



National Audit of Percutaneous Coronary Interventions

PCI Hospital Report

Data from 1st April 2015 to 31st March 2018 inclusive

Hospital: Norfolk and Norwich University Hospital

The data completeness provided for this report's risk adjusted outcomes are considered to be: ADEQUATE

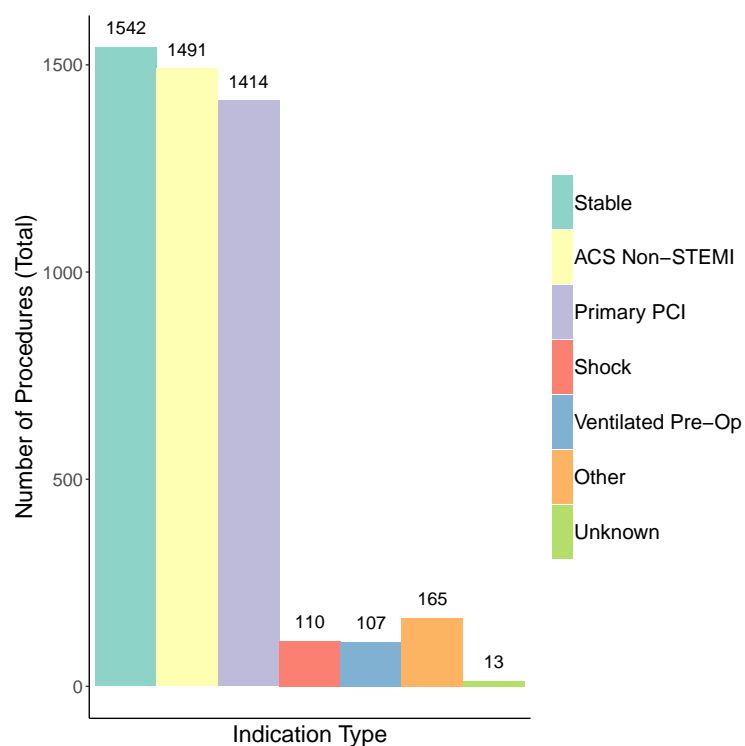
(BCIS require data completeness levels of greater than 95 percent in each category to allow appropriate analysis of PCI outcome data)

Total Number of PCI Procedures: 4625

Consultants Performing PCI:

GMC	2015/16	2016/17	2017/18	Total
2508988	91	-	-	91
3054057	226	145	156	527
3192269	217	240	181	638
3315200	303	326	229	858
4329587	273	293	263	829
5203641	130	226	211	567
6089568	-	48	273	321
6117771	-	10	246	256
6168237	182	219	136	537
Total	1422	1508	1695	4625
Unknown	-	1	-	1

Number of Procedures Split by Clinical Syndrome:



GMC	2015/16	2016/17	2017/18	Total
Stable	471	478	593	1542
ACS Non-STEMI	440	514	537	1491
Primary PCI	459	463	492	1414
Shock	27	28	55	110
Ventilated Pre-Op	33	31	43	107
Other	47	50	68	165
Unknown	5	3	5	13

Radial Access Rates (2017 data only):

	Hospital Rate	National Average
Percent of Cases Where a Radial Access Route Was Used	94.62%	87.29%

Door to Balloon Times and Delays (2017 data only):

(Note: delays calculations are for patients with symptom onset in the community and for Primary PCI also excludes those ventilated or in shock)

Extent of Data Completeness in Variables Relevant to Primary PCI Door to Balloon Time Delays

	Complete Records	Percentage
Date/time of symptom onset	415	100%
Date/time of call for help	409	98.55%
Date/time of arrival at first hospital	413	99.52%
Date/time of arrival at PCI hospital	413	99.52%
Date/time of first balloon inflation	412	99.28%
Discharge date	415	100%

Door to Balloon Times: Primary PCI

	Hospital Rate	National Average
Primary PCI: Percent of Cases Treated Within 90 minutes	91.18%	89.58%

Breakdown of Admission Route for NSTEMI Cases (Where Admission Route Has Been Recorded):

	Hospital Rate	National Average
% of cases recorded as 'Direct Admission':	77.8%	72.55%

Extent of Complete Data in Variables Relevant to NSTEMI Door to Balloon Time Delays

	Complete Records	Percentage
Route of admission *	536	99.81%
Completeness of data to assess delays: Direct Admission **	354	100%
Completeness of data to assess delays: IHT ***	122	100%

* Out of all NSTEMI cases

** Out of all direct admission cases (requires admission route and arrival at PCI centre)

*** Out of all IHTs (requires admission route, symptom onset time, arrival at first hospital, and arrival at PCI centre)

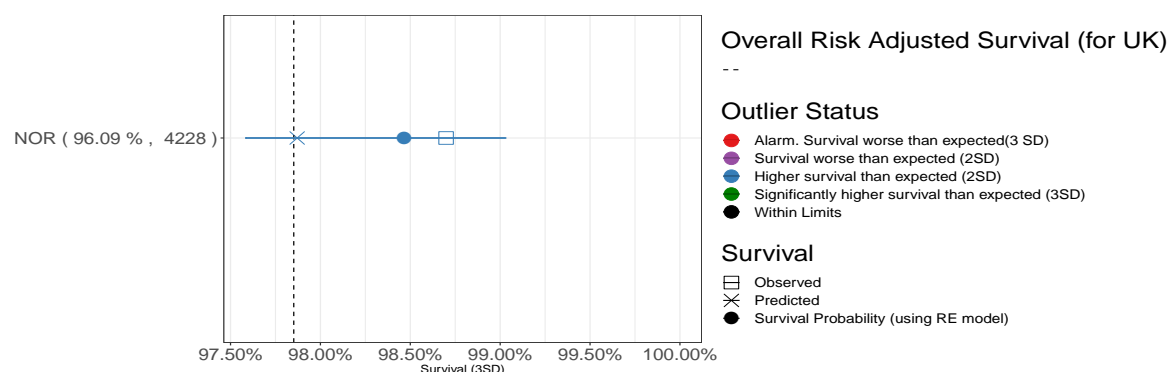
Door to Balloon Times (where admission route and timings are recorded): NSTEMI

	Hospital Rate	National Average
NSTEMI: % of ALL Cases Treated Within 72 Hours	62.33%	57.81%
NSTEMI: % of Direct Admission Treated Within 72 Hours	68.84%	64.51%
NSTEMI: % of IHT Cases Treated Within 72 Hours	39.6%	46.93%

Extent of Data Completeness in Variables Relevant to Risk Estimation (3 years of data):

	Age	Sex	Medical History	Shock	Urgency	Vessels Attempted	Diabetes	Prior MI	Renal Disease	Indication
Count	4625	4625	4586	4625	4625	4625	4597	4591	4490	4612
Percent	100	100	99.16	100	100	100	99.39	99.26	97.08	99.72

Display of Risk Adjusted Analysis:



Vertical axis: Hospital identifier and in parentheses: number of patients treated and completeness rate of life status tracking percentage (i.e. the percentage of patients for whom survival data are available).

Horizontal axis: Percentage Survival at 30 days

The following are presented:

1. Overall Survival to 30 days [dashed vertical line]: the overall proportion of patients who survive across all hospitals
2. Observed Survival per hospital [square]: The proportion of patients who survive 30 days after PCI in each hospital
3. Predicted Survival per hospital [cross]: The Predicted Survival, using the BCIS 30-day mortality model to account for case-mix. For example, a high predicted survival (relative to the national survival) suggests that the hospital performs PCI on relatively low-risk patients.
4. Survival probability (RE model) for outlier detection [full circle]: Survival for each hospital, derived from a random effects model after accounting for case-mix. This estimate and the corresponding horizontal bar provide an indication of whether the hospital is an outlier after taking into account observed and predicted survival

Quantities 1) and 2) do not require any statistical modelling. Calculation of the quantities 3) and 4) require the application of the BCIS 30-day mortality model to predict the outcome and of a random effects model for the detection of outliers.

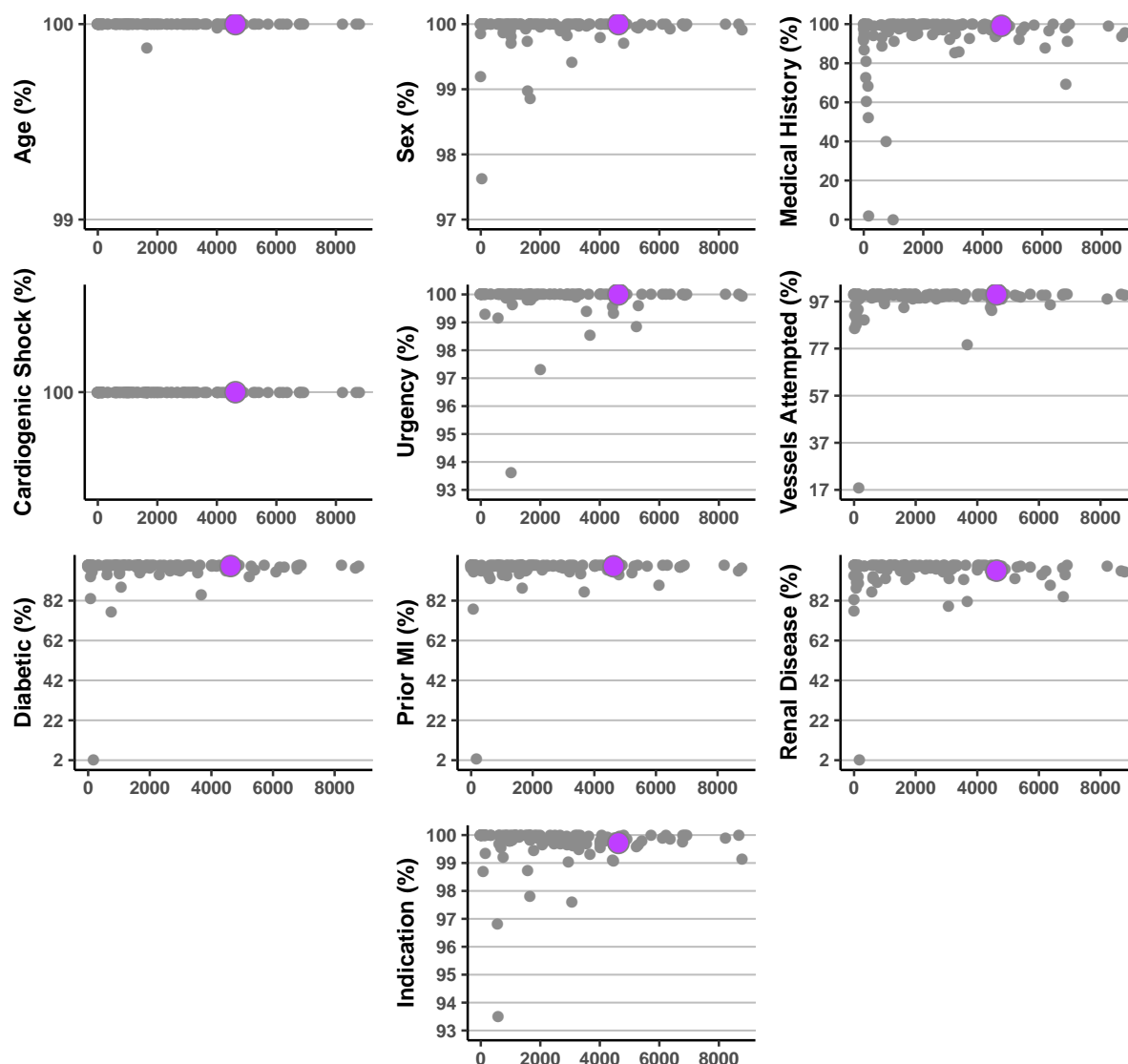
Horizontal bars around the Survival probability (Random Effects model RE Model) indicate whether a hospital is a potential outlier at a 3 standard deviation significance level:

- If the bar for a hospital crosses the vertical Overall Survival dashed line, then the performance of that hospital does not deviate from normal performance.
- If the bar fails to cross the vertical Overall Survival dashed line, then the hospital is either performing significantly better (Green), or significantly worse (Red) than normal. Such hospitals are potential outliers at the 3 SD level

Full details are available on the BCIS web site

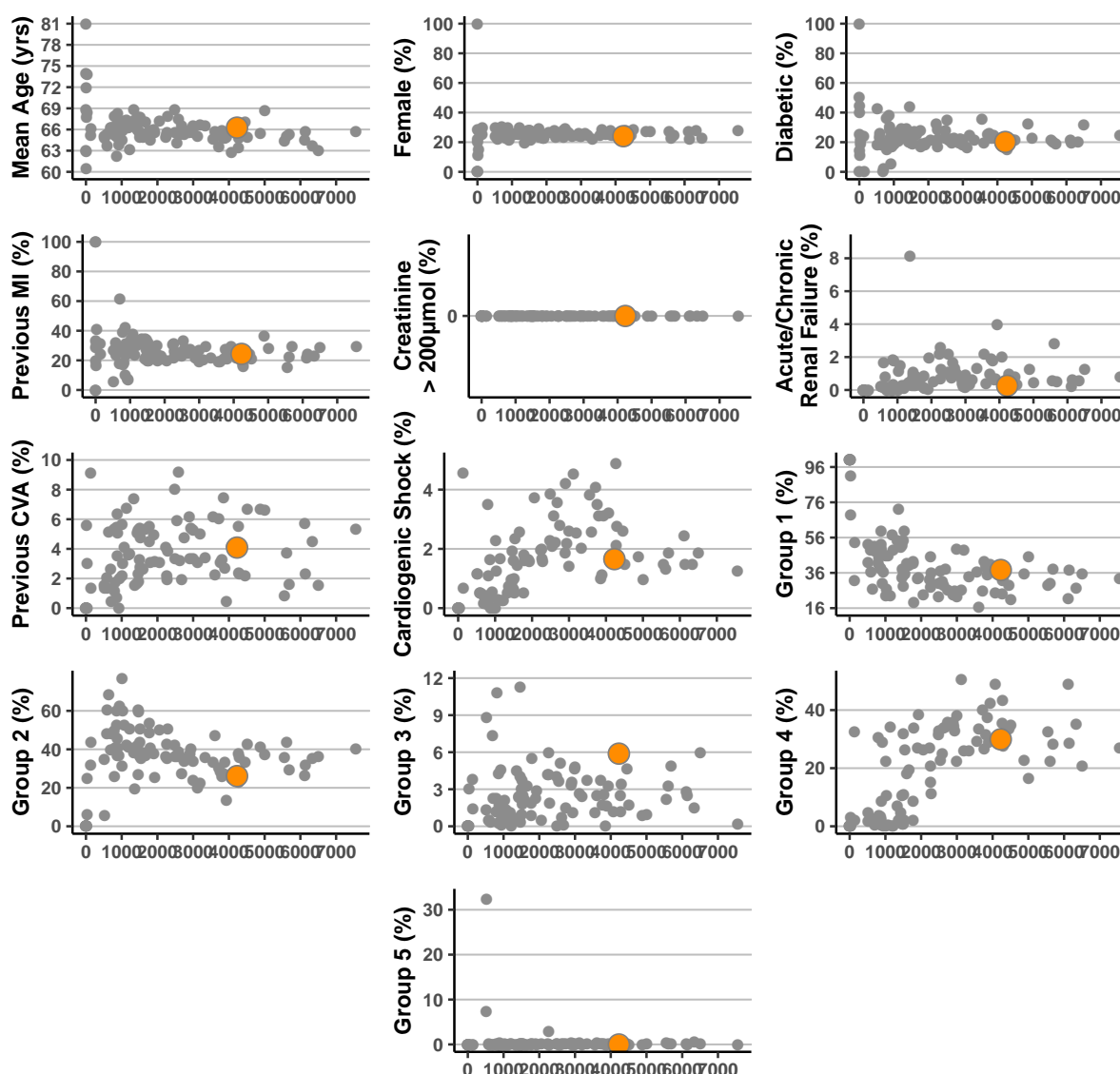
Risk Factor Completeness Plots:

The plots below present the percentage of completeness in each risk factor against the total volume for the period covered by this report. The plots are based on the overall set of PCI records for this hospital. The percentages for this hospital are plotted as purple dots. All other hospitals are represented as smaller grey dots.



Risk Factor Prevalence Plots (30 Day Post-Procedural Mortality Only):

The plots below present the prevalence of each risk factor used in the 30 day post-procedural survival model. The values are plotted against the total volume for the period covered by this report. The plots are based on the subset of PCI records for this hospital that is used in the 30 day post-procedural survival analysis. The percentages for this hospital are plotted as orange dots. All other hospitals are represented as smaller grey dots.



Definitions of Groups 1-5

Group 1:	"stable angina" OR "stable coronary/LV anatomy" OR "staged procedure" OR "hybrid procedure"
Group 2:	"ACS - UA, NSTEMI or convalescent STEMI" AND (NEITHER "emergency" NOR "salvage")
Group 3:	"ACS - UA, NSTEMI or convalescent STEMI" AND (EITHER "emergency" OR "salvage")
Group 4:	"ACS - Primary PCI for STEMI (no lysis)" OR "ACS - Facilitated PCI for STEMI (lysis + PCI)" OR "Acute or sub-acute PCI thrombosis" OR "Bail out following acute complication of diagnostic cardiac catheterisation"
Group 5:	"ACS - Rescue PCI for STEMI (failed lysis)" OR "ACS - PCI for re-infarction (no lysis)" OR "ACS - Rescue PCI for re-infarction (failed lysis)"