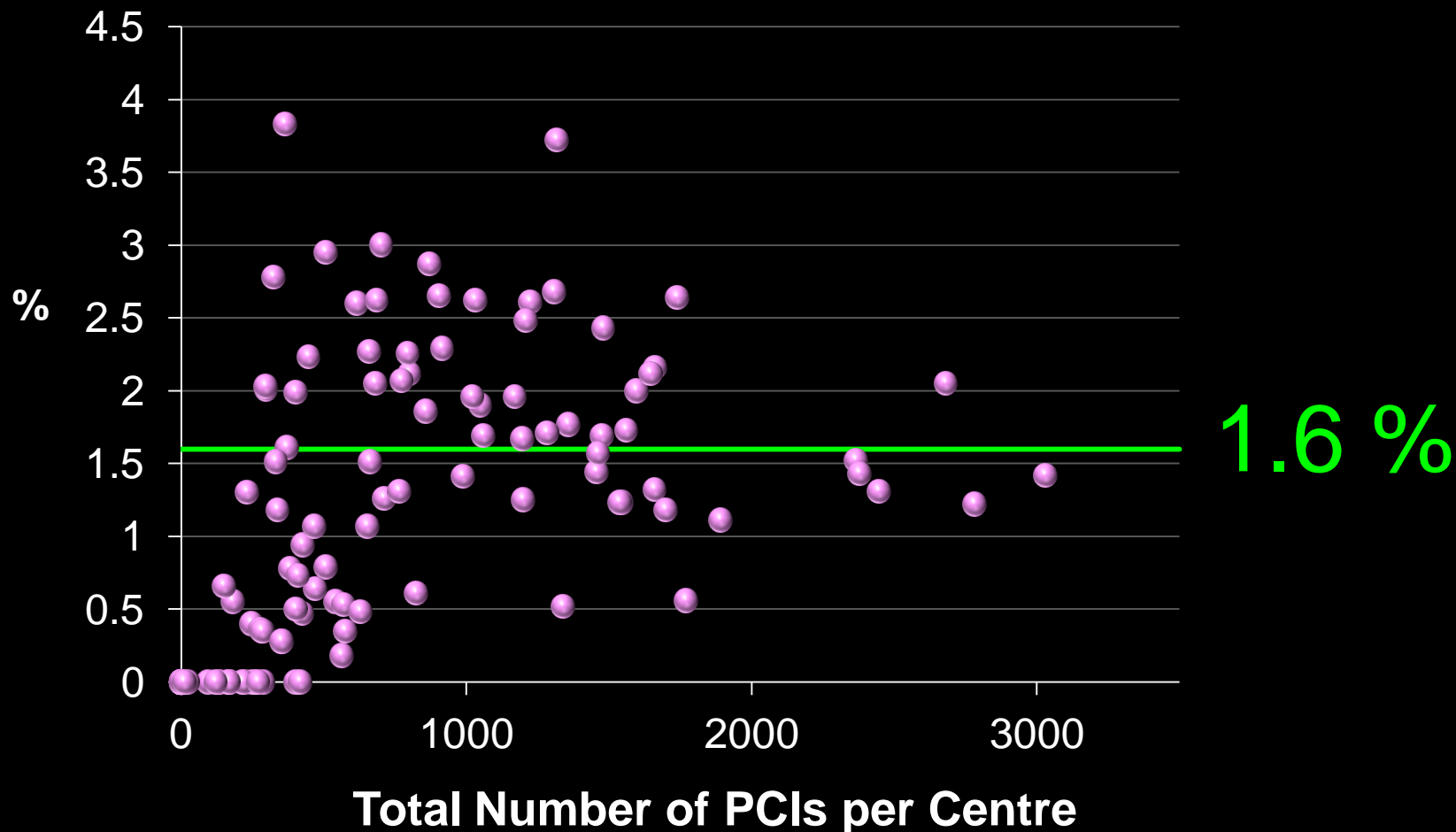
Year	Procedure Success (%)	QMI %	NQMI (stable) (%)	Em CABG (%)	CVA (%)	Mortality (%)	30 day Mortality (%) (Tracked)
1997	92	1.2		1.1		0.89	
1998	92	0.8		0.7		0.80	
1999	90	0.57		0.48		0.61	
2000	92	0.6		0.4		0.64	
2001	94	0.5		0.4		0.75	
2002	92	0.57		0.28		0.54	
2003	92	0.36		0.29		0.53	
2004	93.5	0.30		0.21		0.56	
2005	90.2	0.24		0.12		0.59	
2006	95.5	0.15	0.74	0.09		0.74	
2007	92.1	0.14	0.62	0.08		0.89	
2008	91.8	0.25	0.51	0.07	0.08	1.03	
2009	91.3	0.13	0.47	0.08	0.08	1.21	2.0
2010	92.0	0.17	0.56	0.05	0.12	1.6	2.1
2011	91.9	0.13	0.36	0.05	0.07	1.6	2.4

Adverse Outcomes - Death



2011 data: Ludman

- Mortality to Discharge (self reported)

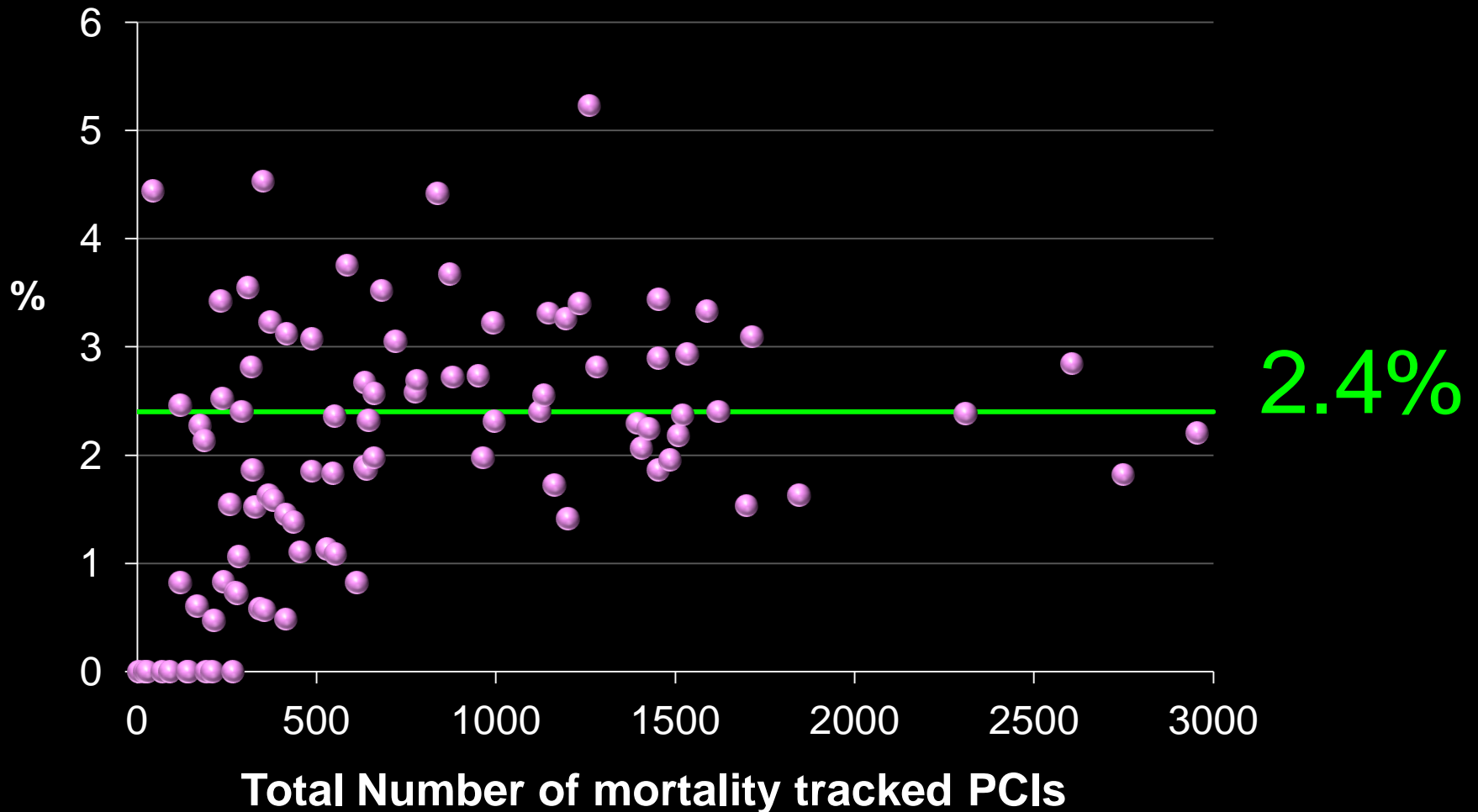


Adverse Outcomes - Death



2011 data: Ludman

- 30/7 Tracked mortality

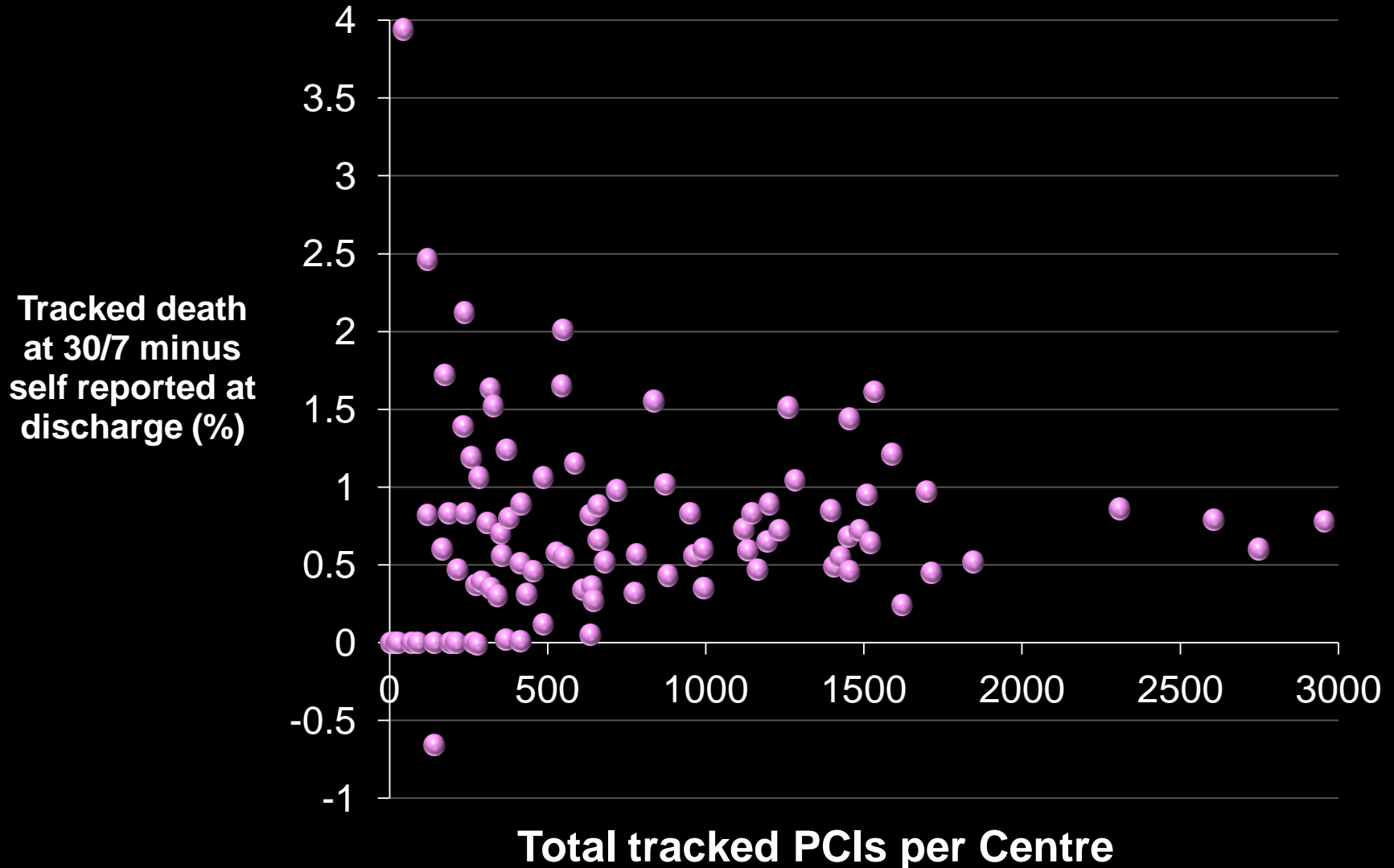


Adverse Outcomes - Death

- Increment from self reported at Dx to 30/7 tracked mortality



2011 data: Ludman

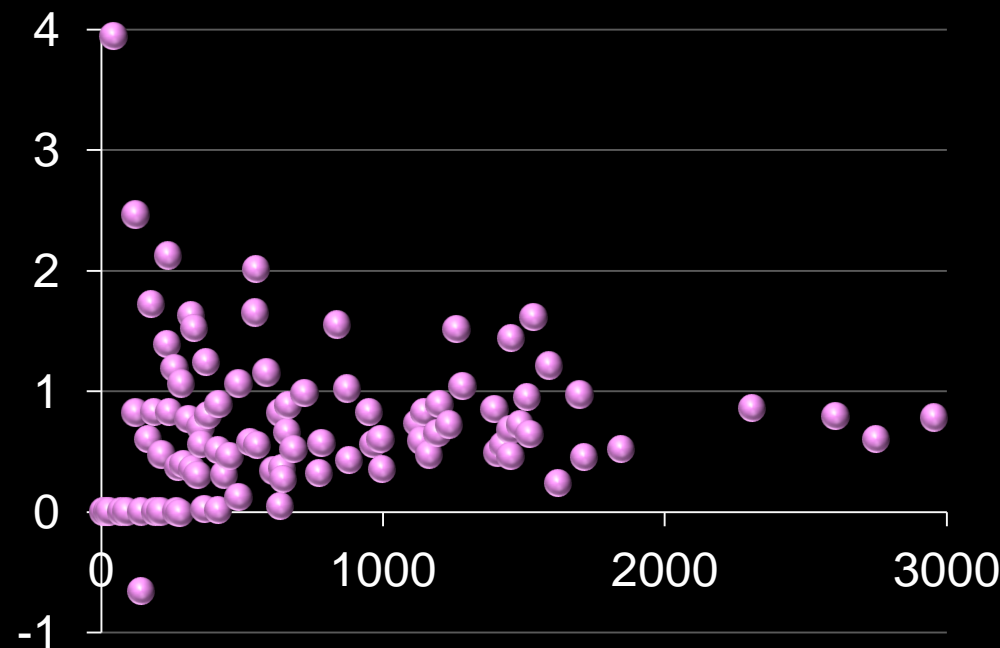


Adverse Outcomes - Death

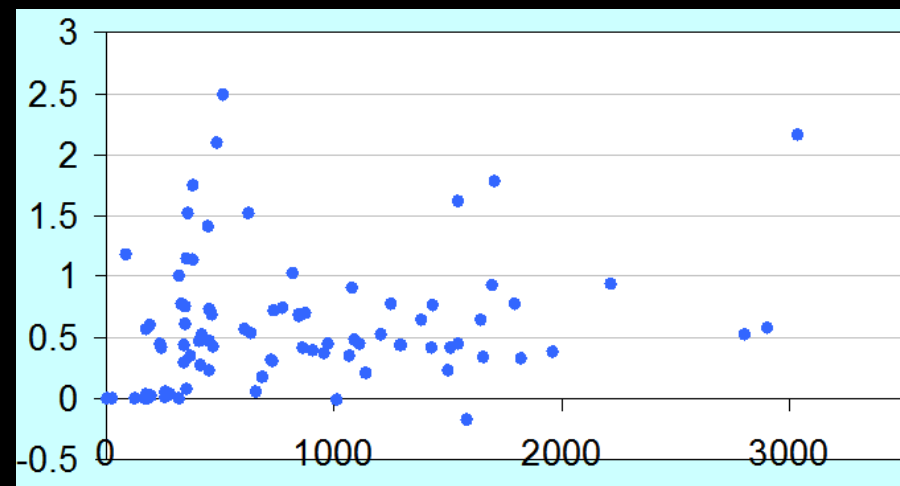
- Increment from self reported at Dx to 30/7 tracked mortality



2011 data: Ludman



2010



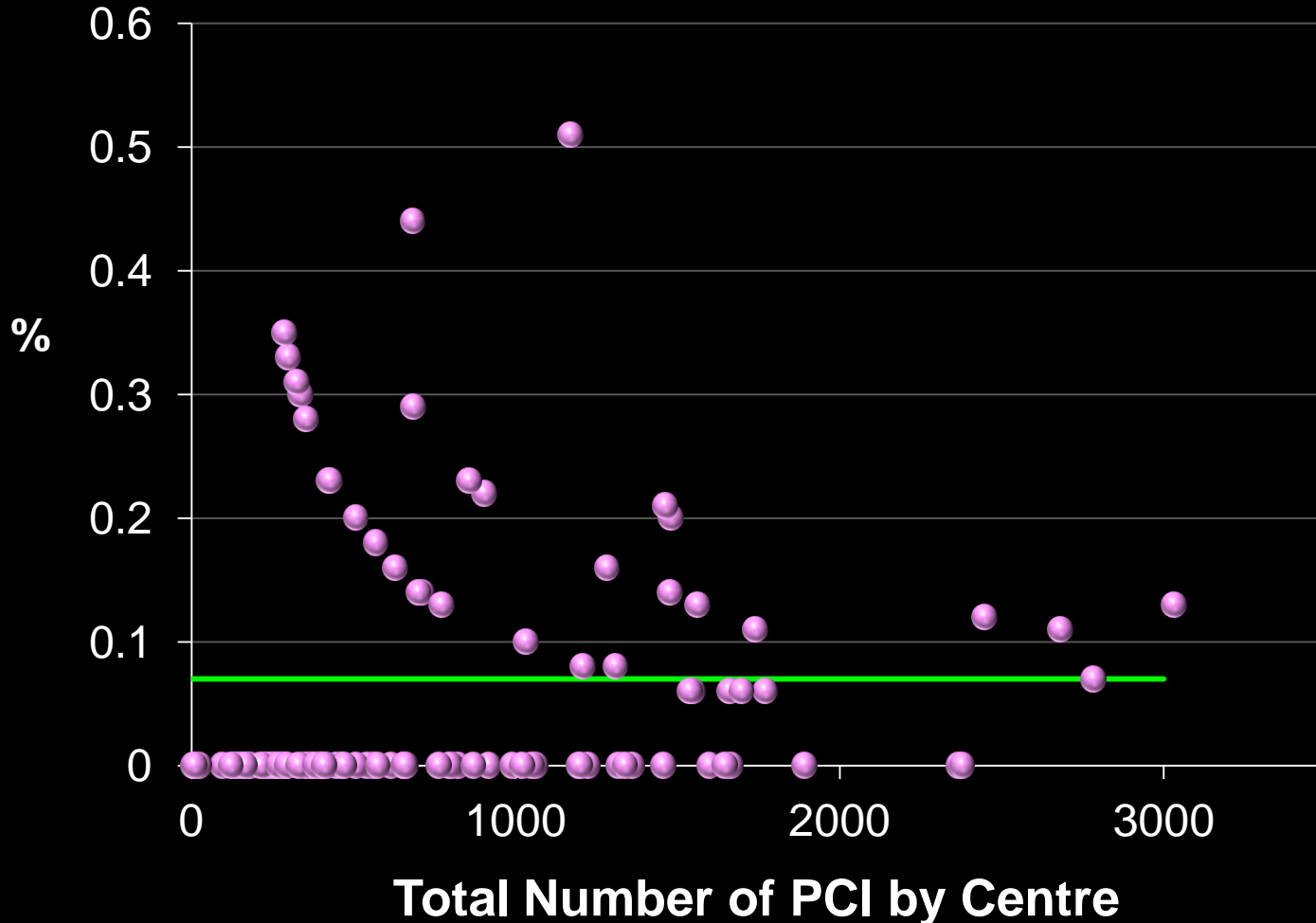
Fewer outliers – improved reporting ?

Adverse Outcomes - CVA



2011 data: Ludman

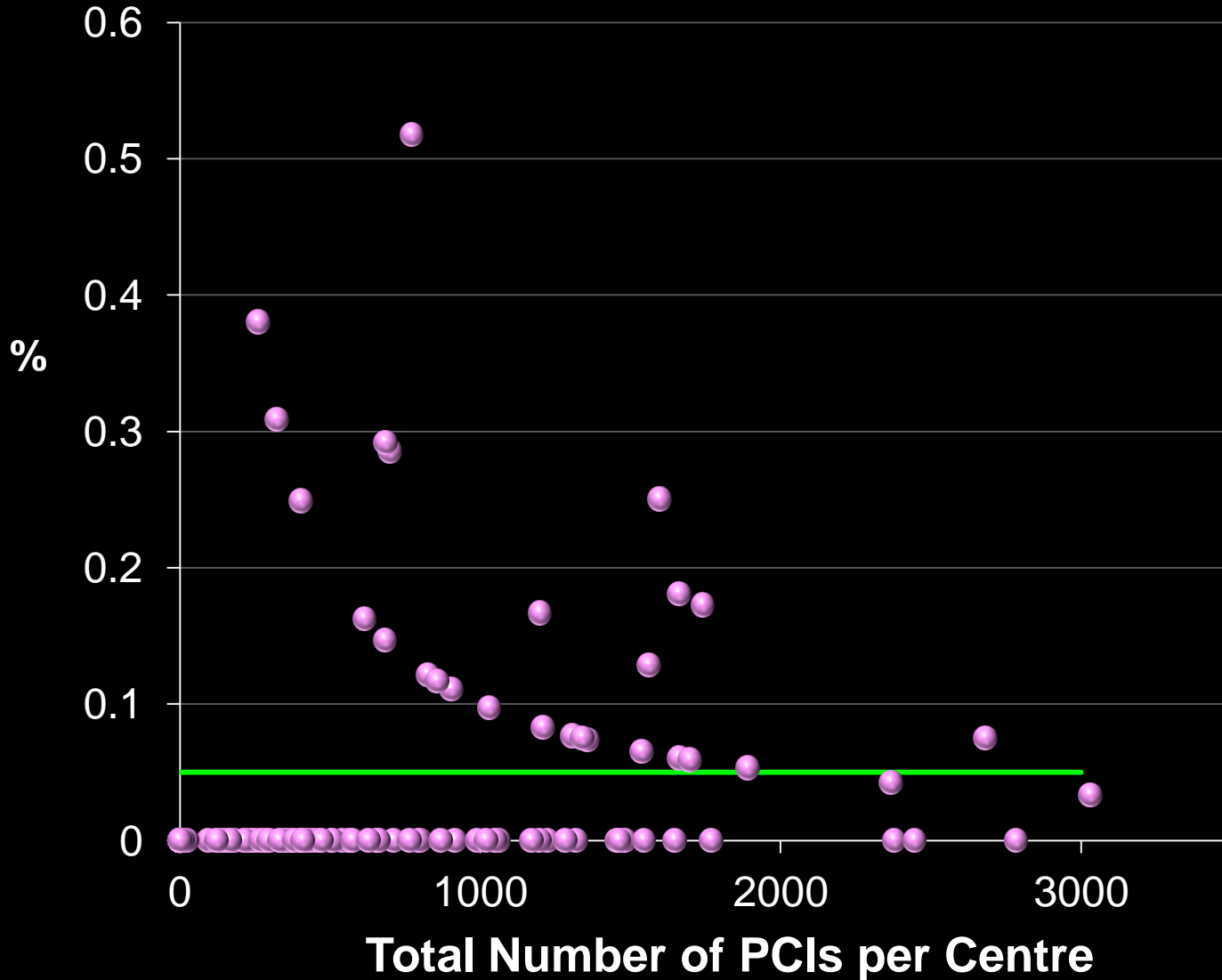
- % of all cases with CVA (not TIA)



0.07%

Adverse Outcomes – CABG

- % of all cases needing emergency CABG

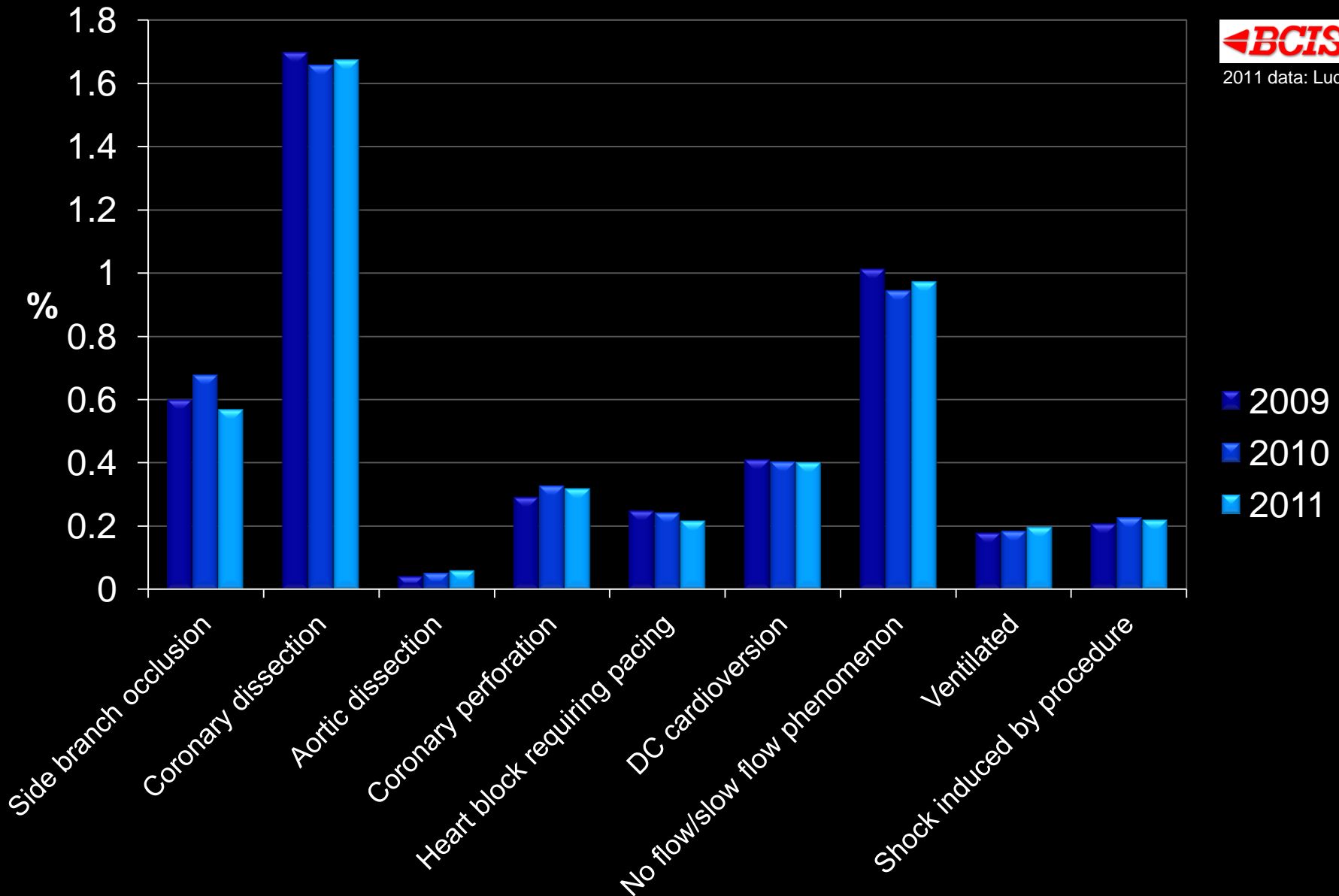


0.05%

Peri-procedural Complications



2011 data: Ludman



Access site complications

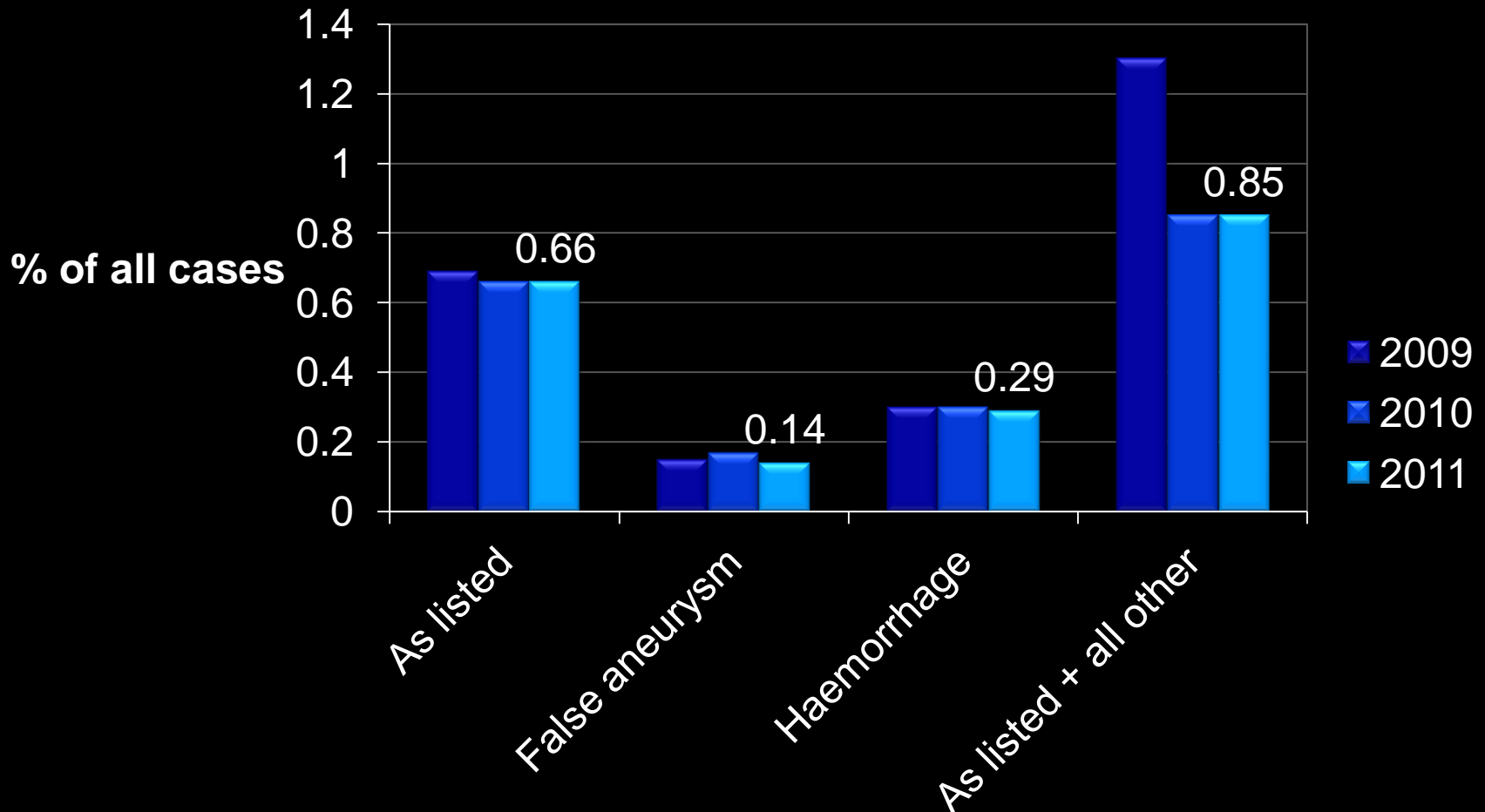
Complications to hospital Dx:

False aneurysm, haemorrhage, arterial occlusion / dissection

Any other surgical intervention



2011 data: Ludman



Complication by Access route

Complications to hospital Dx:

False aneurysm

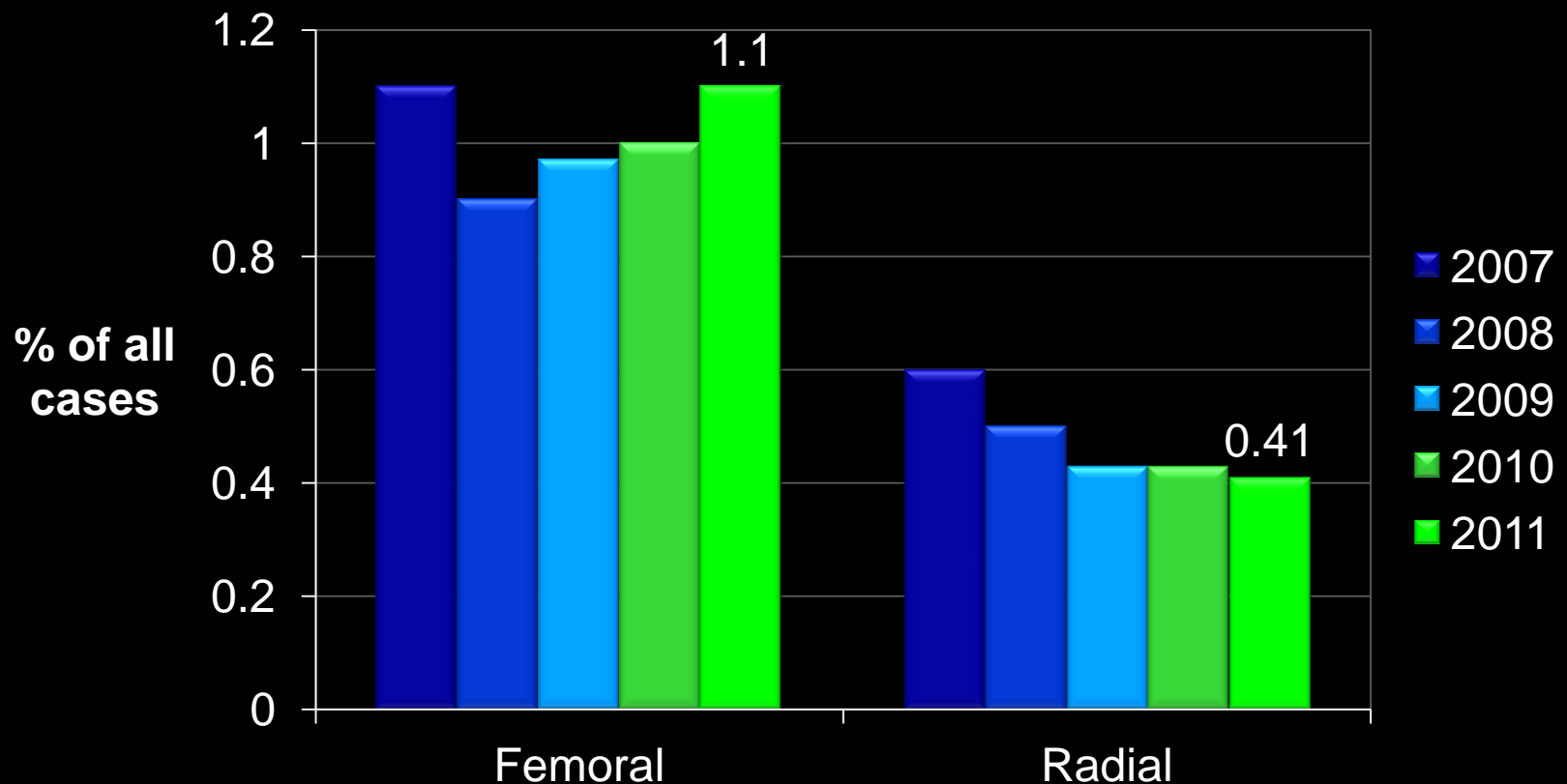
Haemorrhage (retroperitoneal, delay Dx, surgery)

Art occlusion / dissection

Any need for surgery



2011 data: Ludman

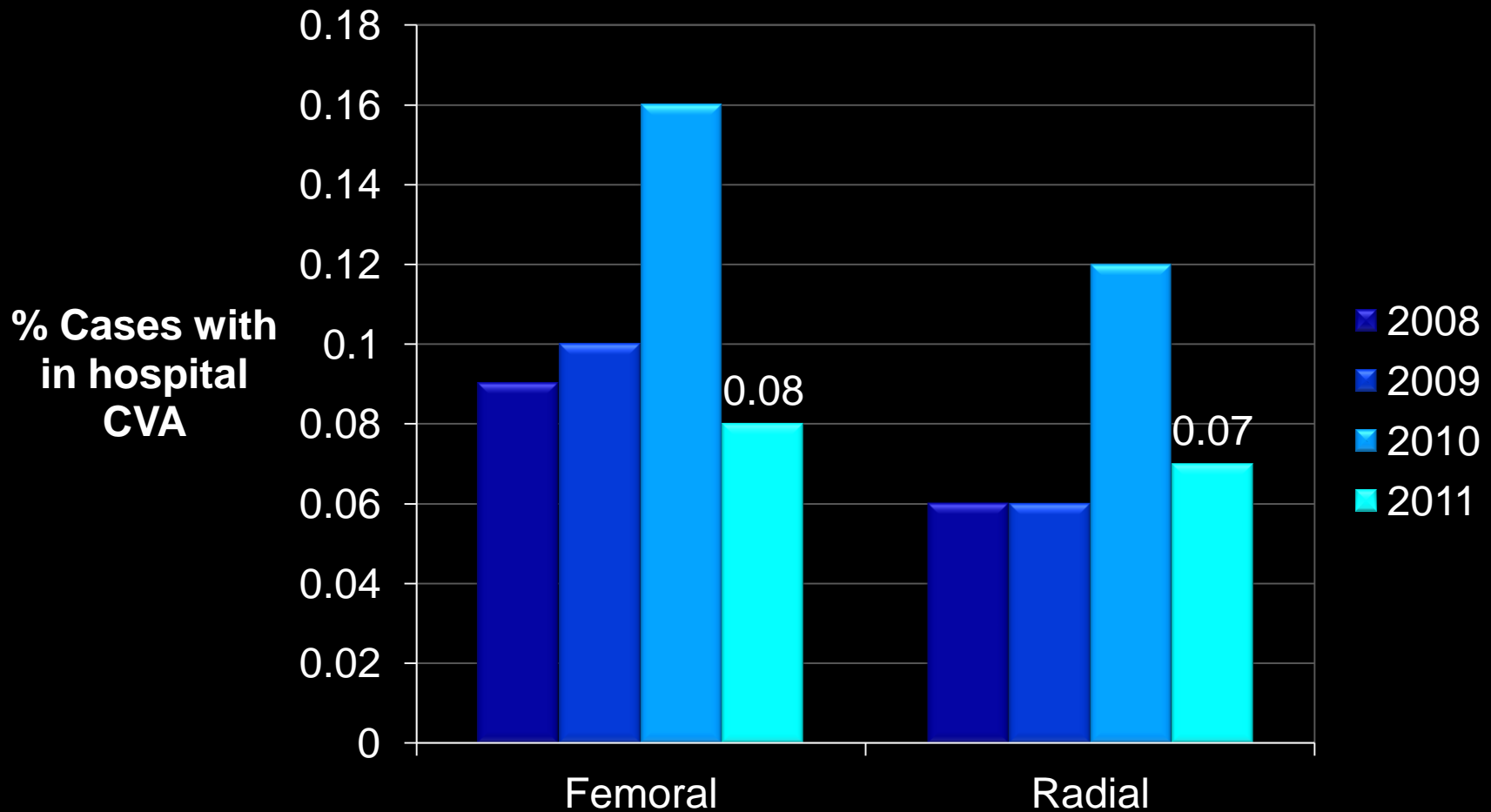


Complication by Access route

CVA



2011 data: Ludman

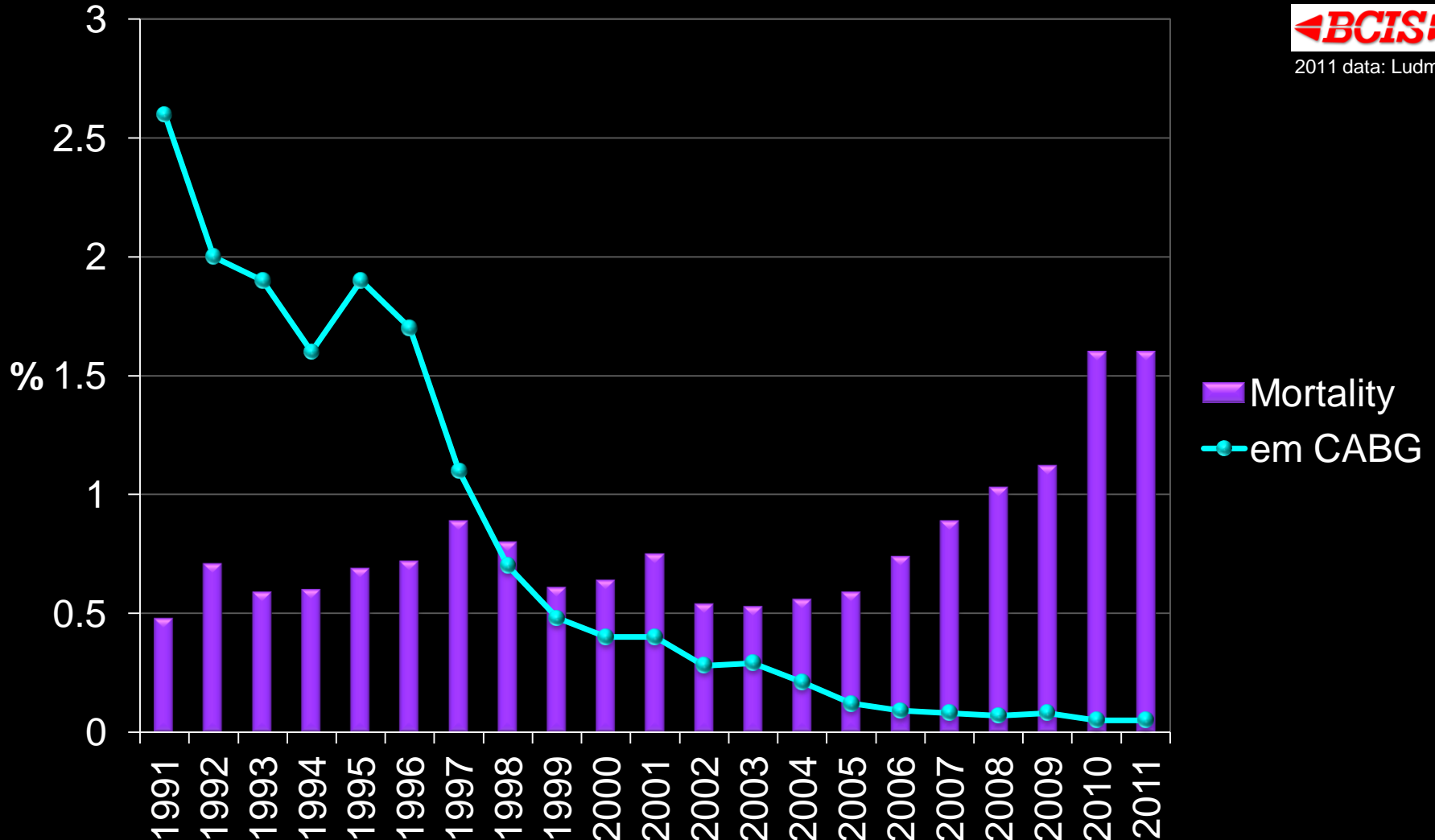


Adverse Outcome

Death and emergency CABG



2011 data: Ludman



Outcome 2010



2011 data: Ludman

Elective Patients

All as %	No. cases	Success	Partial success	Fail no comp	Re-PCI	QMI	Em CABG	CVA	Death In Hosp	Death 30/7 Track
Stable SV (no CTO)	18,078	95.8		2.9	0.15	0.08	0.04	0.03	0.15	
MV (no CTO)	5,633	94.1	4.4	1.0	0.13	0.07	0.05	0.02	0.21	
SV CTO	3,088	69.5		28.2	0.10	0	0.07	0.07	0.17	
MV CTO	855	74.4	21.9	2.85	0.24	0.12	0	0	0.59	
OVERALL STABLE										
All Stable	28,622	92.06		5.3	0.14	0.07	0.05	0.03	0.18	0.40

Outcome 2010



2011 data: Ludman

All as %	No.	Success	Partial success	Fail no comp	Re-PCI	QMI	Em CABG	CVA	Death In hosp	Death 30/7 CR
NSTEMI / UA no shock	30,929	93.3	2.0	3.9	0.2	0.2	0.03	0.05	0.61	1.3
All STEMI no shock	20,825	93.3	1.6	2.7	0.5		0.09	0.15	2.4	3.5
*Primary PCI	21,332	91.2	1.6	2.6	0.5		0.09	0.15	4.4	5.8
*Rescue PCI	674	88.3	2.1	2.7	0.7		0.15	0.45	6.7	10.3
Shock	2,040	62.0	2.6	2.9	1.0		0.10	0.34	31.6	36.9

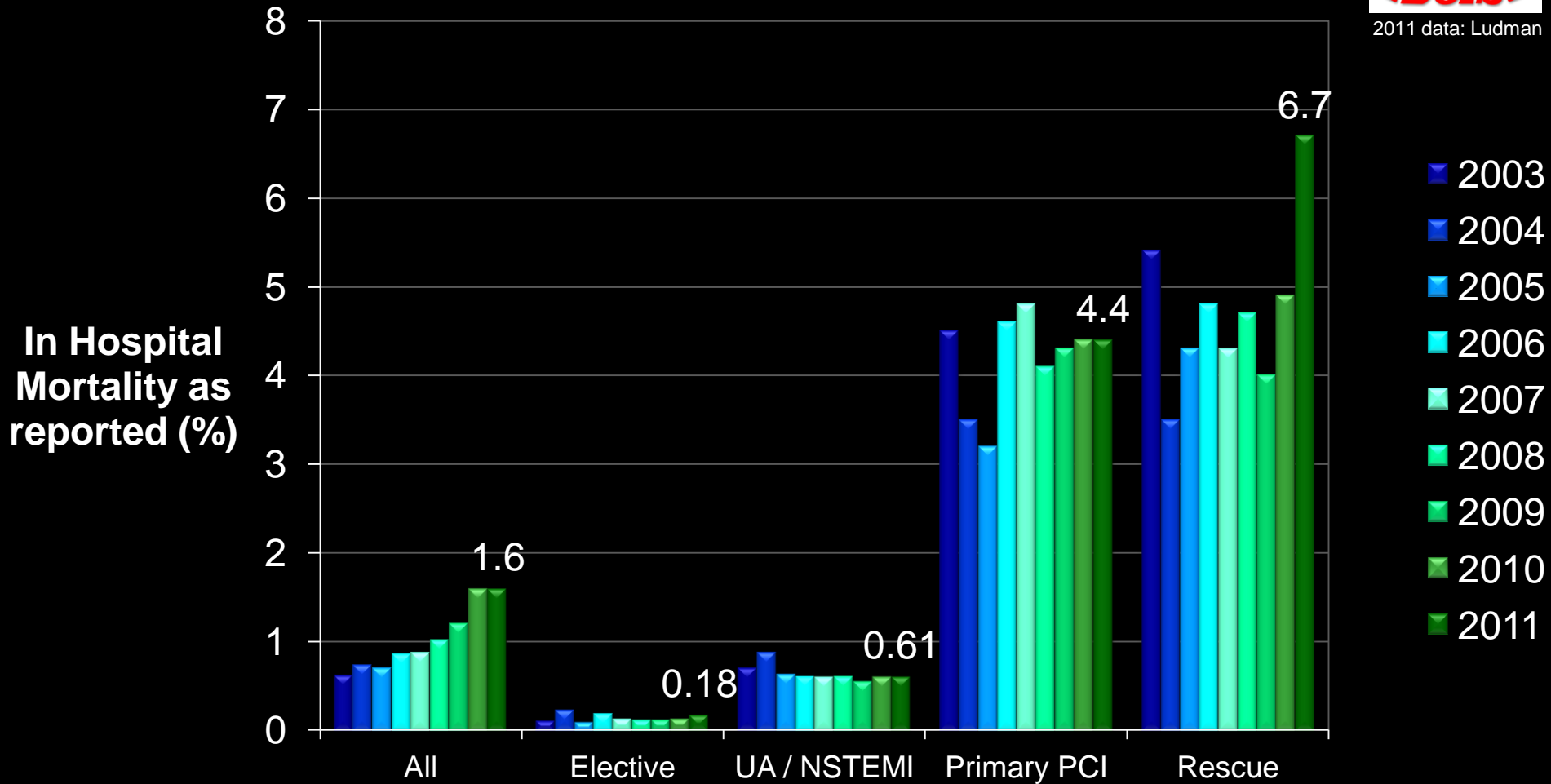
*all PPCI (includes shock / ventilation and onset in community or in hospital)

Summary: Mortality

Risk Stratified by Syndrome



2011 data: Ludman

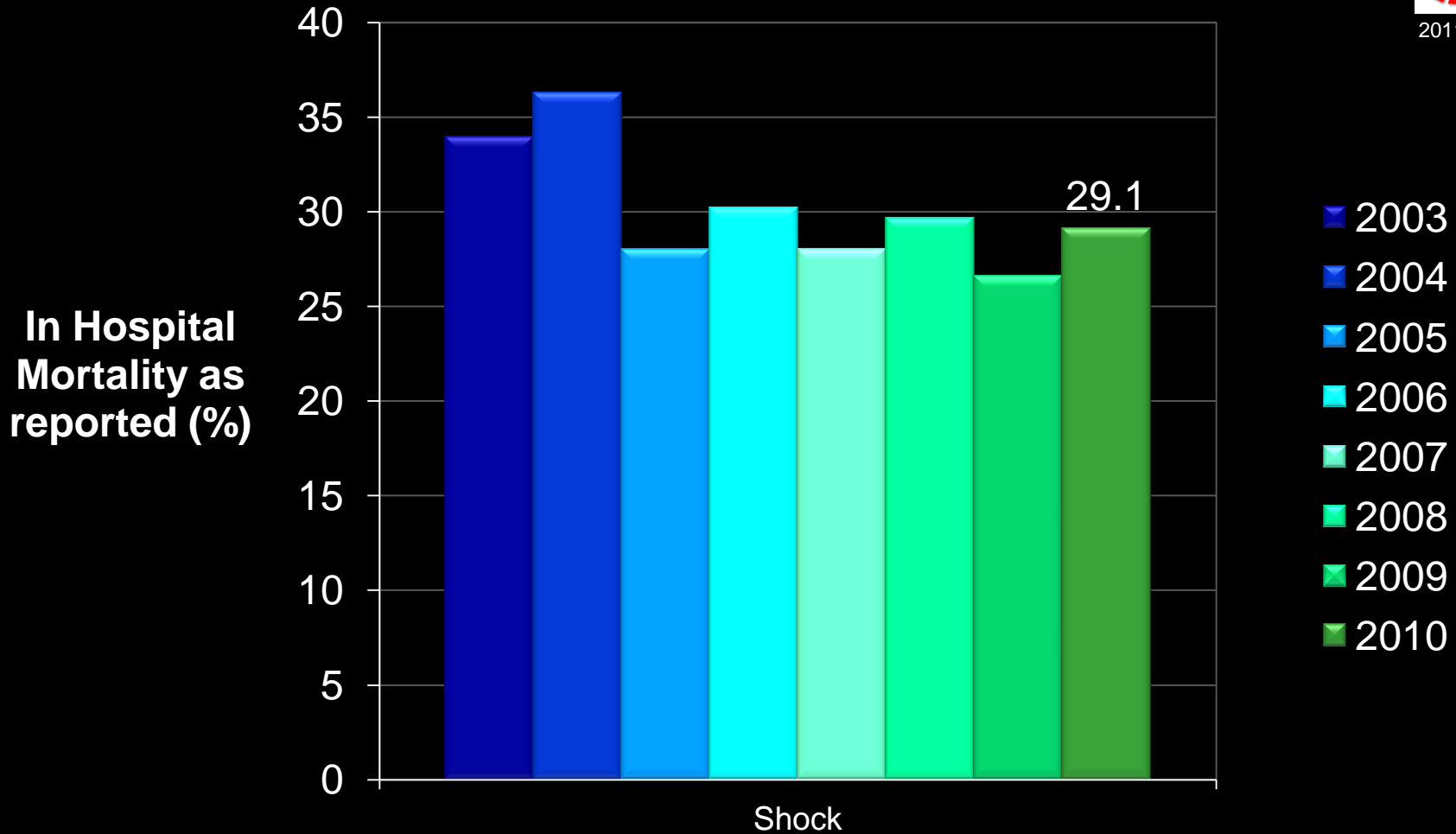


Summary: Mortality

Risk Stratified by Syndrome



2011 data: Ludman

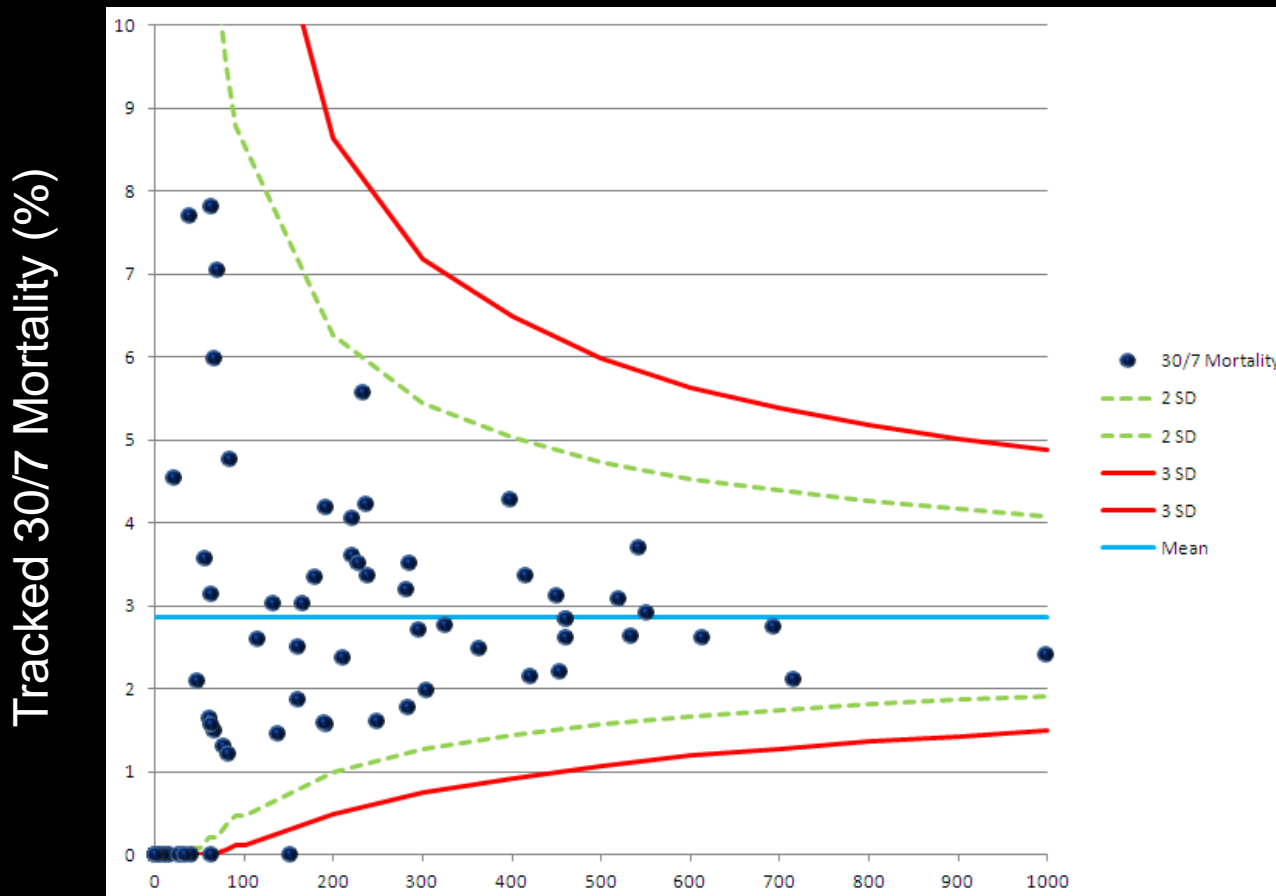


Primary PCI (excludes shock/vent)

30 day Tracked Mortality



2011 data: Ludman



2.9 %

Number of PPCI procedures with tracked data

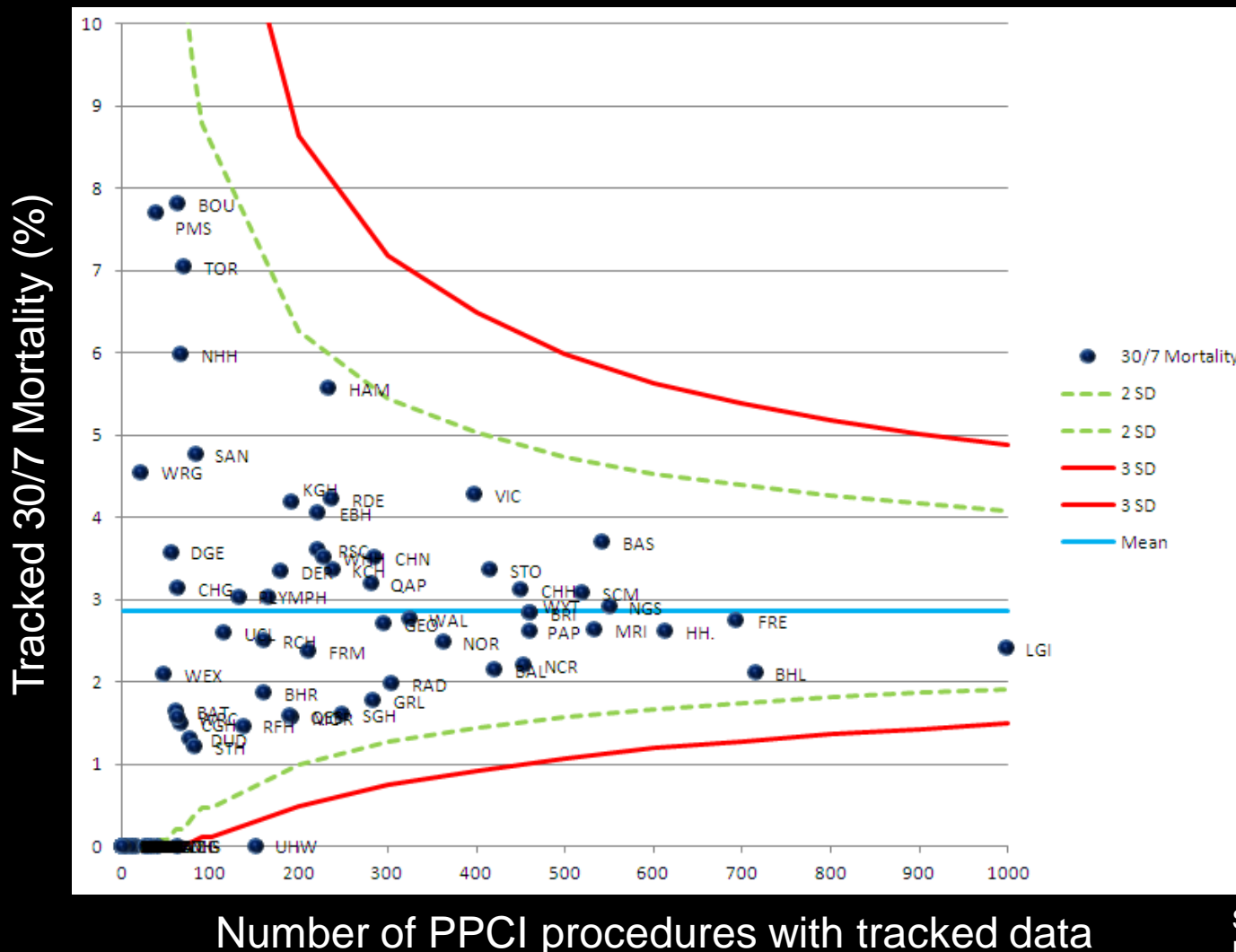
Shock and ventⁿ excluded
England and Wales only
From CTB data all OOH STEMI

Primary PCI (excludes shock/vent)

30 day Tracked Mortality



2011 data: Ludman



2.9 %

Shock and ventⁿ excluded
 England and Wales only
 From CTB data all OOH STEMI
 Unadjusted

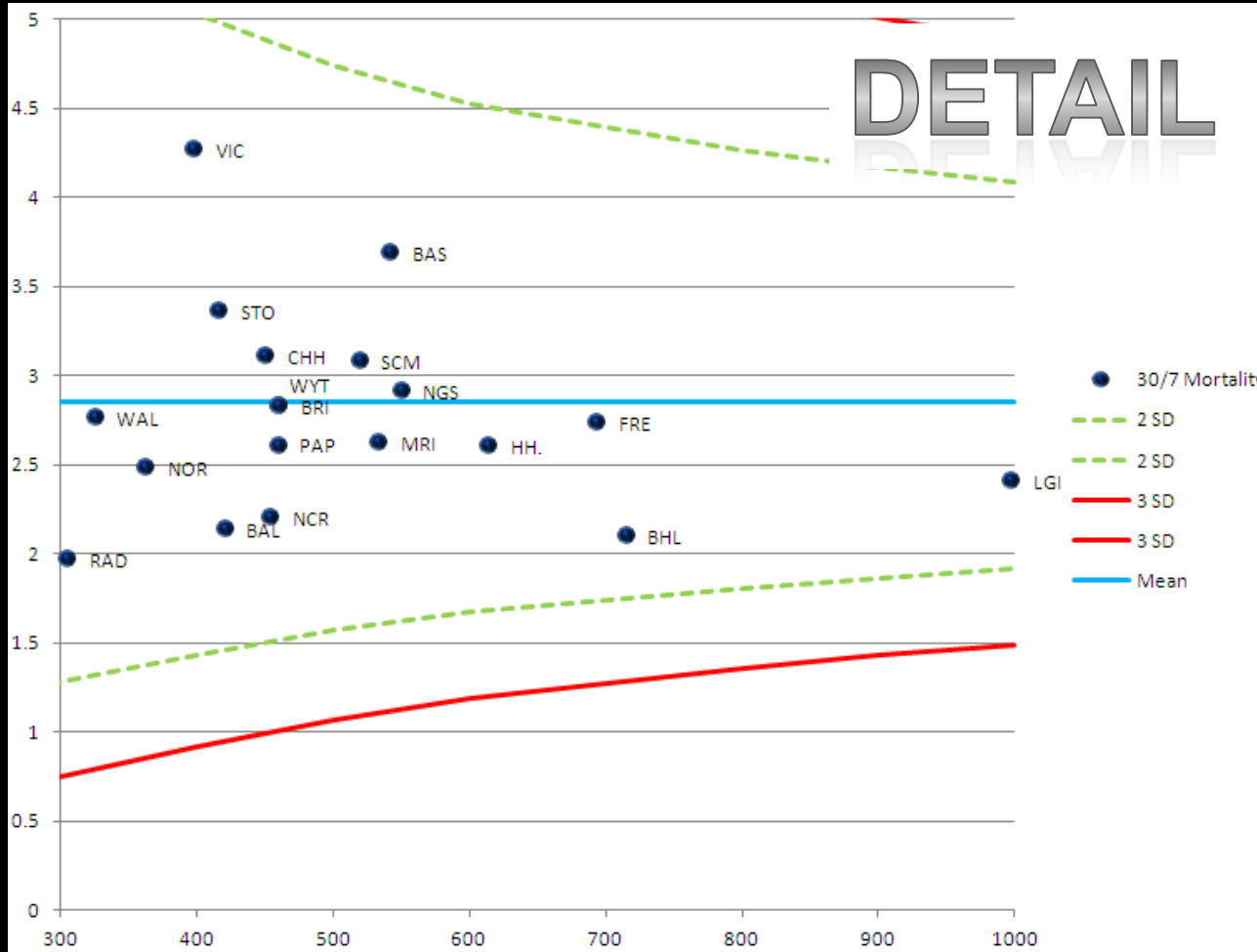
Primary PCI (excludes shock/vent)

30 day Tracked Mortality



2011 data: Ludman

Tracked 30/7 Mortality (%)



2.9 %

Number of PPCI procedures with tracked data

Shock and ventⁿ excluded
 England and Wales only
 From CTB data all OOH STEMI

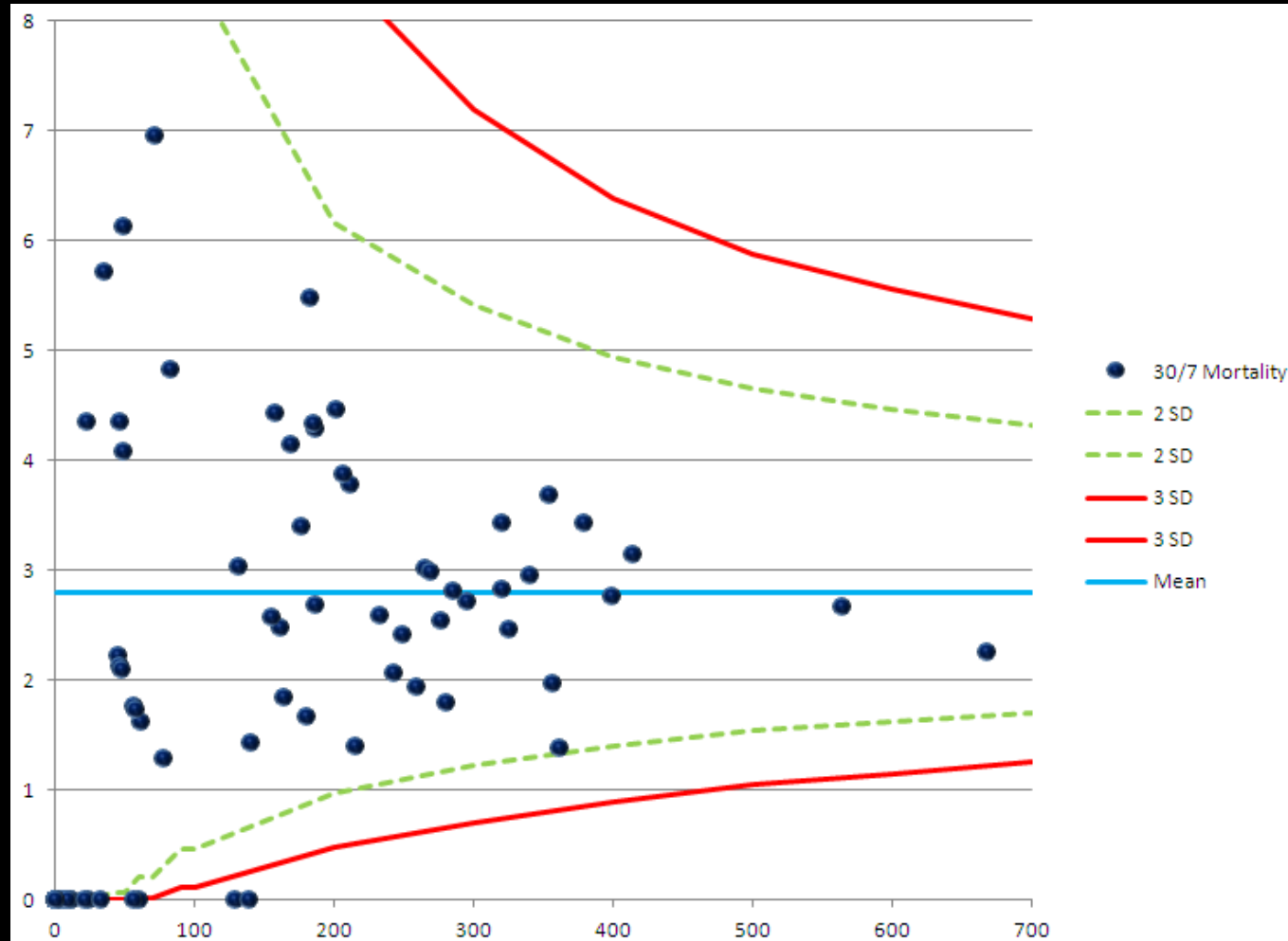
Primary PCI (excl shock/vent, direct adm only)

30 day Tracked Mortality



2011 data: Ludman

Tracked 30/7 Mortality (%)



2.8 %

Number of PPCI procedures with tracked data

Shock and ventⁿ excluded
 England and Wales only
 From DTB data all Direct admit to centre

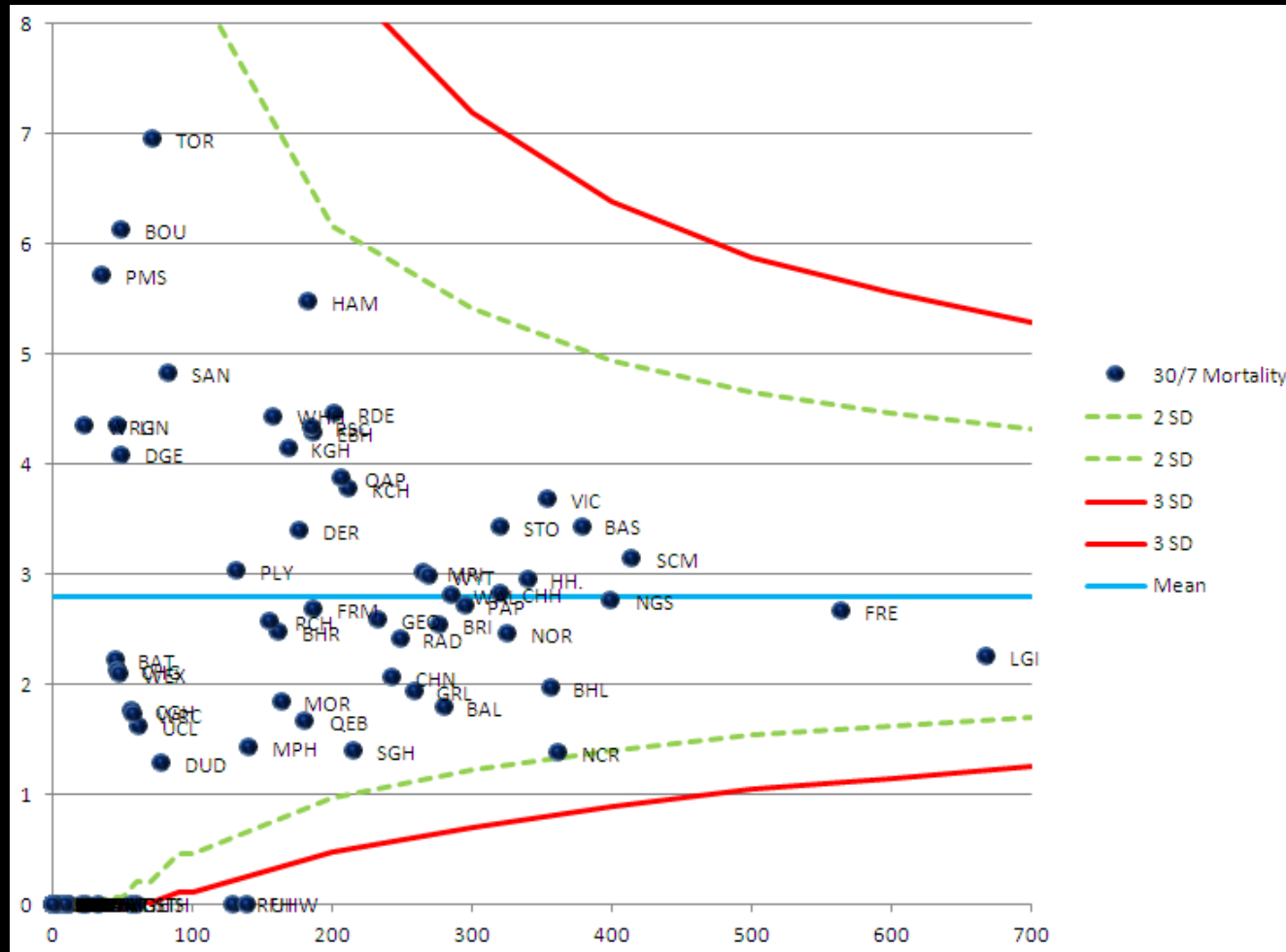
Primary PCI (excludes shock/vent direct adm only)

30 day Tracked Mortality



2011 data: Ludman

Tracked 30/7 Mortality (%)



2.8 %

Number of PPCI procedures with tracked data

Shock and ventⁿ excluded
 England and Wales only
 From DTB data all Direct admit to centre

Primary PCI (excludes shock/vent, direct adm only)

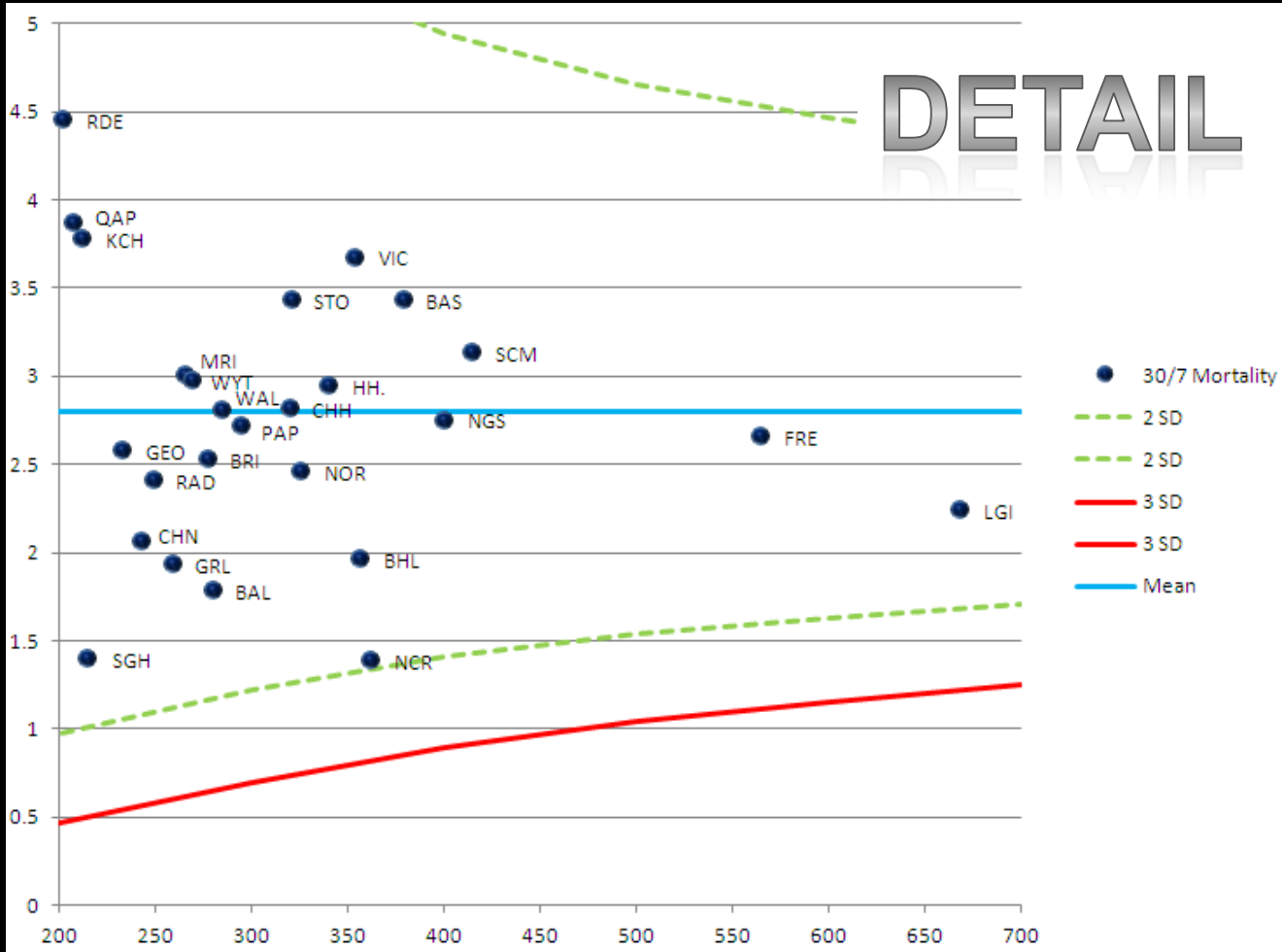
30 day Tracked Mortality



2011 data: Ludman

DETAIL

Tracked 30/7 Mortality (%)



2.8 %

Number of PPCI procedures with tracked data

Shock and ventⁿ excluded
 England and Wales only
 From DTB data all Direct admit to centre

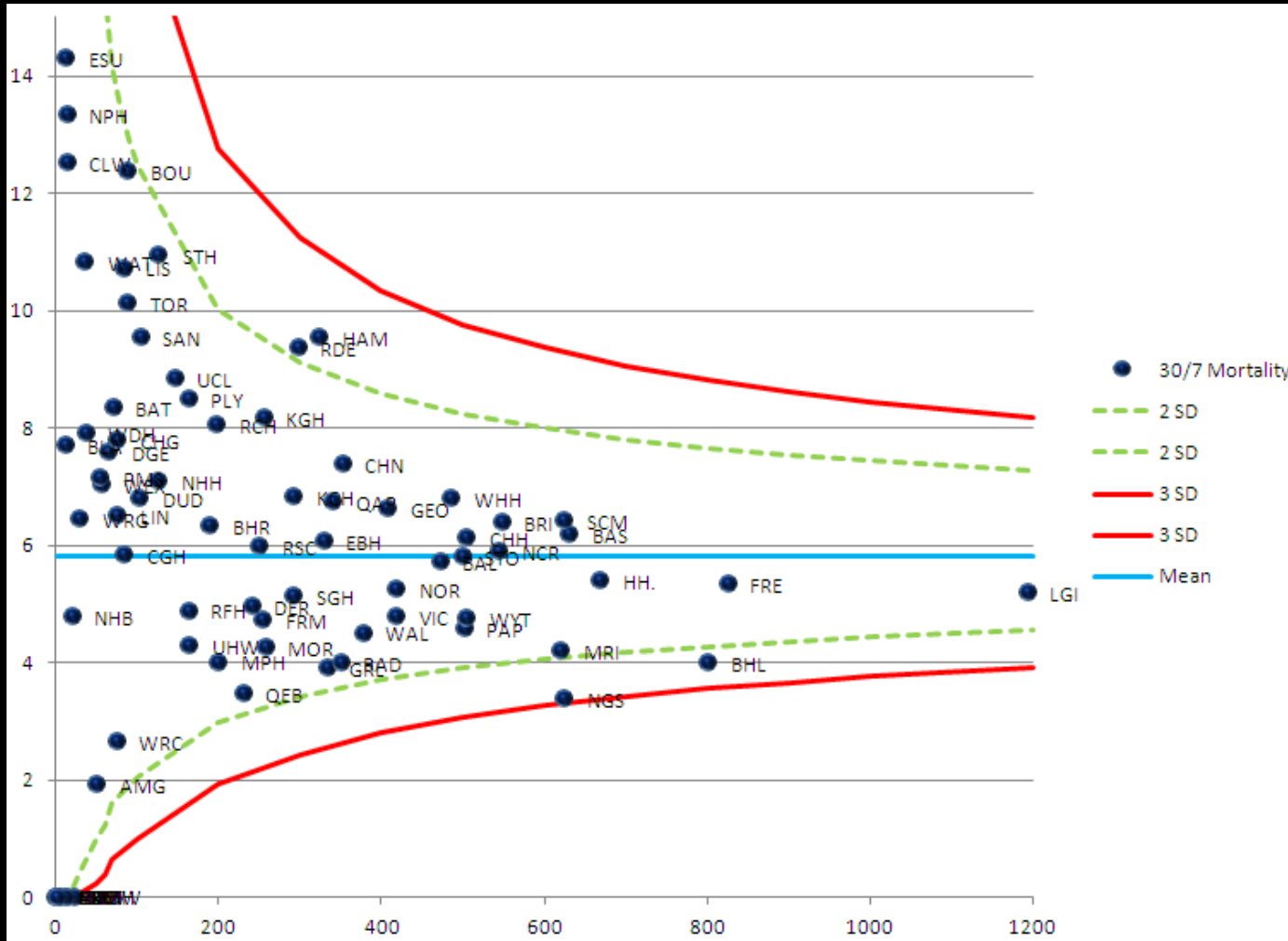
Primary PCI (includes shock/vent)

30 day Tracked Mortality



2011 data: Ludman

Tracked 30/7 Mortality (%)



5.8 %

Number of PPCI procedures with tracked mortality

Shock and ventilation INCLUDED
England and Wales only
Unadjusted

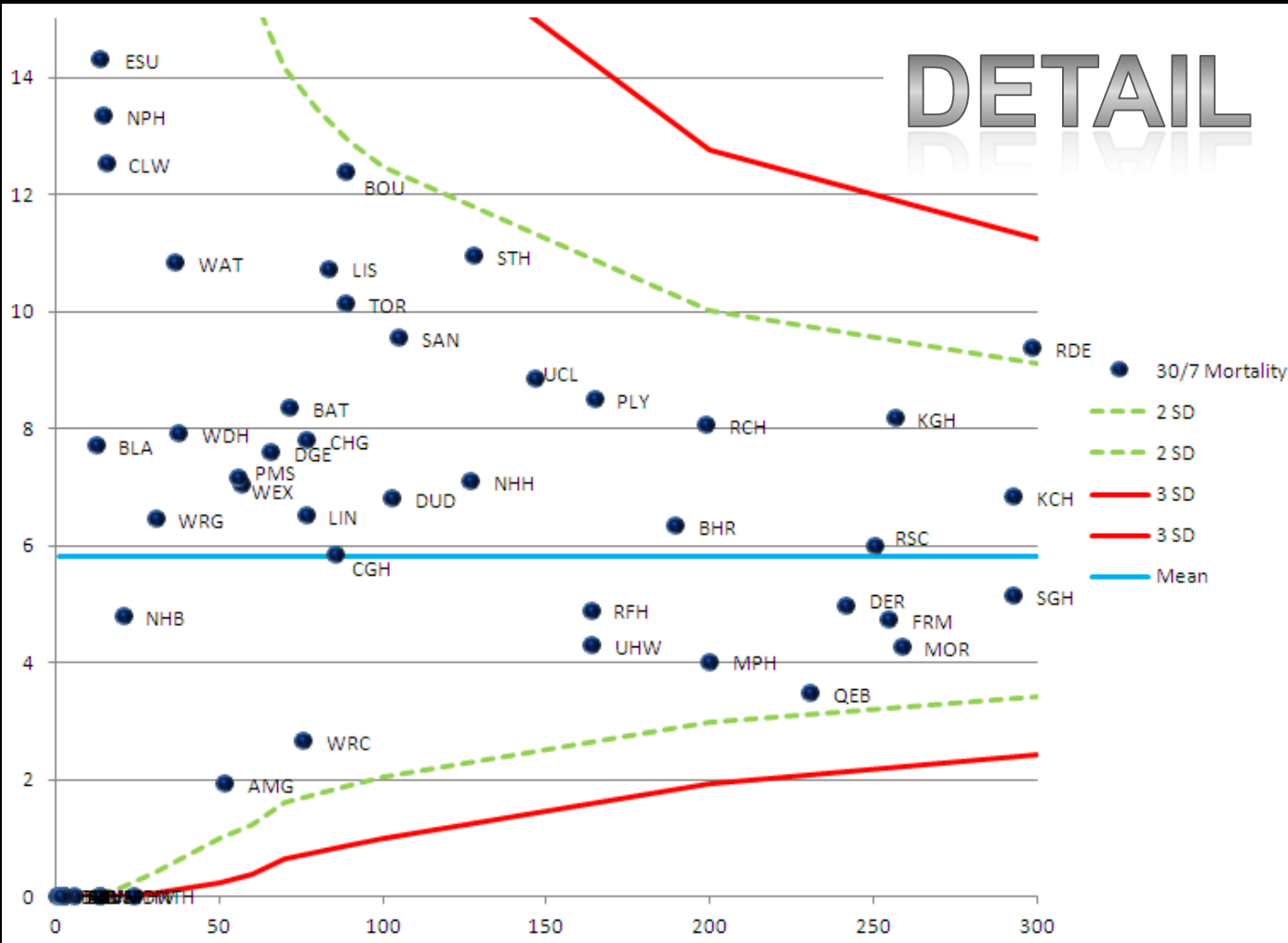
Primary PCI (includes shock/vent)

30 day Tracked Mortality



2011 data: Ludman

Tracked 30/7 Mortality (%)



5.8 %

Number of PPCI procedures with tracked mortality

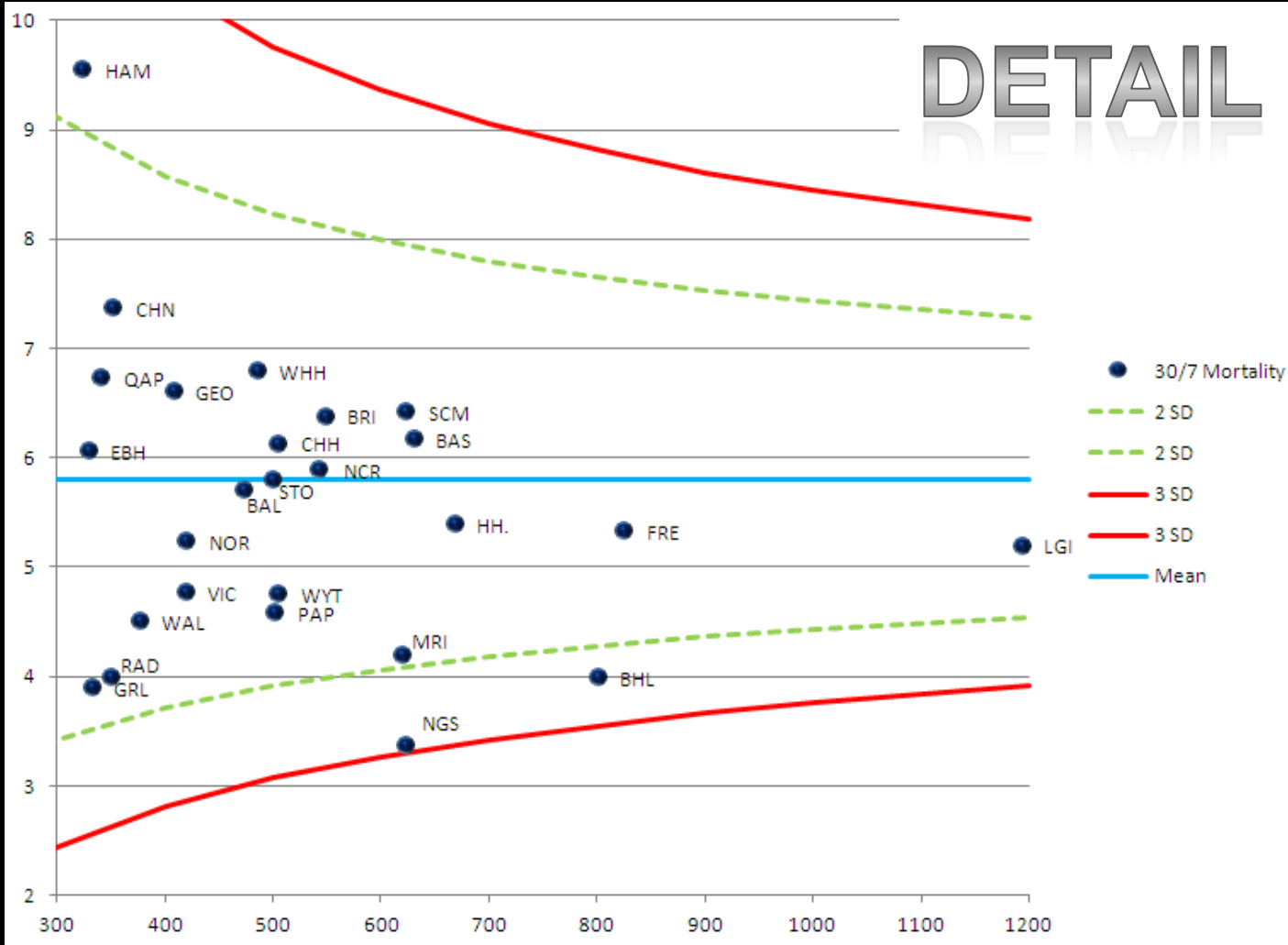
Shock and ventilation INCLUDED
England and Wales only

Primary PCI (includes shock/vent)

30 day Tracked Mortality

DETAIL

Tracked 30/7 Mortality (%)



5.8 %

Number of PPCI procedures with tracked mortality

Shock and ventilation INCLUDED
England and Wales only

Survival after Primary PCI

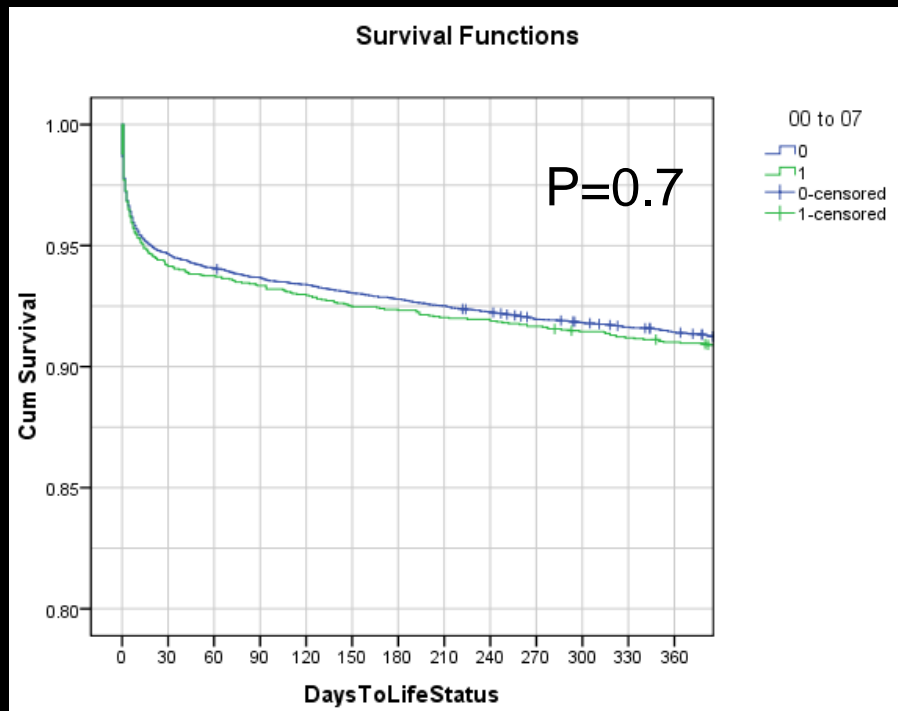
On v Off hours

2010 data tracked to August 2012

Cases with first device time Midnight to 08.00



2011 data: Ludman



— 07:59 to Midnight

— 00:01 to 08:00

	Days	0	30	180	360
On hrs	n at risk	12583	11912	11675	11480
	Survival %		94.7	92.8	91.4
Off hrs	n at risk	2736	2576	2526	2486
	Survival %		94.2	92.3	91.0

Shock and ventilation INCLUDED
England and Wales only
Unadjusted

Survival after Primary PCI

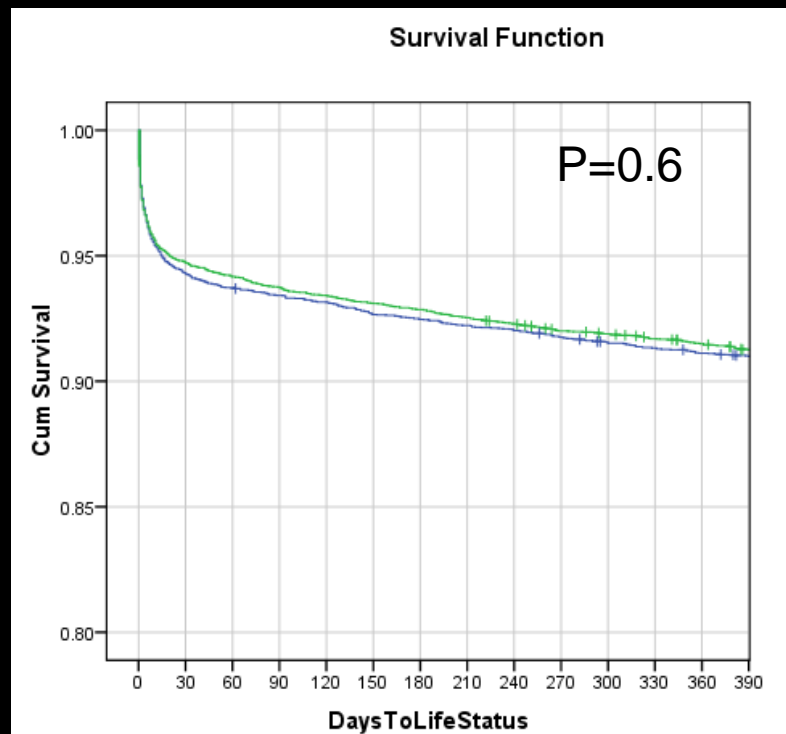
On v Off hours

2010 data tracked to August 2012

Cases with first device time from 08.00 to 18:00 v Off hrs



2011 data: Ludman



— 07:59 to 18:00
— 18:01 to 08:00

	Days	0	30	180	360
On hrs	n at risk	9531	9031	8850	8699
	Survival %		94.8	92.9	91.4
Off hrs	n at risk	5788	5459	5351	5267
	Survival %		94.3	92.5	91.1

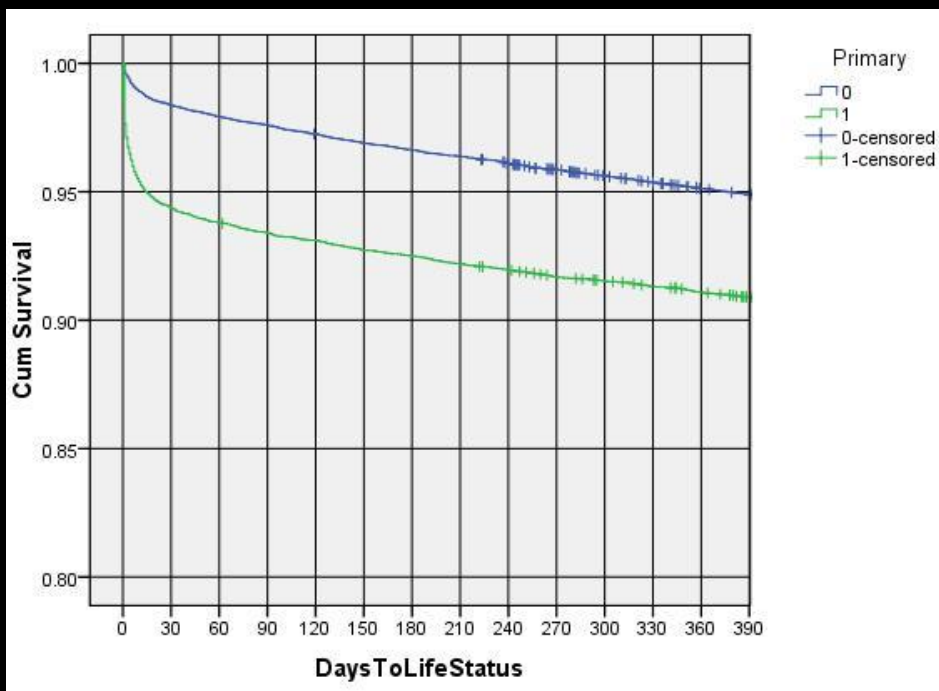
Shock and ventilation INCLUDED
England and Wales only
Unadjusted

Survival after Primary PCI v PCI for NSTEMI

2010 data tracked to August 2012



2011 data: Ludman



	Days	0	30	180	360
PPCI	n at risk	15814	14929	14627	14379
	Survival %		94.4	92.5	91.2
NSTEMI PCI	n at risk	27773	27327	26838	26355
	Survival %		98.4	96.6	95.1

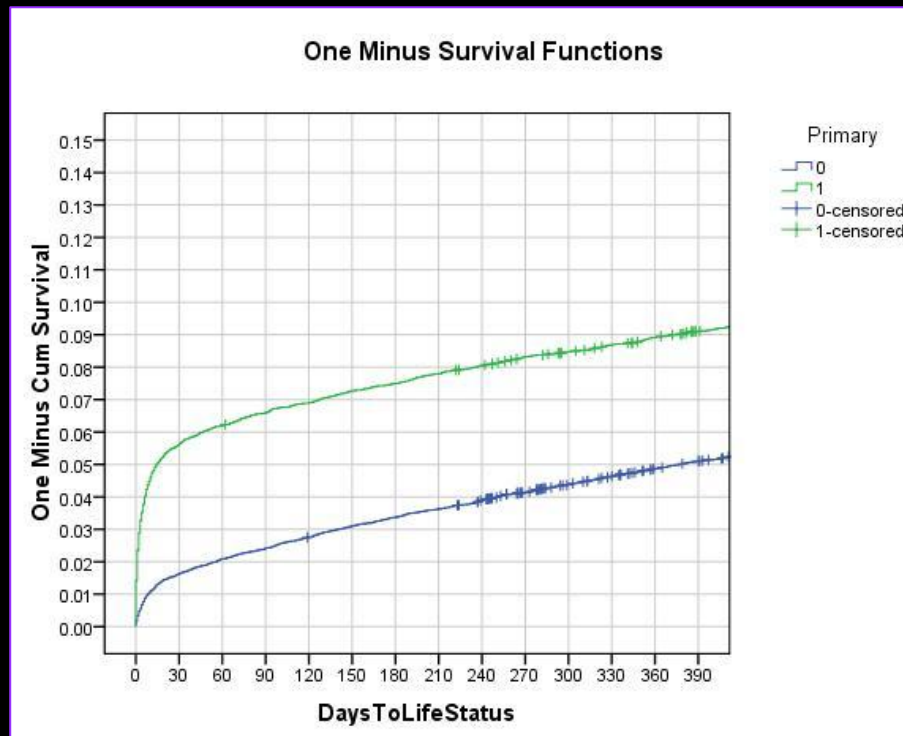
unadjusted

Survival after Primary PCI v PCI for NSTEMI

2010 data tracked to August 2012

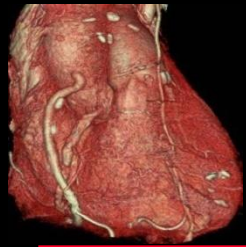


2011 data: Ludman



		0	30	180	360
PPCI	n at risk	15814	14929	14627	14379
	Mortality %		5.6	7.5	8.8
NSTEMI PCI	n at risk	27773	27327	26838	26355
	Mortality %		1.6	3.4	4.9

unadjusted



Bypass grafts

PCI of SVG and Arterial



2011 data: Ludman

All as %	No.	Success	Partial success	Fail no comp	Re-PCI	QMI	Em CABG	In Hosp Death	30/7 Death (CR)
2006	1486	91.6	3.2	3.8	0.1	0.27	0	1.2	
2007	5008	89.6	2.6	6.8	0.2	0.18	0	0.90	
2008	4308*	91.0	3.2	5.2	0.3	0.16	0.02	0.56	
2009	2506	88.9	3.8	6.0	0.2	0.2	0	1.3	1.7
2010	2645	89.3	2.6	5.4	0.2	0.2	0	0.95	1.5
2011	2802	87.8	3.7	6.7	0.5	0.4	0	1.4	2.7

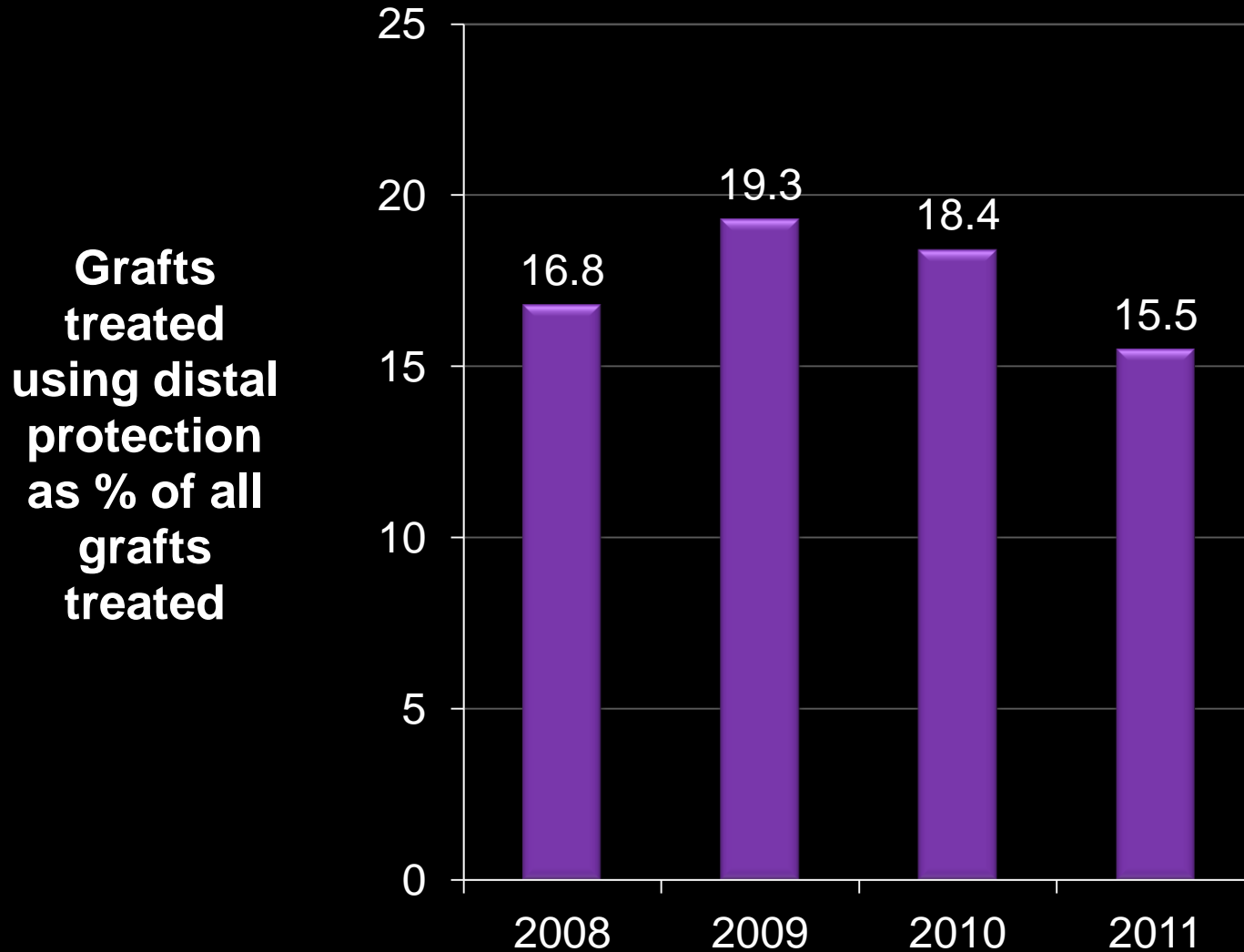
*Centre x = 1860 of 2111 cases in 2008

Bypass Grafts

(all types - SVG and IMA etc)



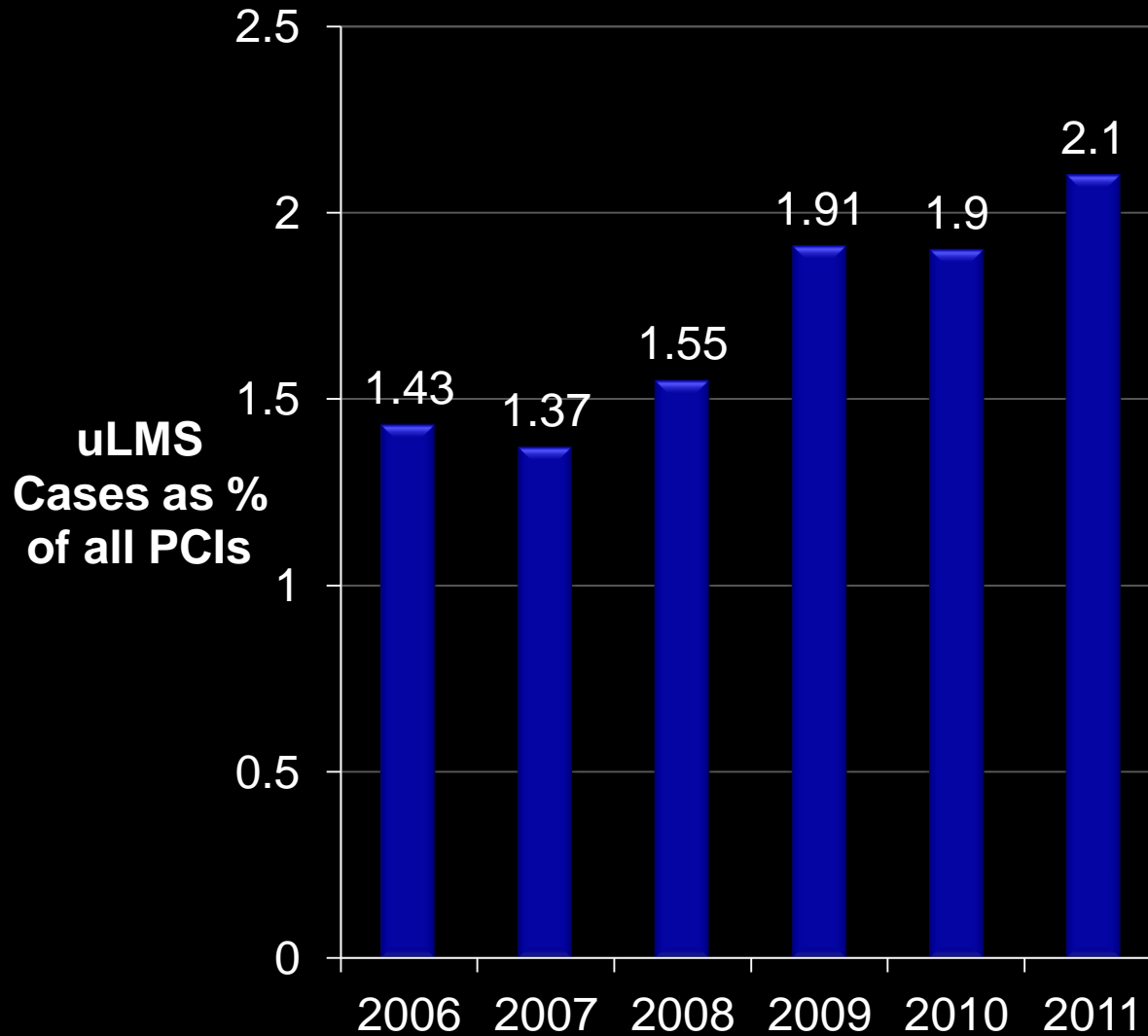
2011 data: Ludman



Unprotected LMS



2011 data: Ludman



Unprotected LMS

Including Shock and STEMI



2011 data: Ludman

All as %	No.	Success	Partial success	Fail no comp	Re- PCI	QMI	Em CABG	In Hosp Death	Death 30/7 (CR)
2006	583	86.8	4.5	0.9	0.3	0.51	0.17	7.0	
2007	842	83.8	7.4	2.6	0.1	0.48	0.7	7.0	
2008	1084	83.9	5.3	2.6	0.6	0.46	0.5	8.0	
2009	1462	84.9	4.0	3.4	0.3	0.27	0.31	7.5	9.2
2010	1516	85.3	4.1	2.2	0.5	0.13	0.07	8.0	9.6
2011	2009	86.0	3.9	2.3	0.3	0.4	0.20	7.4	10.0

Chronic Total Occlusion

Stable only



2011 data: Ludman

All as %	No.	Success	Partial success	Fail no comp	Re- PCI	QMI	Em CABG	In Hosp Death	Death 30/7 (CR)
2011	4069	69.8	6.1	22.3	0.1	0.03	0.05	0.25	0.42

Contents



2011 data: Ludman

- **Structure**
 - New centres
 - Total PCI numbers
 - No of PCIs per centre and per angio
 - PCI pmp and by country
 - PCI operators, by centre, by PPCI
 - On call rotas for PPCI
 - Surgical cover
 - Day case activity
 - Primary PCI units
- **NICOR data collection**
 - Centre participation
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 - Delays data completeness
 - Delays to treatment
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 - IHT versus Direct admission
 - PPCI age > 80 / Length of stay
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 - Septal ablation for HOCM
 - PFO / ASD closure / LAA occlusion
 - Renal Denervation
 - Valve therapies
 - Other adult structural intervention
- **Outcome**
 - MACCE
 - Periprocedural complications and by access
 - Tracked 30 day mortality
 - Outcome by syndrome
 - Outcome by lesion subset
 - Risk adjusted outcomes
 - 3 year MACCE
 - 1 year MACCE
 - Predicted risk by centre type

Appendix: PCI Centre CCAD codes

Risk Adjusted Outcome



Assessment of unit specific performance



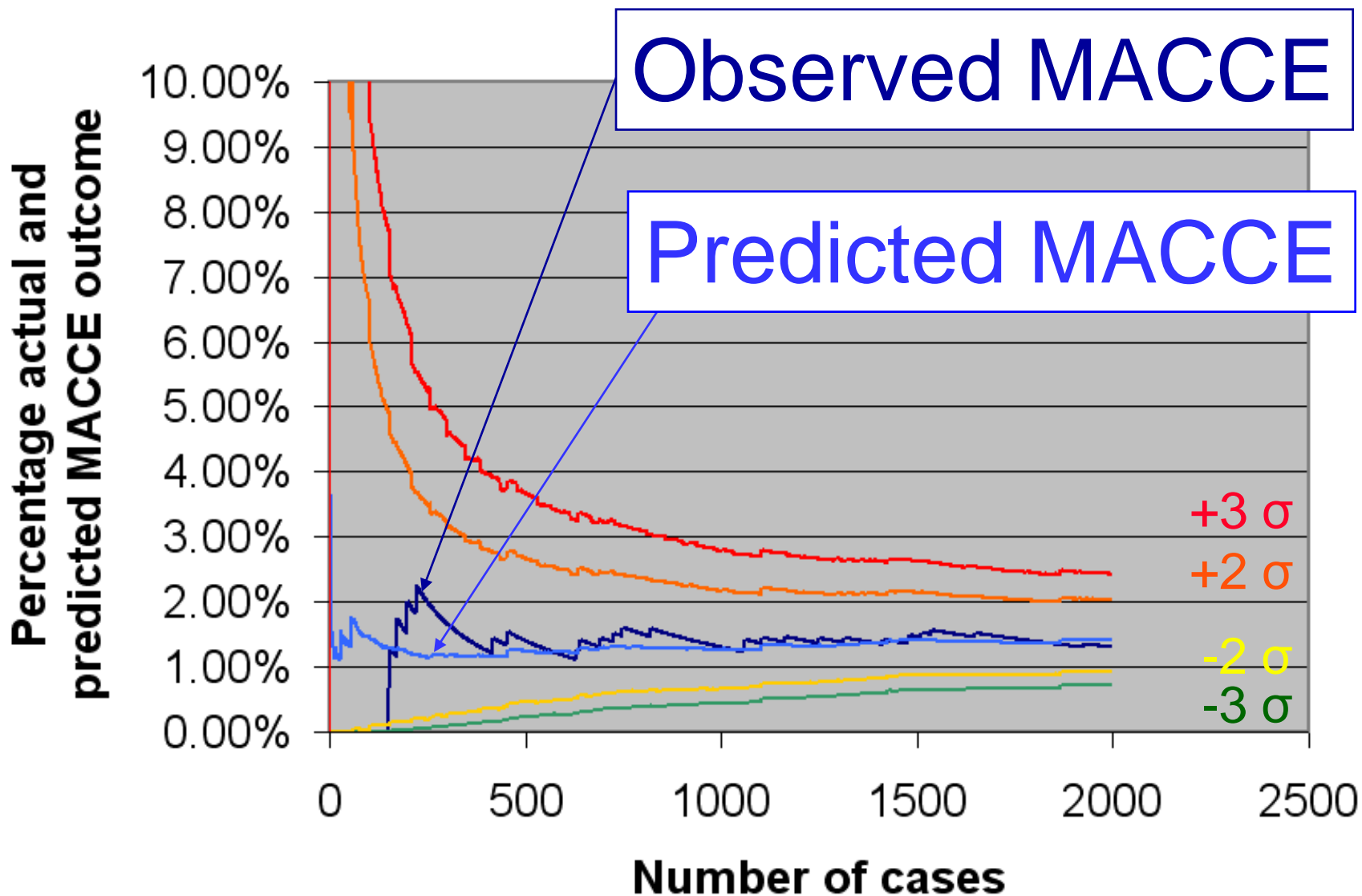
2011 data: Ludman

- Methods:
 - Cumulative Funnel Plots for each unit
 - Plots of each unit's overall risk adjusted outcome
- Data Range Analysed:
 - 3 year data: 2009 to 2011 inclusive
 - 1 year data: 2011 cases

NWQIP Model



2011 data: Ludman



Outcome

MACCE for 2009, 2010 and 2011



2011 data: Ludman

After all PCIs for 2009, 2010 and 2011

Risk Adjusted MACCE (for unit x) =

$$\text{Observed MACCE (all UK cases)} \times \frac{\text{Observed MACCE (for unit x)}}{\text{Predicted MACCE}}$$

Risk Adjusted Outcome



2010 data: Ludman

- 3 year overall 'Spiegelhalter' funnel
 - Individual cumulative funnels
- 1 year overall 'Spiegelhalter' funnel
 - Individual cumulative funnels

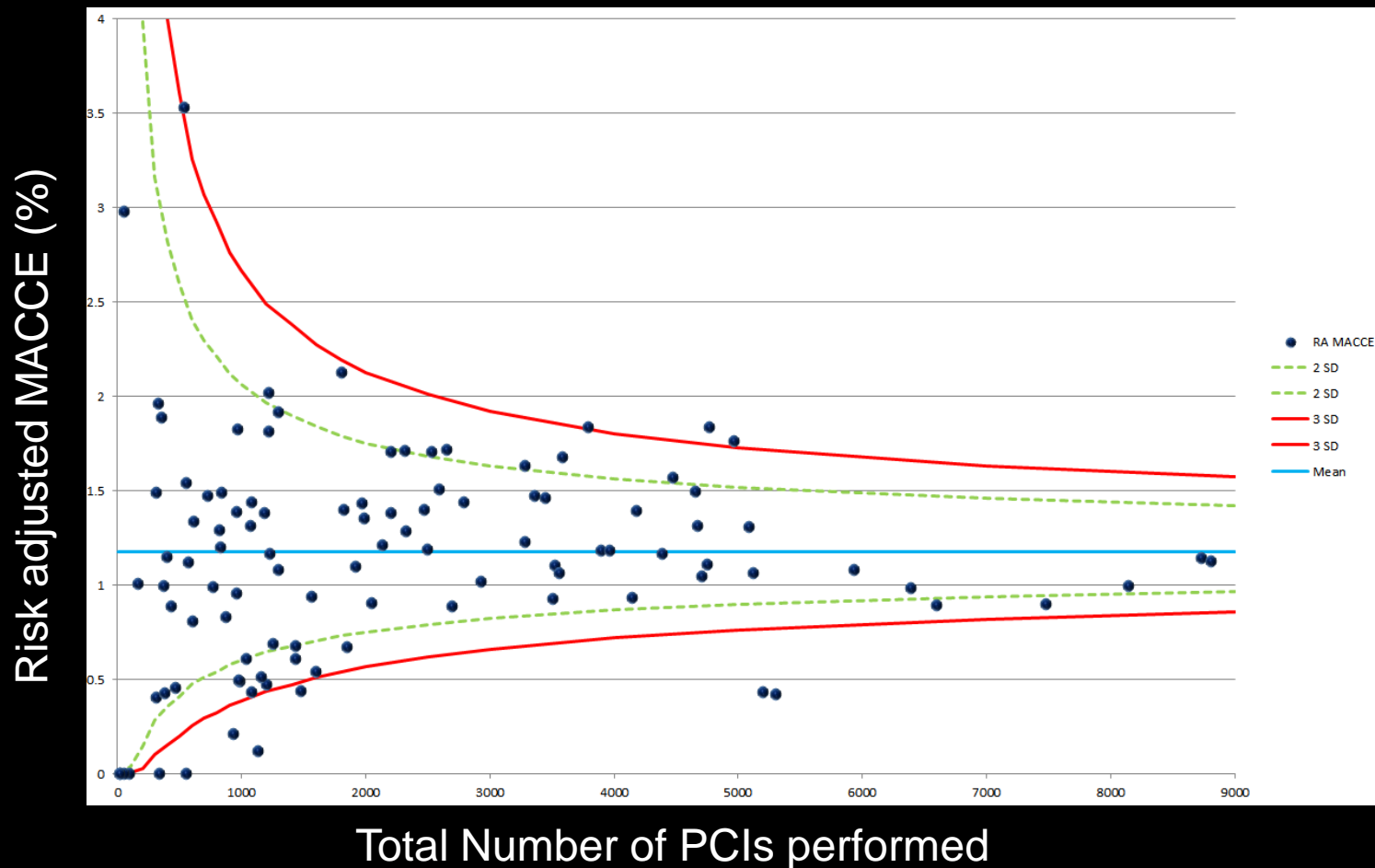
Risk Adjusted Outcome

RA-MACCE for 2009 to 2011 (incl)



2011 data: Ludman

$$\text{RA MACCE} = \frac{\text{Observed}}{\text{Predicted}} \quad \text{MACCE each centre} \times \text{UK mean MACCE}$$



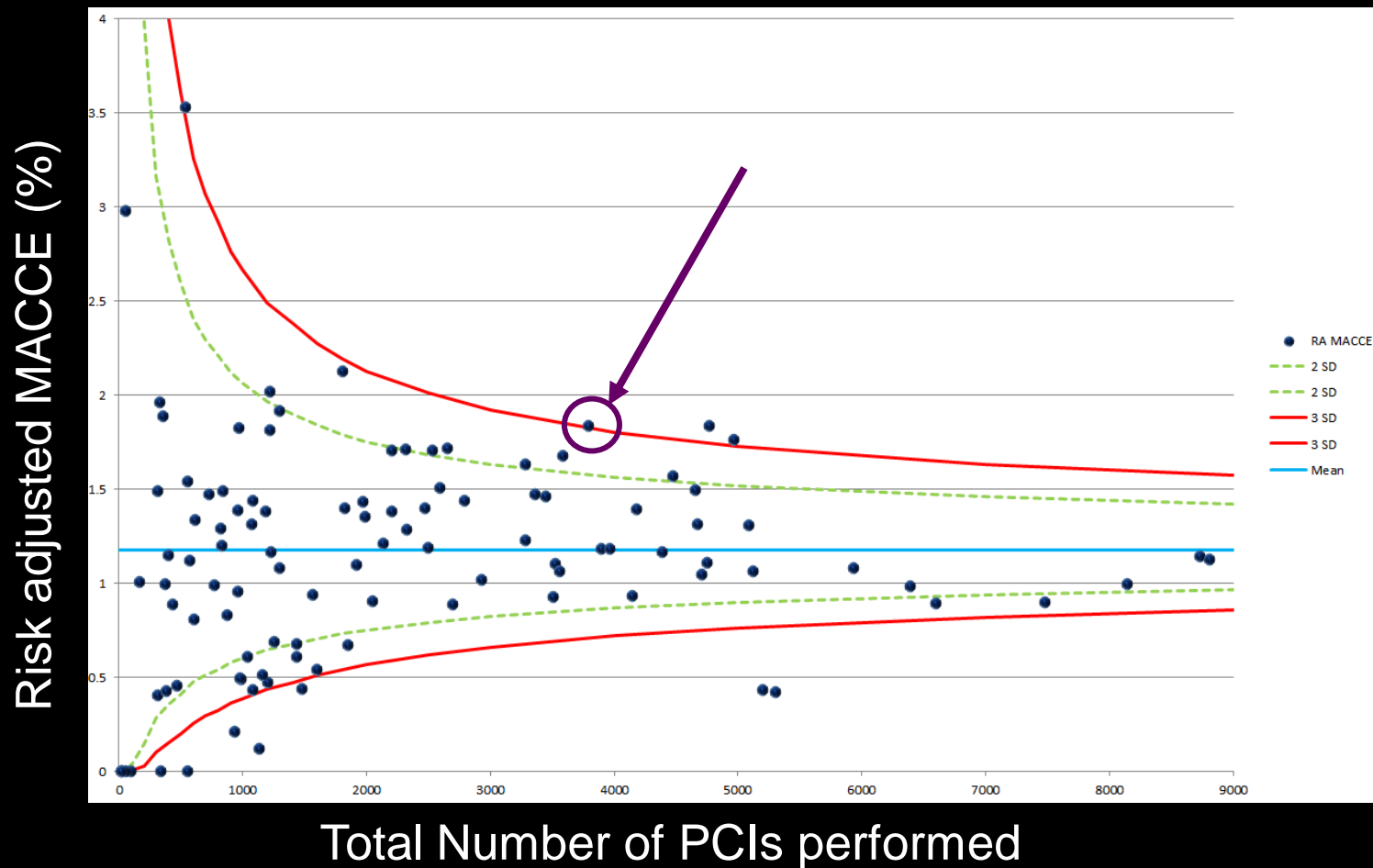
Risk Adjusted Outcome

MACCE (RA) for 2009, 2010 and 2011



2011 data: Ludman

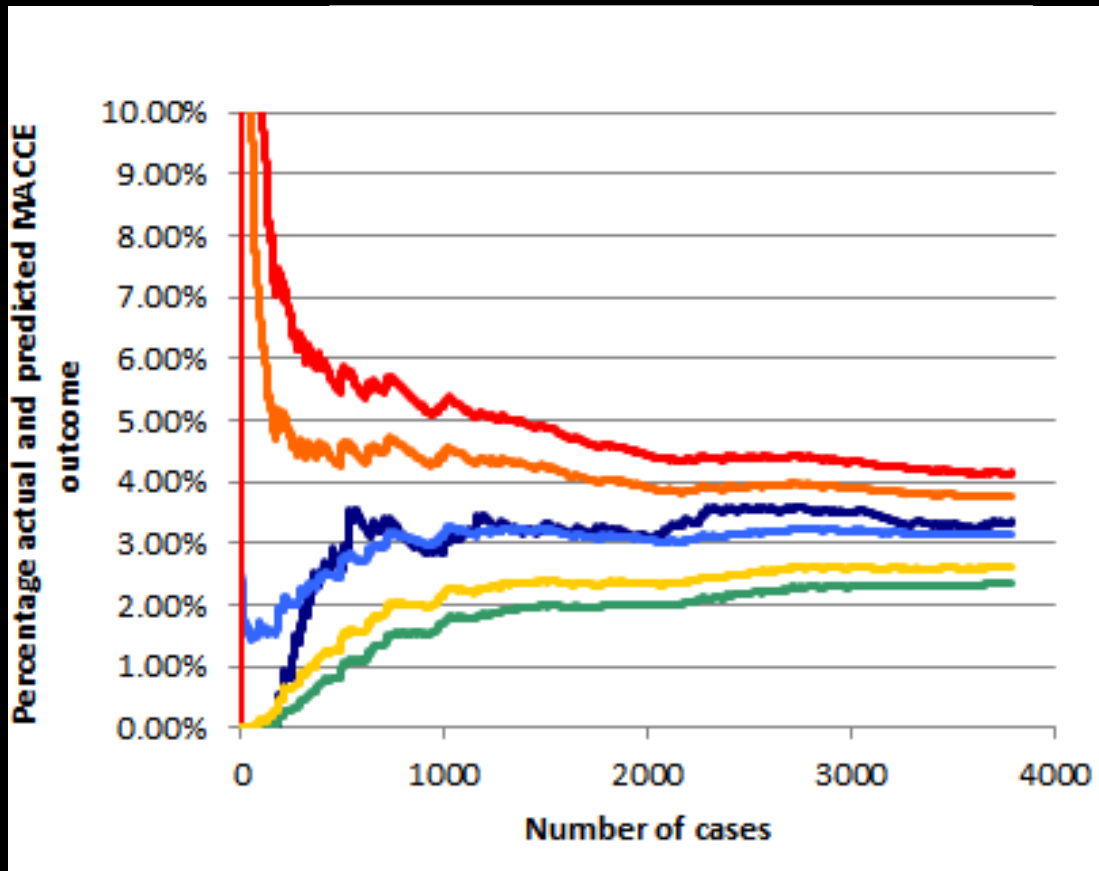
Method: Each point represents the Risk adjusted MACCE for each unit
= UK Mean Obs MACCE rate x Obs / Pred of each unit



3 Year Funnel 2009-2011



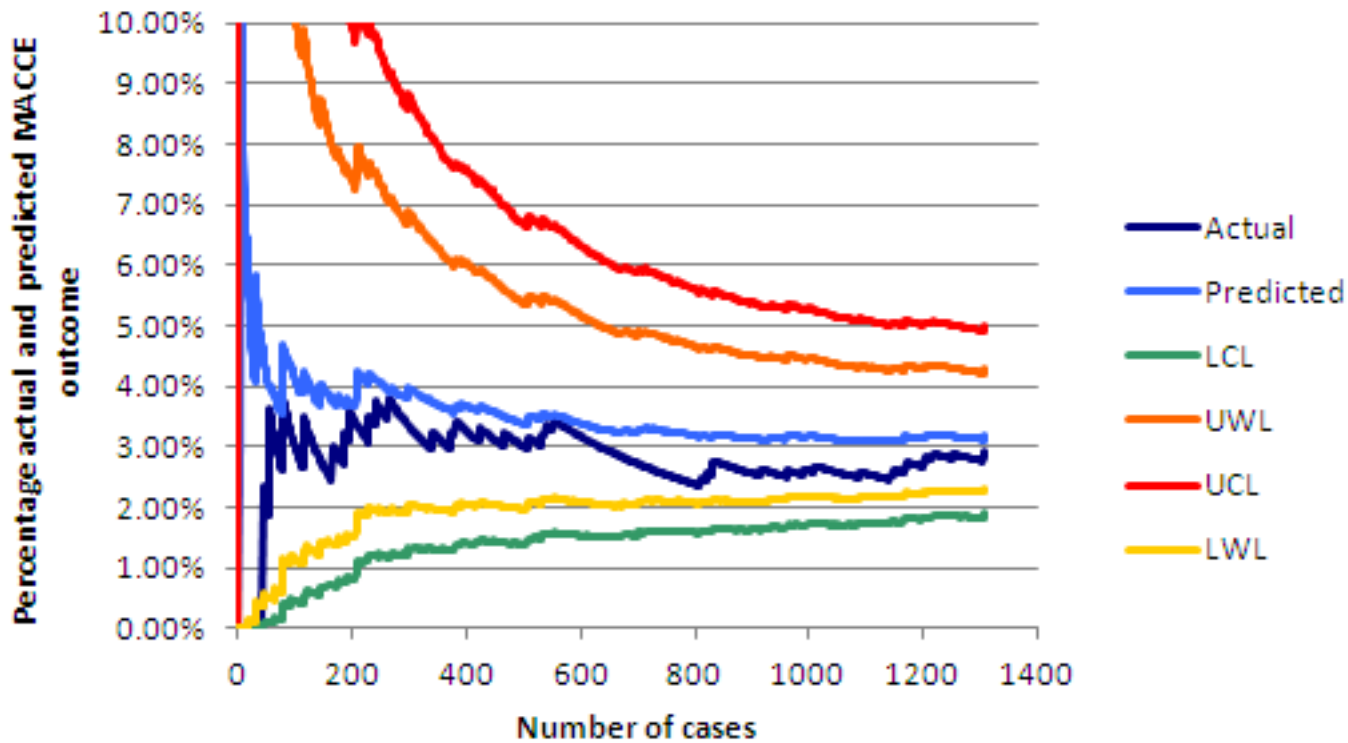
2011 data: Ludman



1 Year Funnel 2011



2011 data: Ludman



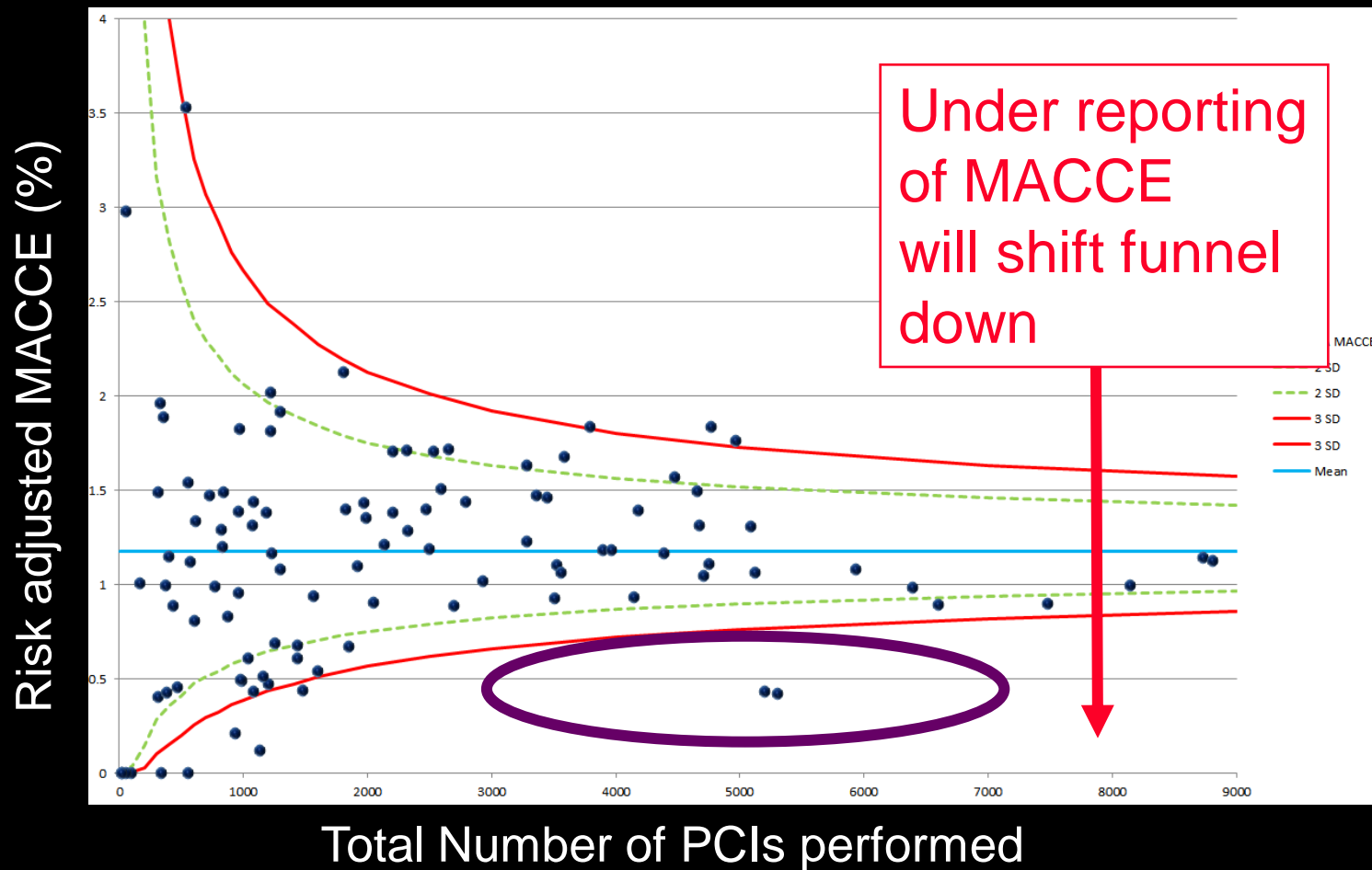
Risk Adjusted Outcome

RA-MACCE for 2009 to 2011 (incl)



2011 data: Ludman

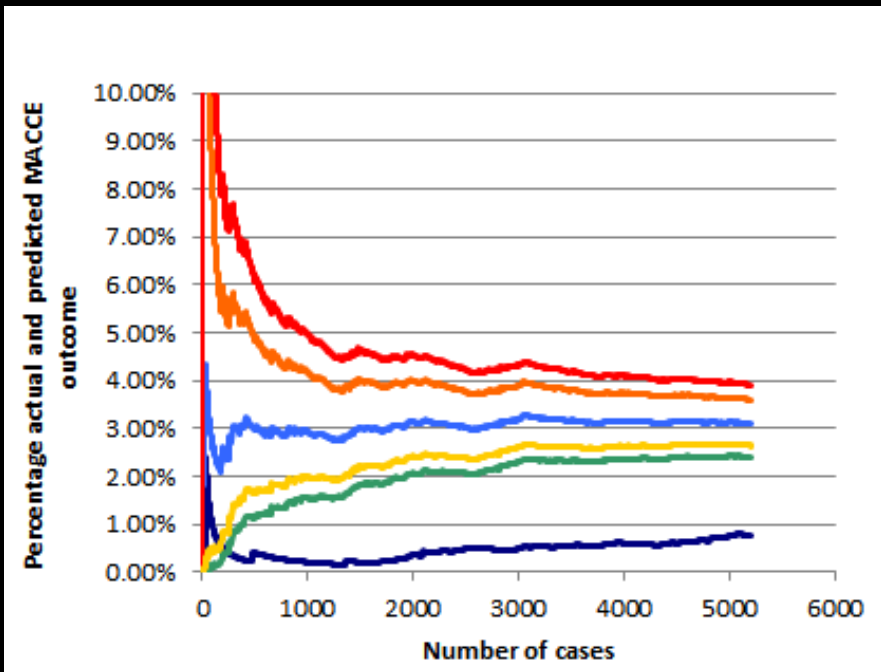
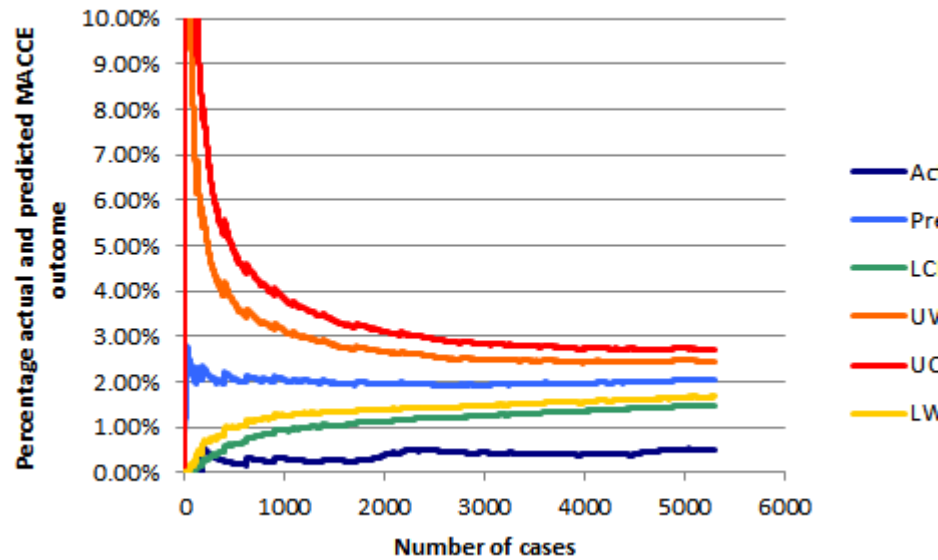
$$\text{RA MACCE} = \frac{\text{Observed}}{\text{Predicted}} \text{ MACCE each centre x UK mean MACCE}$$



Under reporting of MACCE?



2011 data: Ludman

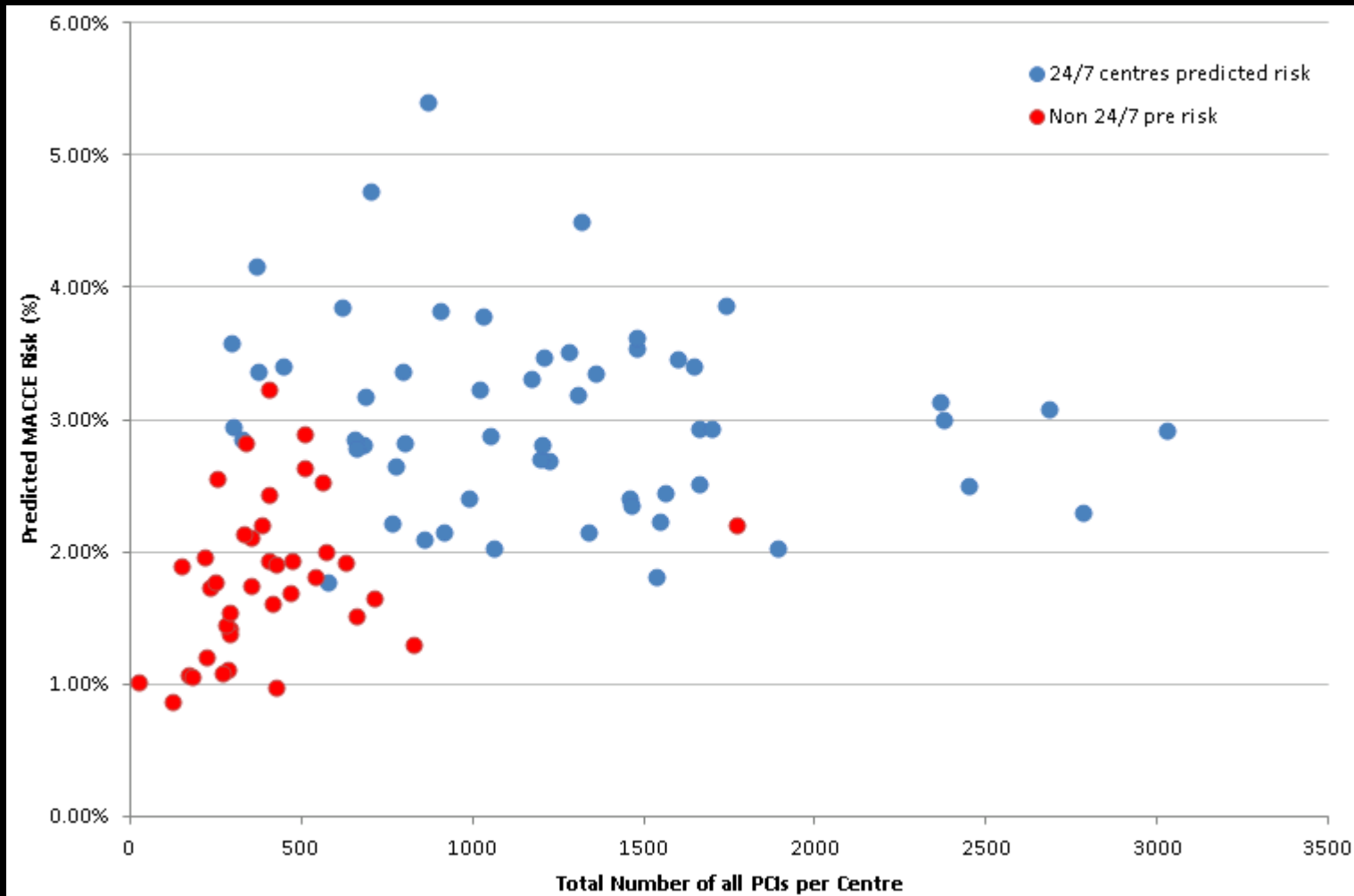


Predicted MACCE (2011 data)

24/7 versus Non 24/7 PPCI Centres



2011 data: Ludman

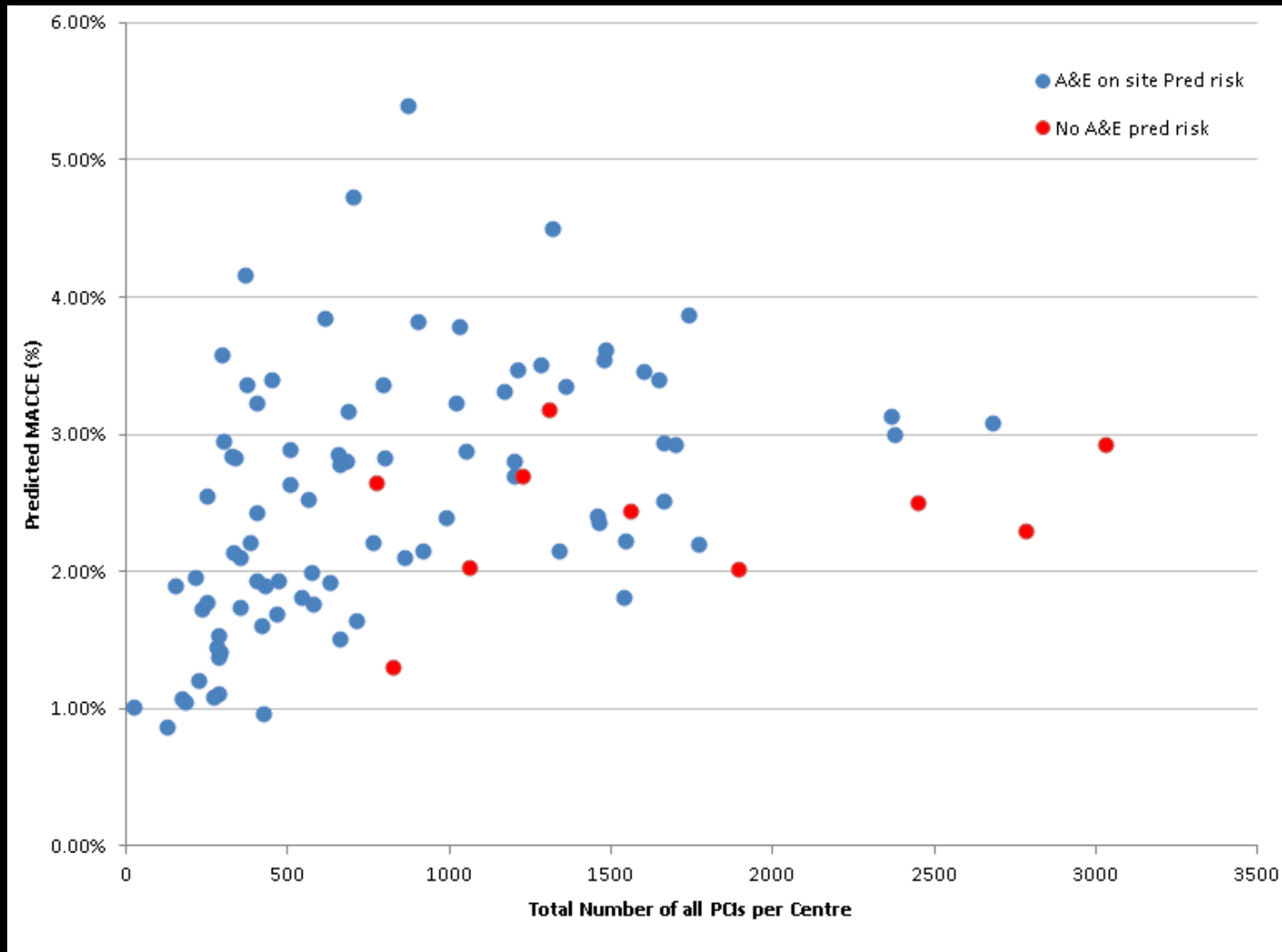


Predicted MACCE (2011 data)

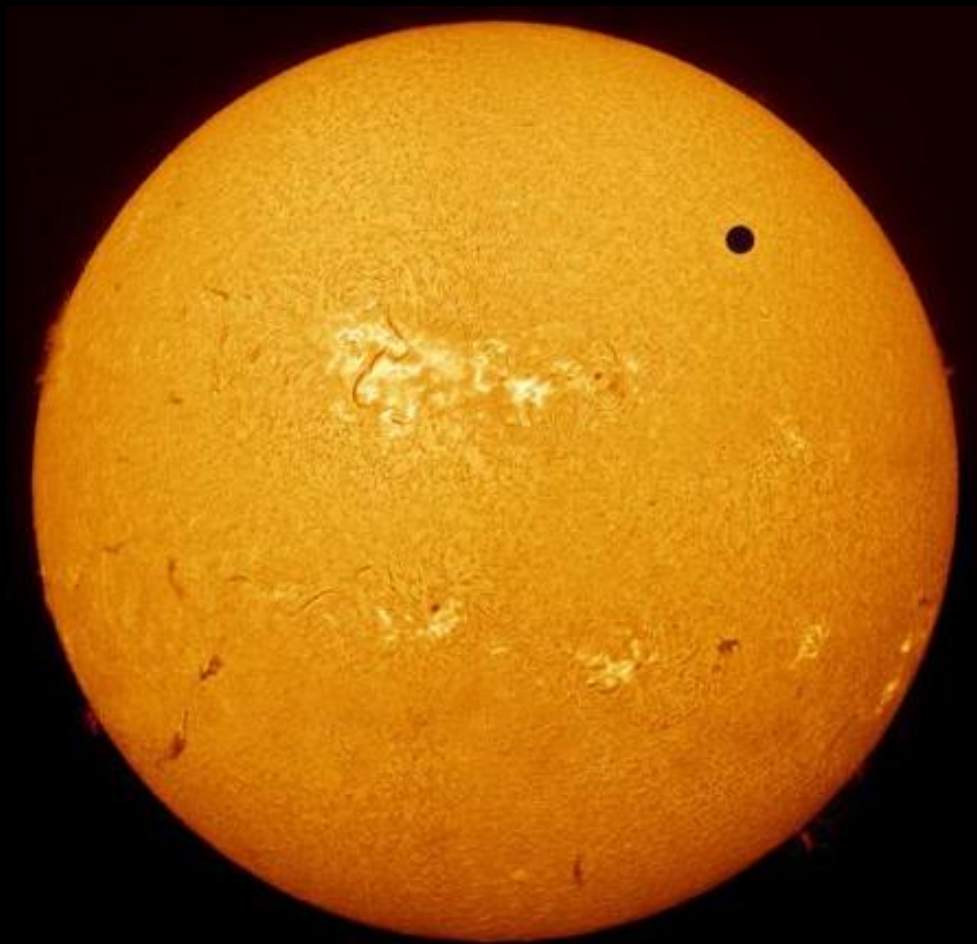
A&E on PPCI site versus No A&E



2011 data: Ludman



Future Plans



Venus transit

Risk Adjustment Issues



2011 data: Ludman

- Model out of date
 - New model being developed
- Reliant on reported MACCE
 - New model - tracked mortality
- Reliant on reported risk factors
 - Encourage use of consistent definitions
 - Encourage internal audit to assess accuracy

NICOR

National Institute for Cardiovascular Outcomes Research


- Developments
 - Migration from NHS Information Centre to University College London servers complete
 - Next phase
 - New Platform
 - Dataset cross linking
 - Improved analyses
 - Collection of new datasets

DMAG

BCIS Data Monitoring and Analysis Group

- Development of analyses of audit data
- Use of audit data for research

Applications from NICOR web site www.ucl.ac.uk/nicor



NICOR: NATIONAL INSTITUTE FOR CARDIOVASCULAR OUTCOMES RESEARCH

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- School of Life and Medical Sciences

Data applications for Research

NICOR's policy for data sharing, in addition to audit specific data application forms, can be found here:

Data Sharing Agreements

- NICOR data application process
- NICOR data application form
- NICOR data sharing policy
- NICOR data user's agreement
- Appendix 1 MINAP data application
- Appendix 2 Adult cardiac surgery data application
- Appendix 3 Adult cardiac intervention data application
- Appendix 4 National Heart Failure Audit data application

Data Applications



2011 data: Ludman

Project Title	Principle Investigator	Status as Sept 2012
Comparison of access site and neurological complications following PCI	Dr James Nolan	Manuscript submitted
Influence of arterial access site selection on outcomes in primary percutaneous coronary intervention	Dr James Nolan	Manuscript written
Influence of arterial access site selection on MACE and impact of centre volume on radial outcomes	Dr James Nolan	Analysis on going
Outcomes in South Asians Following PCI: Analysis of the BCIS Database	Dr Andrew Wragg	Manuscript written
United Kingdom Real-World Registry of Unprotected Left Main Stem PCI : BCIS Dataset.	Dr Nicholas Curzen	Analysis on going
Chronic Total Occlusion angioplasty: complications, results and long term outcome	Dr David Hildick-Smith	Analysis on going
Creating The Evidence To Support Recertification - A 2-year project exploring the value of administrative data (Hospital Episode Statistics / Patient Episode Data Wales)	Professor Jan van der Meulen	Manuscript awaiting amendment
Outcome of drug-eluting stenting in patients requiring prior rotational atherectomy	Dr Adam DeBelder	Manuscript writing
Why do patient outcomes from acute coronary syndromes vary by hospital in England and Wales?	Dr C P Gale	Analysis on going
The development of a dynamic outcome model for percutaneous coronary intervention	Professor Iain Buchan	Analysis on going
Multiple imputation for completion of the British Cardiovascular Intervention Society (BCIS) database	Dr C P Gale	Analysis on going
Optimising anti-anginal therapy prior to percutaneous coronary intervention for stable angina. Has COURAGE changed practice?	Dr David Adlam	Linkage being arranged
Repeat coronary revascularisation: incidence and outcomes in a 'real world' cohort	Dr David Adlam	Linkage being arranged
Appropriateness of PCI in patients with stable coronary artery disease in the UK: a look at the BCIS dataset	Dr Ben Wrigley	Dataset authorised
Emergency Left Main-Stem Coronary Intervention: Analysis of the BCIS database	Professor Adrian Banning	Dataset authorised
Clinical outcomes in patients with cardiogenic shock following PCI: a UK PCI database registry study	Professor Tony Gershlick	Dataset authorised
Is cardiac rehabilitation in England, Wales and Northern Ireland providing the expected health gain? Linking routinely collected audit data with other national datasets and cost data	Dr Patrick Doherty	Linkage being arranged

UK PCI Centre Codes 2011

AEI. Royal Albert Edward Infirmary	CGH. Conquest Hospital	GEO. St George's Hospital
AHM. BMI Alexandra Hospital	CHG. Cheltenham General Hospital	GJH. Golden Jubilee Hospital
ALT. Altnagelvin Hospital	CHH. Castle Hill Hospital	GRL. Glenfield Hospital
AMG. Wycombe General Hospital	CHN. Nottingham City Hospital	GWH. Queen Elizabeth Hospital, Woolwich
ANT. St Anthony's Hospital	CLW. Glan Clwyd DGH Trust	HAI. Hairmyres Hospital
BAL. Barts and the London	CMI. Cumberland Infirmary	HAM. Hammersmith Hospital
BAS. Basildon Hospital	CRG. Craigavon Area Hospital	HBP. BUPA Hospital, Hull & East Riding
BAT. Royal United Hospital Bath	CRO. Cromwell Hospital	HHW. Wellington Hospital
BED. Bedford Hospital	DER. Royal Derby Hospital	HH. Harefield Hospital
BFT. Belfast City Hospital	DGE. Eastbourne DGH	HSC. Harley Street Clinic
BHH. Rochdale Infirmary	DUD. City Hospital	IND. London Independent Hospital
BHL. Liverpool Heart and Chest Hospital	DVH. Darent Valley Hospital	KCH. King's College Hospital
BHR. Royal Berkshire and Battle Hospital	EAL. Ealing Hospital	KGH. Kettering General Hospital
BLA. Royal Blackburn Hospital	EBH. Birmingham Heartlands Hospital	KMH. Kings Mill Hospital
BMI. BMI Meriden Hospital	ERI. Royal infirmary of Edinburgh	KSX. Kent & Sussex Hospital
BOU. Royal Bournemouth General Hospital	ESU. East Surrey Hospital	LBH. London Bridge Hospital
BRD. Bradford Royal Infirmary	FRE. Freeman Hospital	LBP. Leicester BUPA Hospital
BRI. Bristol Royal Infirmary	FRM. Frimley Park Hospital	LEB. BUPA Hospital Leeds
CBS. BUPA Hospital Southampton	FRY. Frenchay Hospital	LGI. Yorkshire Heart Centre

UK PCI Centre Codes 2011

LIN. Lincoln County Hospital	PHN. BMI Park Hospital	SGH. Southampton General Hospital
LIS. Lister Hospital	PIN. Pinderfields Hospital	SPH. St Peter's Hospital
LNH. Leeds Nuffield Hospital	PLY. Derriford Hospital	SSP. Spire Shawfair Park Hospital
MAY. Mayday University Hospital	PMS. The Great Western Hospital	STH. St Thomas' Hospital
MDW. Medway Maritime Hospital	QAP. Queen Alexandra Hospital	STO. North Staffordshire Hospital
MHO. Manor Hospital	QEB. Queen Elizabeth Hospital Edgbaston	SUN. Sunderland Royal Hospital
MOR. Morriston Hospital	RAD. John Radcliffe Hospital	TOR. Torbay Hospital
MPH. Taunton & Somerset	RAI. Raigmore Hospital	UCL. University College Hospital
MRI. Manchester Royal Infirmary	RCH. Royal Cornwall Hospital	UHW. University Hospital of Wales
NCR. New Cross Hospital	RDE. Royal Devon & Exeter Hospital	VIC. Victoria Hospital
NGS. Northern General Hospital	RFH. Royal Free Hospital	WAL. University Hospital Coventry
NHB. Royal Brompton Hospital	RHH. Ross Hall Hospital	WAT. Watford General Hospital
NHH. North Hampshire Hospital	RHI. Calderdale Royal Hospital	WDH. Dorset County Hospital
NIN. Ninewells Hospital	RIA. Aberdeen Royal Infirmary	WEX. Wexham Park Hospital
NOR. Norfolk & Norwich Hospital	RSC. Royal Sussex County Hospital	WHC. Whipps Cross University Hospital
NPH. Northwick Park Hospital	RVB. Royal Victoria Hospital	WHH. William Harvey Hospital
NTH. Northampton General Hospital	SAL. Salisbury Hospital	WRC. Worcestershire Royal Hospital
PAP. Papworth Hospital	SAN. Sandwell District General Hospital	WRG. Worthing Hospital
PHB. BMI Priory Hospital	SCM. James Cook University Hospital	WYT. Wythenshawe Hospital
	SCU. Scunthorpe General Hospital	YDH. York District Hospital

Summary 2011

- 117 PCI centres in UK performing 88,692 PCIs (1,405 PCI pmp)
 - Fall in PCI pmp (change in population estimates)
- High compliance with NICOR data collection
- Changing patterns of treatment
 - As expected from published literature
 - In line with new developments
 - Equipment
 - Pharmacology
- Increase in provision of PPCI
- Delays to Rx
 - Significant improvements in many Centres
- Outcomes
 - Overall appear satisfactory
 - Risk adjusted outcomes appear satisfactory
 - Tracked mortality of homogenous cases satisfactory
- Future
 - NICOR to provide analytic and statistical support for audit
 - Use of data for research progressing well (application process on NICOR website)
- All slides available on the BCIS website www.bcis.org.uk

