

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

**Analyses of PCNL's performed between
January 1st 2014 and December 31st 2016**

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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 20th April 2017 and relate to operations performed during the whole of 2014, 2015 and 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.

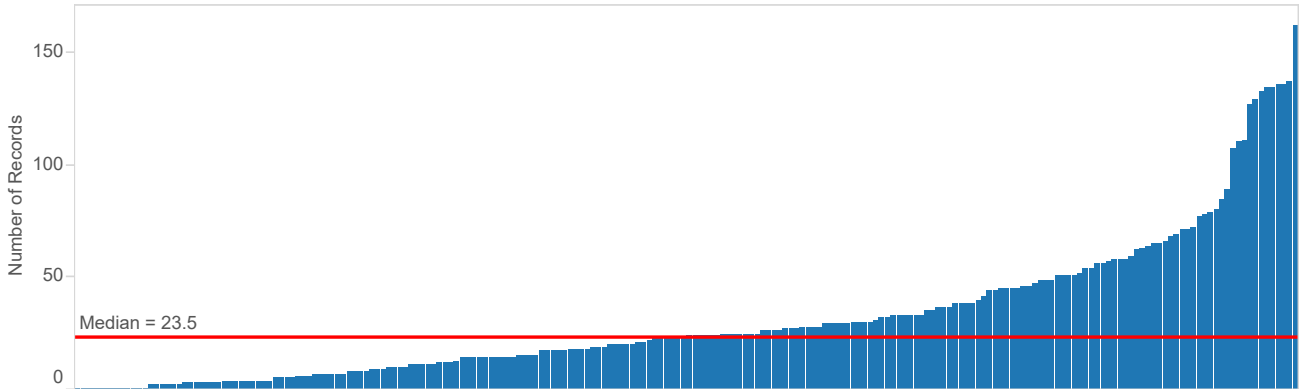
The data collection period was from 1 January 2014 to 31 December 2016.

6,769 procedures were recorded from 215 consultants at 124 centres in the United Kingdom, including 210 private patients from 52 consultants. Nine of the consultants returning data are not BAUS members.

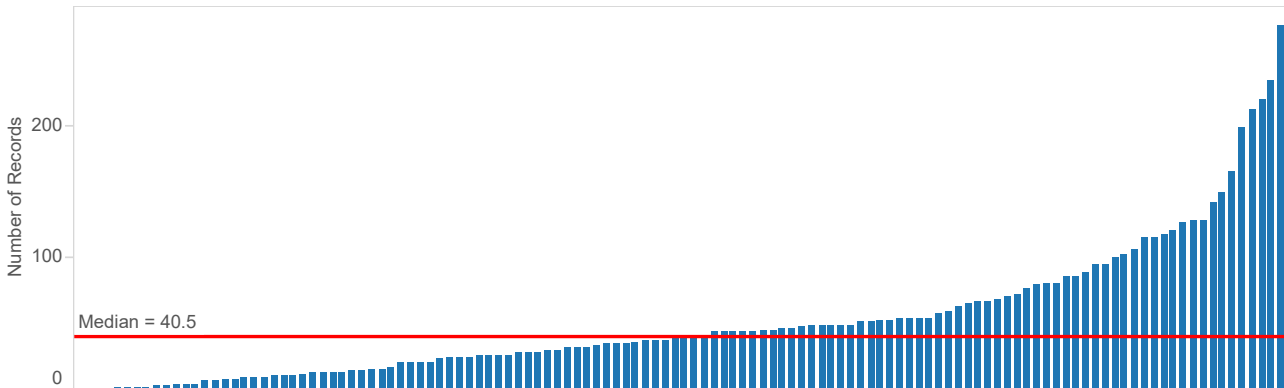
- Median number of cases per consultant: 23 (range 1 - 162)
- Median number of cases per centre: 41 (range 1 - 277)
- All data were entered by hand and there was no bulk uploading of data from other systems.
- Hospital Episode Statistics (HES) for 2014, 2015 and 2016 indicate that there were 4,416 PCNL 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 01/01/2014 and 31/12/2016
6769 procedures from 215 consultants at 124 sites including 210 private cases from 52 consultants

Total by Surgeon



Total by Centre



Gender

Gender1	N	% Total
Female	3,146	46.5%
Male	3,623	53.5%
Grand Total	6,769	100.0%

Side

Side Of Stones	N	% Total
Left	3,745	55.3%
Right	2,912	43.0%
Bilateral	112	1.7%
Grand Total	6,769	100.0%

BMI

BMI	N	% Total
Underweight	95	1.4%
Normal	868	12.8%
Obese	1,524	22.5%
Overweight	1,275	18.8%
Not recorded	3,007	44.4%
Grand Total	6,769	100.0%

Age

N	% Total	Median Age	Min. Age	Max. Age
6,769	100.0%	56	0	109

Complexity

Stone Complexity	N	% Total
I	1,551	22.9%
II	1,980	29.3%
III	1,813	26.8%
IV	1,074	15.9%
Not recorded	351	5.2%
Grand Total	6,769	100.0%

Stone Dimensions

Stone Dimensions ..	Stone Dimensions	Yearofop							
		2014		2015		2016		Grand Total	
		N	% Total	N	% Total	N	% Total	N	% Total
0-2cm	0-1 cm	100	4.7%	105	4.8%	94	3.9%	299	4.4%
	1-2 cm	624	29.2%	593	26.9%	716	29.6%	1,933	28.6%
>2cm	2-4 cm	60	2.8%	778	35.3%	1,028	42.4%	1,866	27.6%
	>2 cm	1,268	59.3%	153	6.9%			1,421	21.0%
	>4 cm	42	2.0%	383	17.4%	502	20.7%	927	13.7%
Not recorded	Not recorded	46	2.1%	195	8.8%	82	3.4%	323	4.8%
Grand Total		2,140	100.0%	2,207	100.0%	2,422	100.0%	6,769	100.0%

LOS by Complexity

Stone Complexity	N	% Total	Median LOS	Min LOS	Max LOS
I	1,551	22.9%	2	0	77
II	1,980	29.3%	3	0	106
III	1,813	26.8%	3	0	160
IV	1,074	15.9%	3	0	157
Not recorded	351	5.2%	2	0	114
Grand Total	6,769	100.0%	3	0	160

LOS by Size

Stone Dimensions (group)	N	% Total	Median LOS	Min LOS	Max LOS
0-2cm	2,232	33.0%	2	0	77
>2cm	4,214	62.3%	3	0	160
Not recorded	323	4.8%	3	1	29
Grand Total	6,769	100.0%	3	0	160

LOS by Comorbidities

Charlson Comorbidities (group)	N	% Total	Median LOS	Min LOS	Max LOS
Not recorded, Other	6,524	96.4%	3	0	160
Spina Bifida, Spinal Injury, Kyphoscoliosis	245	3.6%	4	0	72
Grand Total	6,769	100.0%	3	0	160

Transfusion Rate by Complexity

Stone Compl..	Blood Transfusion				Grand Total	
	Yes		No		N	%
	N	%	N	%		
I	24	1.6%	1,456	98.4%	1,480	100.0%
II	35	1.8%	1,876	98.2%	1,911	100.0%
III	54	3.1%	1,711	96.9%	1,765	100.0%
IV	26	2.5%	995	97.5%	1,021	100.0%
Not recorded	3	1.1%	274	98.9%	277	100.0%
Grand Total	142	2.2%	6,312	97.8%	6,454	100.0%

Transfusion Rate by Size

Stone Dimen..	Blood Transfusion				Grand Total	
	Yes		No		N	%
	N	%	N	%		
0-2cm	29	1.3%	2,122	98.7%	2,151	100.0%
>2cm	107	2.6%	3,963	97.4%	4,070	100.0%
Not recorded	6	2.6%	227	97.4%	233	100.0%
Grand Total	142	2.2%	6,312	97.8%	6,454	100.0%

Transfusion Rate by Comorbidities

Charlson Comorbidi..	Blood Transfusion				Grand Total	
	Yes		No		N	%
	N	%	N	%		
Not recorded, Other	135	2.2%	6,083	97.8%	6,218	100.0%
Spina Bifida, Spinal Injury, Kyphoscolios..	7	3.0%	229	97.0%	236	100.0%
Grand Total	142	2.2%	6,312	97.8%	6,454	100.0%

Sepsis by Complexity

Stone Compl..	Post Operative Infection (group)									
	Sepsis		Fever		None		Not recorded		Grand Total	
	N	%	N	%	N	%	N	%	N	%
I	13	0.8%	94	6.1%	1,320	85.1%	124	8.0%	1,551	100.0%
II	34	1.7%	149	7.5%	1,640	82.8%	157	7.9%	1,980	100.0%
III	59	3.3%	179	9.9%	1,451	80.0%	124	6.8%	1,813	100.0%
IV	57	5.3%	164	15.3%	740	68.9%	113	10.5%	1,074	100.0%
Not recorded	18	5.1%	15	4.3%	225	64.1%	93	26.5%	351	100.0%
Grand Total	181	2.7%	601	8.9%	5,376	79.4%	611	9.0%	6,769	100.0%

Sepsis by Size

Stone Dimen..	Post Operative Infection (group)									
	Sepsis		Fever		None		Not recorded		Grand Total	
	N	%	N	%	N	%	N	%	N	%
Not recorded	10	3.1%	23	7.1%	181	56.0%	109	33.7%	323	100.0%
0-2cm	28	1.3%	140	6.3%	1,881	84.3%	183	8.2%	2,232	100.0%
>2cm	143	3.4%	438	10.4%	3,314	78.6%	319	7.6%	4,214	100.0%
Grand Total	181	2.7%	601	8.9%	5,376	79.4%	611	9.0%	6,769	100.0%

Sepsis by Comorbidities

Charlson Com..	Post Operative Infection (group)									
	Sepsis		Fever		None		Not recorded		Grand Total	
	N	%	N	%	N	%	N	%	N	%
Spina Bifida, Spinal Injury, Kyphoscoliosis	29	11.8%	40	16.3%	153	62.4%	23	9.4%	245	100.0%
Not recorded, Other	152	2.3%	561	8.6%	5,223	80.1%	588	9.0%	6,524	100.0%
Grand Total	181	2.7%	601	8.9%	5,376	79.4%	611	9.0%	6,769	100.0%

Clearance on Post operative radiological imaging by Complexity

Clearance On Post Operative Radiological Imaging

Stone Compl..	Yes		No		Not done		Not recorded		Deferred		Grand Total	
	N	%	N	%	N	%	N	%	N	%	N	%
I	1,009	65.1%	112	7.2%	232	15.0%	165	10.6%	33	2.1%	1,551	100.0%
II	1,125	56.8%	326	16.5%	291	14.7%	196	9.9%	42	2.1%	1,980	100.0%
III	850	46.9%	525	29.0%	236	13.0%	150	8.3%	52	2.9%	1,813	100.0%
IV	315	29.3%	514	47.9%	122	11.4%	104	9.7%	19	1.8%	1,074	100.0%
Not recorded	92	26.2%	37	10.5%	33	9.4%	189	53.8%			351	100.0%
Grand Total	3,391	50.1%	1,514	22.4%	914	13.5%	804	11.9%	146	2.2%	6,769	100.0%

Clearance on Post operative radiological imaging by Stone Size

Clearance On Post Operative Radiological Imaging

Stone Dimen..	Yes		No		Not done		Not recorded		Deferred		Grand Total	
	N	%	N	%	N	%	N	%	N	%	N	%
0-2cm	1,256	56.3%	293	13.1%	376	16.8%	262	11.7%	45	2.0%	2,232	100.0%
>2cm	2,042	48.5%	1,170	27.8%	502	11.9%	399	9.5%	101	2.4%	4,214	100.0%
Not recorded	93	28.8%	51	15.8%	36	11.1%	143	44.3%			323	100.0%
Grand Total	3,391	50.1%	1,514	22.4%	914	13.5%	804	11.9%	146	2.2%	6,769	100.0%

Clearance on Post operative radiological imaging by Comorbidities

Clearance On Post Operative Radiological Imaging

Charlson Comor..	Yes		No		Not done		Not recorded		Deferred		Grand Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Not recorded, Other	3,277	50.2%	1,443	22.1%	885	13.6%	774	11.9%	145	2.2%	6,524	100.0%
Spina Bifida, Spinal Injury, Kyphoscoliosis	114	46.5%	71	29.0%	29	11.8%	30	12.2%	1	0.4%	245	100.0%
Grand Total	3,391	50.1%	1,514	22.4%	914	13.5%	804	11.9%	146	2.2%	6,769	100.0%

Intra-Operative Complications

Intraop Com..	N	% Total
Yes	196	2.9%
No	4,116	60.8%
Not recorded	2,457	36.3%
Grand Total	6,769	100.0%

Post-Operative Complications

Postop Com..	N	% Total
Yes	682	10.1%
No	5,760	85.1%
Null	327	4.8%
Grand Total	6,769	100.0%

CD Grade of Post Operative Complications

ClavienDindoGradeOfC..	N	% Total
Grade I	17	2.5%
Grade II	31	4.5%
Grade IIIa	21	3.1%
Grade IIIb	16	2.3%
Null	597	87.5%
Grand Total	682	100.0%

CD by complexity

Stone Complexity	ClavienDindoGradeOfComplications											
	Grade I		Grade II		Grade IIIa		Grade IIIb		Null		Grand Total	
	N	%	N	%	N	%	N	%	N	%	N	%
I	3	2.6%	4	3.4%	4	3.4%	1	0.9%	104	89.7%	116	100.0%
II	8	4.5%	4	2.2%	2	1.1%	5	2.8%	159	89.3%	178	100.0%
III	4	1.9%	16	7.6%	13	6.2%	5	2.4%	173	82.0%	211	100.0%
IV	1	0.7%	7	4.6%	2	1.3%	5	3.3%	137	90.1%	152	100.0%
Not recorded	1	4.0%							24	96.0%	25	100.0%
Grand Total	17	2.5%	31	4.5%	21	3.1%	16	2.3%	597	87.5%	682	100.0%

CD by Size

Stone Dimensions ..	ClavienDindoGradeOfComplications											
	Grade I		Grade II		Grade IIIa		Grade IIIb		Null		Grand Total	
	N	%	N	%	N	%	N	%	N	%	N	%
0-2cm	6	3.2%	10	5.3%	5	2.6%	4	2.1%	164	86.8%	189	100.0%
>2cm	9	1.9%	21	4.5%	16	3.4%	12	2.6%	407	87.5%	465	100.0%
Not recorded	2	7.1%							26	92.9%	28	100.0%
Grand Total	17	2.5%	31	4.5%	21	3.1%	16	2.3%	597	87.5%	682	100.0%

CD by Comorbidities

Charlson Com..	ClavienDindoGradeOfComplications											
	Grade I		Grade II		Grade IIIa		Grade IIIb		Null		Grand Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Spina Bifida, Spinal Injury, Kyphoscoliosis	1	2.2%	4	8.9%	1	2.2%			39	86.7%	45	100.0%
Not recorded, Other	16	2.5%	27	4.2%	20	3.1%	16	2.5%	558	87.6%	637	100.0%
Grand Total	17	2.5%	31	4.5%	21	3.1%	16	2.3%	597	87.5%	682	100.0%

Clearance on Post operative radiological imaging by Complexity

Clearance On Post Operative Radiological Imaging

Stone Compl..	Yes		No		Not done		Not recorded		Deferred		Grand Total	
	N	%	N	%	N	%	N	%	N	%	N	%
I	1,009	65.1%	112	7.2%	232	15.0%	165	10.6%	33	2.1%	1,551	100.0%
II	1,125	56.8%	326	16.5%	291	14.7%	196	9.9%	42	2.1%	1,980	100.0%
III	850	46.9%	525	29.0%	236	13.0%	150	8.3%	52	2.9%	1,813	100.0%
IV	315	29.3%	514	47.9%	122	11.4%	104	9.7%	19	1.8%	1,074	100.0%
Not recorded	92	26.2%	37	10.5%	33	9.4%	189	53.8%			351	100.0%
Grand Total	3,391	50.1%	1,514	22.4%	914	13.5%	804	11.9%	146	2.2%	6,769	100.0%

Clearance on Post operative radiological imaging by Stone Size

Clearance On Post Operative Radiological Imaging

Stone Dimen..	Yes		No		Not done		Not recorded		Deferred		Grand Total	
	N	%	N	%	N	%	N	%	N	%	N	%
0-2cm	1,256	56.3%	293	13.1%	376	16.8%	262	11.7%	45	2.0%	2,232	100.0%
>2cm	2,042	48.5%	1,170	27.8%	502	11.9%	399	9.5%	101	2.4%	4,214	100.0%
Not recorded	93	28.8%	51	15.8%	36	11.1%	143	44.3%			323	100.0%
Grand Total	3,391	50.1%	1,514	22.4%	914	13.5%	804	11.9%	146	2.2%	6,769	100.0%

Patients with Follow up

Flw Id (grou..	N	% Total
No Follow up	4,639	68.5%
Follow-up	2,130	31.5%
Grand Total	6,769	100.0%

Stone Free at Follow up

Stone Compl..	Stone Free At Follow Up						Grand Total	
	No		Yes		Not recorded		N	%
	N	%	N	%	N	%		
I	38	7.3%	454	86.8%	31	5.9%	523	100.0%
II	132	19.1%	531	77.0%	27	3.9%	690	100.0%
III	189	33.2%	360	63.3%	20	3.5%	569	100.0%
IV	150	46.4%	162	50.2%	11	3.4%	323	100.0%
Not recorded	6	24.0%	16	64.0%	3	12.0%	25	100.0%
Grand Total	515	24.2%	1,523	71.5%	92	4.3%	2,130	100.0%

Stone Free by Size

Stone Dimen..	Stone Free At Follow Up						Grand Total	
	No		Yes		Not recorded		N	%
	N	%	N	%	N	%		
0-2cm	110	15.7%	560	79.9%	31	4.4%	701	100.0%
>2cm	395	28.6%	930	67.3%	56	4.1%	1,381	100.0%
Not recorded	10	20.8%	33	68.8%	5	10.4%	48	100.0%
Grand Total	515	24.2%	1,523	71.5%	92	4.3%	2,130	100.0%

Participating Hospital Centres 2014, 2015 and 2016

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

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

Huddersfield Royal Infirmary	North Manchester General Hospital	Royal Derby Hospital
Imperial College Healthcare NHS Trust	North Middlesex Hospital, London	Royal Devon and Exeter Hospital
Ipswich Hospital, Suffolk	Northampton General Hospital	Royal Free Hospital, London
Kent and Canterbury Hospital	Northwick Park Hospital	Royal Gwent Hospital
Leicester General Hospital	Nottingham City Hospital	Royal Hallamshire Hospital, Sheffield
Leighton Hospital, Cheshire	Peterborough City Hospital	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 Shrewsbury Hospital
Maidstone Hospital	Queen Elizabeth Hospital, Birmingham	Royal Stoke University Hospital
Manchester Royal Infirmary	Raigmore Hospital, Inverness	Royal Sussex County Hospital, Brighton
Milton Keynes Hospital	Rotherham Hospital	Royal United Hospital, Bath
Monklands District General Hospital, Airdrie	Royal Blackburn Hospital	Russells Hall Hospital, Dudley
Morrison Hospital, Swansea	Royal Albert Edward Infirmary, Wigan	Salford Royal Hospital
Musgrove Park Hospital, Taunton	Royal Berkshire Hospital, Reading	Salisbury District Hospital
New Cross Hospital, Wolverhampton	Royal Bolton Hospital	Scunthorpe General Hospital
Norfolk And Norwich University Hospital	Royal Bournemouth General Hospital	South Eastern Health Trust, Northern Ireland
North Devon District Hospital	Royal Cornwall Hospital, Truro	Southampton General Hospital

Southend Hospital	University College Hospital, London	Whittington Hospital, London
Southmead Hospital, Bristol	University Hospital of Wales, Cardiff	Worthing Hospital
Southport And Ormskirk Hospitals	University Hospital, Ayr	Wrexham Maelor Hospital
St George's Hospital, London	Walsgrave Hospital, Coventry	Wycombe Hospital, High Wycombe
St James's University Hospital, Leeds	Watford General Hospital	Wythenshawe Hospital, Manchester
St Peter's Hospital, Chertsey	West Suffolk Hospital, Bury St. Edmunds	Yeovil District Hospital
St Richard's Hospital, Chichester	Western General Hospital, Edinburgh	York Hospital
Stepping Hill Hospital, Stockport	Wexham Park Hospital, Slough	
Sunderland Royal Hospital	Whipps Cross University Hospital, London	
The James Cook University Hospital, Middlesbrough	Whiston Hospital, Prescot	