

THE BRITISH ASSOCIATION OF UROLOGICAL SURGEONS Section of Oncology

Analyses of Radical Prostatectomies performed between

January 1st and December 31st 2014

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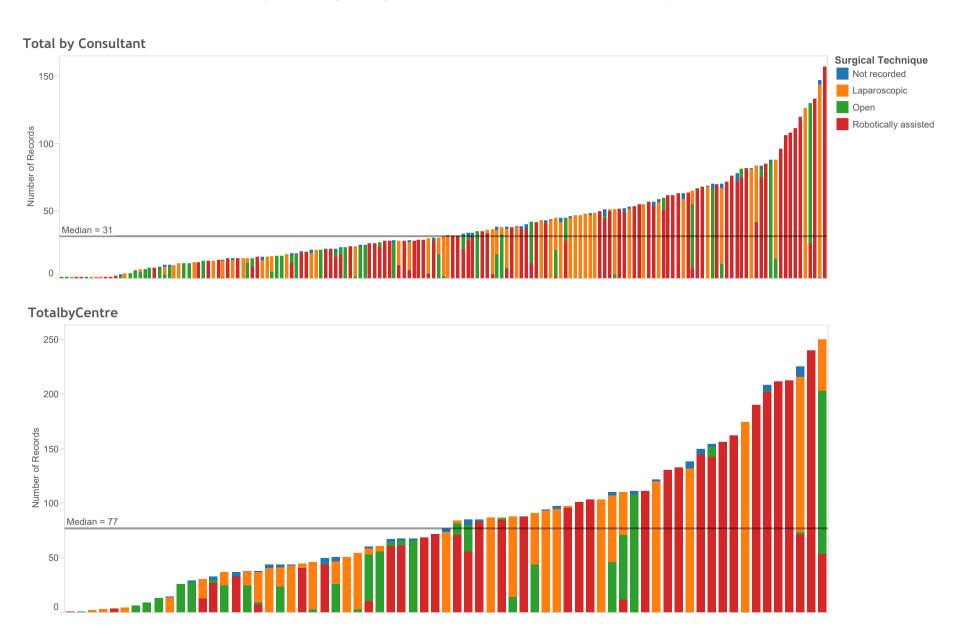
AUDIT RESULTS SUMMARY – Radical Prostatectomy dataset

All the data presented here are a summary of the data extracted from the web-based database on 10th August 2015 and relate to operations performed during the whole of 2014. 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 2014 to 31 December 2014.

- 6,161 cases were submitted in total, of which 5,814 were from England. The 6,161 cases came from 157 consultants at 71 sites and include 292 private patients from 43 consultants.
- Median number of cases per consultant: 31 (range 1 157)
- Median number of cases per centre: 77 (range 1 250)
- The overall transfusion rate was 2.7% By technique, the transfusion rates were: open 6.5%, laparoscopic 0.8% and robotic 2.9%.
- 5,174 of the entries recorded whether there had been post-operative complications. The total post-op complication rate was 9.5% (491/5174). Of these 491 cases 364 recorded the Clavien Dindo grade (i.e. 127 or 26% did not). The Clavien Dindo Grade III plus complication rate was 1.6%.
- Hospital Episode Statistics (HES) for 2014 indicate that there were 6,651 radical prostatectomies undertaken so we collected data on 87% of the radical prostatectomies undertaken in England in 2014. 58.5% were robotic assisted, 26.7% laparoscopic, 13.4% open and in 1.4% of cases the technique was not recorded.

2014 Radical Prostatectomies -6161 cases reported by 157 consultants from 71 sites (including 292 private cases from 43 consultants)



Reason for Prostatectomy

Reason For Prostatectomy	N	% Total
Primary treatment of cancer	4,816	78.2%
Previous active surveillance	689	11.2%
Salvage therapy	35	0.6%
Not recorded	621	10.1%
Grand Total	6,161	100.0%

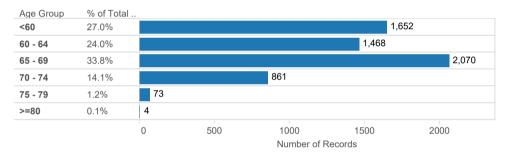
Reason if Previous Active surveillance

If Previous Active Surveillance Reason For Prostatectomy	N	% Total
Clinical progression	68.0	9.9%
Gleason progression	229.0	33.2%
Patient decision	118.0	17.1%
PSA progression	241.0	35.0%
Not recorded	33.0	4.8%
Grand Total	689.0	100.0%

Previous Management

Previous Management	N	% Total
None	5,305	86.1%
Brachytherapy	15	0.2%
HIFU	5	0.1%
Radiotherapy	22	0.4%
TURP	80	1.3%
Not recorded	734	11.9%
Grand Total	6,161	100.0%

Age



SurgicalTechnique

Surgical Technique	N	% Total
Open	849	13.8%
Laparoscopic	1,796	29.2%
Robotically assisted	3,427	55.6%
Not recorded	89	1.4%
Grand Total	6,161	100.0%

BMI

Surgical Technique	N	Median Body Mass Index	Min. Body Mass Index	Max. Body Mass Index
Open	294	27	19	40
Laparoscopic	464	27	18	72
Robotically assisted	1,181	27	18	65
Not recorded	24	28	21	37
Grand Total	1,963	27	18	72

ASA Grade

Asa Grade	N	% Total
ASA 1	1,760	28.6%
ASA 2	2,780	45.1%
ASA 3	121	2.0%
Not recorded	1,500	24.3%
Grand Total	6,161	100.0%

Clinical T stage

Clinical T Stage (group)	N	% Total
0	11	0.2%
1	1,416	23.0%
2	2,989	48.5%
3	903	14.7%
4	1	0.0%
Not recorded / Known	841	13.7%
Grand Total	6,161	100.0%

Comparison of Clinical and Pathological T stage

						Path	nological T	Stage (gro	oup)					
	0		1		2		3	3	4		Not recor	ded / K	Grand	Total
Clinical T Stage (group)	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total
0	2	18.2%			6	54.5%	1	9.1%			2	18.2%	11	100.0%
1	5	0.4%	4	0.3%	849	60.0%	409	28.9%	4	0.3%	145	10.2%	1,416	100.0%
2	6	0.2%	2	0.1%	1,529	51.2%	1,138	38.1%	8	0.3%	306	10.2%	2,989	100.0%
3			1	0.1%	229	25.4%	568	62.9%	11	1.2%	94	10.4%	903	100.0%
4							1	100.0%					1	100.0%
Not recorded	5	0.6%	1	0.1%	340	40.4%	183	21.8%	3	0.4%	309	36.7%	841	100.0%
Grand Total	18	0.3%	8	0.1%	2 953	47 9%	2 300	37.3%	26	0.4%	856	13.9%	6 161	100.0%

Clinical Stage by Pre-op PSA

Pre-0	perative	PSA
L16-0	DELALIVE	

	0-5	5	6-1	0	11-2	20	21-	50	>5	0	Grand	Total
Clinical T Stage (group)	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total
0	2	0.2%	8	0.3%	1	0.1%					11	0.2%
1	297	31.0%	755	28.7%	290	22.4%	44	16.1%	5	16.7%	1,391	26.8%
2	543	56.6%	1,480	56.2%	747	57.7%	130	47.6%	9	30.0%	2,909	56.0%
3	116	12.1%	392	14.9%	256	19.8%	99	36.3%	16	53.3%	879	16.9%
4	1	0.1%									1	0.0%
Grand Total	959	100.0%	2,635	100.0%	1,294	100.0%	273	100.0%	30	100.0%	5,191	100.0%

Pathological Staging by Pre-op PSA

Pre-operative PSA

	0-5	5	6-1	0	11-2	20	21-	50	>50)	Grand	Total
Pathological T Stage (group)	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total
0	6	0.7%	3	0.1%	8	0.6%					17	0.3%
1	3	0.3%	1	0.0%	2	0.2%	1	0.4%			7	0.1%
2	593	66.0%	1,472	57.7%	605	47.3%	76	29.7%	5	17.9%	2,751	54.9%
3	293	32.6%	1,069	41.9%	657	51.3%	175	68.4%	23	82.1%	2,217	44.2%
4	3	0.3%	8	0.3%	8	0.6%	4	1.6%			23	0.5%
Grand Total	898	100.0%	2,553	100.0%	1,280	100.0%	256	100.0%	28	100.0%	5,015	100.0%

Age at Operation by Biopsy Gleason Sum

Biopsy Gleason Sum Score

	5 -	6	7		8 -	10	Grand Total		
Age Group	N	% Total	N	% Total	N	% Total	N	% Tota	
<60	427	30.7%	987	25.8%	139	22.3%	1,553	26.6%	
60 - 64	356	25.6%	883	23.1%	152	24.4%	1,391	23.8%	
65 - 69	445	32.0%	1,342	35.1%	207	33.2%	1,994	34.1%	
70 - 74	153	11.0%	566	14.8%	115	18.4%	834	14.3%	
75 - 79	9	0.6%	48	1.3%	11	1.8%	68	1.2%	
>=80			2	0.1%			2	0.0%	
Grand Total	1,390	100.0%	3,828	100.0%	624	100.0%	5,842	100.0%	

Age at Operation by Surgical Gleason Sum Score

Surgical Gleason Sum Score

				. 3				
	5 -	6	7		8 - 10		Grand	Total
Age Group	N	% Total	N	% Total	N	% Total	N	% Total
<60	274	35.9%	1,145	26.1%	100	19.8%	1,519	26.9%
60 - 64	188	24.6%	1,053	24.0%	133	26.3%	1,374	24.3%
65 - 69	232	30.4%	1,486	33.9%	173	34.3%	1,891	33.5%
70 - 74	67	8.8%	643	14.7%	89	17.6%	799	14.1%
75 - 79	3	0.4%	50	1.1%	10	2.0%	63	1.1%
>=80			4	0.1%			4	0.1%
Grand Total	764	100.0%	4,381	100.0%	505	100.0%	5,650	100.0%

Operating Surgeon

Supervised Training Operation

	No		Yes		Not recorded		Grand Total	
Grade Of Main Operating Surgeon	N	% Total	N	% Total	N	% Total	N	% Total
Consultant	3,261	98.4%	1,227	85.5%	1,149	81.4%	5,637	91.5%
SpR			202	14.1%	1	0.1%	203	3.3%
Other			2	0.1%			2	0.0%
Not recorded	53	1.6%	4	0.3%	262	18.6%	319	5.2%
Grand Total	3,314	100.0%	1,435	100.0%	1,412	100.0%	6,161	100.0%

Conversions

Converted

						verteu				
	Yes		No		Not recorded		Grand Total			
Surgical Technique	N	% of Total	N	% of Total	N	% of Total	N	% of Total		
Laparoscopic	15	0.8%	1,462	81.4%	319	17.8%	1,796	100.0%		
Robotically assisted	5	0.1%	3,335	97.3%	87	2.5%	3,427	100.0%		
Grand Total	20	0.4%	4,797	91.8%	406	7.8%	5,223	100.0%		

Duration of Operation by Technique

Surgical Technique

	Ор	en	Laparoscopic		Robotically assisted		Grand Total	
Duration Of	N	% Total	N	% Total	N	% Total	N	% Total
<2.0 hours	178	20.97%	224	12.47%	621	18.12%	1,023	16.85%
2.0-3.9 hours	540	63.60%	1,209	67.32%	1,835	53.55%	3,584	59.03%
4.0-5.9 hours	47	5.54%	163	9.08%	281	8.20%	491	8.09%
>6.0 hours	4	0.47%	18	1.00%	13	0.38%	35	0.58%
Not recorded	80	9.42%	182	10.13%	677	19.75%	939	15.46%
Grand Total	849	100.00%	1,796	100.00%	3,427	100.00%	6,072	100.00%

Lymph Node Dissection

Nerve Sparing N % Total 3,079 50.0% None Bilateral 1,722 28.0% 1,261 20.5% Unilateral 99 1.6% Not recorded 6,161 100.0% **Grand Total**

Nerve Sparing

Lymph Node Dissection	N	% Total
None	3,295	53.5%
Extended	1,065	17.3%
Obturator fossae	1,321	21.4%
Not recorded	480	7.8%
Grand Total	6,161	100.0%

KnownTransfusionRate

Transfusion	N	%
No	5,334	97.3%
Yes	149	2.7%
Grand Total	5,483	100.0%

TransfusionRatebyAge

	Transfusion							
	No)	Ye	es	Grand Total			
Age Group	N	%	N	%	N	%		
<60	1,408	97.2%	40	2.8%	1,448	100.0%		
60 - 64	1,271	96.5%	46	3.5%	1,317	100.0%		
65 - 69	1,803	97.5%	47	2.5%	1,850	100.0%		
70 - 74	751	98.0%	15	2.0%	766	100.0%		
75 - 79	66	98.5%	1	1.5%	67	100.0%		
>=80	4	100.0%			4	100.0%		
Grand Total	5,303	97.3%	149	2.7%	5,452	100.0%		

TransfusionRatebyASA

Transfusion

	Ye	s	N	0	Grand	Total
Asa Grade	N	%	N	%	N	%
ASA 1	43	2.6%	1,604	97.4%	1,647	100.0%
ASA 2	86	3.4%	2,452	96.6%	2,538	100.0%
ASA 3	8	7.0%	106	93.0%	114	100.0%
Not recorded	12	1.0%	1,141	99.0%	1,153	100.0%
Grand Total	149	2.7%	5,303	97.3%	5,452	100.0%

Tranfusions by Surgical Technique

Surgical Technique

	Оре	en	Laparo	scopic	Robotically	assisted /	Grand	Total
Blood Units Transf	N	% Total	N	% Total	N	% Total	N	% Total
Nil	652	76.80%	1,530	85.19%	3,076	89.76%	5,258	86.59%
Minor (<3 units)	33	3.89%	7	0.39%	16	0.47%	56	0.92%
Moderate (3-6 units)	11	1.30%	5	0.28%	75	2.19%	91	1.50%
Major (>6 units)	1	0.12%	1	0.06%			2	0.03%
Not recorded	152	17.90%	253	14.09%	260	7.59%	665	10.95%
Grand Total	849	100.00%	1,796	100.00%	3,427	100.00%	6,072	100.00%

TransfusionRatebyTechnique

Transfusion

	Yes		N	0	Grand Total		
Surgical Technique	N	%	N	%	N	%	
Open	45	6.5%	652	93.5%	697	100.0%	
Laparoscopic	13	0.8%	1,530	99.2%	1,543	100.0%	
Robotically assisted	91	2.9%	3,076	97.1%	3,167	100.0%	
Not recorded			76	100.0%	76	100.0%	
Grand Total	149	2.7%	5,334	97.3%	5,483	100.0%	

KnownIntraopCompRate

Intraop Comps	N	% Total
yes	420	7.4%
no	5,276	92.6%
Grand Total	5,696	100.0%

Known Post-operative Complication rate by Clavien Dindo Grade

Postop Comps	Post op Clavien Dindo grade	N	% Total
Yes	Grade I	163	3.15%
	Grade II	117	2.26%
	Grade III +	84	1.62%
	Not recorded	127	2.45%
	Total	491	9.49%
No	Not recorded	4,683	90.51%
	Total	4,683	90.51%
Grand Total		5,174	100.00%

Clavien Dindo Grade of Post-Operative Complications by Technique

Surgical Technique

		Laparos	copic	Open		Robotically assisted		Not rec	orded	Grand Total		
Postop Comps	Post op Clavien Dindo grade	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	
Yes	Grade I	46	3.0%	20	2.7%	94	3.3%	3	4.2%	163	3.2%	
	Grade II	42	2.7%	25	3.3%	48	1.7%	2	2.8%	117	2.3%	
	Grade III +	21	1.4%	14	1.9%	45	1.6%	4	5.6%	84	1.6%	
	Not recorded	38	2.5%	56	7.5%	32	1.1%	1	1.4%	127	2.5%	
	Total	147	9.5%	115	15.4%	219	7.8%	10	14.1%	491	9.5%	
No	Not recorded	1,400	90.5%	632	84.6%	2,590	92.2%	61	85.9%	4,683	90.5%	
	Total	1,400	90.5%	632	84.6%	2,590	92.2%	61	85.9%	4,683	90.5%	
Grand Total		1,547	100.0%	747	100.0%	2,809	100.0%	71	100.0%	5,174	100.0%	

Specific Intraoperative Complications

Intra Operative Complications	N	% Total
Difficult dissection	234	55.7%
Problematic bleeding	69	16.4%
Problematic bleeding, Difficult dissection	52	12.4%
Rectal injury	18	4.3%
Ureteric injury	7	1.7%
Vascular injury	6	1.4%
Robotic device failure	6	1.4%
Port complications	5	1.2%
None,Difficult dissection	5	1.2%
Difficult dissection,Rectal injury	3	0.7%
None,Problematic bleeding	2	0.5%
Difficult dissection,Small bowel injury	2	0.5%
Small bowel injury,Port complications	1	0.2%
Problematic bleeding,Port complications	1	0.2%
Problematic bleeding, Difficult dissection, Rectal injury	1	0.2%
Problematic bleeding, Difficult dissection, Port complications	1	0.2%
Port complications,Robotic device failure	1	0.2%
None,Vascular injury	1	0.2%
Nerve injury	1	0.2%
Difficult dissection, Vascular injury	1	0.2%
Difficult dissection,Port complications	1	0.2%
Difficult dissection,Nerve injury	1	0.2%
Difficult dissection,Ureteric injury	1	0.2%
Grand Total	420	100.0%

Specific Post operative complications

PostOperativeComplicationWithin30Days	N	% Total
None	283	67.4%
Anastomotic leak	7	1.7%
Anastomotic leak,PE / DVT,Return to theatre	1	0.2%
Chest infection	4	1.0%
Chest infection, lleus	1	0.2%
Haematuria	5	1.2%
Haematuria, Anastomotic leak, PE / DVT	1	0.2%
Haematuria,Other	1	0.2%
Haematuria,Pelvic haematoma	1	0.2%
Haematuria,Pelvic haematoma,Return to theatre	1	0.2%
Haematuria, Urine leak, Pelvic haematoma	1	0.2%
Haemorrhage / bleeding	3	0.7%
Haemorrhage / bleeding,Return to theatre	1	0.2%
Ileus	2	0.5%
Ileus,Other	1	0.2%
Lymphocoele	3	0.7%
None,Other	1	0.2%
None,Urine leak	1	0.2%
PE / DVT, Ileus	1	0.2%
Pelvic haematoma	4	1.0%
Pelvic haematoma,Other	1	0.2%
Return to theatre	5	1.2%
Return to theatre,Other	1	0.2%
Sepsis	2	0.5%
Sepsis,Pelvic haematoma,Return to theatre	1	0.2%
Urine leak	7	1.7%
Urine leak,Anastomotic leak	2	0.5%
Urine leak,lleus	1	0.2%
Urine leak,Pelvic haematoma	1	0.2%
Wound infection	4	1.0%
Wound infection, Sepsis, Ileus, Return to theatre	1	0.2%
Other	14	3.3%
Not recorded	56	13.3%
PE / DVT	1	0.2%
Grand Total	420	100.0%

LOSbyTechnique

Surgical Technique	N	% Total	Median Length Of Stay	Min. Length Of Stay	Max. Length Of Stay
Open	849	13.8%	3	0	96
Laparoscopic	1,796	29.2%	2	0	84
Robotically a	3,427	55.6%	1	0	547
Not recorded	89	1.4%	2	1	14
Grand Total	6,161	100.0%	2	0	547

pT2 Positive Surgical Margin Rate

Margins (group) 1	N	% Total
Positive	449	16.36%
Negative	2,295	83.64%
Grand Total	2,744	100.00%

pT2 Margins by Technique

	Margins (group) 1										
	Nega	ative	Pos	itive	Grand Total						
Surgical Technique	N	% of Total	N	% of Total	N	% of Total					
Open	321	80.45%	78	19.55%	399	100.00%					
Laparoscopic	659	80.17%	163	19.83%	822	100.00%					
Robotically assisted	1,282	86.39%	202	13.61%	1,484	100.00%					
Not recorded	33	84.62%	6	15.38%	39	100.00%					
Grand Total	2,295	83.64%	449	16.36%	2,744	100.00%					

Positive Lymph Nodes

Number Of Positive Lymph Nodes (group)

	0		1 -	5	6 - 1	10	11 -	20	> 2	20	Not rec	orded	Grand	Total
Number Of Lymph Nodes Sampled - group	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total
1 - 5	689	41.21%	25	13.74%							150	43.10%	864	38.95%
6 - 10	474	28.35%	49	26.92%	2	18.18%					89	25.57%	614	27.68%
11 - 20	399	23.86%	81	44.51%	5	45.45%	1	25.00%			92	26.44%	578	26.06%
> 20	110	6.58%	27	14.84%	4	36.36%	3	75.00%	1	100.00%	17	4.89%	162	7.30%
Grand Total	1,672	100.00%	182	100.00%	11	100.00%	4	100.00%	1	100.00%	348	100.00%	2,218	100.00%

Current Status

Months to Follow-up (group)

	0 - 3 months		4 - 6 m	onths	7 - 12 months		> 12 months		Grand Total	
Current Status	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total
Alive with no evidence of prostate cancer	621	88.21%	273	92.23%	318	90.08%	75	91.46%	1,287	89.69%
Alive with local recurrence of prostate cancer	24	3.41%	8	2.70%	14	3.97%	2	2.44%	48	3.34%
Alive with lymph node involvement by prostate cancer	5	0.71%	7	2.36%	7	1.98%	2	2.44%	21	1.46%
Alive with metastatic disease	2	0.28%			1	0.28%	1	1.22%	4	0.28%
Specific Status not recorded	52	7.39%	8	2.70%	13	3.68%	2	2.44%	75	5.23%
Grand Total	704	100.00%	296	100.00%	353	100.00%	82	100.00%	1,435	100.00%

Participating Hospital Centres 2014

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

Aberdeen Royal Infirmary

Addenbrooke's Hospital, Cambridge

Alexandra Hospital, Redditch Arrowe Park Hospital, Wirral

Barking, Havering And Redbridge University

Hospital

Belfast City Hospital

Bradford Royal Infirmary

Bristol Oncology Centre, United Bristol Health

Care

Burnley General Hospital

Castle Hill Hospital, Hull Charing Cross Hospital

Chelsea & Westminster Hospital, London

Cheltenham General Hospital

Christie Hospital

Churchill Hospital, Oxford Colchester General Hospital

Derriford Hospital, Plymouth

Eastbourne District General Hospital

Freeman Hospital, Newcastle

Guy's & Thomas's Hospital

Heartlands Hospital, Birmingham

Kent and Canterbury Hospital

Leicester General Hospital

Lincoln County Hospital

Lister Hospital, Stevenage

Maidstone Hospital

Manchester Royal Infirmary

Medway Maritime Hospital, Gillingham

Milton Keynes Hospital

Morriston Hospital, Swansea

New Cross Hospital, Wolverhampton

Norfolk And Norwich University Hospital

Northampton General Hospital

Nottingham City Hospital

Pinderfields General Hospital, Wakefield

Princess Elizabeth Hospital, Guernsey

Queen Alexandra Hospital, Portsmouth

Queen Elizabeth Hospital, Birmingham

Royal Berkshire Hospital, Reading

Royal Bournemouth General Hospital

Royal Derby Hospital

Royal Devon and Exeter Hospital

Royal Hallamshire Hospital, Sheffield

Royal Liverpool University Hospital

Royal Marsden Hospital, London

Royal Preston Hospital

Royal Shrewsbury Hospital

Royal Surrey County Hospital, Guildford

Royal Sussex County Hospital, Brighton

Royal United Hospital, Bath

Salford Royal Hospital

Salisbury District Hospital

Southampton General Hospital

Southend Hospital

Southmead Hospital, Bristol

St George's Hospital, London

St James's Hospital, Dublin

St James's University Hospital, Leeds

St Mary's Hospital (HQ)

St Richard's Hospital, Chichester

Stepping Hill Hospital, Stockport

Sunderland Royal Hospital

The James Cook University Hospital,

Middlesbrough

University Hospital of North Staffordshire

Victoria Hospital, Kirkcaldy

Walsgrave Hospital, Coventry

Western General Hospital, Edinburgh

Wexham Park Hospital, Slough

Wycombe Hospital, High Wycombe

Ysbyty Gwynedd Hospital, Bangor