

## THE BRITISH ASSOCIATION OF

# UROLOGICAL SURGEONS Section of Oncology

Analyses of Radical Prostatectomies performed between

January 1<sup>st</sup> and December 31<sup>st</sup> 2019

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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 30<sup>th</sup> June 2020 and relate to operations performed during the whole of 2019. Once extracted the data was transferred to an Access<sup>TM</sup> database for validation before being imported into Tableau<sup>TM</sup> 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 2019 to 31 December 2019.

- 7,913 cases were submitted in total, of which 7,298 were from England (6,587 NHS funded); these 7,913 cases came from 149 consultants at 61 NHS sites and include 754 private patients from 67 consultants.
- Median number of cases per consultant: 46 (range 1 240)
- Median number of cases per centre: 93 (range 1 611)
- The overall transfusion rate was 0.2% By technique, the transfusion rates were: open 0.0%, laparoscopic 0.3% and robotic 0.17%.
- 7,160 of the entries recorded whether there had been adverse post operative events. The total post-operative complication rate was **6.6%** (469/7160). Of these 469 cases, 467 recorded the Clavien Dindo grade (i.e. 2 or 0.4% did not). Complications classified as Clavien Dindo Grade III or above were seen in **1.3%** of cases.
- Hospital Episode Statistics (HES) for 2019 indicate that there were 7,935 radical prostatectomies undertaken in England so we collected data on 83% of the NHS funded radical prostatectomies undertaken in England during 2019.
- It is also important to note that as a result of the COVID-19 crisis some surgeons and units may have been unable to submit all or any of their 2019 data.

## 2019 Radical Prostatectomies -7,913 cases reported by 149 consultants at 61 NHS sites (including 754 private cases from 67 consultants)



#### **Reason for Prostatectomy**

Reason For Prostatectomy	of	% of Total Number of Recor
Primary treatment of cancer	6,403	80.92%
Previous active surveillance	816	10.31%
Salvage therapy	84	1.06%
Not recorded	610	7.71%
Grand Total	7,913	100.00%

# Reason if Previous Active surveillance

If Previous Active Surveillan	Number	% of Tot
Clinical progression	84	10.3%
Clinical progression + Other	62	7.6%
Gleason progression	209	25.6%
Gleason progression + Other	81	9.9%
PSA progression	222	27.2%
PSA progression +/- other	19	2.3%
Patient decision	99	12.1%
Not recorded	40	4.9%
Grand Total	816	100.0%

#### **Previous Management**

Previous Management	of	% of Total Number of Recor
None	6,822	86.21%
Brachytherapy	13	0.16%
HIFU	30	0.38%
Radiotherapy	37	0.47%
TURP	50	0.63%
Cryotherapy	7	0.09%
Hormonal suppression ther	71	0.90%
Not recorded	883	11.16%
Grand Total	7,913	100.00%

#### Age

#### Age Group % of Total . 2,294 <60 29.1% 21.8% 1,717 60 - 64 2,219 28.2% 65 - 69 70 - 74 18.4% 1,447 174 75 - 79 2.2% 22 >=80 0.3% 0 500 1000 1500 2000 2500 Number of Records

#### Median Age

Surgical Technique	Number of Records	Median Age	Min. Age	Max. Age
Open	279	66	41	75
Laparoscopic	351	64	41	75
Robotically assisted	7,133	64	40	75
Grand Total	7,763	64	40	75

#### ASA Grade

Asa Grade	of	% of Total Number of Recor
ASA 1	1,218	15.39%
ASA 2	5,371	67.88%
ASA 3	302	3.82%
ASA 4	3	0.04%
Not recorded	1,019	12.88%
Grand Total	7,913	100.00%

#### BMI

#### BMI Underweight Normal Overweight Obese Not Recorded Grand Total % of Number % of % of % of % of % of Number Number Number Number Number Total Total Total Total Total Total of of of of of of Surgical Technique Numbe.. Records Numbe.. Records Numbe.. Records Numbe.. Records Numbe.. Records Numbe.. Records 0.34% 14.48% 42 39.66% 19.31% 56 26.21% 76 100.00% 290 Open 1 115 Laparoscopic 0.28% 1 12.04% 43 33.89% 121 14.85% 53 38.94% 139 100.00% 357 Robotically assisted 1.29% 94 16.50% 1,199 41.38% 3,007 21.86% 1,588 18.97% 1,378 100.00% 7,266 Grand Total 1.21% 96 16.23% 1,284 40.98% 3,243 21.45% 1,697 20.13% 1,593 100.00% 7,913

#### SurgicalTechnique

Surgical Technique	of	% of Total Number of Recor
Open	290	3.66%
Laparoscopic	357	4.51%
Robotically assisted	7,266	91.82%
Grand Total	7,913	100.00%

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#### Clinical T stage

#### Comparison of Clinical and Pathological T stage

of Records	Number of Recor
12	0.15%
783	9.90%
4,876	61.62%
1,520	19.21%
5	0.06%
717	9.06%
7,913	100.00%
	Records 12 783 4,876 1,520 5 717

		Pathological T Stage (group) 1												
	0	)	1	I	2	2	3		4	L .	Not recorded/ Kn		Grand Total	
Clinical T Stage (group) 1	% of Total Numbe	Number of Records	% of Total Numbe	Number of Records	% of Total Numbe	Number of Records	% of Total Numbe	Number of Records	% of Total Numbe	Number of Records	% of Total Numbe	Number of Records	% of Total Numbe	Number of Records
0	8.33%	1			50.00%	6	16.67%	2			25.00%	3	100.00%	12
1	0.13%	1			58.88%	461	27.20%	213			13.79%	108	100.00%	783
2	0.08%	4	0.02%	1	55.29%	2,696	35.89%	1,750	0.06%	3	8.65%	422	100.00%	4,876
3	0.07%	1	0.07%	1	25.46%	387	65.07%	989	0.07%	1	9.28%	141	100.00%	1,520
4							80.00%	4			20.00%	1	100.00%	5
Not recorded	0.28%	2	0.14%	1	34.59%	248	24.13%	173			40.86%	293	100.00%	717
Grand Total	0.11%	9	0.04%	3	48.00%	3,798	39.57%	3,131	0.05%	4	12.23%	968	100.00%	7,913

#### Clinical Stage by Pre-op PSA

						Pre-opera	ative PSA					
	0-	5	6-10 11-20			-20	21-	-50	>50		Grand Total	
Clinical T Stage (group) 1	Number of Reco	% of Total N	Number of Recor	% of Total N	Number of Reco	% of Total N	Number of Reco	% of Total N	Number of Recor	% of Total N	Number of Reco	% of Total N
0	2	16.7%	7	58.3%	3	25.0%					12	100.0%
1	204	26.2%	388	49.9%	157	20.2%	25	3.2%	4	0.5%	778	100.0%
2	1,108	23.0%	2,435	50.6%	1,038	21.6%	209	4.3%	19	0.4%	4,809	100.0%
3	235	15.7%	699	46.6%	391	26.1%	155	10.3%	20	1.3%	1,500	100.0%
4	1	20.0%			1	20.0%	2	40.0%	1	20.0%	5	100.0%
Not recorded/Known	95	23.8%	205	51.4%	76	19.0%	23	5.8%			399	100.0%
Grand Total	1,645	21.9%	3,734	49.8%	1,666	22.2%	414	5.5%	44	0.6%	7,503	100.0%

#### Median pre-operative PSA

of	Number		
221	3.0%	9	8
324	4.4%	9	8
6,760	92.5%	9	7
7,305	100.0%	9	7
	<b>6</b> ,760	Number   221 3.0%   324 4.4%   6,760 92.5%	Records of Recor Psa   221 3.0% 9   324 4.4% 9   6,760 92.5% 9

#### Pathological Staging by Pre-op PSA

		Pre-operative PSA										
	0-	-5	6-	10	11-	20	21-	-50	>50		Grand Total	
Pathological T Stage (group) 1	Number of Records	% of Total Number	Number of Records	% of Total Number	Number of Records	% of Total Number	Number of Records		Number of Records	% of Total Number	Number of Records	% of Total Number
0	5	55.56%	1	11.11%	3	33.33%					9	100.00%
1			2	100.00%							2	100.00%
2	986	26.45%	1,923	51.58%	700	18.78%	111	2.98%	8	0.21%	3,728	100.00%
3	489	15.90%	1,471	47.82%	822	26.72%	263	8.55%	31	1.01%	3,076	100.00%
4			2	50.00%	1	25.00%			1	25.00%	4	100.00%
Not recorded/ Known	165	24.12%	335	48.98%	140	20.47%	40	5.85%	4	0.58%	684	100.00%
Grand Total	1,645	21.92%	3,734	49.77%	1,666	22.20%	414	5.52%	44	0.59%	7,503	100.00%

### Age at Operation by Biopsy Gleason Sum

		Biopsy Gleason Sum Score							
	5	- 6	7	7	8 -	10	Grand	I Total	
Age Group	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		
<60	291	13.26%	1,689	76.98%	214	9.75%	2,194	100.00%	
60 - 64	191	11.57%	1,258	76.20%	202	12.24%	1,651	100.00%	
65 - 69	208	9.86%	1,642	77.82%	260	12.32%	2,110	100.00%	
70 - 74	120	8.61%	1,089	78.12%	185	13.27%	1,394	100.00%	
75 - 79	12	7.32%	124	75.61%	28	17.07%	164	100.00%	
>=80			18	90.00%	2	10.00%	20	100.00%	
Grand Total	822	10.91%	5,820	77.26%	891	11.83%	7,533	100.00%	

### Age at Operation by Surgical Gleason Sum Score

		Surgical Gleason Sum Score									
	5	- 6	7	7	8 - 10		Grand	l Total			
Age Group	Number of Records	% of Total Number of Records									
<60	126	6.44%	1,669	85.33%	161	8.23%	1,956	100.00%			
60 - 64	84	5.62%	1,243	83.20%	167	11.18%	1,494	100.00%			
65 - 69	76	3.95%	1,617	84.13%	229	11.91%	1,922	100.00%			
70 - 74	28	2.22%	1,071	85.00%	161	12.78%	1,260	100.00%			
75 - 79	8	5.19%	117	75.97%	29	18.83%	154	100.00%			
>=80			16	88.89%	2	11.11%	18	100.00%			
Grand Total	322	4.73%	5,733	84.26%	749	11.01%	6,804	100.00%			

#### Operating Surgeon

Conversions
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Grand Total

		Supervised Training Operation						
	N	0	Y	es	Not ree	corded	Grand Total	
Grade Of Main Operating Surgeon	Number of Records	% of Total Number	Number of Records	% of Total Number	Number of Records	% of Total Number	Number of Records	% of Total Number
Consultant	723	10.23%	29	0.41%	6,318	89.36%	7,070	100.00%
SpR	10	2.42%	395	95.64%	8	1.94%	413	100.00%
Other					111	100.00%	111	100.00%
Not recorded					319	100.00%	319	100.00%
Grand Total	733	9.26%	424	5.36%	6,756	85.38%	7,913	100.00%

#### Duration of Operation by Technique

Surgical Technique

	Ор	en	Laparo	scopic	Robotically assisted		Grand	l Total	
Duration Of Operation	Number of Records	% of Total Number of Records							
<2.0 hours	14	0.80%	55	3.14%	1,685	96.07%	1,754	100.00%	
2.0-3.9 hours	201	3.91%	259	5.04%	4,680	91.05%	5,140	100.00%	
4.0-5.9 hours	9	3.35%	13	4.83%	247	91.82%	269	100.00%	
>= 6.0 hours			5	41.67%	7	58.33%	12	100.00%	
Not recorded	66	8.94%	25	3.39%	647	87.67%	738	100.00%	
Grand Total	290	3.66%	357	4.51%	7,266	91.82%	7,913	100.00%	

#### Nerve Sparing

Nerve Sparing	Number of Records	% of Total Number of Recor
None	2,263	28.60%
Bilateral	2,677	33.83%
Unilateral	2,311	29.21%
Not recorded	662	8.37%
Grand Total	7,913	100.00%

#### Lymph Node Dissection

Records	of Recor
4,713	59.56%
1,236	15.62%
855	10.81%
1,109	14.01%
7,913	100.00%
	4,713 1,236 855 1,109

	Ye	S	N	o	N	ull	Grand	l Total
Surgical Technique	Numbe	% of T	Numbe	% of To	Numbe	% of To	Numbe	% of To.
Open					290	100.00%	290	100.00%
Laparoscopic	5	1.40%	324	90.76%	28	7.84%	357	100.00%
Robotically assisted	21	0.29%	6,688	92.05%	557	7.67%	7,266	100.00%

7,012 88.61%

26 0.33%

Converted

7,913 100.00%

875 11.06%

#### KnownTransfusionRate

Transfused	of	% of Total Number of Recor
Not transfused	7,779	99.83%
Transfused	13	0.17%
Grand Total	7,792	100.00%

#### Tranfusions by Surgical Technique

		Surgical Technique								
	Ор	en	Laparo	scopic	Roboticall	y assisted	Grand Total			
Blood Units Transfused	Number of Records	% of Total Number of Records								
Nil	243	3.12%	332	4.27%	7,204	92.61%	7,779	100.00%		
Minor (<3 units)			1	10.00%	9	90.00%	10	100.00%		
Moderate (3-6 units)					1	100.00%	1	100.00%		
Major (>6 units)					2	100.00%	2	100.00%		
Not recorded	47	38.84%	24	19.83%	50	41.32%	121	100.00%		
Grand Total	290	3.66%	357	4.51%	7,266	91.82%	7,913	100.00%		

#### TransfusionRatebyTechnique

			Trans	fused		
	Trans	fused	Not trar	nsfused	Grand	l Total
Surgical Technique	% of Total Number of Records	Number of Records	% of Total Number of Records	Number of Records	% of Total Number of Records	Number of Records
Open			100.00%	243	100.00%	243
Laparoscopic	0.30%	1	99.70%	332	100.00%	333
Robotically assisted	0.17%	12	99.83%	7,204	100.00%	7,216
Grand Total	0.17%	13	99.83%	7,779	100.00%	7,792

#### TransfusionRatebyAge

		Transfused						
	Trans	fused	Not trar	nsfused	Grand Total			
Age Group	Number of Records	% of Total Number of Records	Number of Records	% of Total Number of Records	Number of Records	% of Total Number of Records		
<60	2	0.09%	2,262	99.91%	2,264	100.00%		
60 - 64	1	0.06%	1,690	99.94%	1,691	100.00%		
65 - 69	3	0.14%	2,180	99.86%	2,183	100.00%		
70 - 74	6	0.42%	1,417	99.58%	1,423	100.00%		
75 - 79	1	0.59%	169	99.41%	170	100.00%		
>=80			21	100.00%	21	100.00%		
Grand Total	13	0.17%	7,739	99.83%	7,752	100.00%		

#### TransfusionRatebyASA

		Transfused								
	Trans	fused	Not trar	nsfused	Grand Total					
Asa Grade	Number of Records	% of Total Number of Records	Number of Records	% of Total Number of Records	Number of Records	% of Total Number of Records				
ASA 1	1	0.08%	1,213	99.92%	1,214	100.00%				
ASA 2	9	0.17%	5,348	99.83%	5,357	100.00%				
ASA 3	1	0.33%	298	99.67%	299	100.00%				
ASA 4			3	100.00%	3	100.00%				
Not recorded	2	0.22%	917	99.78%	919	100.00%				
Grand Total	13	0.17%	7,779	99.83%	7,792	100.00%				

#### KnownIntraopCompRate

Intra Operative Complications (group) (copy)	of	% of Total Number of Recor
Complication recorded	279	3.79%
None	7,076	96.21%
Grand Total	7,355	100.00%

### Known Post-operative Complication rate

PostOperative Complication Wit	of	% of Total Number of Recor
Complication	469	6.55%
None	6,691	93.45%
Grand Total	7,160	100.00%

#### Clavien Dindo Grade of Post-Operative Complications by Technique

		Surgical Technique									
	Laparo	scopic	Open		Roboticall	y assisted	Grand Total				
Clavien Dindo Grade Of Complications (group)	Number of Records	% of Total Number of Records	Number of Records	% of Total Number of Records	Number of Records		Number of Records	% of Total Number of Records			
Grade I	17	5.12%	18	7.41%	194	2.95%	229	3.20%			
Grade II	19	5.72%	6	2.47%	122	1.85%	147	2.05%			
Grade III plus	4	1.20%	6	2.47%	82	1.25%	92	1.28%			
Not recorded / NA	292	87.95%	213	87.65%	6,187	93.96%	6,692	93.46%			
Grand Total	332	100.00%	243	100.00%	6,585	100.00%	7,160	100.00%			

### Specific Intraoperative Complications

		Specific Post operative complications	
Number	% of Total		
of	Number		% of Tota

Intra Operative Complications	of	% of Total Number of Recor
Difficult dissection	176	63.08%
Problematic bleeding	29	10.39%
Problematic bleeding, Difficult dissection	44	15.77%
Rectal injury	8	2.87%
Ureteric injury	4	1.43%
Vascular injury	2	0.72%
Robotic device failure	4	1.43%
Port complications	1	0.36%
Difficult dissection,Small bowel injury	1	0.36%
Problematic bleeding,Port complications	1	0.36%
Nerve injury	2	0.72%
Difficult dissection,Port complications	2	0.72%
Difficult dissection,Robotic device failure	1	0.36%
Small bowel injury	4	1.43%
Grand Total	279	100.00%

		Table (Down)
Anastomotic Leak + others	37	7.89%
Chest infection + others	14	2.99%
Haematuria + others	37	7.89%
Haemorrhage + Others	18	3.84%
lleus	24	5.12%
lleus + others	3	0.64%
Pelvic Haematoma +/- others	22	4.69%
Sepsis	27	5.76%
Urine leak	18	3.84%
Urine leak & others	4	0.85%
Wound infection	20	4.26%
Sepsis & others	6	1.28%
Return to theatre +/- others	19	4.05%
PE / DVT +/- others	8	1.71%
Others	212	45.20%
Grand Total	469	100.00%

### LOSbyTechnique

Surgical Technique	Number of Records	Median Length Of Stay	Avg. Length Of Stay	Min. Length Of Stay	Max. Length Of Stay
Open	243	3.0	3	0	37
Laparoscopic	332	2.0	2	0	15
Robotically a	6,748	1.0	2	0	91
Grand Total	7,323	1.0	2	0	91

### pT2 Positive Surgical Margin Rate

Margins (group) 1	of	% of Total Number of Recor
Positive	614	16.55%
Negative	3,095	83.45%
Grand Total	3,709	100.00%

#### pT2 Margins by Technique

	Margins (group) 1										
	Pos	itive	Neg	ative	Grand Total						
Surgical Technique	Number of Records	% of Total Number of Records	Number of Records	% of Total Number of Records	Number of Records	% of Total Number of Records					
Open	9	11.69%	68	88.31%	77	100.00%					
Laparoscopic	38	18.36%	169	81.64%	207	100.00%					
Robotically assisted	567	16.55%	2,858	83.45%	3,425	100.00%					
Grand Total	614	16.55%	3,095	83.45%	3,709	100.00%					

#### Positive Lymph Nodes

Number Of Positive Lymph Nodes (group)														
		D	1.	- 5	6 -	10	11 -	- 20	>	20	Not re	corded	Grand	Total
Number Of Lymph		% of Total		% of Total		% of Total		% of Total		% of Total		% of Total		% of Total
Nodes Sampled - group	Number of Records					Number of Records	Number of Records			Number of Records	Number of Records		Number of Records	
1 - 5	602	90.66%	51	7.68%	3	0.45%	1	0.15%	1	0.15%	6	0.90%	664	100.00%
6 - 10	530	88.93%	61	10.23%	1	0.17%					4	0.67%	596	100.00%
11 - 20	517	85.60%	73	12.09%	1	0.17%	4	0.66%	1	0.17%	8	1.32%	604	100.00%
> 20	155	77.11%	39	19.40%	3	1.49%	2	1.00%			2	1.00%	201	100.00%
Grand Total	1,804	87.36%	224	10.85%	8	0.39%	7	0.34%	2	0.10%	20	0.97%	2,065	100.00%

### Patients followed up

Follow up	of	% of Total Number of Recor
Followed up	2,087	26.37%
Not followed up	5,826	73.63%
Grand Total	7,913	100.00%

#### **Current Status**

	TimetoFu months									
	0 -	- 3	4 -	6	7 -	12	> 12		Grand	I Total
Current Status	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		Number of Records	% of Total Number of Records
Alive with no evidence of prostate cancer	1,166	73.15%	263	78.74%	98	69.50%	9	56.25%	1,536	73.67%
Alive with local recurrence of prostate cancer	10	0.63%	7	2.10%	3	2.13%			20	0.96%
Alive with lymph node involvement by prostate cancer	3	0.19%	4	1.20%					7	0.34%
Alive with metastatic disease	1	0.06%	1	0.30%					2	0.10%
Discharged to GP / Other consultant	114	7.15%	4	1.20%					118	5.66%
Not recorded	300	18.82%	55	16.47%	40	28.37%	7	43.75%	402	19.28%
Grand Total	1,594	100.00%	334	100.00%	141	100.00%	16	100.00%	2,085	100.00%

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#### **Participating Hospital Centres 2019**

#### 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 & Redbridge University Hospital Broomfield Hospital, Chelmsford Castle Hill Hospital, Hull Charing Cross 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 Hammersmith Hospital, London Heartlands Hospital, Birmingham James Cook University Hospital, Middlesbrough Leicester General Hospital Lister Hospital, Stevenage Maidstone Hospital Medway Maritime Hospital, Gillingham Morriston Hospital, Swansea New Cross Hospital, Wolverhampton Ninewells Hospital, Dundee Norfolk & Norwich University Hospital Nottingham City Hospital Pinderfields General Hospital, Wakefield Princess Elizabeth Hospital, Guernsey

Queen Alexandra Hospital, Portsmouth Queen Elizabeth Hospital, Birmingham Queen Elizabeth University Hospital Royal Berkshire Hospital, Reading Royal Blackburn Hospital Royal Bournemouth General Hospital Royal Derby Hospital Royal Devon & Exeter Hospital 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

Southampton General Hospital	St Mary's Hospital, London
Southend Hospital	Stepping Hill Hospital, Stockport
Southmead Hospital, Bristol	Sunderland Royal Hospital
St George's Hospital, London	University College Hospital, London
St James's University Hospital, Leeds	University Hospital of Wales, Cardiff

Walsgrave Hospital, Coventry Western General Hospital, Edinburgh Wycombe Hospital, High Wycombe