

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

**Analyses of Radical Prostatectomies performed between
January 1st and December 31st 2016**

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AUDIT RESULTS SUMMARY – Radical Prostatectomy dataset

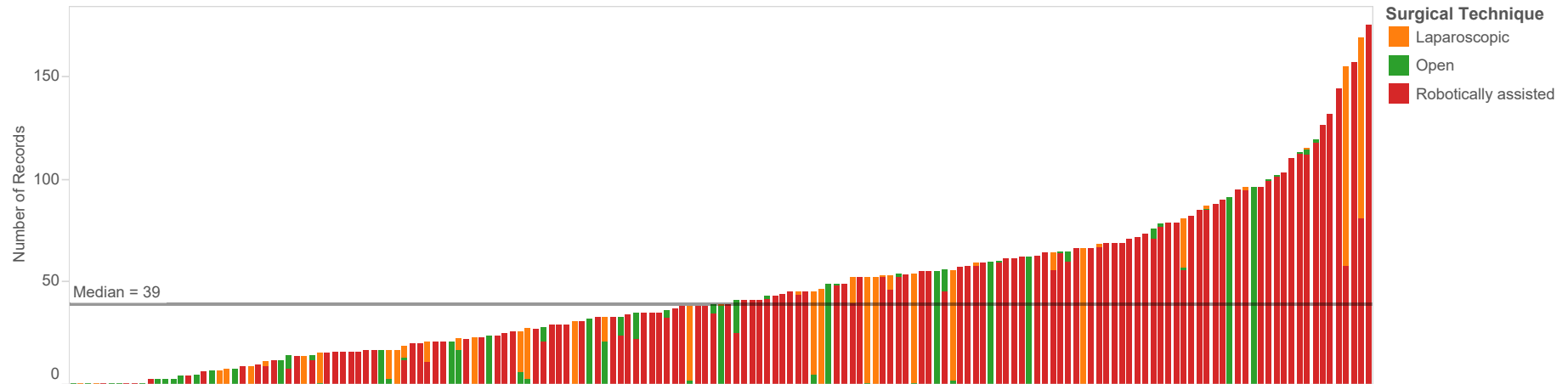
All the data presented here are a summary of the data extracted from the web-based database on 19th August 2017 and relate to operations performed during the whole of 2016. Once extracted the data was transferred to an AccessTM database for validation before being imported into TableauTM for generation 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 2016 to 31 December 2016.

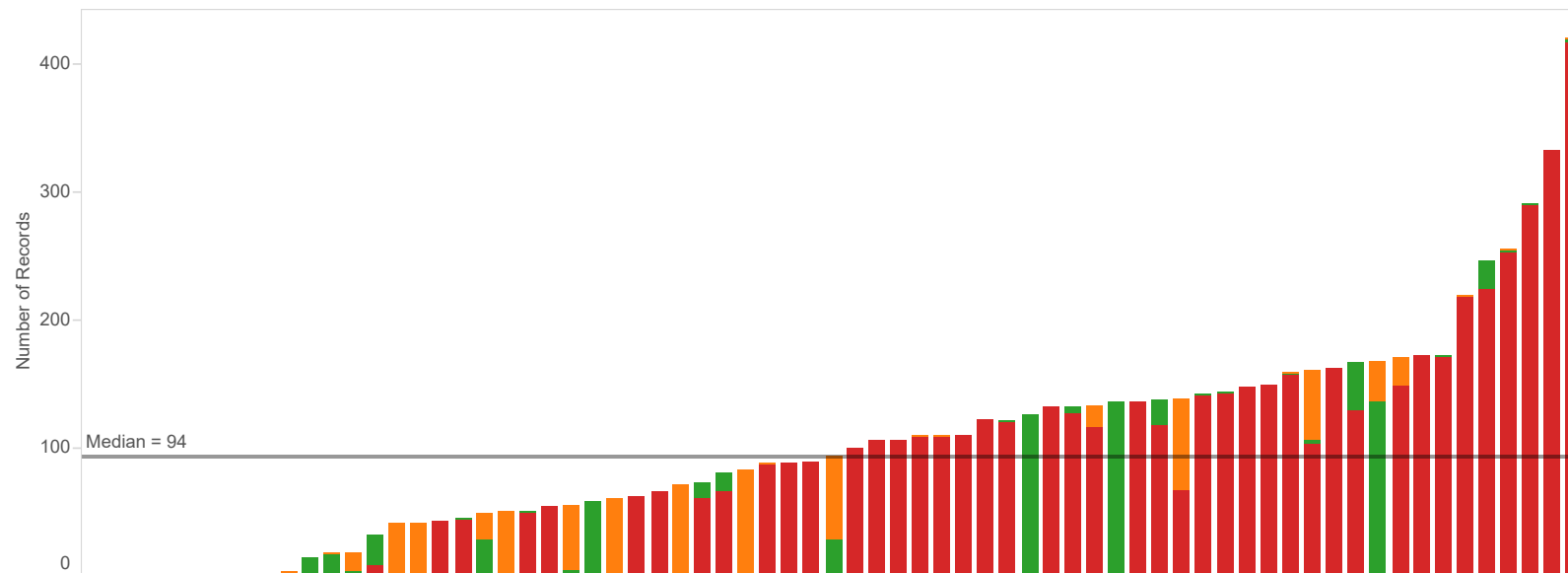
- 7,787 cases were submitted in total, of which 7,352 were from England; these 7,787 cases came from 169 consultants at 69 sites, and include 686 private patients from 69 consultants.
- Median number of cases per consultant: 39 (range 1 - 175)
- Median number of cases per centre: 94 (range 1 - 421)
- The overall transfusion rate was 0.4% By technique, the transfusion rates were: open 2.0%, laparoscopic 0.25% and robotic 0.20%.
- 6,697 of the entries recorded whether there had been adverse events. The total post-operative complication rate was **6.8%** (456/6697). Of these 456 cases, 424 recorded the **Clavien Dindo grade** (i.e. 32 or 7% did not). Complications classified as Clavien Dindo Grade III or above were seen in **1.2%** of cases
- Hospital Episode Statistics (HES) for 2016 indicate that there were 7,163 radical prostatectomies undertaken in England so we collected data on 100% of the radical prostatectomies undertaken in England during 2016.

2016 Radical Prostatectomies -7,787 cases reported by 169 consultants at 69 sites (including 686 private cases from 69 consultants)

Total by Consultant



Total by Centre



Reason for Prostatectomy

Reason For Prostatectomy	N	% Total
Primary treatment of cancer	6,234	80.06%
Previous active surveillance	847	10.88%
Salvage therapy	104	1.34%
Null	602	7.73%
Grand Total	7,787	100.00%

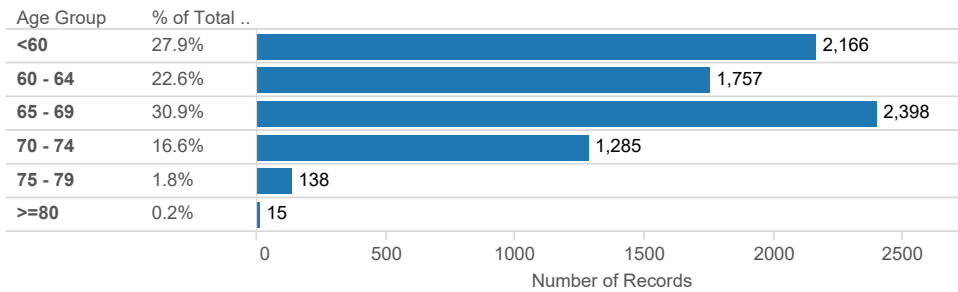
Reason if Previous Active surveillance

If Previous Active Surveillan..	N	% Total
Not recorded	21	2.5%
Clinical progression	87	10.3%
Clinical progression + Other	40	4.7%
Gleason progression	256	30.2%
Gleason progression + Other	58	6.8%
PSA progression	225	26.6%
PSA progression +/- other	25	3.0%
Patient decision	135	15.9%
Grand Total	847	100.0%

Previous Management

Previous Management	N	% Total
None	6,661	85.54%
Brachytherapy	13	0.17%
HIFU	41	0.53%
Radiotherapy	36	0.46%
TURP	87	1.12%
Null	850	10.92%
Cryotherapy	4	0.05%
Hormonal suppression ther..	95	1.22%
Grand Total	7,787	100.00%

Age



Surgical Technique

Surgical Technique	N	% Total
Open	754	9.68%
Laparoscopic	861	11.06%
Robotically assisted	6,172	79.26%
Grand Total	7,787	100.00%

Median Age

Surgical Technique	N	Median Age	Min. Age	Max. Age
Open	732	66	43	75
Laparoscopic	846	65	43	75
Robotically assisted	6,095	64	40	75
Grand Total	7,673	64	40	75

BMI

Surgical Technique	BMI									
	Underweight		Normal		Overweight		Obese		Grand Total	
	%	N	%	N	%	N	%	N	%	N
Open			16.62%	61	47.68%	175	35.69%	131	100.00%	367
Laparoscopic	0.17%	1	18.08%	109	53.40%	322	28.36%	171	100.00%	603
Robotically assisted	0.18%	8	20.10%	882	52.04%	2,283	27.67%	1,214	100.00%	4,387
Grand Total	0.17%	9	19.64%	1,052	51.89%	2,780	28.30%	1,516	100.00%	5,357

ASA Grade

Asa Grade	N	% Total
ASA 1	1,796	23.06%
ASA 2	4,480	57.53%
ASA 3	267	3.43%
ASA 4	4	0.05%
Not recorded	1,240	15.92%
Grand Total	7,787	100.00%

Clinical T stage

Clinical T Stage (gro..	N	% Total
0	12	0.15%
1	1,242	15.95%
2	4,552	58.46%
3	1,424	18.29%
4	7	0.09%
Not recorded/Known	550	7.06%
Grand Total	7,787	100.00%

Comparison of Clinical and Pathological T stage

Clinical T St..	Pathological T Stage (group) 1												Grand Total	
	0		1		2		3		4		Not recorded/ Kn..		%	N
	%	N	%	N	%	N	%	N	%	N	%	N	%	N
0	8.33%	1			75.00%	9	16.67%	2					100.00%	12
1	0.24%	3	0.48%	6	59.90%	744	30.19%	375			9.18%	114	100.00%	1,242
2	0.07%	3	0.02%	1	53.45%	2,433	39.65%	1,805	0.18%	8	6.63%	302	100.00%	4,552
3			0.07%	1	23.03%	328	67.21%	957	0.21%	3	9.48%	135	100.00%	1,424
4					28.57%	2	42.86%	3	14.29%	1	14.29%	1	100.00%	7
Not recorded..	0.18%	1	0.36%	2	34.18%	188	21.64%	119	0.18%	1	43.45%	239	100.00%	550
Grand Total	0.10%	8	0.13%	10	47.57%	3,704	41.88%	3,261	0.17%	13	10.16%	791	100.00%	7,787

Clinical Stage by Pre-op PSA

Clinical T Stage (group) 1	Pre-operative PSA										Grand Total	
	0-5		6-10		11-20		21-50		>50		N	%
	N	%	N	%	N	%	N	%	N	%	N	%
0	2	18.2%	7	63.6%	2	18.2%					11	100.0%
1	275	22.4%	679	55.2%	231	18.8%	42	3.4%	2	0.2%	1,229	100.0%
2	877	19.6%	2,348	52.4%	1,034	23.1%	206	4.6%	15	0.3%	4,480	100.0%
3	216	15.4%	588	41.9%	419	29.8%	159	11.3%	22	1.6%	1,404	100.0%
4	2	33.3%	1	16.7%	2	33.3%			1	16.7%	6	100.0%
Not recorded/Known	61	20.0%	170	55.7%	62	20.3%	11	3.6%	1	0.3%	305	100.0%
Grand Total	1,433	19.3%	3,793	51.0%	1,750	23.5%	418	5.6%	41	0.6%	7,435	100.0%

Median pre-operative PSA

Surgical Technique	N	% Total	Average	Median
Open	656	9.1%	9	8
Laparoscopic	821	11.3%	9	8
Robotically assisted	5,771	79.6%	9	7
Grand Total	7,248	100.0%	9	8

Pathological Staging by Pre-op PSA

Pathological T Stage (gro..	Pre-operative PSA										Grand Total	
	0-5		6-10		11-20		21-50		>50		N	%
	N	%	N	%	N	%	N	%	N	%	N	%
0	1	12.50%	7	87.50%							8	100.00%
1	3	37.50%	3	37.50%	1	12.50%	1	12.50%			8	100.00%
2	858	23.61%	1,955	53.80%	693	19.07%	119	3.27%	9	0.25%	3,634	100.00%
3	473	14.75%	1,537	47.93%	902	28.13%	266	8.29%	29	0.90%	3,207	100.00%
4	1	7.69%	2	15.38%	7	53.85%	1	7.69%	2	15.38%	13	100.00%
Not recorded..	97	17.17%	289	51.15%	147	26.02%	31	5.49%	1	0.18%	565	100.00%
Grand Total	1,433	19.27%	3,793	51.02%	1,750	23.54%	418	5.62%	41	0.55%	7,435	100.00%

Age at Operation by Biopsy Gleason Sum

Age Group	Biopsy Gleason Sum Score						Grand Total	
	5 - 6		7		8 - 10		N	%
	N	%	N	%	N	%		
<60	453	21.59%	1,449	69.07%	196	9.34%	2,098	100.00%
60 - 64	325	19.13%	1,160	68.28%	214	12.60%	1,699	100.00%
65 - 69	334	14.50%	1,669	72.44%	301	13.06%	2,304	100.00%
70 - 74	168	13.66%	878	71.38%	184	14.96%	1,230	100.00%
75 - 79	8	6.56%	89	72.95%	25	20.49%	122	100.00%
>=80	3	25.00%	5	41.67%	4	33.33%	12	100.00%
Grand Total	1,291	17.29%	5,250	70.33%	924	12.38%	7,465	100.00%

Age at Operation by Surgical Gleason Sum Score

Age Group	Surgical Gleason Sum Score						Grand Total	
	5 - 6		7		8 - 10		N	%
	N	%	N	%	N	%		
<60	233	11.94%	1,541	78.99%	177	9.07%	1,951	100.00%
60 - 64	130	8.26%	1,265	80.42%	178	11.32%	1,573	100.00%
65 - 69	147	6.96%	1,712	81.06%	253	11.98%	2,112	100.00%
70 - 74	66	5.84%	921	81.43%	144	12.73%	1,131	100.00%
75 - 79	3	2.91%	84	81.55%	16	15.53%	103	100.00%
>=80	2	16.67%	9	75.00%	1	8.33%	12	100.00%
Grand Total	581	8.44%	5,532	80.38%	769	11.17%	6,882	100.00%

Operating Surgeon

Grade Of Main Op..	Supervised Training Operation						Grand Total	
	No		Yes		Not recorded			
	N	%	N	%	N	%	N	%
Consultant	969	13.94%	184	2.65%	5,796	83.41%	6,949	100.00%
SpR	1	0.23%	424	98.60%	5	1.16%	430	100.00%
Other					20	100.00%	20	100.00%
Not recorded					388	100.00%	388	100.00%
Grand Total	970	12.46%	608	7.81%	6,209	79.74%	7,787	100.00%

Conversions

Surgical Technique	Converted						Grand Total	
	Yes		No		Not recorded			
	N	%	N	%	N	%	N	%
Laparoscopic	5	0.58%	807	93.73%	49	5.69%	861	100.00%
Robotically assisted	16	0.26%	5,605	90.81%	551	8.93%	6,172	100.00%
Grand Total	21	0.30%	6,412	91.17%	600	8.53%	7,033	100.00%

Duration of Operation by Technique

Duration Of ..	Surgical Technique						Grand Total	
	Open		Laparoscopic		Robotically assisted			
	N	%	N	%	N	%	N	%
<2.0 hours	168	12.44%	169	12.51%	1,014	75.06%	1,351	100.00%
2.0-3.9 hours	339	6.66%	531	10.43%	4,223	82.92%	5,093	100.00%
4.0-5.9 hours	39	6.23%	68	10.86%	519	82.91%	626	100.00%
>= 6.0 hours	2	8.70%	6	26.09%	15	65.22%	23	100.00%
Not recorded	206	29.68%	87	12.54%	401	57.78%	694	100.00%
Grand Total	754	9.68%	861	11.06%	6,172	79.26%	7,787	100.00%

Nerve Sparing

Nerve Sparing	N	% Total
None	2,844	36.52%
Bilateral	2,294	29.46%
Unilateral	2,051	26.34%
Not recorded	598	7.68%
Grand Total	7,787	100.00%

Lymph Node Dissection

Lymph Node Dissection	N	% Total
None	4,313	55.39%
Extended	1,667	21.41%
Obturator fossae	1,238	15.90%
Not recorded	569	7.31%
Grand Total	7,787	100.00%

KnownTransfusionRate

Transfused	N	% Total
Not transfused	7,335	99.63%
Transfused	27	0.37%
Grand Total	7,362	100.00%

Tranfusions by Surgical Technique

Blood Units Transf..	Surgical Technique							
	Open		Laparoscopic		Robotically assisted		Grand Total	
	N	%	N	%	N	%	N	%
Nil	637	8.68%	783	10.67%	5,915	80.64%	7,335	100.00%
Minor (<3 units)	13	56.52%	2	8.70%	8	34.78%	23	100.00%
Moderate (3-6 units)					4	100.00%	4	100.00%
Not recorded	104	24.47%	76	17.88%	245	57.65%	425	100.00%
Grand Total	754	9.68%	861	11.06%	6,172	79.26%	7,787	100.00%

TransfusionRatebyAge

Age Group	Transfused		Not transfused		Grand Total	
	N	%	N	%	N	%
<60	6	0.29%	2,074	99.71%	2,080	100.00%
60 - 64	3	0.18%	1,675	99.82%	1,678	100.00%
65 - 69	9	0.40%	2,248	99.60%	2,257	100.00%
70 - 74	8	0.67%	1,181	99.33%	1,189	100.00%
75 - 79	1	0.83%	119	99.17%	120	100.00%
>=80			12	100.00%	12	100.00%
Grand Total	27	0.37%	7,309	99.63%	7,336	100.00%

TransfusionRatebyTechnique

Surgical Technique	Transfused		Not transfused		Grand Total	
	%	N	%	N	%	N
Open	2.00%	13	98.00%	637	100.00%	650
Laparoscopic	0.25%	2	99.75%	783	100.00%	785
Robotically assisted	0.20%	12	99.80%	5,915	100.00%	5,927
Grand Total	0.37%	27	99.63%	7,335	100.00%	7,362

TransfusionRatebyASA

Asa Grade	Transfused		Not transfused		Grand Total	
	N	%	N	%	N	%
ASA 1	5	0.28%	1,750	99.72%	1,755	100.00%
ASA 2	16	0.36%	4,378	99.64%	4,394	100.00%
ASA 3	1	0.38%	264	99.62%	265	100.00%
ASA 4			3	100.00%	3	100.00%
Not recorded	5	0.53%	940	99.47%	945	100.00%
Grand Total	27	0.37%	7,335	99.63%	7,362	100.00%

KnownIntraopCompRate

Intra Operative Complic..	N	% Total
Complication recorded	393	5.52%
None	6,726	94.48%
Grand Total	7,119	100.00%

Known Post-operative Complication rate

PostOperativ..	N	% Total
Complication	456	6.81%
None	6,241	93.19%
Grand Total	6,697	100.00%

Clavien Dindo Grade of Post-Operative Complications by Technique

Surgical Technique

Clavien Dindo Grad..	Laparoscopic		Open		Robotically assisted		Grand Total	
	N	% Total	N	% Total	N	% Total	N	% Total
Grade I	23	2.81%	168	26.33%	152	2.90%	343	5.12%
Grade II	24	2.93%	13	2.04%	94	1.79%	131	1.96%
Grade III plus	12	1.47%	9	1.41%	58	1.11%	79	1.18%
Not recorded / NA	759	92.79%	448	70.22%	4,937	94.20%	6,144	91.74%
Grand Total	818	100.00%	638	100.00%	5,241	100.00%	6,697	100.00%

Specific Intraoperative Complications

Intra Operative Complications	N	% Total
Difficult dissection	259.0	65.90%
Problematic bleeding	37.0	9.41%
Problematic bleeding,Difficult dissection	37.0	9.41%
Rectal injury	13.0	3.31%
Ureteric injury	4.0	1.02%
Vascular injury	2.0	0.51%
Robotic device failure	10.0	2.54%
Port complications	5.0	1.27%
Difficult dissection,Rectal injury	3.0	0.76%
Difficult dissection,Small bowel injury	1.0	0.25%
Problematic bleeding,Difficult dissection,Rectal injury	2.0	0.51%
Problematic bleeding,Difficult dissection,Port complications	1.0	0.25%
Nerve injury	2.0	0.51%
Difficult dissection,Port complications	2.0	0.51%
Difficult dissection,Nerve injury	1.0	0.25%
Adhesions	5.0	1.27%
Difficult dissection,Robotic device failure	1.0	0.25%
Problematic bleeding,Robotic device failure	1.0	0.25%
Small bowel injury	7.0	1.78%
Grand Total	393.0	100.00%

Specific Post operative complications

PostOperativeComplication..	N	% Total
Anastomotic leak	37.0	8.11%
Anastomotic Leak + others	10.0	2.19%
Chest infection	21.0	4.61%
Chest infection + others	2.0	0.44%
Haematuria	26.0	5.70%
Haematuria + others	1.0	0.22%
Haemorrhage / bleeding	17.0	3.73%
Haemorrhage + Others	3.0	0.66%
Ileus	24.0	5.26%
Ileus,Lymphocoele, Ileus,Ot..	7.0	1.54%
Others	182.0	39.91%
PE / DVT, PE / DVT,Ileus, PE..	14.0	3.07%
Pelvic haematoma, Pelvic h..	25.0	5.48%
Return to theatre & Return t..	15.0	3.29%
Sepsis	26.0	5.70%
Sepsis,Anastomotic leak,Re..	4.0	0.88%
Urine leak	23.0	5.04%
Urine leak,Anastomotic leak..	3.0	0.66%
Wound infection	15.0	3.29%
Wound infection,Chest infec..	1.0	0.22%
Grand Total	456.0	100.00%

LOSbyTechnique

Surgical Technique	N	Median Length Of Stay	Avg. Length Of Stay	Min. Length Of Stay	Max. Length Of Stay
Open	712	3.0	4	0	33
Laparoscopic	837	2.0	2	0	50
Robotically a..	5,733	1.0	2	0	93
Grand Total	7,282	1.0	2	0	93

pT2 Positive Surgical Margin Rate

Margins (group) 1	N	% Total
Positive	546	15.29%
Negative	3,026	84.71%
Grand Total	3,572	100.00%

pT2 Margins by Technique

Surgical Technique	Margins (group) 1				Grand Total	
	Positive		Negative		N	%
	N	%	N	%		
Open	54	15.56%	293	84.44%	347	100.00%
Laparoscopic	65	14.98%	369	85.02%	434	100.00%
Robotically assisted	427	15.30%	2,364	84.70%	2,791	100.00%
Grand Total	546	15.29%	3,026	84.71%	3,572	100.00%

Positive Lymph Nodes

Number Of Lymph ..	Number Of Positive Lymph Nodes (group)											
	0		1 - 5		6 - 10		11 - 20		Not recorded		Grand Total	
	N	%	N	%	N	%	N	%	N	%	N	%
1 - 5	862	93.90%	48	5.23%	1	0.11%	1	0.11%	6	0.65%	918	100.00%
6 - 10	643	89.93%	64	8.95%	3	0.42%			5	0.70%	715	100.00%
11 - 20	628	85.21%	96	13.03%	3	0.41%	4	0.54%	6	0.81%	737	100.00%
> 20	232	78.11%	55	18.52%	7	2.36%	3	1.01%			297	100.00%
Grand Total	2,365	88.68%	263	9.86%	14	0.52%	8	0.30%	17	0.64%	2,667	100.00%

Current Status

Current Status	TimetoFu months								Grand Total	
	0 - 3		4 - 6		7 - 12		> 12			
	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total
Alive with no evidence of prostate cancer	724	90.05%	326	88.83%	178	87.68%	12	92.31%	1,240	89.40%
Alive with local recurrence of prostate cancer	17	2.11%	17	4.63%	8	3.94%			42	3.03%
Alive with lymph node involvement by prostate cancer	14	1.74%	3	0.82%					17	1.23%
Alive with metastatic disease	7	0.87%	1	0.27%					8	0.58%
Not recorded	42	5.22%	20	5.45%	17	8.37%	1	7.69%	80	5.77%
Grand Total	804	100.00%	367	100.00%	203	100.00%	13	100.00%	1,387	100.00%

Participating Hospital Centres 2016

We are grateful to consultants from the following NHS 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 Hospita
Basildon University Hospital, Essex
Belfast City Hospital
Bradford Royal Infirmary
Bristol Oncology Centre
Burnley General Hospital
Castle Hill Hospital, Hull
Charing Cross Hospital, London
Chelsea & Westminster Hospital, London
Cheltenham General Hospital
Christie Hospital
Churchill Hospital, Oxford
Colchester General Hospital
Countess of Chester Hospital
Darent Valley Hospital, Kent
Derriford Hospital, Plymouth
Diana, Princess of Wales Hospital, Grimsby
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
Monklands District General Hospital, Airdrie
Morrison Hospital, Swansea
New Cross Hospital, Wolverhampton
Norfolk And Norwich University Hospital
North Middlesex Hospital, London
Northampton General Hospital
Nottingham City Hospital
Pinderfields General Hospital, Wakefield
Princess Elizabeth Hospital, Guernsey
Queen Alexandra Hospital, Portsmouth
Queen Elizabeth Hospital, Birmingham
Queen Elizabeth University Hospital
Raigmore Hospital, Inverness
Royal Blackburn Hospital
Royal Berkshire Hospital, Reading
Royal Bournemouth General Hospital
Royal Derby Hospital
Royal Devon and Exeter Hospital
Royal Free Hospital, London

Royal Hallamshire Hospital, Sheffield
Royal Liverpool University Hospital
Royal Marsden Hospital, London
Royal Preston Hospital
Royal Shrewsbury Hospital
Royal Stoke University 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, London
St Mary's Hospital, London
St Richard's Hospital, Chichester
Stepping Hill Hospital, Stockport
Sunderland Royal Hospital
The James Cook University Hospital, Middlesbrough
University College Hospital, London
University Hospital of Wales, Cardiff
Victoria Hospital, Kirkcaldy

Walsgrave Hospital, Coventry
Western General Hospital, Edinburgh

Wexham Park Hospital, Slough
Wycombe Hospital, High Wycombe

Ysbyty Gwynedd Hospital, Bangor