

**THE BRITISH ASSOCIATION OF
UROLOGICAL SURGEONS
Section of Endourology**

**Analyses of PCNL's performed between
January 1st 2015 and December 31st 2017**

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AUDIT RESULTS SUMMARY – PCNL dataset

All the data presented here are a summary of the data extracted from the web-based database on 24th April 2018 and relate to operations performed during the whole of 2015, 2016 and 2017. Once extracted the data was transferred to an AccessTM database for validation before being imported into TableauTM for generation of the analyses. The validation mainly comprised checks for duplicate and / or empty entries and invalid / inappropriate dates.

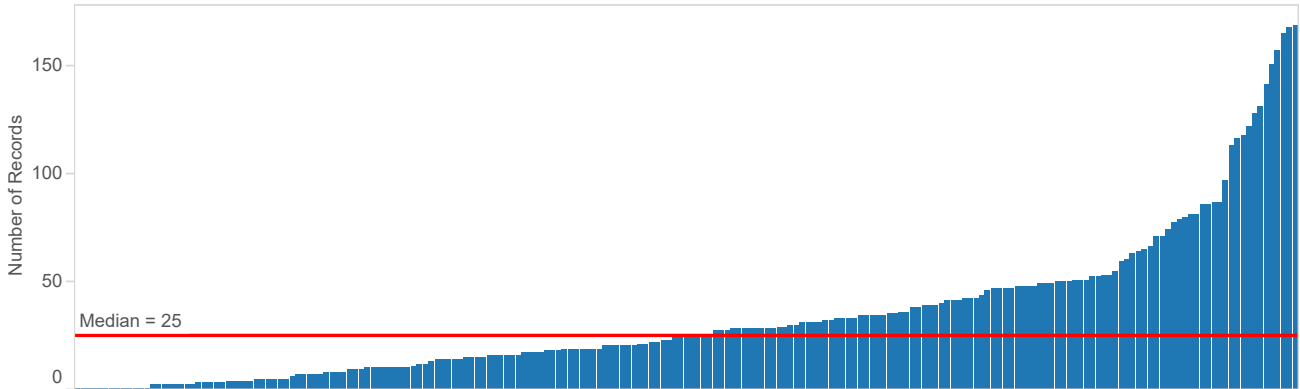
The data collection period was from 1 January 2015 to 31 December 2017.

7,064 procedures were recorded from 211 consultants at 123 centres in the United Kingdom, including 264 private patients from 54 consultants. Ten of the consultants returning data are not BAUS members.

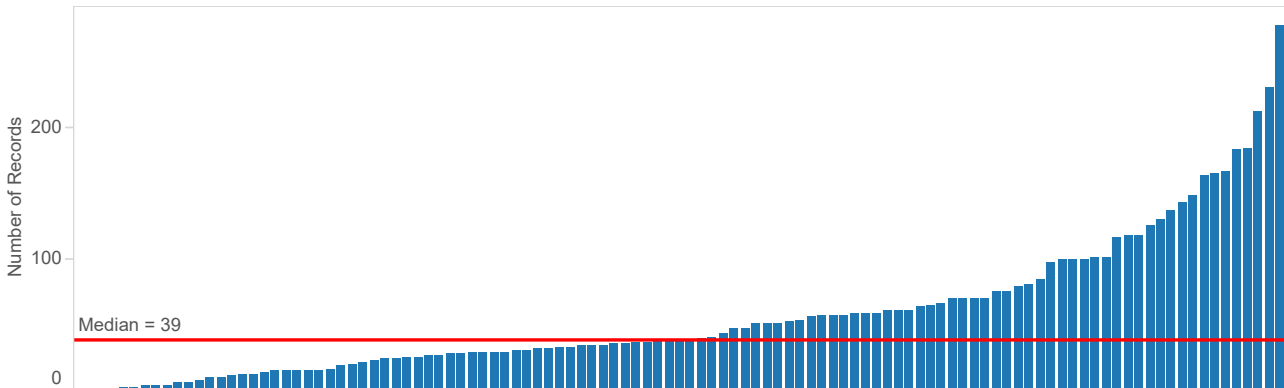
- Median number of cases per consultant: 25 (range 1 - 169)
- Median number of cases per centre: 39 (range 1 - 298)
- All data were entered by hand and there was no bulk uploading of data from other systems.
- Hospital Episode Statistics (HES) for 2015, 2016 and 2017 indicate that there were 5,024 PCNL cases in England. We do not, however, believe that HES data accurately record the total number of procedures undertaken as we are aware there are differences in the way this procedure is coded by different units. However, we do think we have received a very good response from the surgeons undertaking this procedure and we estimate that we have collected data on about 90% of the procedures undertaken in England during this time.

PCNL's performed between 01/01/2015 and 31/12/2017
7064 procedures from 211 consultants at 123 sites including 264 private cases from 54 consultants

Total by Surgeon



Total by Centre



Gender

Gender	Number of Records	% of Total Number of Recor..
Female	3,218	45.6%
Male	3,846	54.4%
Grand Total	7,064	100.0%

Side

Side Of Stones	Number of Records	% of Total Number of Recor..
Left	3,869	54.8%
Right	3,057	43.3%
Bilateral	138	2.0%
Grand Total	7,064	100.0%

BMI

BMI	Number of Records	% of Total Number of Recor..
Underweight	86	1.2%
Normal	991	14.0%
Obese	1,694	24.0%
Overweight	1,417	20.1%
Not recorded	2,876	40.7%
Grand Total	7,064	100.0%

Age

Number of Records	% of Total Number of Recor..	Median Age	Min. Age	Max. Age
7,064	100.0%	56	0	176

Complexity

Stone Complexity	Number of Records	% of Total Number of Recor..
I	1,647	23.3%
II	2,116	30.0%
III	1,846	26.1%
IV	1,193	16.9%
Not recorded	262	3.7%
Grand Total	7,064	100.0%

Stone Dimensions

Stone Dimensions ..	Stone Dimensions	Yearofop							
		2015		2016		2017		Grand Total	
		Number of Records	% of Total Number ..	Number of Records	% of Total Number ..	Number of Records	% of Total Number ..	Number of Records	% of Total Number ..
0-2cm	0-1 cm	105	4.7%	97	4.0%	100	4.2%	302	4.3%
	1-2 cm	595	26.9%	735	30.0%	740	30.9%	2,070	29.3%
>2cm	2-4 cm	788	35.6%	1,048	42.7%	1,014	42.3%	2,850	40.3%
	>2 cm	151	6.8%					151	2.1%
	>4 cm	384	17.3%	502	20.5%	527	22.0%	1,413	20.0%
Not recorded	Null	191	8.6%	71	2.9%	16	0.7%	278	3.9%
Grand Total		2,214	100.0%	2,453	100.0%	2,397	100.0%	7,064	100.0%

LOS by Complexity

Stone Complexity	Number of Records	% of Total Number of Recor..	Median Post Operative..	Min. Post Operative Stay	Max. Post Operative Stay
I	1,647	23.3%	2	0	124
II	2,116	30.0%	2	0	125
III	1,846	26.1%	3	0	160
IV	1,193	16.9%	3	0	157
Not recorded	262	3.7%	2	0	114
Grand Total	7,064	100.0%	3	0	160

LOS by Size

Stone Dimensions (group)	Number of Records	% of Total Number of Recor..	Median Post Operative..	Min. Post Operative Stay	Max. Post Operative Stay
0-2cm	2,372	33.6%	2	0	124
>2cm	4,414	62.5%	3	0	160
Not recorded	278	3.9%	3	1	29
Grand Total	7,064	100.0%	3	0	160

LOS by Comorbidities

Co-Morbidities	Number of Records	% of Total Numbe..	Median Post Operati..	Min. Post Operati ve Stay	Max. Post Operati ve Stay
Spina Bifida, Spinal Injury, Kyphoscoliosis	347	4.9%	4	0	72
Other Co-morbidity	6,426	91.0%	2	0	160
Not recorded	291	4.1%	2	1	44
Grand Total	7,064	100.0%	3	0	160

Transfusion Rate by Complexity

Stone Complexity	Blood Transfusion					
	Yes		No		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
I	27	1.7%	1,571	98.3%	1,598	100.0%
II	35	1.7%	2,018	98.3%	2,053	100.0%
III	47	2.6%	1,758	97.4%	1,805	100.0%
IV	32	2.8%	1,111	97.2%	1,143	100.0%
Not recorded	1	0.5%	182	99.5%	183	100.0%
Grand Total	142	2.1%	6,640	97.9%	6,782	100.0%

Transfusion Rate by Size

Stone Dimensions (group)	Blood Transfusion					
	Yes		No		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
0-2cm	29	1.3%	2,281	98.7%	2,310	100.0%
>2cm	110	2.6%	4,180	97.4%	4,290	100.0%
Not recorded	3	1.6%	179	98.4%	182	100.0%
Grand Total	142	2.1%	6,640	97.9%	6,782	100.0%

Transfusion Rate by Comorbidities

Co-Morbidities	Blood Transfusion					
	Yes		No		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
Spina Bifida, Spinal Injury, Kyphoscoliosis	12	3.6%	321	96.4%	333	100.0%
Other Co-morbidity	128	2.0%	6,125	98.0%	6,253	100.0%
Not recorded	2	1.0%	194	99.0%	196	100.0%
Grand Total	142	2.1%	6,640	97.9%	6,782	100.0%

Sepsis by Complexity

Post Operative Infection (group)

Stone Complexity	Sepsis		Fever		None		Not recorded		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
I	12	0.7%	84	5.1%	1,402	85.1%	149	9.0%	1,647	100.0%
II	29	1.4%	137	6.5%	1,744	82.4%	206	9.7%	2,116	100.0%
III	35	1.9%	173	9.4%	1,482	80.3%	156	8.5%	1,846	100.0%
IV	61	5.1%	162	13.6%	848	71.1%	122	10.2%	1,193	100.0%
Not recorded	12	4.6%	12	4.6%	140	53.4%	98	37.4%	262	100.0%
Grand Total	149	2.1%	568	8.0%	5,616	79.5%	731	10.3%	7,064	100.0%

Sepsis by Size

Post Operative Infection (group)

Stone Dimensions (group)	Sepsis		Fever		None		Not recorded		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
0-2cm	25	1.1%	129	5.4%	1,963	82.8%	255	10.8%	2,372	100.0%
>2cm	117	2.7%	421	9.5%	3,514	79.6%	362	8.2%	4,414	100.0%
Not recorded	7	2.5%	18	6.5%	139	50.0%	114	41.0%	278	100.0%
Grand Total	149	2.1%	568	8.0%	5,616	79.5%	731	10.3%	7,064	100.0%

Sepsis by Comorbidities

Post Operative Infection (group)

Co-Morbidities	Sepsis		Fever		None		Not recorded		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
Spina Bifida, Spinal Injury, Kyphoscoliosi..	27	7.8%	44	12.7%	242	69.7%	34	9.8%	347	100.0%
Other Co-morbidity	116	1.8%	508	7.9%	5,220	81.2%	582	9.1%	6,426	100.0%
Not recorded	6	2.1%	16	5.5%	154	52.9%	115	39.5%	291	100.0%
Grand Total	149	2.1%	568	8.0%	5,616	79.5%	731	10.3%	7,064	100.0%

Clearance on Post operative radiological imaging by Complexity

Clearance On Post Operative Radiological Imaging During A

Stone Complexity	Yes		No		Not done		Null		Deferred		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
I	942	57.2%	123	7.5%	359	21.8%	143	8.7%	80	4.9%	1,647	100.0%
II	1,085	51.3%	317	15.0%	415	19.6%	182	8.6%	117	5.5%	2,116	100.0%
III	800	43.3%	460	24.9%	321	17.4%	137	7.4%	128	6.9%	1,846	100.0%
IV	347	29.1%	499	41.8%	180	15.1%	103	8.6%	64	5.4%	1,193	100.0%
Not recorded	83	31.7%	35	13.4%	33	12.6%	111	42.4%			262	100.0%
Grand Total	3,257	46.1%	1,434	20.3%	1,308	18.5%	676	9.6%	389	5.5%	7,064	100.0%

Clearance on Post operative radiological imaging by Stone Size

Clearance On Post Operative Radiological Imaging During A

Stone Dimensions (group)	Yes		No		Not done		Null		Deferred		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
0-2cm	1,168	49.2%	292	12.3%	549	23.1%	224	9.4%	139	5.9%	2,372	100.0%
>2cm	2,012	45.6%	1,099	24.9%	725	16.4%	328	7.4%	250	5.7%	4,414	100.0%
Not recorded	77	27.7%	43	15.5%	34	12.2%	124	44.6%			278	100.0%
Grand Total	3,257	46.1%	1,434	20.3%	1,308	18.5%	676	9.6%	389	5.5%	7,064	100.0%

Clearance on Post operative radiological imaging by Comorbidities

Clearance On Post Operative Radiological Imaging During A

Co-Morbidities	Yes		No		Not done		Null		Deferred		Grand Total	
	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..
Spina Bifida, Spinal Injury, Kyphoscoliosis	164	47.3%	80	23.1%	54	15.6%	33	9.5%	16	4.6%	347	100.0%
Other Co-morbidity	3,004	46.7%	1,311	20.4%	1,211	18.8%	527	8.2%	373	5.8%	6,426	100.0%
Not recorded	89	30.6%	43	14.8%	43	14.8%	116	39.9%			291	100.0%
Grand Total	3,257	46.1%	1,434	20.3%	1,308	18.5%	676	9.6%	389	5.5%	7,064	100.0%

Intra-Operative Complications

Intraop Complications	Number of Records	% of Total Number of Recor..
Yes	234	3.3%
No	6,095	86.3%
Not recorded	735	10.4%
Grand Total	7,064	100.0%

Post-Operative Complications

Postop Complications	Number of Records	% of Total Number of Recor..
Yes	833	11.8%
No	5,666	80.2%
Not recorded	565	8.0%
Grand Total	7,064	100.0%

CD Grade of Post Operative Complications

Clavien Dindo Grade Of Complications	Number of Records	% of Total Number of Recor..
Grade I	1	0.1%
Grade II	2	0.2%
Grade IIIa	1	0.1%
Grade IIIb	5	0.6%
Not recorded	824	98.9%
Grand Total	833	100.0%

CD by complexity

Stone Complexity	Clavien Dindo Grade Of Complications											
	Grade I		Grade II		Grade IIIa		Grade IIIb		Not recorded		Grand Total	
	Number of Records	% of Total Number of ..	Number of Records	% of Total Number of ..	Number of Records	% of Total Number of ..	Number of Records	% of Total Number of ..	Number of Records	% of Total Number of ..	Number of Records	% of Total Number of ..
I									153	100.0%	153	100.0%
II	1	0.5%	1	0.5%			2	0.9%	218	98.2%	222	100.0%
III			1	0.4%	1	0.4%	2	0.9%	227	98.3%	231	100.0%
IV							1	0.5%	204	99.5%	205	100.0%
Not recorded									22	100.0%	22	100.0%
Grand Total	1	0.1%	2	0.2%	1	0.1%	5	0.6%	824	98.9%	833	100.0%

CD by Size

Stone Dimensions (group)	Clavien Dindo Grade Of Complications											
	Grade I		Grade II		Grade IIIa		Grade IIIb		Not recorded		Grand Total	
	Number of Records	% of Total Number of Records alo..	Number of Records	% of Total Number of Records alo..	Number of Records	% of Total Number of Records alo..	Number of Records	% of Total Number of Records alo..	Number of Records	% of Total Number of Records alo..	Number of Records	% of Total Number of Records alo..
0-2cm							3	1.4%	219	98.6%	222	100.0%
>2cm			2	0.3%	1	0.2%	2	0.3%	580	99.1%	585	100.0%
Not recorded	1	3.8%							25	96.2%	26	100.0%
Grand Total	1	0.1%	2	0.2%	1	0.1%	5	0.6%	824	98.9%	833	100.0%

CD by Comorbidities

Co-Morbidities	Clavien Dindo Grade Of Complications											
	Grade I		Grade II		Grade IIIa		Grade IIIb		Not recorded		Grand Total	
	Number of Records	% of Total Number of Records al..	Number of Records	% of Total Number of Records al..	Number of Records	% of Total Number of Records al..	Number of Records	% of Total Number of Records al..	Number of Records	% of Total Number of Records al..	Number of Records	% of Total Number of Records al..
Spina Bifida, Spinal Injury, Kyphoscoliosis									65	100.0%	65	100.0%
Other Co-morbidity	1	0.1%	2	0.3%	1	0.1%	5	0.7%	742	98.8%	751	100.0%
Not recorded									17	100.0%	17	100.0%
Grand Total	1	0.1%	2	0.2%	1	0.1%	5	0.6%	824	98.9%	833	100.0%

Clearance on Post operative radiological imaging by Complexity

Clearance On Post Operative Radiological Imaging During A

Stone Complexity	Yes		No		Not done		Null		Deferred		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
I	942	57.2%	123	7.5%	359	21.8%	143	8.7%	80	4.9%	1,647	100.0%
II	1,085	51.3%	317	15.0%	415	19.6%	182	8.6%	117	5.5%	2,116	100.0%
III	800	43.3%	460	24.9%	321	17.4%	137	7.4%	128	6.9%	1,846	100.0%
IV	347	29.1%	499	41.8%	180	15.1%	103	8.6%	64	5.4%	1,193	100.0%
Not recorded	83	31.7%	35	13.4%	33	12.6%	111	42.4%			262	100.0%
Grand Total	3,257	46.1%	1,434	20.3%	1,308	18.5%	676	9.6%	389	5.5%	7,064	100.0%

Clearance on Post operative radiological imaging by Stone Size

Clearance On Post Operative Radiological Imaging During A

Stone Dimensions (group)	Yes		No		Not done		Null		Deferred		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
0-2cm	1,168	49.2%	292	12.3%	549	23.1%	224	9.4%	139	5.9%	2,372	100.0%
>2cm	2,012	45.6%	1,099	24.9%	725	16.4%	328	7.4%	250	5.7%	4,414	100.0%
Not recorded	77	27.7%	43	15.5%	34	12.2%	124	44.6%			278	100.0%
Grand Total	3,257	46.1%	1,434	20.3%	1,308	18.5%	676	9.6%	389	5.5%	7,064	100.0%

Patients with Follow up

Follow up	Number of Records	% of Total Number of Records
Follow-up	1,548	21.9%
No Follow up	5,516	78.1%
Grand Total	7,064	100.0%

Stone Free at Follow up

Stone Free At Follow Up

Stone Complexity	No		Yes		Null		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
I	30	7.8%	327	85.4%	26	6.8%	383	100.0%
II	101	20.2%	376	75.4%	22	4.4%	499	100.0%
III	110	27.4%	271	67.6%	20	5.0%	401	100.0%
IV	112	45.3%	119	48.2%	16	6.5%	247	100.0%
Not recorded	6	33.3%	9	50.0%	3	16.7%	18	100.0%
Grand Total	359	23.2%	1,102	71.2%	87	5.6%	1,548	100.0%

Stone Free by Size

Stone Free At Follow Up

Stone Dimensions (group)	No		Yes		Null		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
0-2cm	82	16.2%	394	78.0%	29	5.7%	505	100.0%
>2cm	272	27.0%	682	67.7%	54	5.4%	1,008	100.0%
Not recorded	5	14.3%	26	74.3%	4	11.4%	35	100.0%
Grand Total	359	23.2%	1,102	71.2%	87	5.6%	1,548	100.0%

Participating Hospital Centres 2015, 2016 and 2017

We are grateful to consultants from the following Centres / trusts who returned data for these analyses:

Aberdeen Royal Infirmary	Chelsea & Westminster Hospital, London	East Surrey Hospital, Redhill
Addenbrooke's Hospital, Cambridge	Cheltenham General Hospital	Eastbourne District General Hospital
Aintree University Hospital, Liverpool	Chesterfield Royal Hospital	Epsom General Hospital, Surrey
Alexandra Hospital, Redditch	Churchill Hospital, Oxford	Forth Valley Royal Hospital, Larbert
Arrowe Park Hospital, Wirral	City Hospital Birmingham	Freeman Hospital, Newcastle
Barking, Havering & Redbridge University Hospital	Colchester General Hospital	Frimley Park Hospital
Basildon University Hospital, Essex	Countess of Chester Hospital	George Eliot Hospital, Nuneaton
Basingstoke and North Hampshire Hospital	County Hospital, Stafford	Glasgow Royal Infirmary
Bedford Hospital	Cumberland Infirmary, Carlisle	Good Hope Hospital, Sutton Coldfield
Blackpool Victoria Hospital	Darent Valley Hospital, Kent	Guy's & Thomas's Hospital
Bradford Royal Infirmary	Derriford Hospital, Plymouth	Hereford County Hospital
Broadgreen Hospital, Liverpool	Diana, Princess of Wales Hospital, Grimsby	Huddersfield Royal Infirmary
Broomfield Hospital, Chelmsford	Doncaster Royal Infirmary	Ipswich Hospital, Suffolk
Castle Hill Hospital, Hull	Dorset County Hospital, Dorchester	James Cook University Hospital, Middlesbrough
	Ealing Hospital	Kent & Canterbury Hospital

King's College Hospital, London	Northwick Park Hospital	Royal Gwent Hospital
Leicester General Hospital	Nottingham City Hospital	Royal Hallamshire Hospital, Sheffield
Leighton Hospital, Cheshire	Pilgrim Hospital, Boston	Royal Hampshire County Hospital, Winchester
Lincoln County Hospital	Pinderfields General Hospital, Wakefield	Royal Liverpool University Hospital
Lister Hospital, Stevenage	Princess Alexandra Hospital, Harlow	Royal Preston Hospital
Luton & Dunstable University Hospital	Queen Alexandra Hospital, Portsmouth	Royal Stoke University Hospital
Maidstone Hospital	Queen Elizabeth Hospital, Birmingham	Royal Sussex County Hospital, Brighton
Manchester Royal Infirmary	Raigmore Hospital, Inverness	Royal United Hospital, Bath
Milton Keynes Hospital	Rotherham Hospital	Russells Hall Hospital, Dudley
Monklands District General Hospital, Airdrie	Royal Blackburn Hospital	Salford Royal Hospital
Morrison Hospital, Swansea	Royal Albert Edward Infirmary, Wigan	Salisbury District Hospital
Musgrove Park Hospital, Taunton	Royal Berkshire Hospital, Reading	Scunthorpe General Hospital
New Cross Hospital, Wolverhampton	Royal Bolton Hospital	South Eastern Health Trust, Northern Ireland
Norfolk & Norwich University Hospital	Royal Bournemouth General Hospital	Southampton General Hospital
North Devon District Hospital	Royal Cornwall Hospital, Truro	Southend Hospital
North Manchester General Hospital	Royal Derby Hospital	Southmead Hospital, Bristol
North Middlesex Hospital, London	Royal Devon & Exeter Hospital	Southport & Ormskirk Hospitals
Northampton General Hospital	Royal Free Hospital, London	St George's Hospital, London

St James's University Hospital, Leeds

St Peter's Hospital, Chertsey

St Richard's Hospital, Chichester

Stepping Hill Hospital, Stockport

Sunderland Royal Hospital

University College Hospital, London

University Hospital of Wales, Cardiff

University Hospital, Ayr

Walsgrave Hospital, Coventry

Watford General Hospital

West Suffolk Hospital, Bury St Edmunds

Western General Hospital, Edinburgh

Wexham Park Hospital, Slough

Whipps Cross University Hospital, London

Whiston Hospital, Prescot

Whittington Hospital, London

Worthing Hospital

Wrexham Maelor Hospital

Wycombe Hospital, High Wycombe

Wythenshawe Hospital, Manchester

Yeovil District Hospital

York Hospital