

NCAP

NATIONAL CARDIAC AUDIT PROGRAMME

NACSA Annual Report 2021 (Data for the 3 years - from April 2017 to March 2020) Appendix – additional data

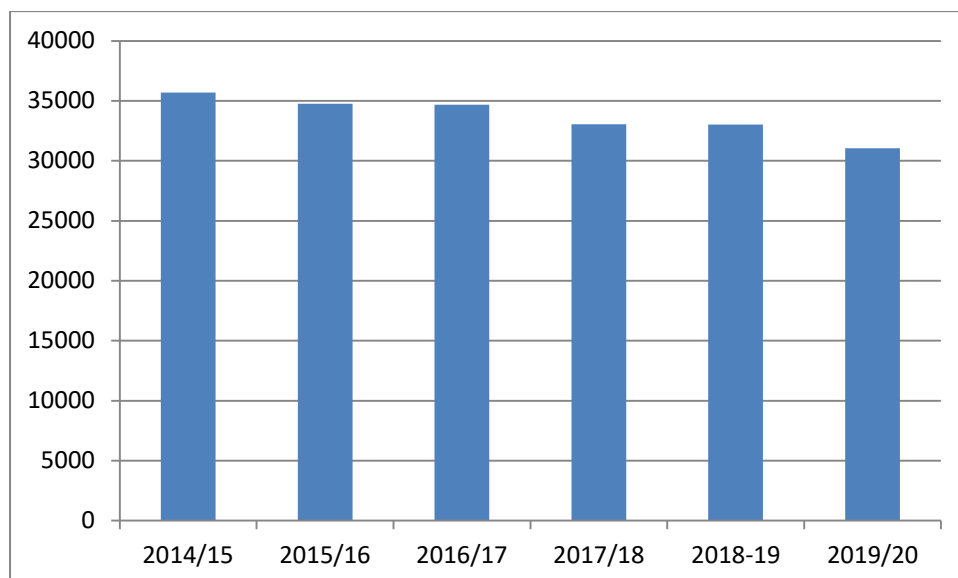


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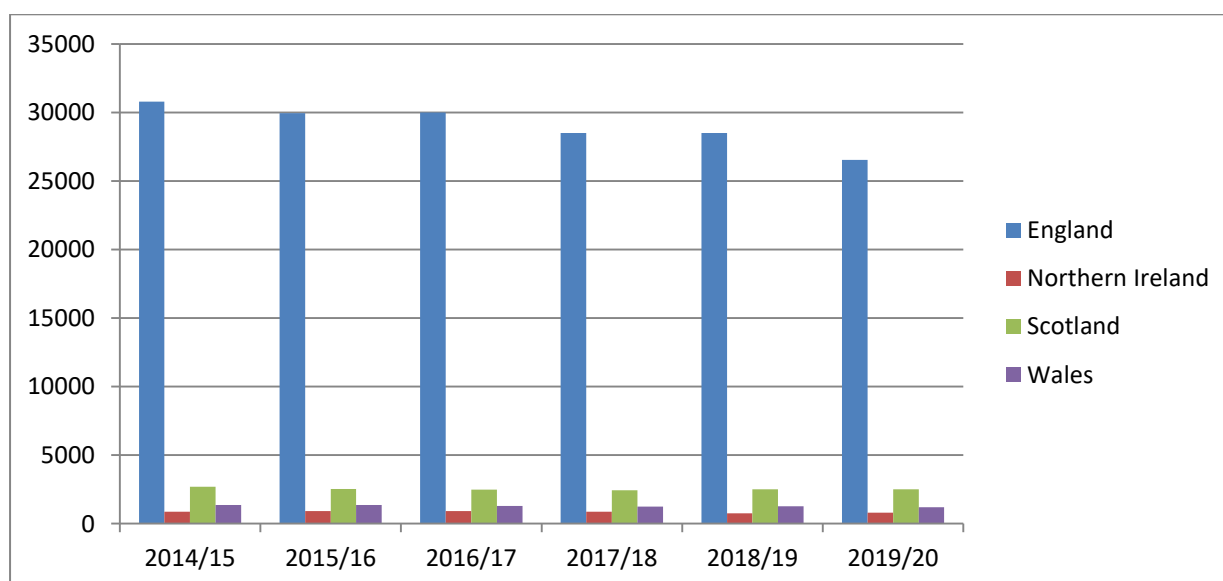
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Case Numbers - All Procedures (including emergencies) for UK



	All procedures					
Region	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
UK	35691	34752	34670	33040	33023	31046
England	30782	29949	29991	28499	28493	26545
Northern Ireland	864	917	907	860	752	792
Scotland	2680	2521	2475	2432	2506	2505
Wales	1365	1365	1297	1249	1272	1204

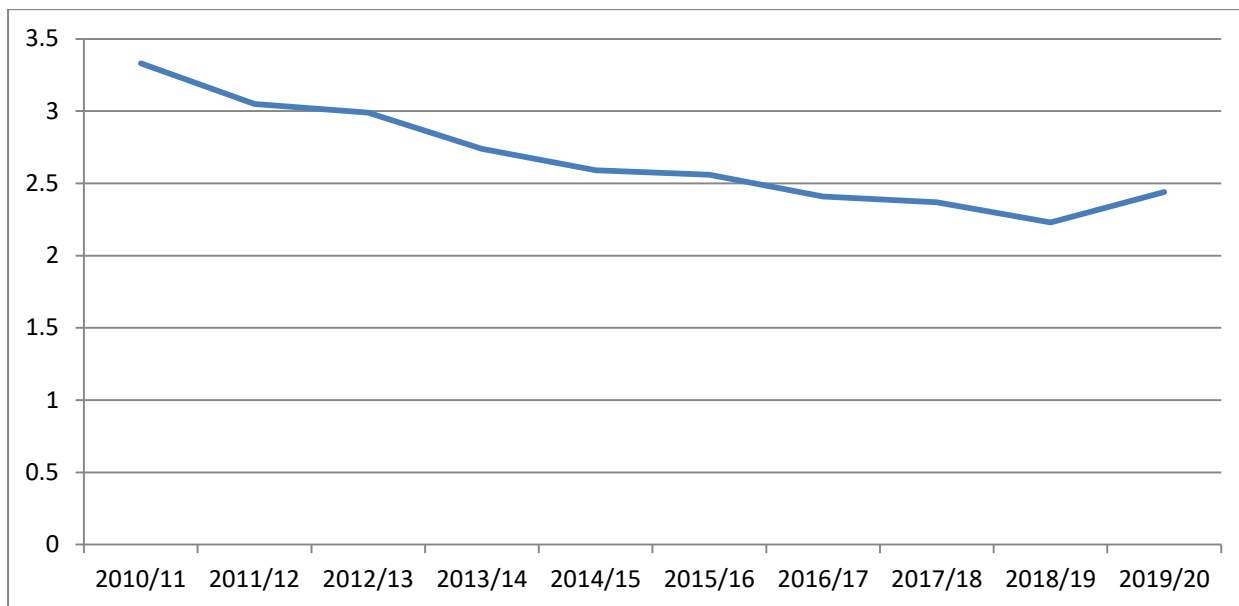
Case Numbers - All Procedures (including emergencies) by UK region



Case Numbers - All Procedures (including emergencies) - Unit level

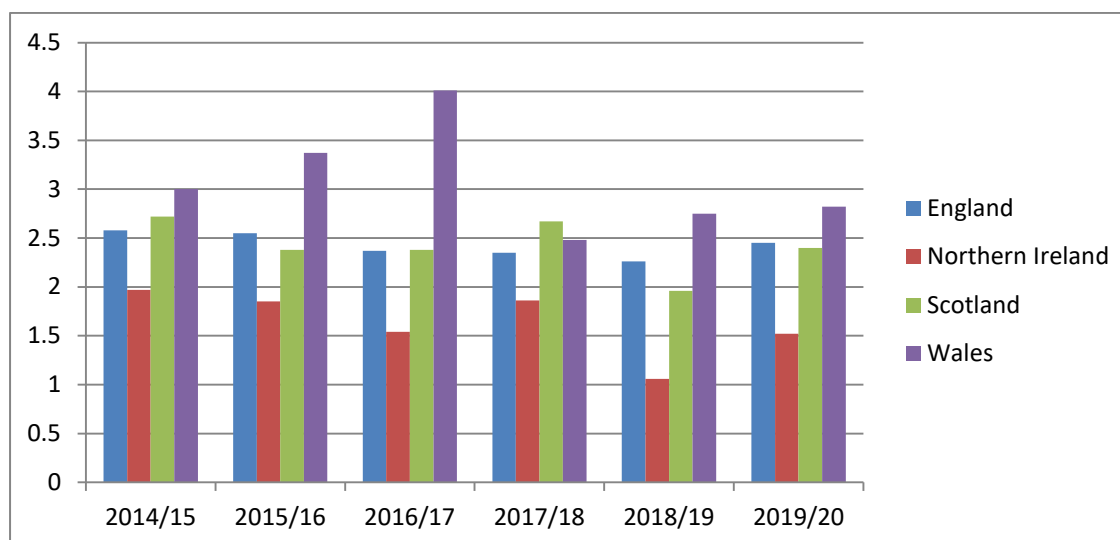
Hospital	2014 /15	2015 /16	2016 /17	2017 /18	2018 /19	2019 /20
Spire St Anthony's Hospital (PP)	350	258	108	97	86	57
Barts and the London	940	1654	1837	1891	2088	1958
Basildon Hospital	911	909	890	738	800	698
Liverpool Heart and Chest Hospital	1935	1908	2067	2003	1871	1756
Bristol Royal Infirmary	1407	1315	1308	1249	1339	1183
Spire Southampton Hospital (PP)	449	403	407	399	422	190
Castle Hill Hospital	655	660	696	616	780	831
Nottingham City Hospital	572	550	535	596	610	537
Cromwell Hospital (PP)	0	2	33	21	33	15
Royal Infirmary of Edinburgh	898	906	929	885	888	913
Freeman Hospital	737	743	735	697	694	588
St George's Hospital	843	898	1102	993	718	657
Golden Jubilee Hospital	1300	1145	1127	1142	1232	1253
Glenfield Hospital	1177	1091	1115	1056	1050	962
Hammersmith Hospital	619	626	591	592	620	613
Harefield Hospital	971	943	929	928	947	1026
Wellington Hospital North (PP)	218	141	124	91	N/A	N/A
Harley Street Clinic (PP)	134	109	133	111	N/A	N/A
King's College Hospital	987	869	888	811	756	780
London Bridge Hospital (PP)	155	147	163	89	N/A	N/A
Leeds General Infirmary	975	1036	869	907	914	857
Morrison Hospital	697	613	607	647	647	566
Manchester Royal Infirmary	772	648	742	773	700	662
New Cross Hospital	850	810	851	767	865	836
Northern General Hospital	928	1014	928	901	913	869
Royal Brompton Hospital	855	831	882	831	860	838
Papworth Hospital	2104	2043	1957	1790	1782	1622
Derriford Hospital	1058	1121	1104	988	971	1048
Queen Elizabeth Hospital	586	563	611	634	665	603
Queen Elizabeth Hospital (PP)	6	0	0	0	0	0
John Radcliffe Hospital	860	828	774	824	814	635
Aberdeen Royal Infirmary	482	470	419	405	386	339
Royal Sussex County Hospital	520	603	659	599	629	588
Royal Victoria Hospital	864	917	907	860	752	792
James Cook University Hospital	1052	1052	1031	955	945	876
Southampton General Hospital	1333	1316	1307	1283	1269	1106
St Thomas' Hospital	1076	1010	1065	931	1054	1104
University Hospital of North Staffordshire	853	875	871	740	727	662
University College Hospital	911	38	0	0	0	0
University Hospital of Wales	668	752	690	602	625	638
Blackpool Victoria Hospital	1165	1109	977	1060	1059	1006
University Hospital Coventry	795	772	677	650	633	593
Wythenshawe Hospital	1023	1054	1025	888	879	789

Crude Mortality Rate (%) - All Procedures (including emergencies) in UK



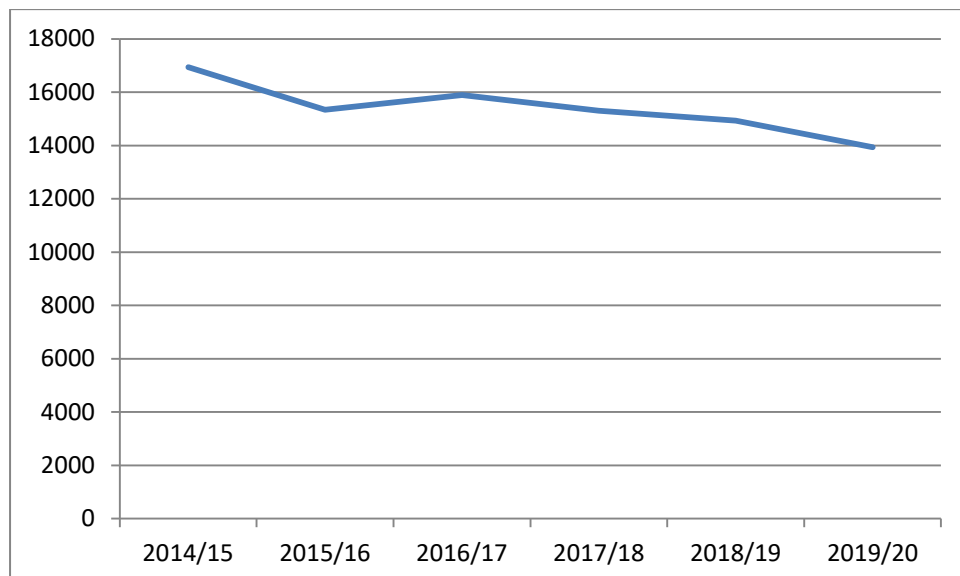
	All procedures									
	2010/ 11	2011/ 12	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20
UK	3.33	3.05	2.99	2.74	2.59	2.56	2.41	2.37	2.23	2.44

Crude Mortality Rate - All Procedures (including emergencies) by UK region

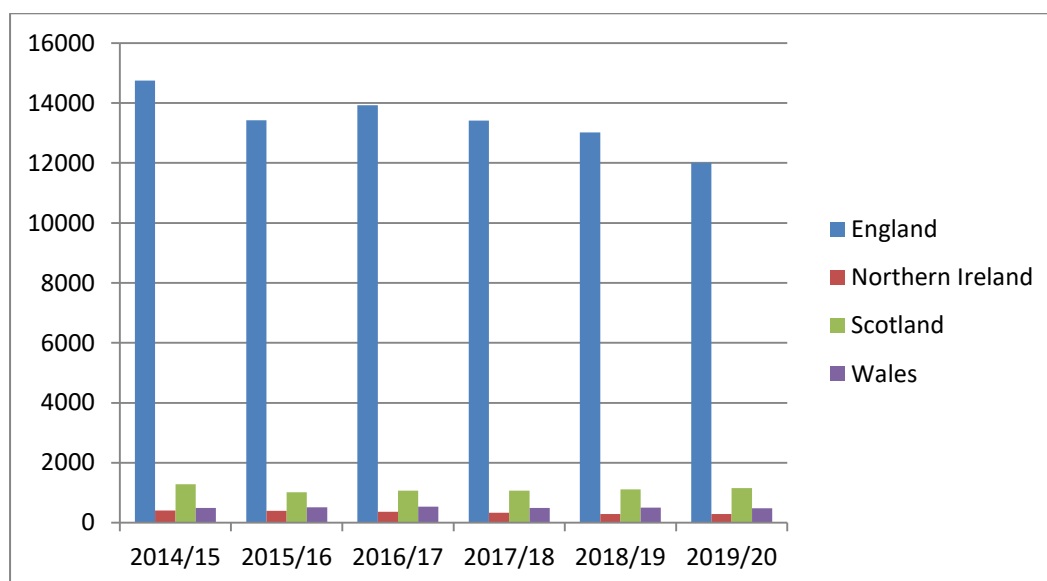


	All procedures					
Region	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
UK	2.59	2.56	2.41	2.37	2.23	2.44
England	2.58	2.55	2.37	2.35	2.26	2.45
Northern Ireland	1.97	1.85	1.54	1.86	1.06	1.52
Scotland	2.72	2.38	2.38	2.67	1.96	2.4
Wales	3	3.37	4.01	2.48	2.75	2.82

Case Numbers - Isolated CABG (including emergencies)



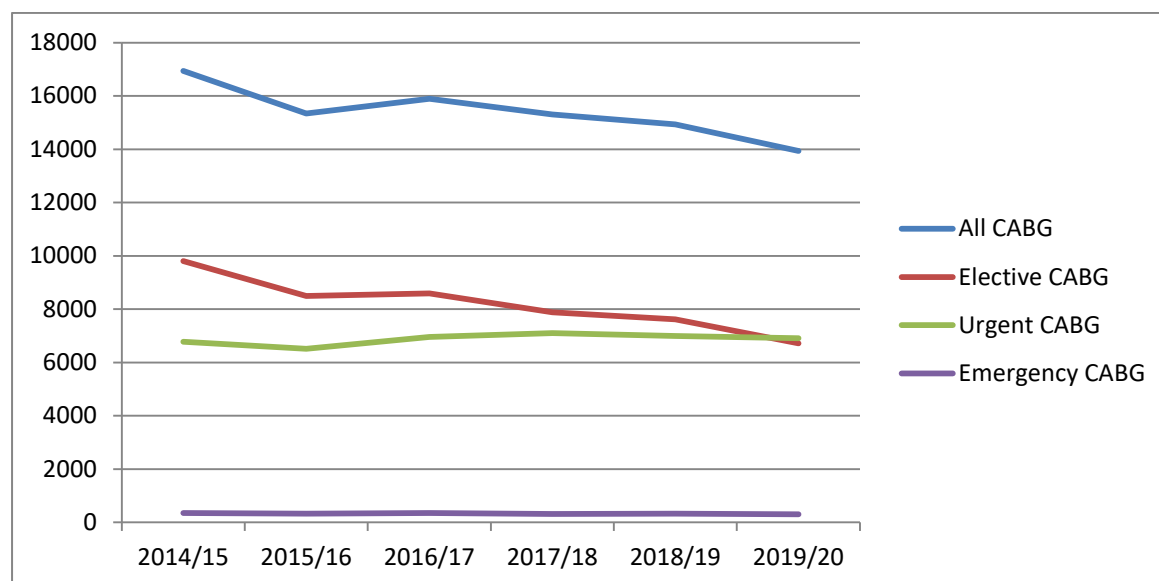
	First time isolated CABG (incl Emergency and Salvage)					
Region	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
UK	16939	15345	15897	15305	14930	13932
England	14747	13419	13927	13411	13020	12002
Northern Ireland	413	395	365	330	295	295
Scotland	1286	1013	1071	1068	1115	1152
Wales	493	518	534	496	500	483



Hospital	First time isolated CABG (incl Emergency and Salvage)					
	2014 /15	2015 /16	2016 /17	2017 /18	2018 /19	2019 /20
ANT. Spire St Anthony's Hospital (PP)	185	111	53	53	47	24
BAL. Barts and the London	512	731	852	882	1003	956
BAS. Basildon Hospital	507	422	392	333	377	311
BHL. Liverpool Heart and Chest Hospital	877	901	952	928	777	786
BRI. Bristol Royal Infirmary	663	553	529	503	511	443
CBS. Spire Southampton Hospital (PP)	146	126	150	133	137	54
CHH. Castle Hill Hospital	373	367	334	321	414	452
CHN. Nottingham City Hospital	260	221	206	254	279	223
CRO. Cromwell Hospital (PP)	0	2	23	10	22	9
ERI. Royal Infirmary of Edinburgh	375	315	302	294	300	334
FRE. Freeman Hospital	272	291	256	281	259	229
GEO. St George's Hospital	448	502	569	530	404	360
GJH. Golden Jubilee Hospital	659	483	546	587	629	647
GRL. Glenfield Hospital	511	516	460	478	451	444
HAM. Hammersmith Hospital	363	354	327	296	332	322
HH. Harefield Hospital	475	406	459	473	465	461
HHW. Wellington Hospital North (PP)	108	72	48	49	NA	NA
HSC. Harley Street Clinic (PP)	66	41	45	34	NA	NA
KCH. King's College Hospital	501	424	461	397	358	393
LBH. London Bridge Hospital (PP)	84	67	82	40	NA	NA
LGI. Leeds General Infirmary	541	36	471	576	525	463
MOR. Morriston Hospital	258	242	271	263	247	243
MRI. Manchester Royal Infirmary	411	326	388	462	398	349
NCR. New Cross Hospital	468	443	458	404	478	429
NGS. Northern General Hospital	432	395	364	355	305	318
NHB. Royal Brompton Hospital	418	419	407	384	430	394
PAP. Papworth Hospital	823	768	754	727	676	579
PLY. Derriford Hospital	484	562	522	406	352	307
QEB. Queen Elizabeth Hospital	278	257	322	292	314	268
QEP. Queen Elizabeth Hospital (private) (PP)	4	0	0	0	0	0
RAD. John Radcliffe Hospital	373	364	364	388	349	296
RIA. Aberdeen Royal Infirmary	252	215	223	187	186	171
RSC. Royal Sussex County Hospital	269	308	313	286	286	275
RVB. Royal Victoria Hospital	413	395	365	330	295	295
SCM. James Cook University Hospital	589	571	568	525	539	530
SGH. Southampton General Hospital	475	486	498	463	512	401
STH. St Thomas' Hospital	455	416	461	404	386	440
STO. University Hospital of North Staffordshire	463	443	452	383	354	333
UCL. University College Hospital	377	10	0	0	0	0
UHW. University Hospital of Wales	235	276	263	233	253	240
VIC. Blackpool Victoria Hospital	641	603	508	575	550	513
WAL. University Hospital Coventry	381	349	303	291	278	267
WYT. Wythenshawe Hospital	514	556	576	495	452	373

NA not available (data not submitted)

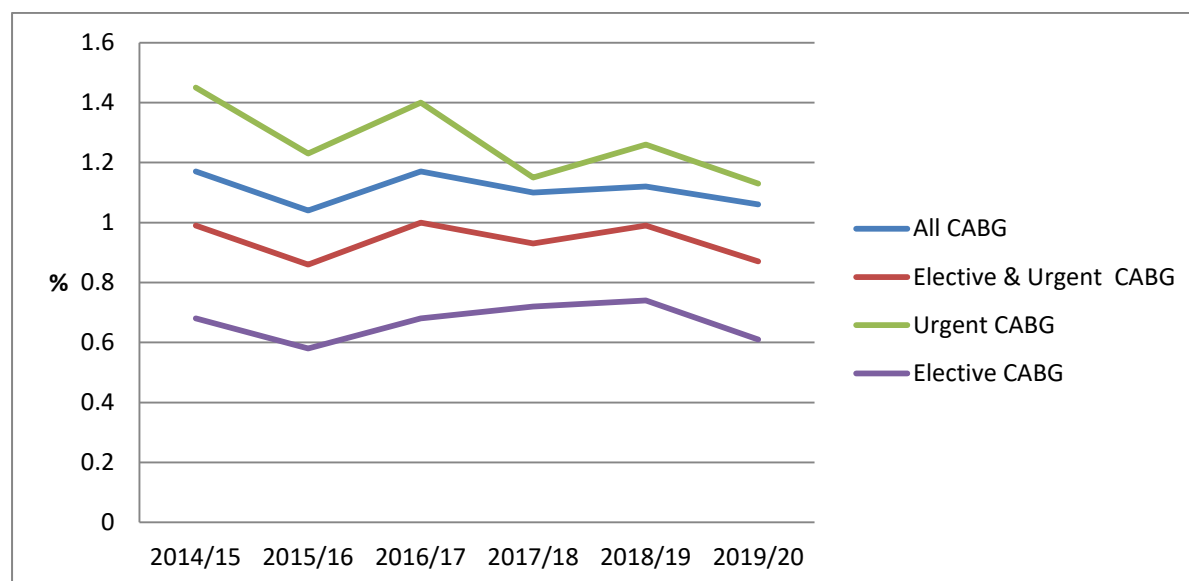
Numbers of isolated CABG operations in the UK (total and divided into operative urgency)



	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
All CABG	16939	15345	15897	15305	14930	13932
Elective CABG	9804	8500	8592	7884	7613	6714
Urgent CABG	6782	6512	6951	7106	6987	6914
Emergency CABG	353	333	354	315	330	304

Emergency CABG includes both emergencies and salvage.

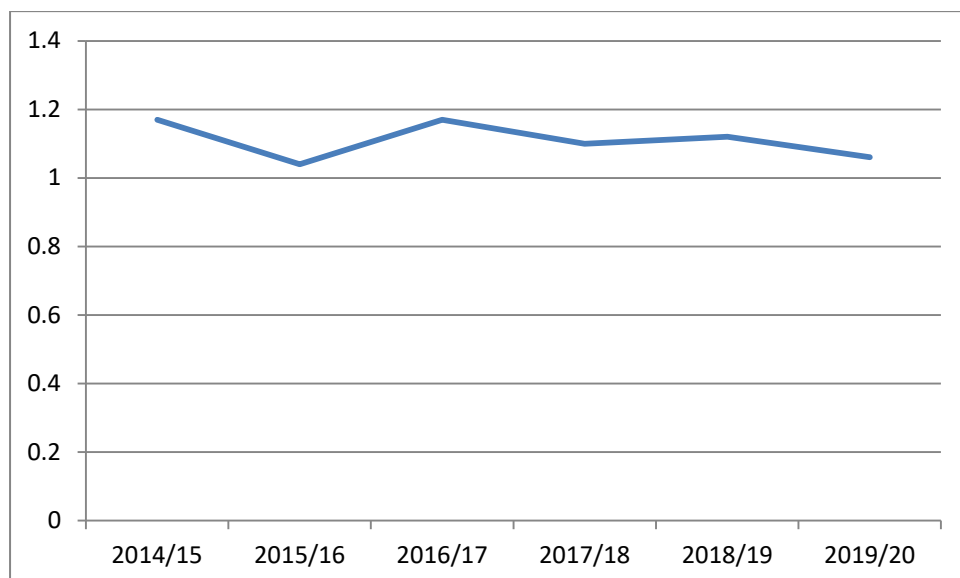
Mortality (%) following isolated CABG operations in the UK (total and divided into operative urgency)



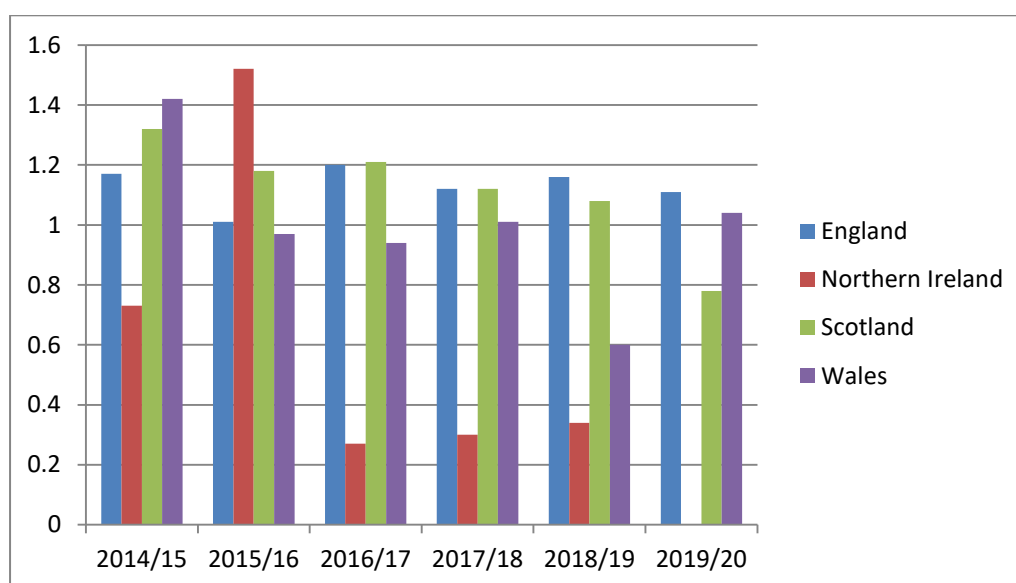
UK	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
All CABG	1.17	1.04	1.17	1.1	1.12	1.06
Elective & Urgent CABG	0.99	0.86	1	0.93	0.99	0.87
Urgent CABG	1.45	1.23	1.4	1.15	1.26	1.13
Elective CABG	0.68	0.58	0.68	0.72	0.74	0.61

Isolated CABG only. All CABG includes emergencies and salvage. In hospital mortality rate.

Crude Mortality rate (%) following Isolated CABG (including emergencies)



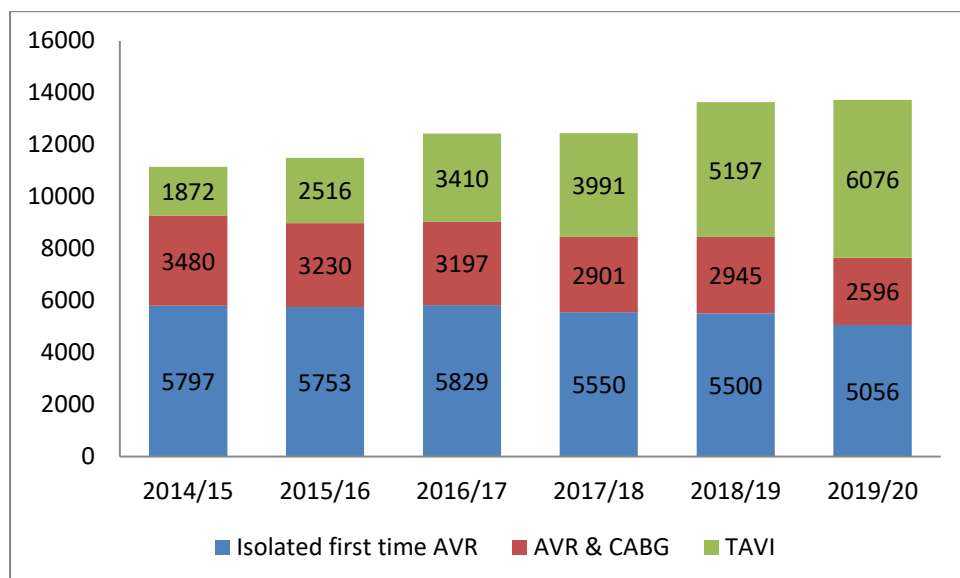
	First Time isolated CABG (including emergencies)					
Region	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
UK	1.17	1.04	1.17	1.1	1.12	1.06
England	1.17	1.01	1.2	1.12	1.16	1.11
Northern Ireland	0.73	1.52	0.27	0.3	0.34	0
Scotland	1.32	1.18	1.21	1.12	1.08	0.78
Wales	1.42	0.97	0.94	1.01	0.6	1.04



Hospital	First Time isolated CABG (including emergencies)					
	2014 /15	2015 /16	2016 /17	2017 /18	2018 /19	2019 /20
ANT. Spire St Anthony's Hospital (PP)	0	0.9	0	0	0	0
BAL. Barts and the London	0.2	1.37	1.17	1.93	1.79	1.26
BAS. Basildon Hospital	0.59	0.24	1.53	0.9	1.33	1.61
BHL. Liverpool Heart and Chest Hospital	1.6	1	2.63	2.26	1.29	1.53
BRI. Bristol Royal Infirmary	1.51	1.27	1.32	1.39	0.98	0.68
CBS. Spire Southampton Hospital (PP)	0.68	0	0	0	0	0
CHH. Castle Hill Hospital	1.07	1.91	1.2	2.18	1.45	1.99
CHN. Nottingham City Hospital	2.69	1.81	1.46	0.39	1.43	3.14
CRO. Cromwell Hospital (PP)	No data	0	0	0	0	0
ERI. Royal Infirmary of Edinburgh	1.6	0.95	1.32	0.68	0.67	0.3
FRE. Freeman Hospital	2.21	1.03	1.95	1.07	1.54	0.44
GEO. St George's Hospital	0.67	2.19	1.93	1.13	1.24	1.11
GJH. Golden Jubilee Hospital	1.06	1.04	0.92	0.85	0.32	0.77
GRL. Glenfield Hospital	0.78	1.36	1.09	1.26	1.33	1.58
HAM. Hammersmith Hospital	1.65	0.28	1.53	0	0.9	0
HH. Harefield Hospital	2.11	1.48	2.18	0.21	1.94	1.08
HHW. Wellington Hospital North (PP)	2.78	0	0	0	No data	No data
HSC. Harley Street Clinic (PP)	1.52	0	0	0	No data	No data
KCH. King's College Hospital	1.4	1.42	0.65	1.26	0.56	1.27
LBH. London Bridge Hospital (PP)	0	0	1.22	0	No data	No data
LGI. Leeds General Infirmary	0.92	0	0.64	1.22	0.76	0.65
MOR. Morriston Hospital	2.33	1.24	0.74	1.14	0.81	1.23
MRI. Manchester Royal Infirmary	1.22	0.92	2.06	1.52	1.01	1.43
NCR. New Cross Hospital	1.07	0.23	0.44	0.25	1.05	0.47
NGS. Northern General Hospital	1.16	0.76	0.55	0.85	1.31	3.14
NHB. Royal Brompton Hospital	1.44	0.95	0.49	2.08	1.4	1.02
PAP. Papworth Hospital	0.49	1.43	0.8	0.96	0.74	0.86
PLY. Derriford Hospital	1.65	1.42	0.57	1.97	2.27	1.95
QEB. Queen Elizabeth Hospital	2.16	0.39	0.62	1.03	0.64	0.75
QEP. Queen Elizabeth Hospital (private) (PP)	0	No data	No data	No data	No data	No data
RAD. John Radcliffe Hospital	1.88	0.55	1.37	0.77	0.86	0.68
RIA. Aberdeen Royal Infirmary	1.59	1.86	1.79	2.67	4.3	1.75
RSC. Royal Sussex County Hospital	0.74	0	0.64	0.35	0	0.73
RVB. Royal Victoria Hospital	0.73	1.52	0.27	0.3	0.34	0
SCM. James Cook University Hospital	1.36	1.4	1.76	0.76	0.93	0.75
SGH. Southampton General Hospital	1.05	0.41	1.2	0.65	0.39	0.25
STH. St Thomas' Hospital	0.66	0	0.22	0.74	0.52	0.23
STO. University Hospital of North Staffordshire	0.86	1.13	0.88	1.04	1.69	0
UCL. University College Hospital	0.27	No data	No data	No data	No data	No data
UHW. University Hospital of Wales	0.43	0.72	1.14	0.86	0.4	0.83
VIC. Blackpool Victoria Hospital	1.09	0.66	1.18	0.7	0.55	1.36

WAL. University Hospital Coventry	1.57	2.01	1.32	1.37	3.96	2.62
WYT. Wythenshawe Hospital	0.97	0.72	1.04	0.61	0.88	0.54

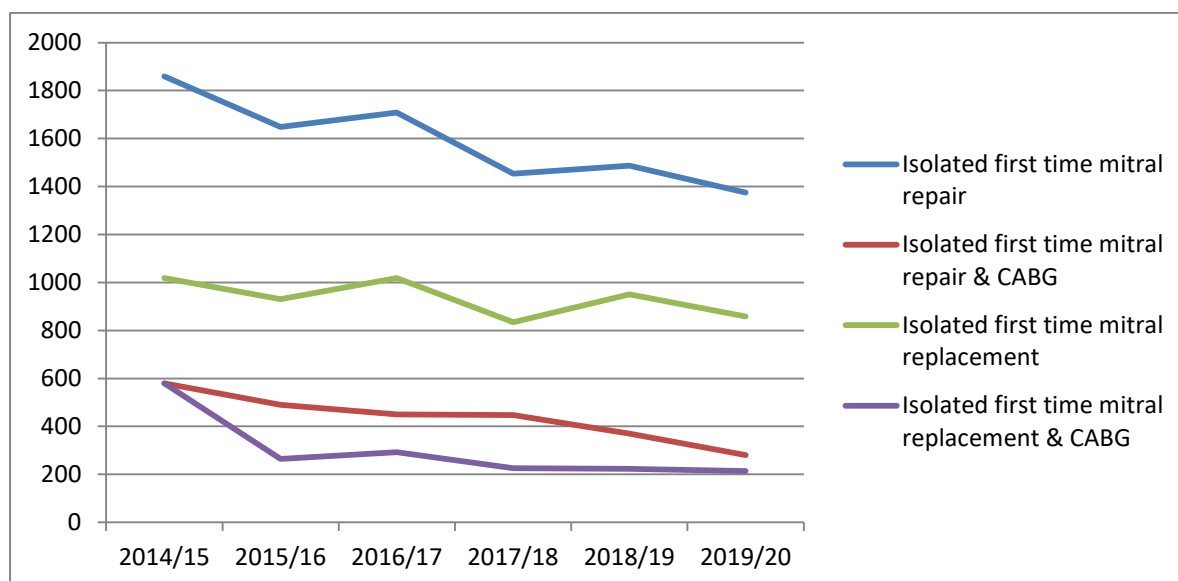
Case Numbers - AVR and TAVI (UK)



AVR (Aortic Valve Replacement); TAVI (Transcatheter Aortic Valve Implantation)

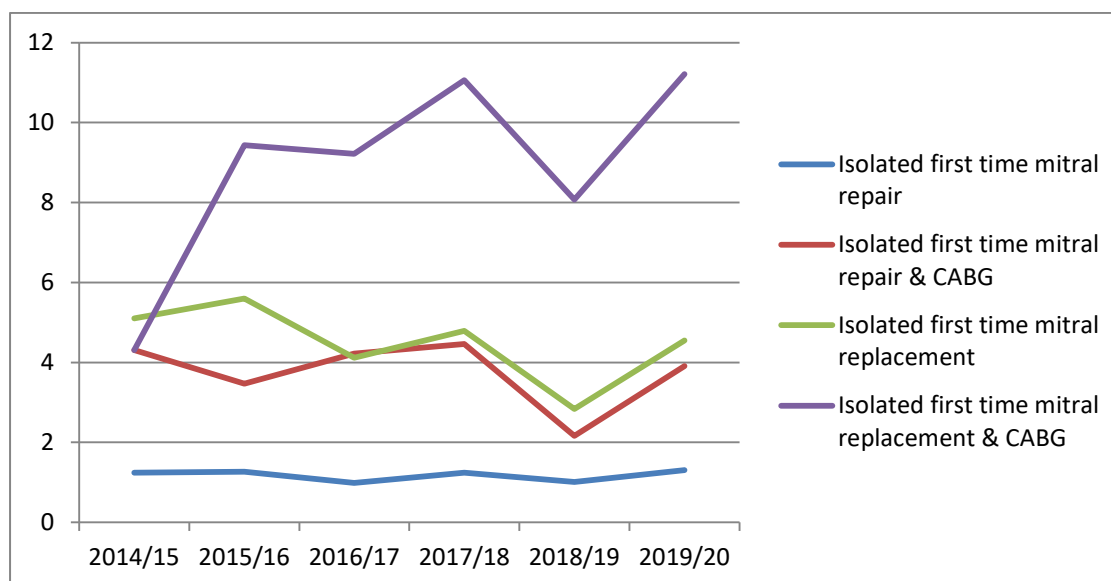
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Isolated first time AVR	5797	5753	5829	5550	5500	5056
AVR & CABG	3480	3230	3197	2901	2945	2596
TAVI	1872	2516	3410	3991	5197	6076

Case Numbers – Mitral Valve operations with and without CABG (including emergencies)



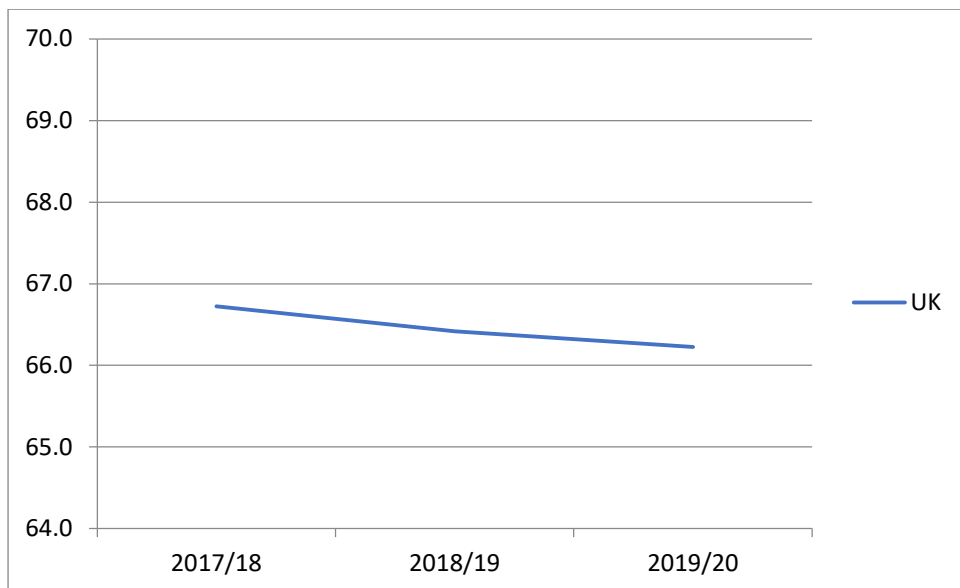
UK	2014 /15	2015 /16	2016 /17	2017 /18	2018 /19	2019 /20
Isolated first time mitral repair	1859	1649	1709	1454	1487	1375
Isolated first time mitral repair & CABG	580	490	450	448	370	281
Isolated first time mitral replacement	1019	930	1019	835	951	858
Isolated first time mitral replacement & CABG	580	265	293	226	223	214

Crude Mortality (%) – Mitral Valve operations with and without CABG (including emergencies)

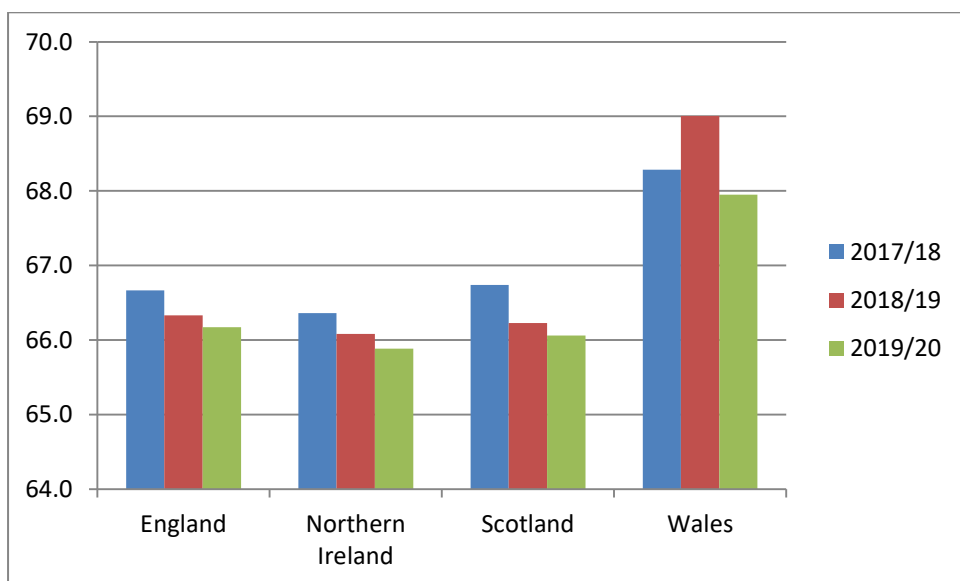


UK	2014 /15	2015 /16	2016 /17	2017 /18	2018 /19	2019 /20
Isolated first time mitral repair	1.24	1.27	0.99	1.24	1.01	1.31
Isolated first time mitral repair & CABG	4.31	3.47	4.22	4.46	2.16	3.91
Isolated first time mitral replacement	5.1	5.6	4.12	4.79	2.84	4.55
Isolated first time mitral replacement & CABG	4.31	9.43	9.22	11.06	8.07	11.21

Age (mean) of patients undergoing cardiac surgery- UK



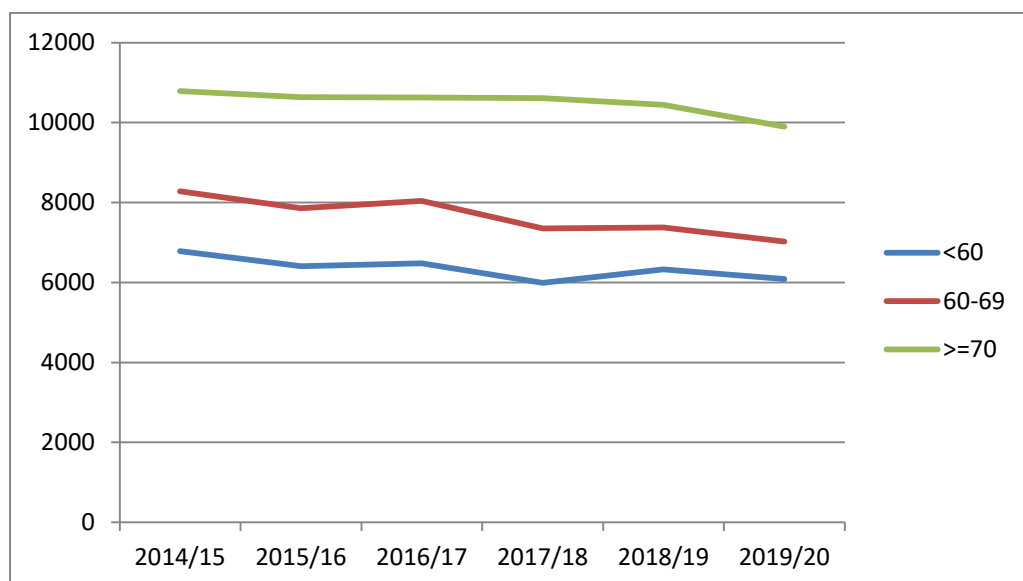
	All procedures		
Region	2017/18	2018/19	2019/20
UK	66.7	66.4	66.2
England	66.7	66.3	66.2
Northern Ireland	66.4	66.1	65.9
Scotland	66.7	66.2	66.1
Wales	68.3	69.0	68.0



Hospital	All procedures		
	2017/18	2018/19	2019/20
CBS. Spire Southampton Hospital (PP)	69.2	69.1	70.4
SGH. Southampton General Hospital	69.6	69.1	70.0
MOR. Morriston Hospital	69.5	70.2	69.8
RSC. Royal Sussex County Hospital	68.3	67.9	69.0
PAP. Papworth Hospital	69.4	69.0	68.9
PLY. Derriford Hospital	69.3	68.0	68.4
FRE. Freeman Hospital	68.6	67.5	68.2
VIC. Blackpool Victoria Hospital	68.5	67.5	67.7
CHN. Nottingham City Hospital	68.0	67.9	67.6
ERI. Royal Infirmary of Edinburgh	67.7	67.7	67.4
RIA. Aberdeen Royal Infirmary	68.8	67.5	67.4
BAS. Basildon Hospital	67.9	68.2	67.2
CHH. Castle Hill Hospital	68.3	68.0	67.2
STO. University Hospital of North Staffordshire	67.5	67.2	67.0
SCM. James Cook University Hospital	67.1	66.2	66.8
GEO. St George's Hospital	66.7	66.5	66.7
BHL. Liverpool Heart and Chest Hospital	67.1	65.8	66.7
WAL. University Hospital Coventry	67.2	67.0	66.5
NGS. Northern General Hospital	66.9	67.2	66.5
UHW. University Hospital of Wales	67.0	67.8	66.4
RVB. Royal Victoria Hospital	66.4	66.1	65.9
NCR. New Cross Hospital	65.4	65.5	65.9
GRL. Glenfield Hospital	66.8	66.9	65.8
STH. St Thomas' Hospital	64.4	64.3	65.2
WYT. Wythenshawe Hospital	66.3	65.7	65.2
MRI. Manchester Royal Infirmary	65.0	64.9	65.2
HH. Harefield Hospital	65.4	65.7	64.9
RAD. John Radcliffe Hospital	65.9	65.9	64.8
GJH. Golden Jubilee Hospital	65.3	64.8	64.7
NHB. Royal Brompton Hospital	65.0	64.2	64.4
LGI. Leeds General Infirmary	64.9	65.1	64.4
KCH. King's College Hospital	65.2	65.6	64.3
BRI. Bristol Royal Infirmary	64.9	65.4	64.3
QEB. Queen Elizabeth Hospital	64.2	64.2	64.2
ANT. Spire St Anthony's Hospital (PP)	67.8	65.3	64.0
HAM. Hammersmith Hospital	64.2	64.0	63.4
BAL. Barts and the London	63.8	63.3	63.0
CRO. Cromwell Hospital (PP)	65.7	66.6	62.9
HHW. Wellington Hospital North (PP)	66.3	No data	No data
HSC. Harley Street Clinic (PP)	63.3	No data	No data
LBH. London Bridge Hospital (PP)	64.7	No data	No data

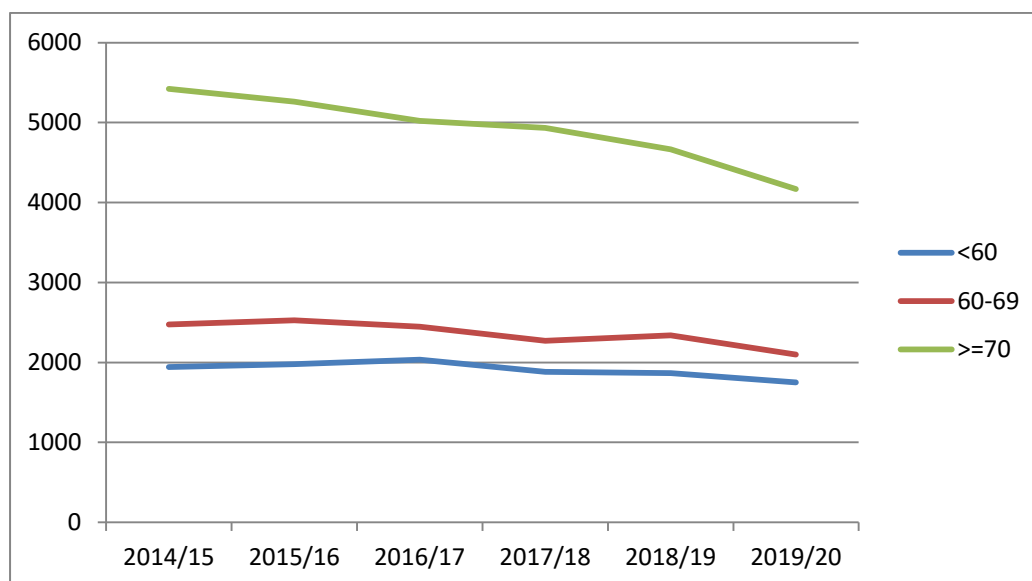
Ranked by mean age in 2019-20

Numbers of male patients having cardiac surgery (all procedures) by age group (UK)



	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
<60	6782	6409	6476	5989	6326	6088
60-69	8282	7859	8043	7356	7377	7026
>=70	10784	10637	10630	10609	10440	9895

Numbers of female patients having cardiac surgery (all procedures) by age group (UK)



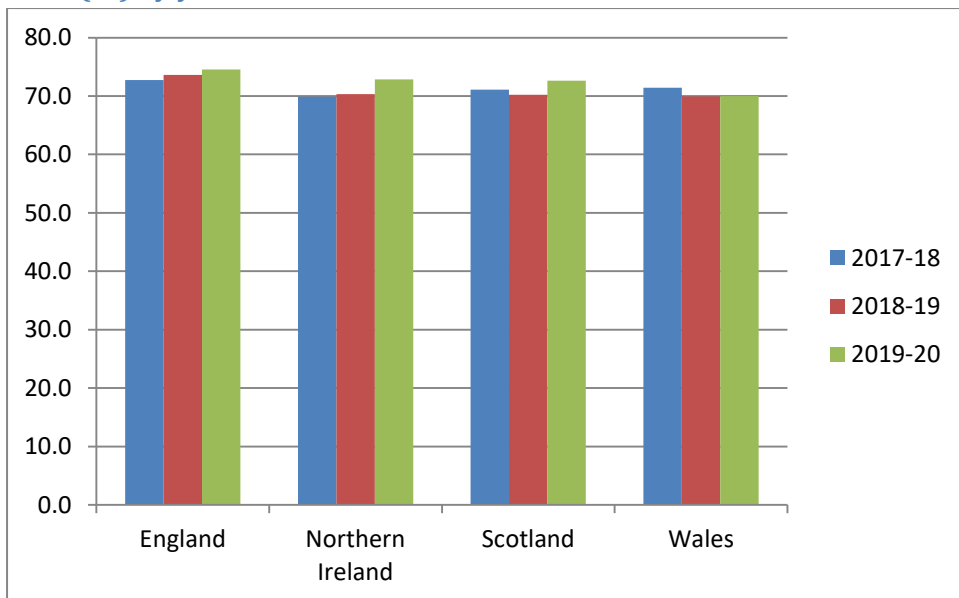
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
<60	1941	1980	2036	1881	1866	1749
60-69	2476	2527	2449	2270	2338	2098
>=70	5423	5262	5023	4932	4664	4170

Sex of patients undergoing cardiac surgery (all procedures) by UK region

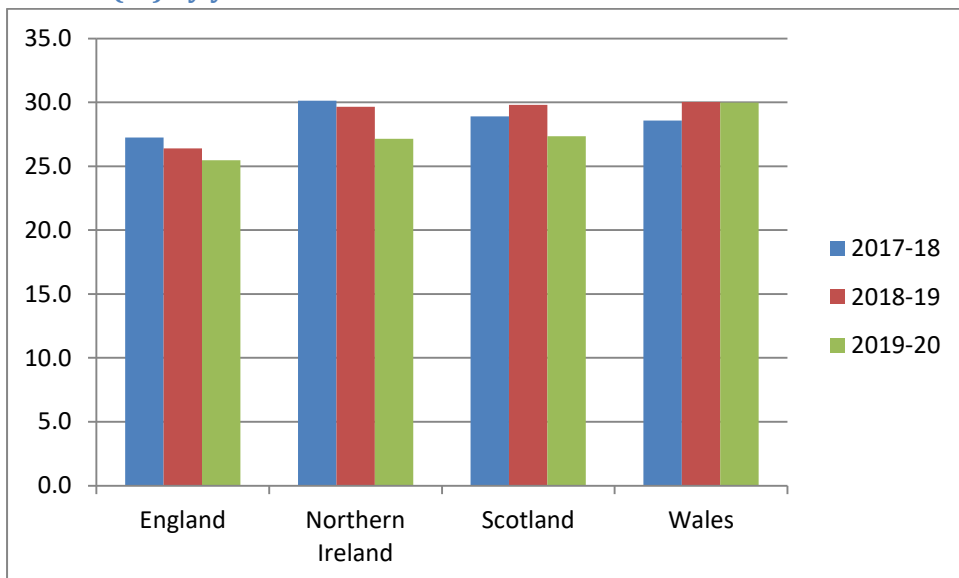
Nations	Male - All procedures (n)			Female - All procedures (n)		
	2017/18	2018/19	2019/20	2017/18	2018/19	2019/20
UK	23954	24143	23009	9083	8868	8017
England	20732	20965	19769	7764	7516	6756
Northern Ireland	601	529	577	259	223	215
Scotland	1729	1759	1820	703	747	685
Wales	892	890	843	357	382	361

Nations	Male - All procedures (%)			Female - All procedures (%)		
	2017/18	2018/19	2019/20	2017/18	2018/19	2019/20
UK	72.5	73.1	74.2	27.5	26.9	25.8
England	72.8	73.6	74.5	27.2	26.4	25.5
Northern Ireland	69.9	70.3	72.9	30.1	29.7	27.1
Scotland	71.1	70.2	72.7	28.9	29.8	27.3
Wales	71.4	70.0	70.0	28.6	30.0	30.0

Male (%) by year



Female (%) by year

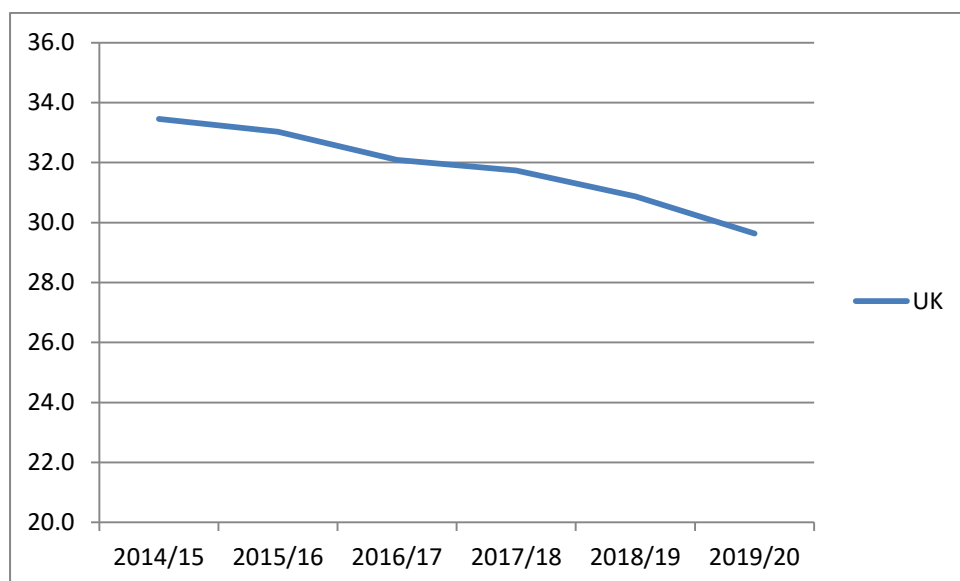


Proportion of female patients (%) – all procedures

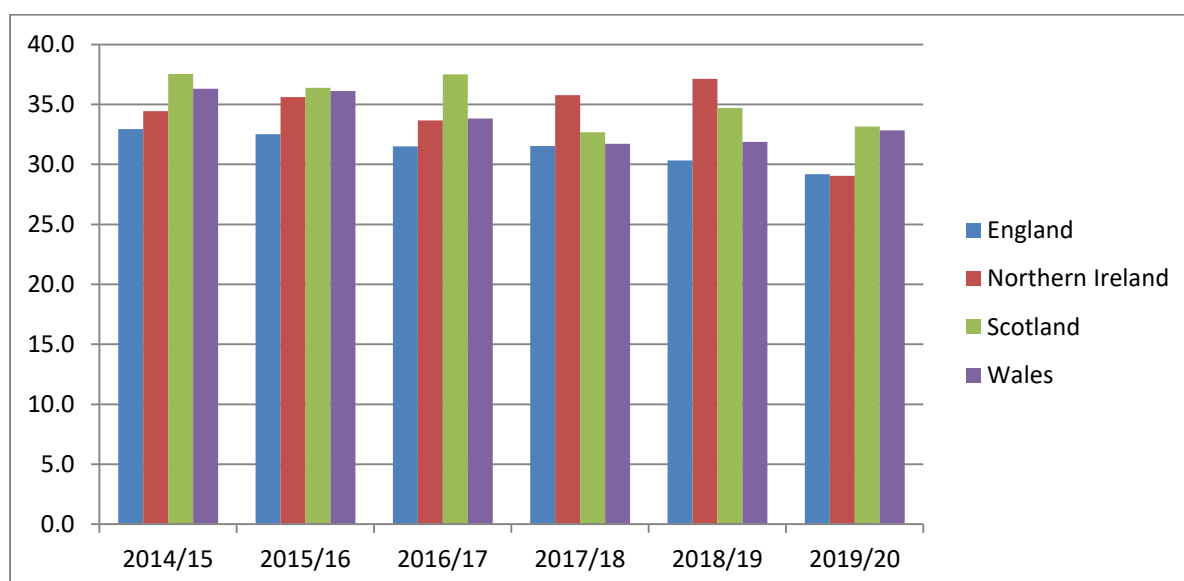
Hospital	Female - All procedures (%)		
	2017/18	2018/19	2019/20
ERI. Royal Infirmary of Edinburgh	31.2	32.9	31.2
UHW. University Hospital of Wales	28.9	31.5	30.1
MOR. Morriston Hospital	28.3	28.6	29.9
STH. St Thomas' Hospital	30.4	28.9	29.1
PAP. Papworth Hospital	30.7	29.6	28.0
CHN. Nottingham City Hospital	29.9	25.6	27.9
BRI. Bristol Royal Infirmary	27.9	27.7	27.9
SGH. Southampton General Hospital	30.3	29.1	27.8
VIC. Blackpool Victoria Hospital	26.6	30.9	27.6
RVB. Royal Victoria Hospital	30.1	29.7	27.1
PLY. Derriford Hospital	27.0	25.2	26.9
QEB. Queen Elizabeth Hospital	26.2	23.3	26.5
BAL. Barts and the London	28.2	26.3	26.4
FRE. Freeman Hospital	31.3	27.1	26.0
CBS. Spire Southampton Hospital (PP)	26.1	24.6	25.8
GRL. Glenfield Hospital	28.0	26.4	25.6
BHL. Liverpool Heart and Chest Hospital	28.0	26.5	25.6
GJH. Golden Jubilee Hospital	28.4	28.3	25.5
HAM. Hammersmith Hospital	28.5	26.1	25.4
NGS. Northern General Hospital	29.0	29.9	25.4
NCR. New Cross Hospital	25.0	25.3	25.4
BAS. Basildon Hospital	25.6	26.8	25.4
RSC. Royal Sussex County Hospital	27.5	24.8	25.3
SCM. James Cook University Hospital	24.7	25.6	24.8
KCH. King's College Hospital	27.4	27.8	24.6
MRI. Manchester Royal Infirmary	25.4	27.7	24.5
WAL. University Hospital Coventry	25.2	24.8	24.1
HH. Harefield Hospital	24.4	23.7	23.8
LGI. Leeds General Infirmary	23.0	22.3	23.7
RIA. Aberdeen Royal Infirmary	25.4	27.5	23.6
WYT. Wythenshawe Hospital	25.8	24.1	23.4
RAD. John Radcliffe Hospital	27.3	23.5	23.3
STO. University Hospital of North Staffordshire	22.4	24.9	22.2
NHB. Royal Brompton Hospital	27.2	24.5	22.2
CHH. Castle Hill Hospital	26.6	24.6	21.9
GEO. St George's Hospital	26.3	25.9	20.5
ANT. Spire St Anthony's Hospital (PP)	22.7	17.4	12.3
CRO. Cromwell Hospital (PP)	19.0	18.2	6.7
HHW. Wellington Hospital North (PP)	17.6	No data	No data
HSC. Harley Street Clinic (PP)	25.2	No data	No data
LBH. London Bridge Hospital (PP)	21.3	No data	No data

Ranked by proportion of female patients 2019/20

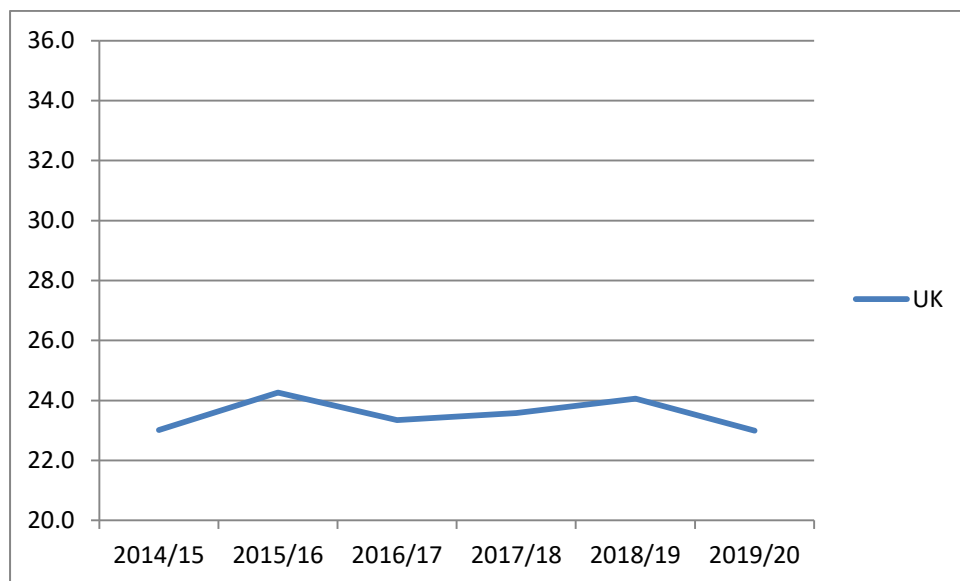
Proportion (%) of patients >70 years old undergoing cardiac surgery (all procedures) that are female (by year)



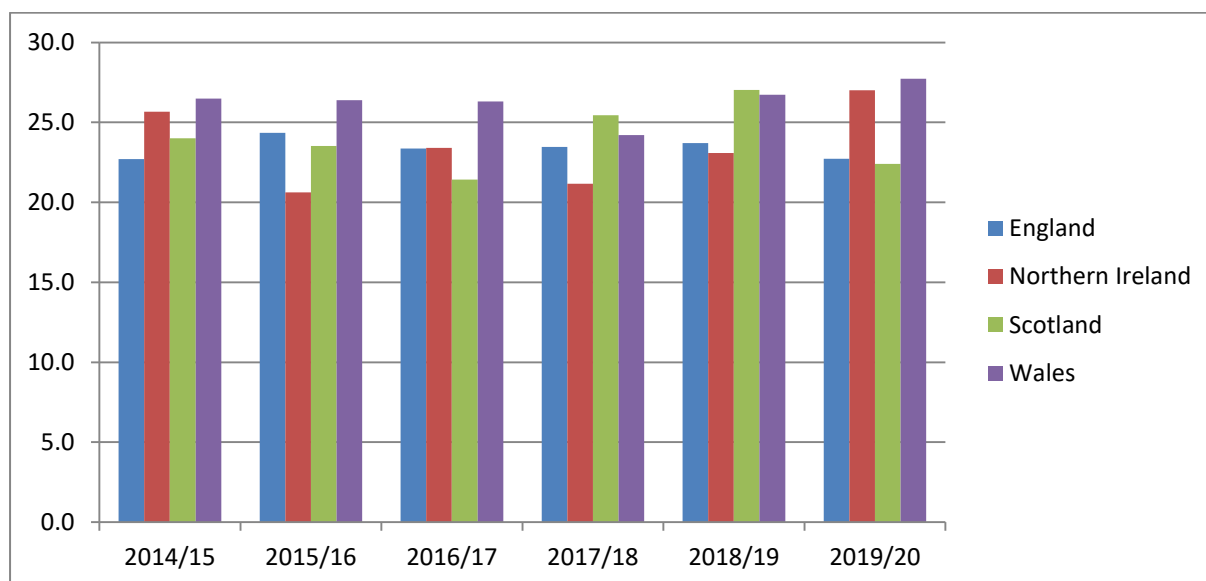
Nation	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
UK	33.5	33.0	32.1	31.7	30.9	29.6
England	32.9	32.5	31.5	31.5	30.3	29.2
Northern Ireland	34.4	35.6	33.7	35.8	37.1	29.1
Scotland	37.5	36.4	37.5	32.7	34.7	33.1
Wales	36.3	36.1	33.8	31.7	31.9	32.8



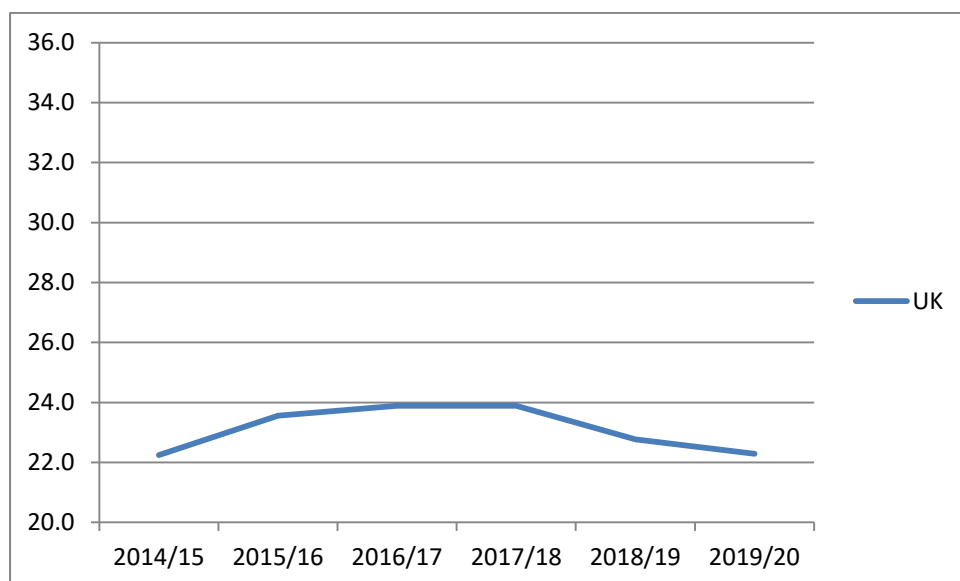
Proportion (%) of patients 60-69 years old undergoing cardiac surgery (all procedures) that are female (by year)



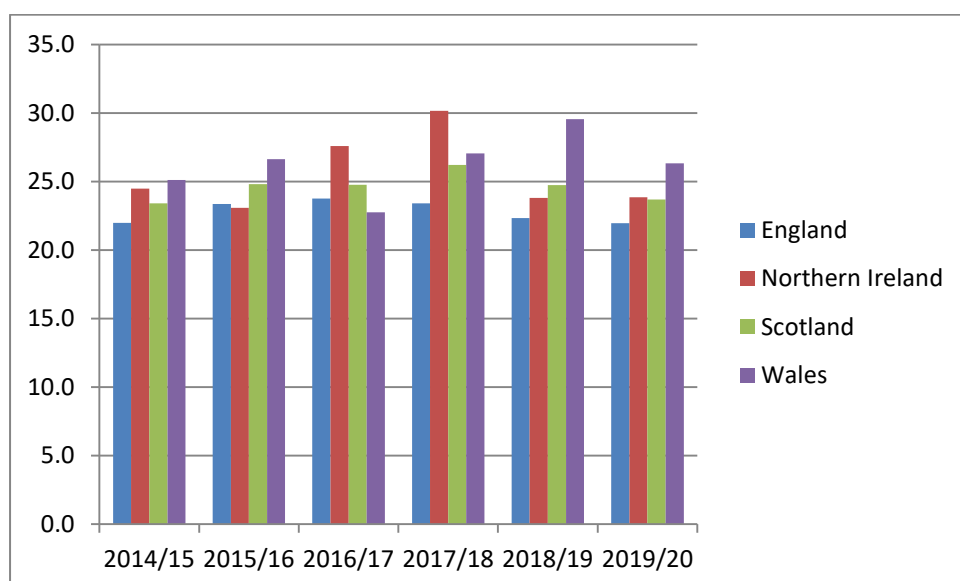
Nation	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
UK	23.0	24.3	23.3	23.6	24.1	23.0
England	22.7	24.3	23.4	23.5	23.7	22.7
Northern Ireland	25.7	20.6	23.4	21.2	23.1	27.0
Scotland	24.0	23.5	21.4	25.4	27.0	22.4
Wales	26.5	26.4	26.3	24.2	26.7	27.7



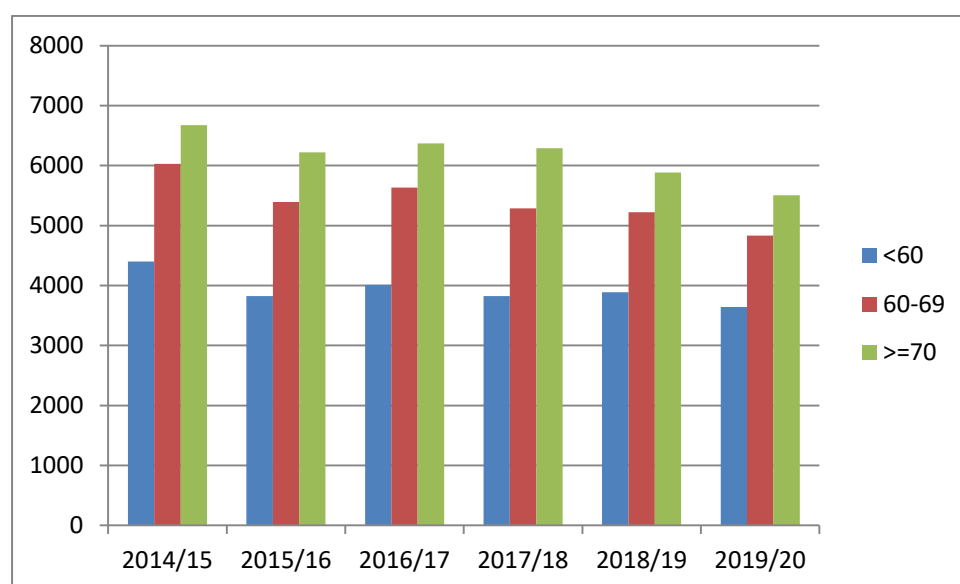
Proportion (%) of patients <60 years old undergoing cardiac surgery (all procedures) that are female (by year)



Nation	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
UK	22.2	23.6	23.9	23.9	22.8	22.3
England	22.0	23.4	23.8	23.4	22.3	22.0
Northern Ireland	24.5	23.1	27.6	30.2	23.8	23.9
Scotland	23.4	24.8	24.8	26.2	24.7	23.7
Wales	25.1	26.6	22.7	27.0	29.5	26.3

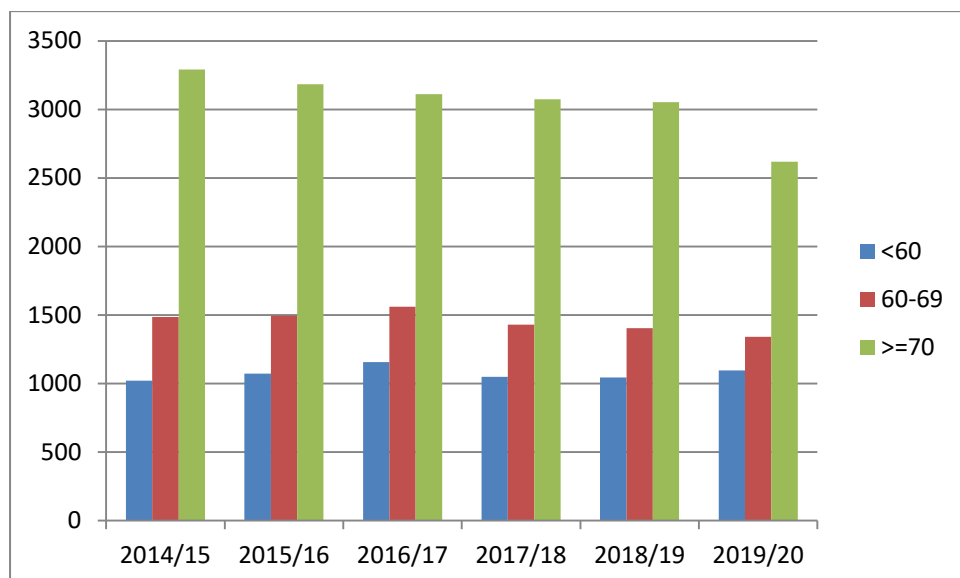


Numbers of patients by different age groups undergoing isolated CABG in UK



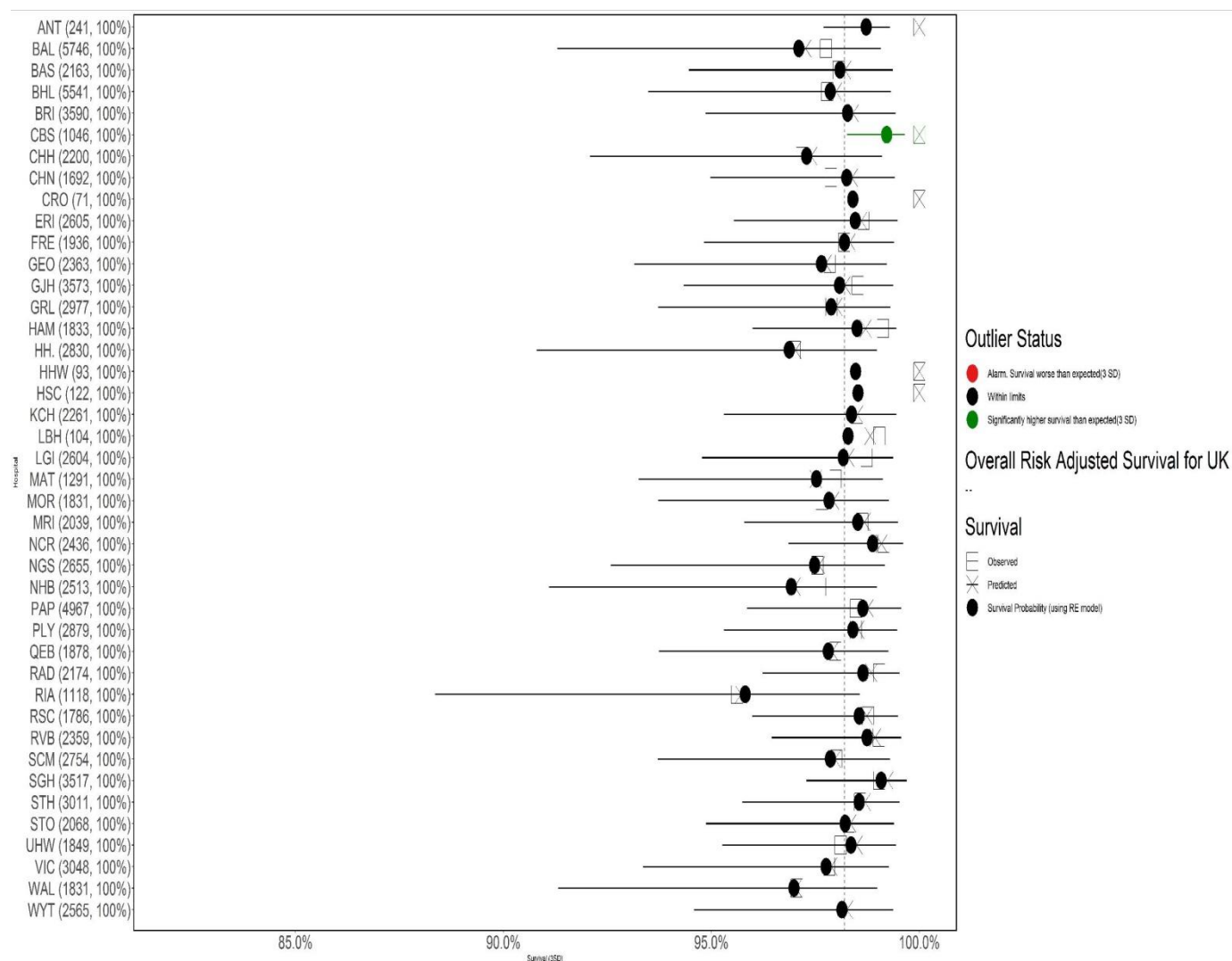
Age (UK)	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
<60	4399	3825	4011	3825	3885	3643
60-69	6026	5391	5633	5286	5221	4834
>=70	6672	6220	6367	6288	5883	5505

Numbers of patients by different age groups undergoing isolated AVR in UK



Age (UK)	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
<60	1021	1073	1157	1048	1045	1095
60-69	1486	1496	1560	1429	1403	1342
>=70	3290	3184	3112	3073	3052	2619

Clinical Outcomes Publication (COP) – UK Hospital level Forest Plot for Risk Adjusted Survival rates following Adult Cardiac Surgery (3 years 1/3/2017 to 29/2/2020)



Data analysis shifted back by 1 month from usual timeframe (1st April to March 31st) - due to the rising incidence of COVID-19 in UK from March 2020.

For **Hospital codes** see Appendix.

For the 3 year time period of this audit it is to be noted that there were no 3SD “Alarm” outliers in the UK, meaning that reassuringly every hospital had “as expected” survival rates following cardiac surgery. One hospital had survival rates that were significantly better than expected.

Outlier methodology for Clinical Outcomes Publication (COP)

A random effects (RE) methodology is used to infer the outlier status of each hospital. Further technical details are available from NICOR. The results are displayed graphically using a forest plot.

Forest plot

Vertical axis: Hospital identifier code and in parentheses: number of procedures performed and completeness of survival data (i.e. the percentage of patients for whom survival data are available).

Horizontal axis: Percentage Survival whilst in hospital for operation (Overall for UK; and Observed, Predicted, model-based Risk-Adjusted for each hospital).

More specifically, the following quantities are presented:

- 1. Overall UK In-Hospital Survival [dashed vertical line]:** the overall proportion of patients who survive across all hospitals in the UK. In the attached graph it is around 98.2%.
- 2. Observed Survival per hospital [square]:** The proportion of patients who survived after Adult Cardiac Surgery in each hospital.
- 3. Predicted Survival per hospital [cross]:** The Predicted Survival, using the modified EuroSCORE logistic mortality model to account for case-mix. For example, a high predicted survival (relative to the overall UK survival) suggests that the hospital or operator performs surgery on relatively low-risk patients.
- 4. Survival probability (RE model) for outlier detection [full circle]:** Survival for each hospital, derived from a random effects model after accounting for case-mix. This estimate and the corresponding horizontal bar provide an indication of whether the hospital is an 'outlier' after taking into account observed and predicted survival.

Quantities 1 and 2 do not require any statistical modelling. Calculation of the quantities 3 and 4 require the application of the modified EuroSCORE logistic mortality model to predict the outcome and of a random effects model for the detection of outliers.

Display of outliers

Hospitals with outcomes within limits of acceptable variability are assumed to demonstrate 'usual' or 'normal performance'. A hospital is said to be an outlier when its performance deviates from usual, normal performance.

Black full circles indicate hospitals with normal performance (performance 'within expected limits').

Red or Green full circles indicate hospitals with worse (red) or better (green) performance than normal at the 3SD level. A hospital or operator with lower risk-adjusted survival than usual at the 3SD level is called an '*Alarm*'.

For the purposes of public reporting only 3SD outliers are displayed on the published forest plots. (2SD outliers are notified by SCTS and NICOR, but their results are not displayed).

The confidence intervals for the Survival probability (RE model) for outlier detection (solid horizontal bars) indicate whether a hospital is a potential outlier at a given significance level:

If the confidence interval for a hospital crosses the vertical Overall Survival dashed line, then the performance of that hospital does not deviate from normal performance.

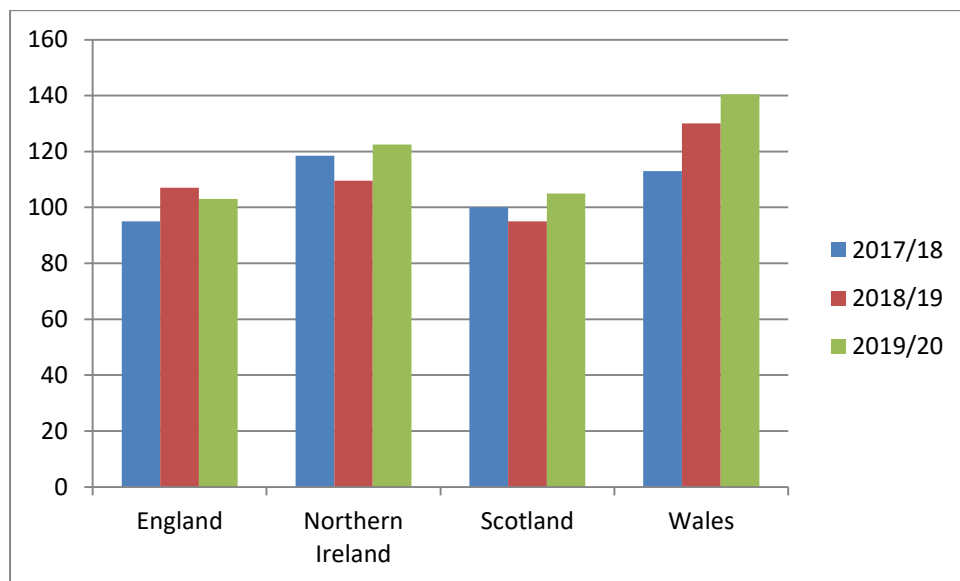
If the confidence interval fails to cross the vertical Overall UK Survival dashed line, then the hospital is either performing significantly better (Green), or significantly worse (Red) than normal. Such hospitals are potential outliers at the 3 SD level.

The length of each confidence interval relates to the estimate of the Survival probability (RE model) for each hospital, after accounting for case-mix, relative to the variation in survival across all UK hospitals. The confidence intervals are not symmetric due to the inverse log-odds transformation. The length of the confidence interval shortens as survival approaches 100%.

Note: The validity of the outlier process relies on having an adequate number of patients per hospital. Although there is no exact guideline for this figure, simulation studies suggest that for the settings considered (survival of 98%) the minimum number of observations to ensure the validity of the tests is 200. Thus, hospitals with fewer than 200 patients will not have horizontal bars placed around their survival estimate and will not be assigned an outlier status.

Non-mortality metrics

Elective CABG waiting time - from angio to op date (mean days)

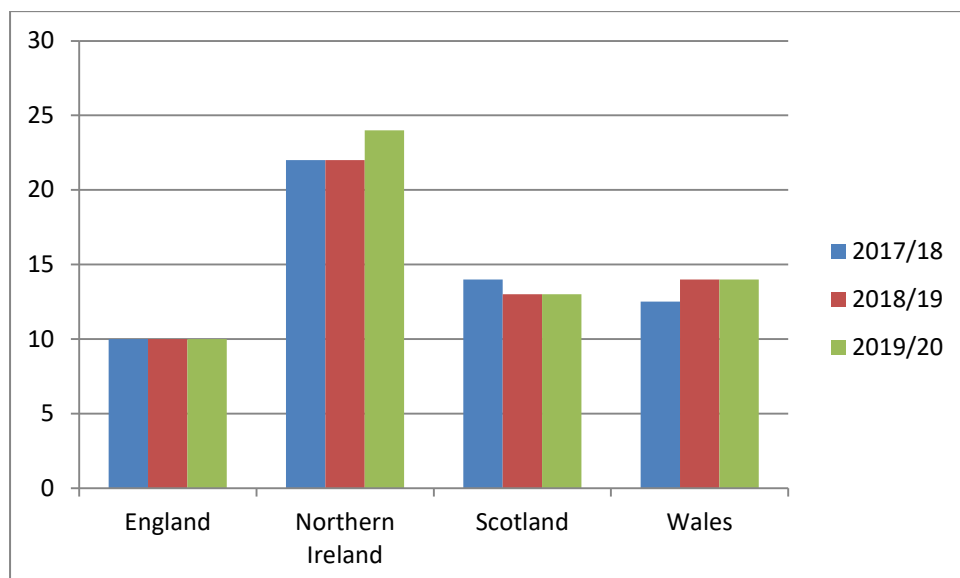


Nations	2017/18	2018/19	2019/20
UK	97	105	104
England	95	107	103
Northern Ireland	118.5	109.5	122.5
Scotland	100	95	105
Wales	113	130	140.5

Hospital	Completeness (%)	2017/18	2018/19	2019/20
ANT. Spire St Anthony's Hospital (PP)	93	25	20	15
CRO. Cromwell Hospital (PP)	100	8.5	14	22
SGH. Southampton General Hospital	90	76	86.5	46
ERI. Royal Infirmary of Edinburgh	95	86	90	61
CBS. Spire Southampton Hospital (PP)	12	46.5	67	64.5
NHB. Royal Brompton Hospital	99	57	63	66.5
SCM. James Cook University Hospital	100	70	50	72
NCR. New Cross Hospital	98	64	76	74
HH. Harefield Hospital	67	119	100.5	77.5
BHL. Liverpool Heart and Chest Hospital	18	103.5	67	79
GEO. St George's Hospital	98	101.5	76	79
STO. University Hospital of North Staffordshire	74	86.5	116	85
HAM. Hammersmith Hospital	67	73.5	79	86
BAL. Barts and the London	58	113	85.5	88.5
BRI. Bristol Royal Infirmary	88	99.5	111	98
KCH. King's College Hospital	43	133	154	99
WAL. University Hospital Coventry	62	63	75	99
GRL. Glenfield Hospital	99	82	106	100
RIA. Aberdeen Royal Infirmary	98	104	85.5	104
RAD. John Radcliffe Hospital	87	70	100	109
WYT. Wythenshawe Hospital	85	118	123.5	109
STH. St Thomas' Hospital	99	101	123	110.5
VIC. Blackpool Victoria Hospital	98	89	112	119
BAS. Basildon Hospital	99	48	107	122
RVB. Royal Victoria Hospital	54	118.5	109.5	122.5
LGI. Leeds General Infirmary	98	117.5	148	123
GJH. Golden Jubilee Hospital	98	104	98	124
NGS. Northern General Hospital	98	147	125	126
MOR. Morriston Hospital	33	29	80.5	127
CHH. Castle Hill Hospital	97	137.5	200	130
PLY. Derriford Hospital	100	100	141	132
PAP. Papworth Hospital	26	143	140	133
CHN. Nottingham City Hospital	99	118	99	138
UHW. University Hospital of Wales	99	114	141	150
MRI. Manchester Royal Infirmary	53	175.5	114.5	150.5
QEB. Queen Elizabeth Hospital	99	118	175	182
FRE. Freeman Hospital	4	201	87	NA
HHW. Wellington Hospital North (PP)	100	28	NA	NA
HSC. Harley Street Clinic (PP)	66	29	NA	NA
LBH. London Bridge Hospital (PP)	97	24	NA	NA
RSC. Royal Sussex County Hospital	0	NA	NA	NA

Standard is <12 weeks. Ranked by shortest in 2019/20. Green if < 12 weeks. Red if >18 weeks.

Urgent (inpatient) CABG waiting time – from angio to op date (mean days)

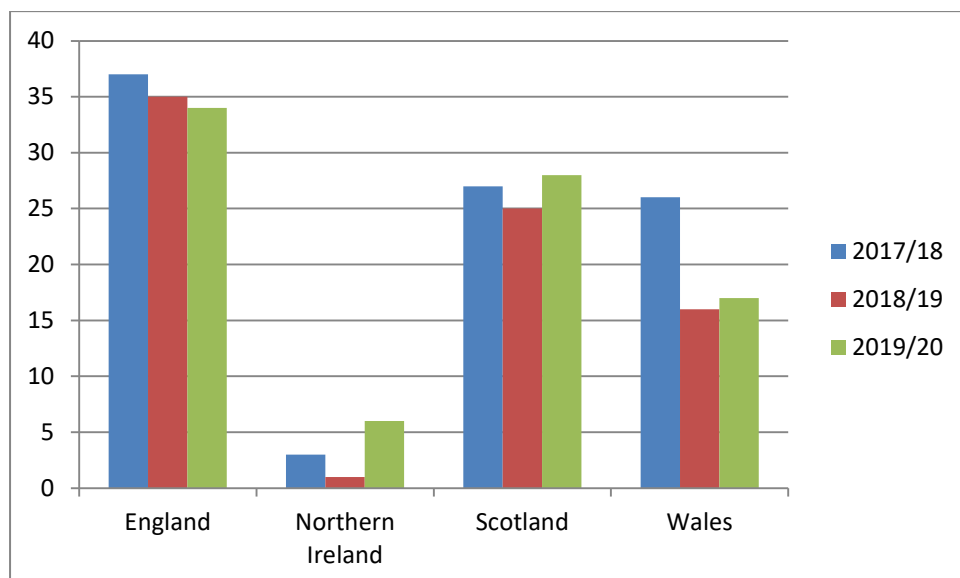


Nations	2017/18	2018/19	2019/20
UK	10	11	11
England	10	10	10
Northern Ireland	22	22	24
Scotland	14	13	13
Wales	12.5	14	14

Hospital	Completeness (%)	2017/18	2018/19	2019/20
GEO. St George's Hospital	99	7	7	7
NCR. New Cross Hospital	98	7	7	7
STO. University Hospital of North Staffordshire	88	7	7	7
WAL. University Hospital Coventry	77	7	7	7
ERI. Royal Infirmary of Edinburgh	88	8	8.5	7
ANT. Spire St Anthony's Hospital (PP)	97	4.5	3	8
BAL. Barts and the London	73	6	8	8
SCM. James Cook University Hospital	100	7	7	8
KCH. King's College Hospital	40	8.5	9	8
BHL. Liverpool Heart and Chest Hospital	15	13	8	8
HH. Harefield Hospital	68	9.5	7	9
BRI. Bristol Royal Infirmary	90	10	12	9
MRI. Manchester Royal Infirmary	67	7	9	10
SGH. Southampton General Hospital	91	10	11	10
RAD. John Radcliffe Hospital	92	11	12	10
STH. St Thomas' Hospital	99	11.5	11	10
PAP. Papworth Hospital	41	13	14.5	10
NHB. Royal Brompton Hospital	98	12.5	11	11
CHH. Castle Hill Hospital	100	13	13	11
GRL. Glenfield Hospital	99	11	11	11.5
MOR. Morriston Hospital	38	8.5	12.5	12
HAM. Hammersmith Hospital	63	9	11	12
CBS. Spire Southampton Hospital	22	11	14.5	12
VIC. Blackpool Victoria Hospital	98	13	11	12
WYT. Wythenshawe Hospital	84	10	11	13
PLY. Derriford Hospital	100	17.5	18	13
LGI. Leeds General Infirmary	98	9	16	14
BAS. Basildon Hospital	99	10	13	14
UHW. University Hospital of Wales	99	13	14	14
CHN. Nottingham City Hospital	98	14	13	14
RIA. Aberdeen Royal Infirmary	100	15	11	14
NGS. Northern General Hospital	98	15	16.5	15
GJH. Golden Jubilee Hospital	97	15.5	15	16
QEB. Queen Elizabeth Hospital	100	12	17.5	17
CRO. Cromwell Hospital (PP)	100	2	4	22
RVB. Royal Victoria Hospital	61	22	22	24
HSC. Harley Street Clinic	100	0.5	NA	NA
HHW. Wellington Hospital North (PP)	95	7	NA	NA
FRE. Freeman Hospital	8	9.5	8	NA
LBH. London Bridge Hospital (PP)	100	10	NA	NA
RSC. Royal Sussex County Hospital	0	NA	NA	NA

Ranked by mean waiting time 2019/20. Green if equal or better than UK average of 11 days

Proportion (%) of Urgent CABG performed within 7 days of angiogram

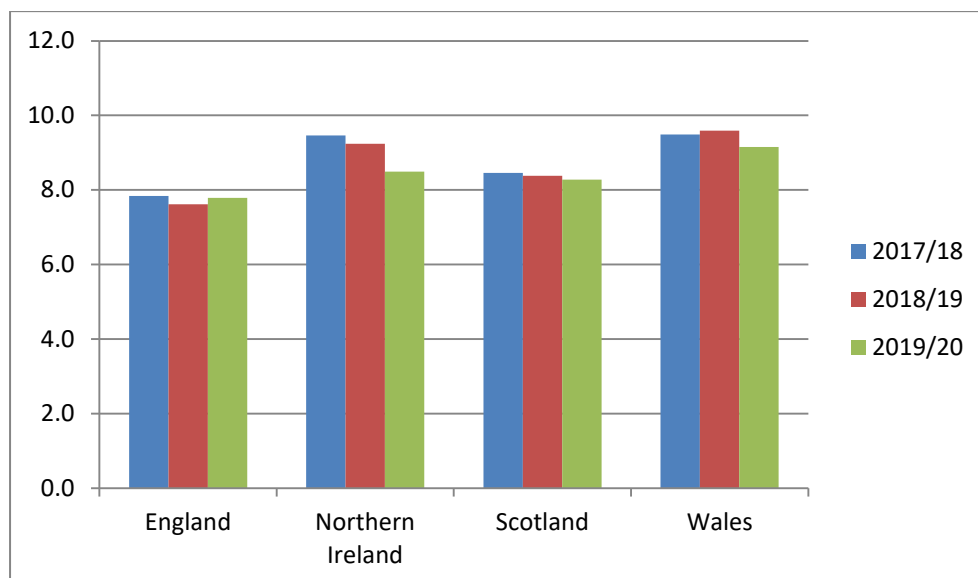


Nation	2017/18	2018/19	2019/20
England	37	35	34
Northern Ireland	3	1	6
Scotland	27	25	28
Wales	26	16	17

Hospital	2017/18	2018/19	2019/20
ERI. Royal Infirmary of Edinburgh	48	42	60
GEO. St George's Hospital	60	55	57
STO. University Hospital of North Staffordshire	60	55	56
NCR. New Cross Hospital	51	51	54
WAL. University Hospital Coventry	56	55	52
BAL. Barts and the London	66	48	50
CRO. Cromwell Hospital (PP)	100	75	50
SCM. James Cook University Hospital	57	62	46
BHL. Liverpool Heart and Chest Hospital	19	35	44
BRI. Bristol Royal Infirmary	33	31	43
KCH. King's College Hospital	44	46	42
HH. Harefield Hospital	38	54	41
MRI. Manchester Royal Infirmary	55	41	36
RAD. John Radcliffe Hospital	29	29	35
ANT. Spire St Anthony's Hospital (PP)	67	90	33
PAP. Papworth Hospital	21	32	33
SGH. Southampton General Hospital	34	29	32
STH. St Thomas' Hospital	34	32	30
HAM. Hammersmith Hospital	35	27	29
GRL. Glenfield Hospital	30	27	27
PLY. Derriford Hospital	17	13	26
NHB. Royal Brompton Hospital	35	31	25
CHH. Castle Hill Hospital	14	10	23
RIA. Aberdeen Royal Infirmary	19	29	23
VIC. Blackpool Victoria Hospital	28	30	23
MOR. Morriston Hospital	37	22	22
BAS. Basildon Hospital	34	22	20
CHN. Nottingham City Hospital	15	23	19
MAT. Mater Misericordiae Hospital	37	30	19
WYT. Wythenshawe Hospital	30	24	19
LGI. Leeds General Infirmary	37	17	17
GJH. Golden Jubilee Hospital	23	17	15
UHW. University Hospital of Wales	22	14	15
QEB. Queen Elizabeth Hospital	18	9	11
NGS. Northern General Hospital	9	8	6
RVB. Royal Victoria Hospital	3	1	6
FRE. Freeman Hospital	50	45	NA
HSC. Harley Street Clinic (PP)	100	NA	NA
HHW. Wellington Hospital North (PP)	51	NA	NA
LBH. London Bridge Hospital (PP)	43	NA	NA
CBS. Spire Southampton Hospital (PP)	NA	NA	NA
RSC. Royal Sussex County Hospital	NA	NA	NA

Target is 75%. Ranked by highest in 2019/20.

Post op length of stay (PLOS) following CABG (mean days)

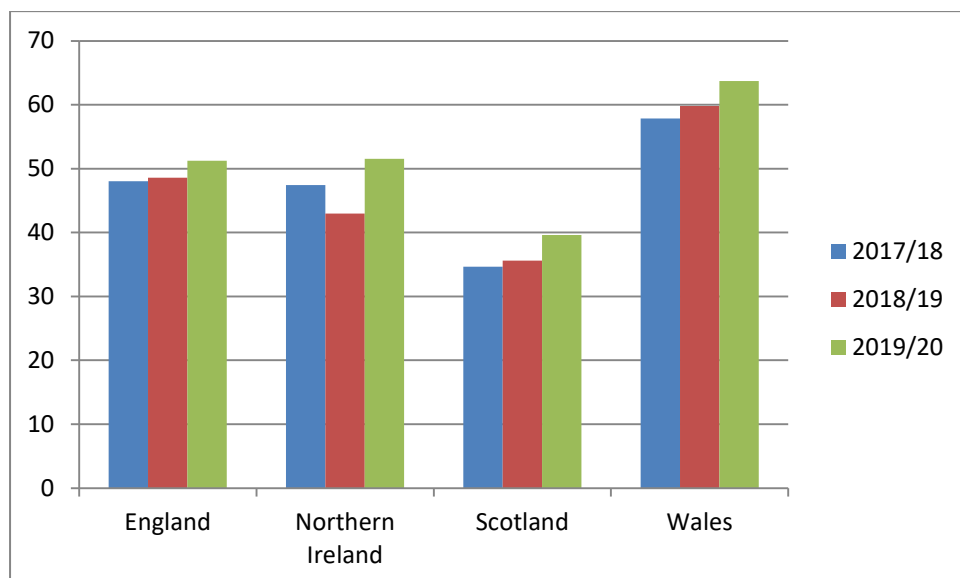


Region	2017/18	2018/19	2019/20
UK	8.0	7.8	7.9
England	7.8	7.6	7.8
Northern Ireland	9.5	9.2	8.5
Scotland	8.5	8.4	8.3
Wales	9.5	9.6	9.2

Hospital	2017/18	2018/19	2019/20
CBS. Spire Southampton Hospital (PP)	6.0	5.9	6.4
NCR. New Cross Hospital	6.2	6.5	6.5
NHB. Royal Brompton Hospital	7.2	7.0	6.7
SCM. James Cook University Hospital	7.5	6.3	6.7
RSC. Royal Sussex County Hospital	7.6	6.2	6.8
STH. St Thomas' Hospital	8.4	8.1	6.9
BAS. Basildon Hospital	7.2	7.5	7.0
STO. University Hospital of North Staffordshire	8.0	8.0	7.1
RAD. John Radcliffe Hospital	7.2	7.5	7.3
VIC. Blackpool Victoria Hospital	7.2	8.2	7.3
HAM. Hammersmith Hospital	8.0	8.1	7.3
PLY. Derriford Hospital	7.9	6.7	7.3
ERI. Royal Infirmary of Edinburgh	7.3	7.4	7.4
NGS. Northern General Hospital	8.5	8.0	7.4
ANT. Spire St Anthony's Hospital (PP)	7.3	7.2	7.5
BRI. Bristol Royal Infirmary	7.8	7.8	7.5
WAL. University Hospital Coventry	7.6	7.5	7.5
GEO. St George's Hospital	7.4	7.3	7.7
BAL. Barts and the London	8.0	7.7	7.9
PAP. Papworth Hospital	7.5	7.7	7.9
CHN. Nottingham City Hospital	8.1	7.2	7.9
GRL. Glenfield Hospital	7.6	6.9	7.9
KCH. King's College Hospital	9.2	9.0	8.0
FRE. Freeman Hospital	7.3	7.2	8.1
WYT. Wythenshawe Hospital	8.2	7.0	8.1
HH. Harefield Hospital	7.2	7.4	8.1
GJH. Golden Jubilee Hospital	8.0	8.1	8.1
CHH. Castle Hill Hospital	7.4	7.7	8.2
QEB. Queen Elizabeth Hospital	9.0	8.1	8.4
RVB. Royal Victoria Hospital	9.5	9.2	8.5
BHL. Liverpool Heart and Chest Hospital	8.4	8.0	8.5
UHW. University Hospital of Wales	10.2	9.5	8.8
LGI. Leeds General Infirmary	8.5	7.7	9.0
SGH. Southampton General Hospital	8.7	9.3	9.3
MOR. Morriston Hospital	8.9	9.7	9.5
RIA. Aberdeen Royal Infirmary	11.6	11.0	10.6
MRI. Manchester Royal Infirmary	8.2	9.4	10.7
CRO. Cromwell Hospital (PP)	10.9	6.0	19.0
LBH. London Bridge Hospital (PP)	6.9		
HSC. Harley Street Clinic (PP)	7.2		
HHW. Wellington Hospital North (PP)	8.8		

Ranked by shortest 2019/20. Green if better than UK average (7.9 days).

Proportion (%) of first time CABG patients operated on urgently

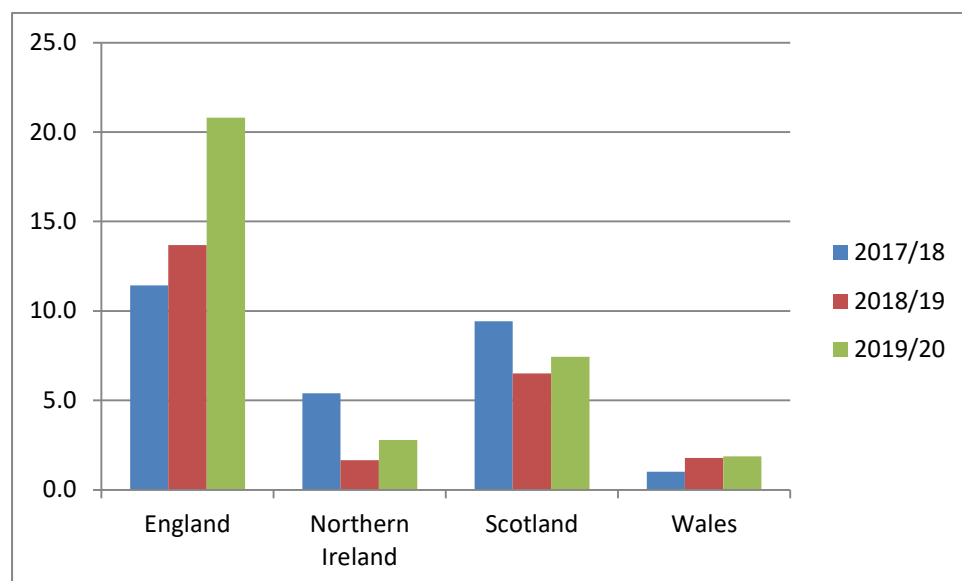


Nations	2017/18	2018/19	2019/20
UK	47.4	47.9	50.7
England	48.0	48.6	51.3
Northern Ireland	47.4	43.0	51.5
Scotland	34.6	35.6	39.6
Wales	57.9	59.8	63.7

Hospital	2017/18	2018/19	2019/20
SGH. Southampton General Hospital	64	67	70
UHW. University Hospital of Wales	53	56	68
SCM. James Cook University Hospital	57	61	66
MRI. Manchester Royal Infirmary	68	56	64
WYT. Wythenshawe Hospital	55	56	64
GEO. St George's Hospital	51	54	61
STO. University Hospital of North Staffordshire	70	57	60
MOR. Morriston Hospital	62	64	60
FRE. Freeman Hospital	44	56	58
WAL. University Hospital Coventry	52	57	57
NCR. New Cross Hospital	46	57	56
BHL. Liverpool Heart and Chest Hospital	47	54	56
LGI. Leeds General Infirmary	58	47	55
RIA. Aberdeen Royal Infirmary	53	46	55
CHN. Nottingham City Hospital	53	50	54
BAS. Basildon Hospital	49	49	54
BRI. Bristol Royal Infirmary	64	60	53
GRL. Glenfield Hospital	52	50	53
RVB. Royal Victoria Hospital	47	43	52
NGS. Northern General Hospital	46	54	51
BAL. Barts and the London	37	45	50
QEB. Queen Elizabeth Hospital	52	53	49
RAD. John Radcliffe Hospital	44	49	48
PAP. Papworth Hospital	48	42	47
CHH. Castle Hill Hospital	38	37	47
PLY. Derriford Hospital	39	37	46
KCH. King's College Hospital	49	59	45
STH. St Thomas' Hospital	53	46	45
CRO. Cromwell Hospital (PP)	20	36	44
RSC. Royal Sussex County Hospital	50	40	44
HAM. Hammersmith Hospital	47	45	44
ERI. Royal Infirmary of Edinburgh	28	33	38
VIC. Blackpool Victoria Hospital	32	38	38
GJH. Golden Jubilee Hospital	32	34	36
HH. Harefield Hospital	33	32	36
NHB. Royal Brompton Hospital	21	23	29
ANT. Spire St Anthony's Hospital (PP)	36	21	13
CBS. Spire Southampton Hospital (PP)	8	7	7
HHW. Wellington Hospital North (PP)	80	NA	NA
LBH. London Bridge Hospital (PP)	18	NA	NA
HSC. Harley Street Clinic (PP)	6	NA	NA

Ranked by highest in 2019/20. (Green if >50%)

Proportion (%) of patients with day of surgery admission (DOSA) for elective cardiac surgery (CABG)

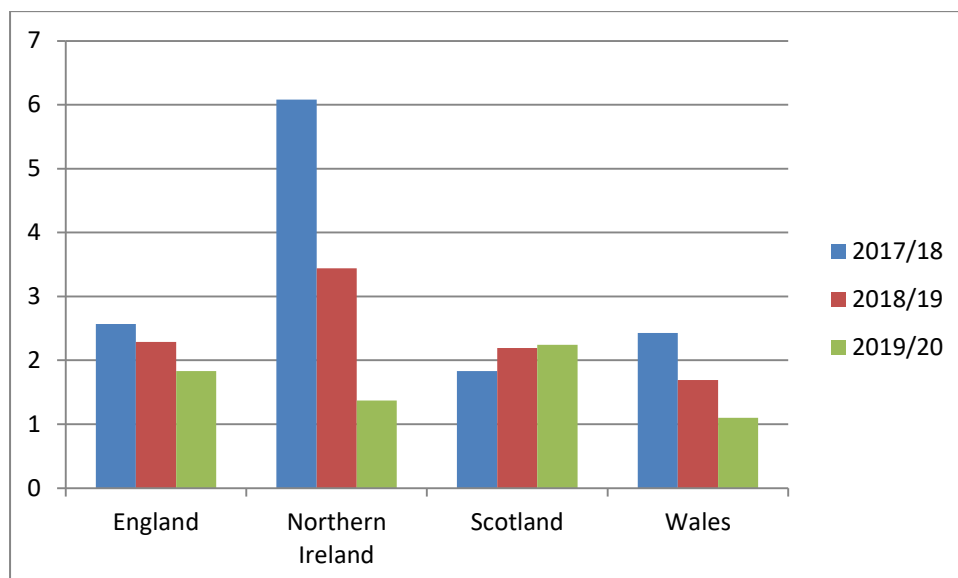


Region	2017/18	2018/19	2019/20
UK	10.8	12.4	18.5
England	11.4	13.7	20.8
Northern Ireland	5.4	1.7	2.8
Scotland	9.4	6.5	7.4
Wales	1.0	1.8	1.9

Hospital	2017/18	2018/19	2019/20
BRI. Bristol Royal Infirmary	12.7	16.8	71.4
VIC. Blackpool Victoria Hospital	68.6	71.3	71.0
HH. Harefield Hospital	1.4	21.9	56.1
SCM. James Cook University Hospital	41.7	47.4	51.1
PAP. Papworth Hospital	22.4	22.3	36.6
BHL. Liverpool Heart and Chest Hospital	3.1	23.7	35.6
STH. St Thomas' Hospital		3.2	31.2
RAD. John Radcliffe Hospital	27.3	17.2	29.0
SGH. Southampton General Hospital	39.8	38.6	27.2
STO. University Hospital of North Staffordshire	15.7	17.0	21.4
CRO. Cromwell Hospital (PP)	22.2	36.4	18.2
NHB. Royal Brompton Hospital	1.5	8.1	18.2
FRE. Freeman Hospital	8.0	15.7	15.4
GJH. Golden Jubilee Hospital	9.7	10.2	14.6
WAL. University Hospital Coventry	7.0	8.6	13.5
KCH. King's College Hospital	15.5	9.3	10.1
ANT. Spire St Anthony's Hospital (PP)	5.6	5.3	5.7
QEB. Queen Elizabeth Hospital	0.9	2.5	5.2
LGI. Leeds General Infirmary	6.9	5.3	4.9
WYT. Wythenshawe Hospital	1.4	1.0	4.4
MRI. Manchester Royal Infirmary	0.6	1.3	4.2
PLY. Derriford Hospital	2.3	3.8	4.1
BAS. Basildon Hospital	4.2	6.5	4.0
GEO. St George's Hospital	9.4	6.7	3.1
RVB. Royal Victoria Hospital	5.4	1.7	2.8
MOR. Morriston Hospital	0.6	2.9	2.0
UHW. University Hospital of Wales	1.4	0.6	1.8
NCR. New Cross Hospital	1.2	1.4	1.5
BAL. Barts and the London	3.6	5.8	0.9
RSC. Royal Sussex County Hospital	1.1	1.2	0.8
HAM. Hammersmith Hospital	2.8	1.6	0.7
NGS. Northern General Hospital	0.2	0.5	0.7
ERI. Royal Infirmary of Edinburgh	4.5	2.1	0.4
CHN. Nottingham City Hospital	1.6	0.3	0.3
HHW. Wellington Hospital North (PP)	56.0		
HSC. Harley Street Clinic (PP)	28.0		
RIA. Aberdeen Royal Infirmary	23.3	5.5	
LBH. London Bridge Hospital (PP)	22.1		
CBS. Spire Southampton Hospital (PP)	1.6	0.5	
GRL. Glenfield Hospital	0.5	0.3	
CHH. Castle Hill Hospital	No data		

Ranked by highest 2019/20. Target is >50% (green). Red if below UK mean (18.5%).

Reoperation rate for bleeding (%) following CABG surgery



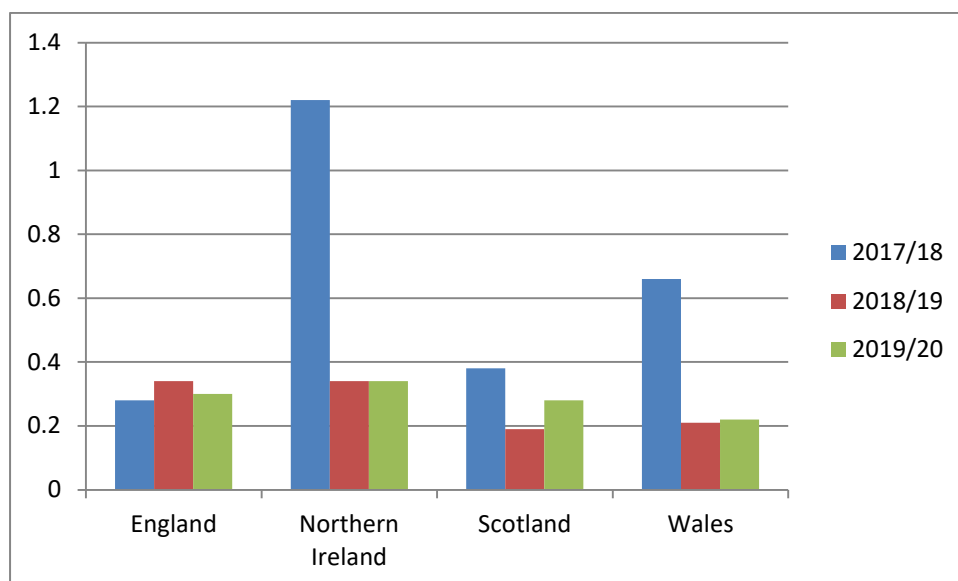
Nations	2017/18	2018/19	2019/20
UK	2.59	2.29	1.83
England	2.57	2.29	1.83
Northern Ireland	6.08	3.44	1.37
Scotland	1.83	2.19	2.24
Wales	2.43	1.69	1.1

UK	2017 to 2020 aggregate (Unit level data)
Mean	2.25%
1st Quartile	1.65%
Median	2.23%
3rd Quartile	2.94%
SD	1.04%

Hospital	Data completeness (%)	2017 /18	2018 /19	2019 /20
CBS. Spire Southampton Hospital (PP)	98	5.26	0	0
HAM. Hammersmith Hospital	100	0	1.52	0
HSC. Harley Street Clinic (PP)	100	5.88	0	0
NGS. Northern General Hospital	100	1.14	0.33	0.32
WAL. University Hospital Coventry	99	2.87	3.32	0.41
UHW. University Hospital of Wales	90	4.1	0.88	0.44
FRE. Freeman Hospital	100	1.11	2.01	0.45
STH. St Thomas' Hospital	95	1.88	1.75	0.46
KCH. King's College Hospital	60	2.82	1.36	0.53
SGH. Southampton General Hospital	100	2.23	2.19	1.02
VIC. Blackpool Victoria Hospital	100	3.91	2.06	1.21
STO. University Hospital of North Staffordshire	100	3.98	1.46	1.25
PAP. Papworth Hospital	100	1.44	0.46	1.26
HH. Harefield Hospital	100	2.57	0.66	1.35
WYT. Wythenshawe Hospital	72	0.78	0.67	1.35
RVB. Royal Victoria Hospital	100	6.08	3.44	1.37
GJH. Golden Jubilee Hospital	100	2.22	2.23	1.39
BAL. Barts and the London	100	1.27	2.27	1.72
MOR. Morriston Hospital	99	1.16	2.46	1.73
LGI. Leeds General Infirmary	100	3.79	1	1.77
QEB. Queen Elizabeth Hospital	100	3.86	3.56	1.89
CHN. Nottingham City Hospital	100	1.19	1.12	1.9
BAS. Basildon Hospital	90	1.76	4.66	1.91
MRI. Manchester Royal Infirmary	96	2.06	1.42	1.94
RAD. John Radcliffe Hospital	100	1.6	3.23	2.11
BHL. Liverpool Heart and Chest Hospital	100	1.65	2.47	2.17
GRL. Glenfield Hospital	100	3.39	2.52	2.52
GEO. St George's Hospital	100	3.28	3.53	2.54
NHB. Royal Brompton Hospital	100	3.44	4.43	2.55
SCM. James Cook University Hospital	100	4.8	1.5	2.87
NCR. New Cross Hospital	100	1.75	3.83	3.13
RSC. Royal Sussex County Hospital	100	2.81	4.21	3.3
CHH. Castle Hill Hospital	100	3.12	2.17	3.33
ERI. Royal Infirmary of Edinburgh	85	0.72	2.09	3.53
RIA. Aberdeen Royal Infirmary	99	2.26	2.17	3.57
ANT. Spire St Anthony's Hospital (PP)	99	0	2.13	4.35
BRI. Bristol Royal Infirmary	47	3.28	12.94	6.45
PLY. Derriford Hospital	3*	100*	76.92*	87.5*
CRO. Cromwell Hospital (PP)	0*	No data	No data	No data
HHW. Wellington Hospital North (PP)	0*	No data	No data	No data
LBH. London Bridge Hospital (PP)	0*	No data	No data	No data

Ranked by rates in 2019-20. Green if in top quartile (compared to aggregate data for 2017-20). Red if in bottom quartile. Data completeness yellow if <90%, red if <80%. (* very poor data compliance, so figures unreliable)

Deep Sternal Wound Infection (DSWI) rate (%) following CABG (requiring surgical debridement or reoperation)



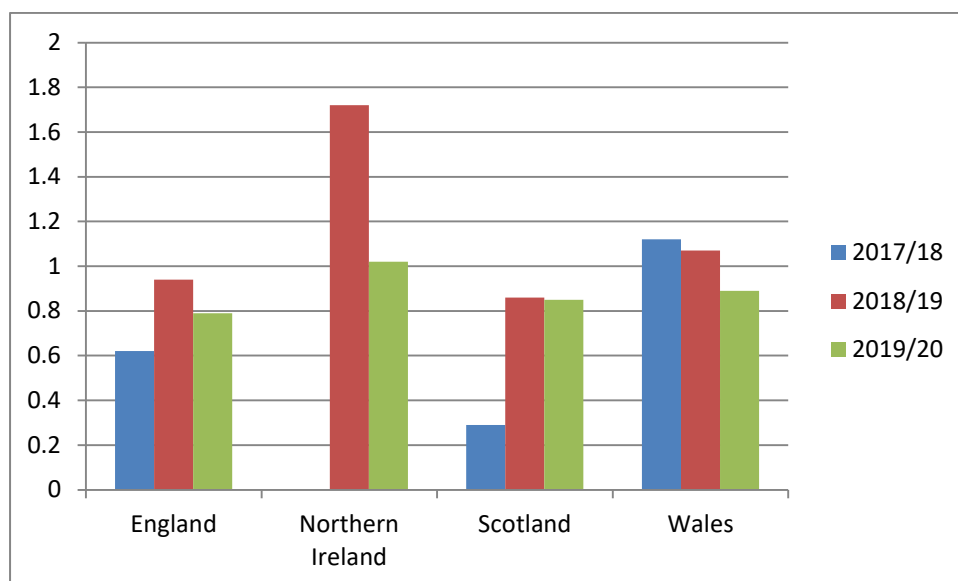
Nations	2017/18	2018/19	2019/20
UK	0.33	0.32	0.3
England	0.28	0.34	0.3
Northern Ireland	1.22	0.34	0.34
Scotland	0.38	0.19	0.28
Wales	0.66	0.21	0.22

UK	2017 to 2020 aggregate (Unit level data)
Mean	0.32%
1st Quartile	0.21%
Median	0.32%
3rd Quartile	0.54%
SD	0.54%

Hospital	Data completeness (%)	2017/18	2018/19	2019/20
SCM. James Cook University Hospital	100	0.38	0	0
RIA. Aberdeen Royal Infirmary	99	0.56	0	0
UHW. University Hospital of Wales	90	1.54	0	0
LBH. London Bridge Hospital	100	2.5	0	0
STH. St Thomas' Hospital	95	0	0.29	0
STO. University Hospital of North Staffordshire	100	0.27	0.29	0
PAP. Papworth Hospital	100	0	0.31	0
SGH. Southampton General Hospital	100	0.67	0.6	0
HAM. Hammersmith Hospital	100	0.68	0.61	0
GEO. St George's Hospital	100	0.19	0.76	0
KCH. King's College Hospital	60	2.82	0.9	0
MRI. Manchester Royal Infirmary	96	0.46	1.14	0
LGI. Leeds General Infirmary	100	0.18	0.2	0.22
CBS. Spire Southampton Hospital (PP)	100	0	0.48	0.22
NHB. Royal Brompton Hospital	100	0	0	0.26
WYT. Wythenshawe Hospital	72	0	0.22	0.27
GJH. Golden Jubilee Hospital	100	0.34	0.32	0.31
RVB. Royal Victoria Hospital	100	1.22	0.34	0.34
RSC. Royal Sussex County Hospital	100	0.35	0.7	0.37
QEB. Queen Elizabeth Hospital	100	0	0.32	0.38
ERI. Royal Infirmary of Edinburgh	85	0.36	0	0.39
WAL. University Hospital Coventry	99	0.36	0.74	0.41
BAL. Barts and the London	100	0.69	0.31	0.43
MOR. Morriston Hospital	99	0	0.41	0.43
GRL. Glenfield Hospital	100	0	0	0.46
CHN. Nottingham City Hospital	100	0	0.37	0.47
NCR. New Cross Hospital	100	0	0.21	0.48
HH. Harefield Hospital	100	0	0	0.68
RAD. John Radcliffe Hospital	100	0.53	0	0.7
VIC. Blackpool Victoria Hospital	100	0.53	0.94	1.01
FRE. Freeman Hospital	100	1.11	0.4	1.36
BRI. Bristol Royal Infirmary	47	0.2	1.18	2.15
CRO. Cromwell Hospital (PP)	100	0	0	11.11
PLY. Derriford Hospital	3*	16.67*	7.69*	12.5*
ANT. Spire St Anthony's Hospital (PP)	0	No data	No data	No data
BAS. Basildon Hospital	0	No data	No data	No data
BHL. Liverpool Heart and Chest Hospital	0	No data	No data	No data
CHH. Castle Hill Hospital	0	No data	No data	No data
HHW. Wellington Hospital North (PP)	0	No data	No data	No data
HSC. Harley Street Clinic (PP)	0	No data	No data	No data
NGS. Northern General Hospital	0	No data	No data	No data

Ranked by rates in 2019-20. Green if in top quartile (compared to aggregate data for 2017-20). Red if in bottom quartile. Data completeness yellow if <90%, red if <80%. (* very poor data compliance, so figures unreliable)

New post-operative any neurological event (CVA and TIA combined) rate (%) following CABG



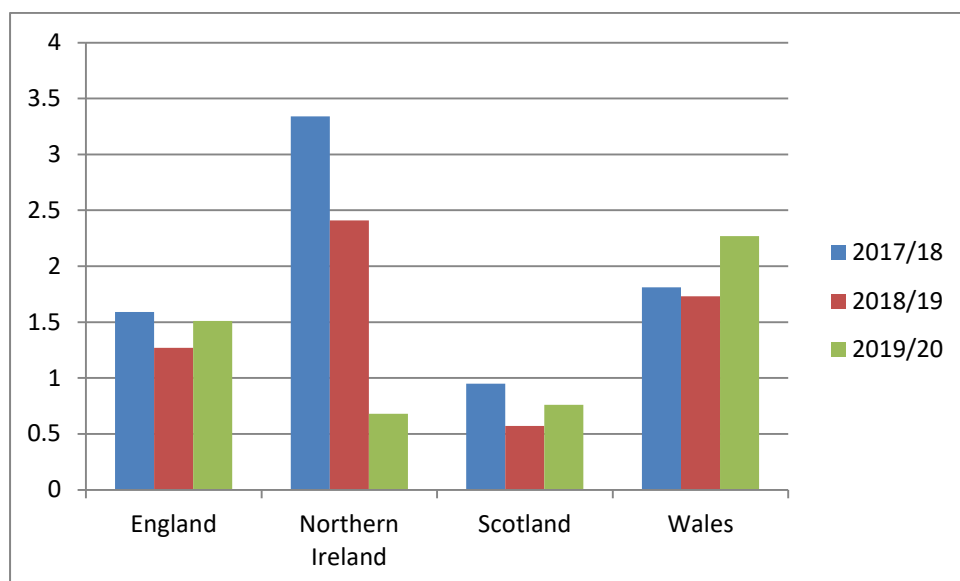
Nations	2017/18	2018/19	2019/20
UK	0.6	0.95	0.8
England	0.62	0.94	0.79
Northern Ireland	0	1.72	1.02
Scotland	0.29	0.86	0.85
Wales	1.12	1.07	0.89

UK	2017 to 2020 aggregate (Unit level data)
Mean	0.78%
1st Quartile	0.59%
Median	0.81%
3rd Quartile	0.95%
SD	0.50%

Hospital	Data completeness (%)	2017/18	2018/19	2019/20
MRI. Manchester Royal Infirmary	96	0	0.29	0
HAM. Hammersmith Hospital	100	0	0.3	0
RAD. John Radcliffe Hospital	88	0.31	1.34	0
ANT. Spire St Anthony's Hospital (PP)	98	0	2.13	0
KCH. King's College Hospital	74	0.41	1.32	0.28
GJH. Golden Jubilee Hospital	100	0.34	0.16	0.31
PLY. Derriford Hospital	100	0.75	0.58	0.34
LGI. Leeds General Infirmary	100	0.9	0.4	0.44
UHW. University Hospital of Wales	90	1.04	0.88	0.45
FRE. Freeman Hospital	100	0.74	1.2	0.45
CHN. Nottingham City Hospital	100	0.4	0.37	0.47
STH. St Thomas' Hospital	94	1.34	0.89	0.47
NHB. Royal Brompton Hospital	69	0	1.63	0.51
WYT. Wythenshawe Hospital	83	0.7	0.46	0.54
GRL. Glenfield Hospital	100	1.06	1.14	0.69
NCR. New Cross Hospital	100	0.25	0.85	0.72
SGH. Southampton General Hospital	100	0	0.2	0.76
SCM. James Cook University Hospital	100	0.58	1.13	0.76
WAL. University Hospital Coventry	78	0.44	0.65	0.82
HH. Harefield Hospital	99	0.65	0.22	0.9
STO. University Hospital of North Staffordshire	98	0.81	0.89	0.95
BAL. Barts and the London	100	0.92	0.82	0.97
RVB. Royal Victoria Hospital	100	0	1.72	1.02
CHH. Castle Hill Hospital	100	1.25	0.72	1.11
GEO. St George's Hospital	100	1.16	1.01	1.13
RIA. Aberdeen Royal Infirmary	100	0.55	1.64	1.2
VIC. Blackpool Victoria Hospital	100	1.25	0.19	1.21
PAP. Papworth Hospital	100	0.43	0.61	1.26
BHL. Liverpool Heart and Chest Hospital	100	0.55	0.65	1.28
MOR. Morriston Hospital	97	1.18	1.24	1.34
QEB. Queen Elizabeth Hospital	100	0	0.97	1.51
ERI. Royal Infirmary of Edinburgh	84	0	2.11	2.02
BRI. Bristol Royal Infirmary	48	0	25.53*	2.2
RSC. Royal Sussex County Hospital	100	2.46	3.16	2.94
BAS. Basildon Hospital	0	No data	No data	No data
CBS. Spire Southampton Hospital (PP)	0	No data	No data	No data
CRO. Cromwell Hospital (PP)	0	No data	No data	No data
HHW. Wellington Hospital North (PP)	0	No data	No data	No data
HSC. Harley Street Clinic (PP)	0	No data	No data	No data
LBH. London Bridge Hospital (PP)	0	No data	No data	No data
NGS. Northern General Hospital	0	No data	No data	No data

Ranked by rates in 2019-20. Green if in top quartile (compared to aggregate data for 2017-20). Red if no data. Data completeness yellow if <90%, red if <80%. (*poor data compliance, so figures unreliable)

New post-operative kidney failure (requiring renal support therapy) following CABG (%)



Nations	2017/18	2018/19	2019/20
UK	1.59	1.26	1.46
England	1.59	1.27	1.51
Northern Ireland	3.34	2.41	0.68
Scotland	0.95	0.57	0.76
Wales	1.81	1.73	2.27

UK	2017 to 2020 aggregate (Unit level data)
Mean	1.44%
1st Quartile	0.84%
Median	1.35%
3rd Quartile	2.09%
SD	0.81%

Hospital	Data completeness (%)	2017/18	2018/19	2019/20
ANT. Spire St Anthony's Hospital (PP)	99	1.89	0	0
HHW. Wellington Hospital North (PP)	100	2.17	0	0
STO. University Hospital of North Staffordshire	97	0.54	1.19	0
STH. St Thomas' Hospital	94	0.54	0.59	0.47
VIC. Blackpool Victoria Hospital	99	1.07	0.95	0.61
RIA. Aberdeen Royal Infirmary	99	0	1.09	0.61
KCH. King's College Hospital	71	0.83	1.78	0.61
RVB. Royal Victoria Hospital	100	3.34	2.41	0.68
SGH. Southampton General Hospital	100	0.67	0.2	0.76
GJH. Golden Jubilee Hospital	100	1.54	0.64	0.77
BHL. Liverpool Heart and Chest Hospital	100	0.55	1.17	0.77
ERI. Royal Infirmary of Edinburgh	84	0.35	0	0.81
WAL. University Hospital Coventry	77	1.33	1.29	0.83
CHN. Nottingham City Hospital	100	1.98	1.49	0.95
NCR. New Cross Hospital	100	0.5	1.06	0.96
WYT. Wythenshawe Hospital	84	0	1.12	1.08
SCM. James Cook University Hospital	100	1.54	0.19	1.34
UHW. University Hospital of Wales	90	3.12	2.63	1.34
RSC. Royal Sussex County Hospital	100	1.4	0	1.47
MRI. Manchester Royal Infirmary	100	1.61	0.79	1.54
CHH. Castle Hill Hospital	100	1.56	0.97	1.56
LGI. Leeds General Infirmary	100	2.53	1	1.77
PAP. Papworth Hospital	100	2.02	1.99	1.8
FRE. Freeman Hospital	100	2.58	2.41	1.81
GRL. Glenfield Hospital	100	2.33	1.6	1.83
RAD. John Radcliffe Hospital	88	0.93	3	1.9
NHB. Royal Brompton Hospital	100	2.12	1.86	2.04
QEB. Queen Elizabeth Hospital	100	3.86	1.94	2.26
BRI. Bristol Royal Infirmary	46	0.2	1.33	2.33
GEO. St George's Hospital	100	2.9	1.51	2.54
BAL. Barts and the London	100	2.55	2.78	2.69
HH. Harefield Hospital	99	2.37	0.89	2.71
MOR. Morriston Hospital	95	0.8	0.85	3.23
BAS. Basildon Hospital	100	5.08	1.98	3.36
PLY. Derriford Hospital	100	2.76	1.16	4.03
CBS. Spire Southampton Hospital (PP)	0	No data	No data	No data
CRO. Cromwell Hospital (PP)	0	No data	No data	No data
HAM. Hammersmith Hospital	0	No data	No data	No data
HSC. Harley Street Clinic (PP)	0	No data	No data	No data
LBH. London Bridge Hospital (PP)	0	No data	No data	No data
NGS. Northern General Hospital	0	No data	No data	No data

Ranked by rates in 2019-20. Green if in top quartile (compared to aggregate data for 2017-20). Red if no data. Data completeness yellow if <90%, red if <80%.

Dual Consultant Operations (2019/20)

Nations	Number of DCO cases	% total cases	Deaths (n)	Mortality (%)	Predicted mortality (%)
UK	110	0.34	36	32.7	27.3
England	109	0.40	35	32.1	26.6
Northern Ireland	0				
Scotland	1	0.04	1	100.0	98.2
Wales	0				

Predicted mortality calculated by EuroSCORE logistic %

Dual Consultant Operating (DCO) is a new concept within adult cardiac surgery and was introduced to the national audit following discussion between SCTS, NICOR and HQIP in April 2019. Data are therefore only for the 2019/20 year.

DCO was introduced so as to optimise patient care for those undergoing very high risk procedures by having 2 experts involved in the procedure. Since the advent of surgeon-specific mortality outcome reporting there had been concerns that some surgeons may be less willing to operate on patients perceived to be at high risk of dying following cardiac surgery. In order to try to reduce “risk averse” behaviour, surgeons with the prior documented agreement of a multidisciplinary team, can remove these cases from their own reported figures. However, the cases (and any deaths) are still audited as occurring within that hospital, and so will still continue as before to contribute to the outcomes reported for each individual hospital. In this way the onus for the outcomes lies with the unit and the team treating the patient, rather than with an individual surgeon.

Estimates of operative risk are presented here using the EuroSCORE logistic, so that an indication of the risks of patients operated on can be determined. However, it is recognised that this scoring method performs less well for patients with very high risk profiles.

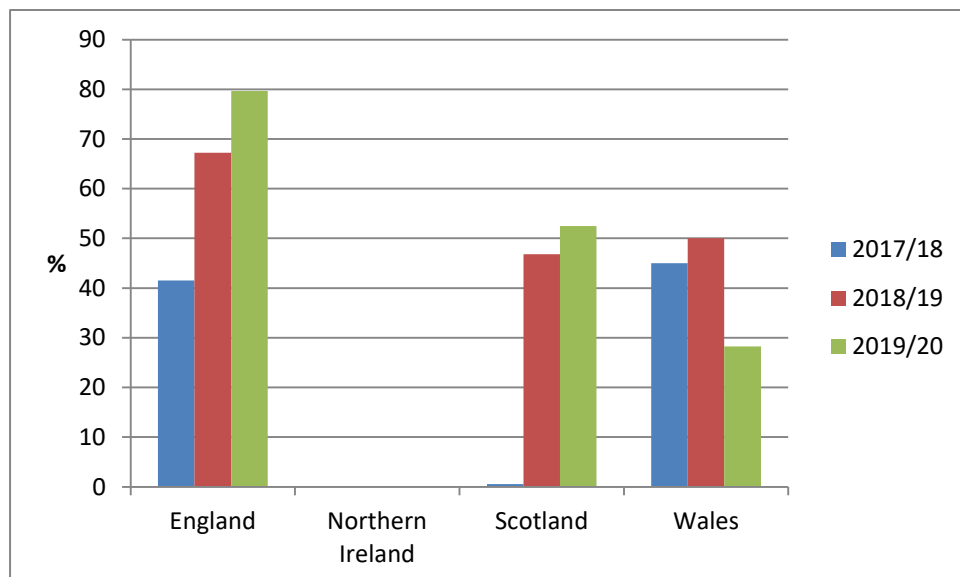
Units	Number of DCO cases	% total cases	Deaths (n)	Mortality (%)	Predicted mortality (%)
ANT. Spire St Anthony's Hospital					
BAL. Barts and the London					
BAS. Basildon Hospital					
BHL. Liverpool Heart and Chest Hospital	6	0.34	2	33.3	33.6
BRI. Bristol Royal Infirmary					
CBS. Spire Southampton Hospital					
CHH. Castle Hill Hospital	10	1.17	3	30.0	40.2
CHN. Nottingham City Hospital					
CRO. Cromwell Hospital					
ERI. Royal Infirmary of Edinburgh					
FRE. Freeman Hospital					
GEO. St George's Hospital					
GJH. Golden Jubilee Hospital					
GRL. Glenfield Hospital	16	1.61	1	6.3	20.1
HAM. Hammersmith Hospital	9	1.40	0	0.0	19.1
HH. Harefield Hospital	10	0.97	4	40.0	27.3
HHW. Wellington Hospital North					
HSC. Harley Street Clinic					
KCH. King's College Hospital	7	0.86	4	57.1	32.6
LBH. London Bridge Hospital					
LGI. Leeds General Infirmary					
MOR. Morriston Hospital					
MRI. Manchester Royal Infirmary	4	0.59	2	50.0	40.3
NCR. New Cross Hospital	2	0.23	1	50.0	26.4
NGS. Northern General Hospital	15	1.69	4	26.7	23.3
NHB. Royal Brompton Hospital	8	0.93	5	62.5	24.6
PAP. Papworth Hospital	5	0.30	5	100.0	25.6
PLY. Derriford Hospital					
QEB. Queen Elizabeth Hospital	1	0.16	1	100.0	37.8
RAD. John Radcliffe Hospital	4	0.62	1	25.0	24.4
RIA. Aberdeen Royal Infirmary	1	0.30	1	100.0	98.2
RSC. Royal Sussex County Hospital					
RVB. Royal Victoria Hospital					
SCM. James Cook University Hospital	5	0.56	1	20.0	17.7
SGH. Southampton General Hospital					
STH. St Thomas' Hospital					
STO. University Hospital of North Staffordshire					
UHW. University Hospital of Wales					
VIC. Blackpool Victoria Hospital					
WAL. University Hospital Coventry					
WYT. Wythenshawe Hospital	7	0.82	1	14.3	27.9

Predicted mortality calculated by EuroSCORE logistic %

Mitral Valve Surgery

See also case numbers and mortality earlier in report

Proportion (%) of mitral cases where data on surgical incision has been recorded



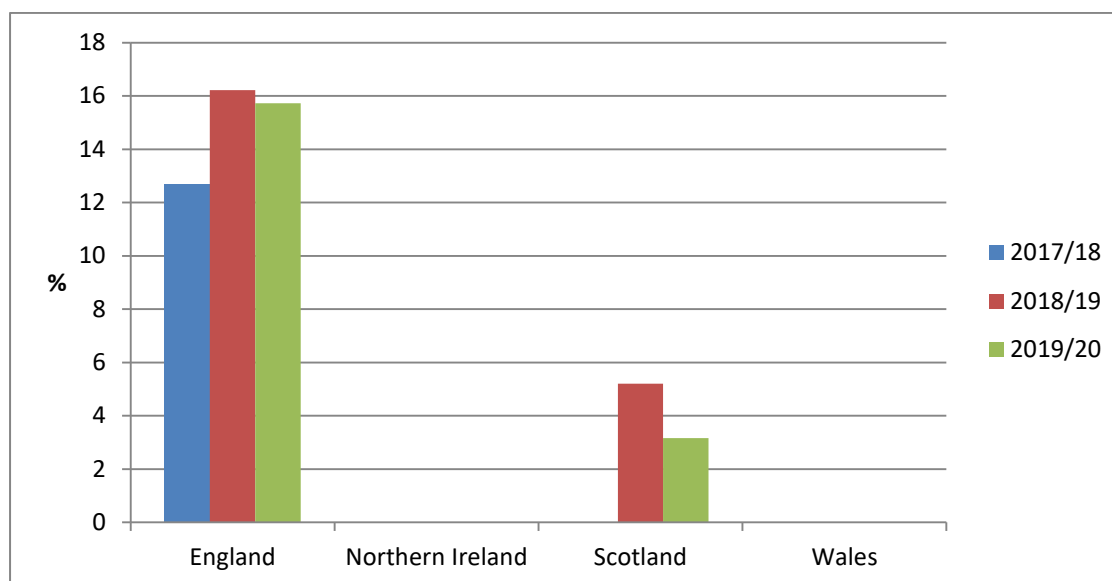
Nations	2017/18	2018/19	2019/20
UK	38	63	73
England	42	67	80
Northern Ireland	0	0	0
Scotland	1	47	52
Wales	45	50	28

Data on the surgical incision was a new variable collected in the NACSA dataset from April 2017. This was added to allow data on minimally invasive surgical approaches to be analysed separately where required. Compliance with this data field collection is also a marker of whether units respond in a timely fashion to database upgrades. (Notification of the change was sent to units and the software providers 6 months prior to April 2017).

Hospital	2017/18	2018/19	2019/20
ANT. Spire St Anthony's Hospital (PP)	100	100	100
CHN. Nottingham City Hospital	100	100	100
CRO. Cromwell Hospital (PP)	100	100	100
GEO. St George's Hospital	100	100	100
GRL. Glenfield Hospital	100	100	100
HHW. Wellington Hospital North (PP)	100	100	100
HSC. Harley Street Clinic (PP)	100	100	100
LBH. London Bridge Hospital (PP)	100	100	100
MRI. Manchester Royal Infirmary	100	100	100
QEB. Queen Elizabeth Hospital	100	100	100
SCM. James Cook University Hospital	100	100	100
SGH. Southampton General Hospital	100	100	100
NCR. New Cross Hospital	98	100	100
MOR. Morriston Hospital	94	100	100
HAM. Hammersmith hospital	73	100	100
BAL. Barts and the London	64	100	100
RAD. John Radcliffe Hospital	14	100	100
HH. Harefield Hospital	0	100	100
NHB. Royal Brompton Hospital	0	100	100
BHL. Liverpool Heart and Chest Hospital	99	99	100
FRE. Freeman Hospital	100	98	100
RIA. Aberdeen Royal Infirmary	0	87	100
WAL. University Hospital Coventry	3	76	100
BAS. Basildon Hospital	0	63	100
STH. St Thomas' Hospital	0	29	100
GJH. Golden Jubilee National Hospital	1	99	97
PAP. Royal Papworth Hospital	30	100	97
STO. Royal Stoke University Hospital	7	92	97
VIC. Blackpool Victoria Hospital	8	97	95
NGS. Northern General Hospital	0	1	90
WYT. Wythenshawe Hospital	0	3	81
KCH. King's College Hospital	50	66	65
CHH. Castle Hill Hospital	0	3	3
BRI. Bristol Royal Infirmary	0	0	0
CBS. Spire Southampton Hospital (PP)	0	0	0
ERI. Royal Infirmary of Edinburgh	0	0	0
LGI. Leeds General Infirmary	0	0	0
PLY. Derriford Hospital	0	0	0
RSC. Royal Sussex County Hospital	0	0	0
RVB. Royal Victoria Hospital	0	0	0
UHW. University Hospital of Wales	0	0	0

Ranked by data completeness for 2019/20. Data completeness yellow if <90%, red if <80%.

Proportion (%) of mitral valve operations performed through an incision other than a conventional sternotomy



Nations	2017/18	2018/19	2019/20
UK	12.1	15.2	14.8
England	12.7	16.2	15.7
Northern Ireland	No data	No data	No data
Scotland	0	5.2	3.2
Wales	0	0	0

Incision used for Mitral Valve Surgery (UK)

UK Numbers - by year

Incision	2017/18	2018/19	2019/20
Median sternotomy	866	1447	1511
Partial sternotomy	22	16	28
Thoracotomy	27	51	30
Mini thoracotomy	74	195	208
Robot assisted	5	13	14
Other	1	25	16
Missing	1636	982	656

UK Percentage (%) - by year

Incision	2017/18	2018/19	2019/20
Median sternotomy	87.9	84.8	85.2
Partial sternotomy	2.2	0.9	1.6
Thoracotomy	2.7	3.0	1.7
Mini thoracotomy	7.5	11.4	11.7
Robot assisted	0.5	0.8	0.8
Other	0.1	1.5	0.9

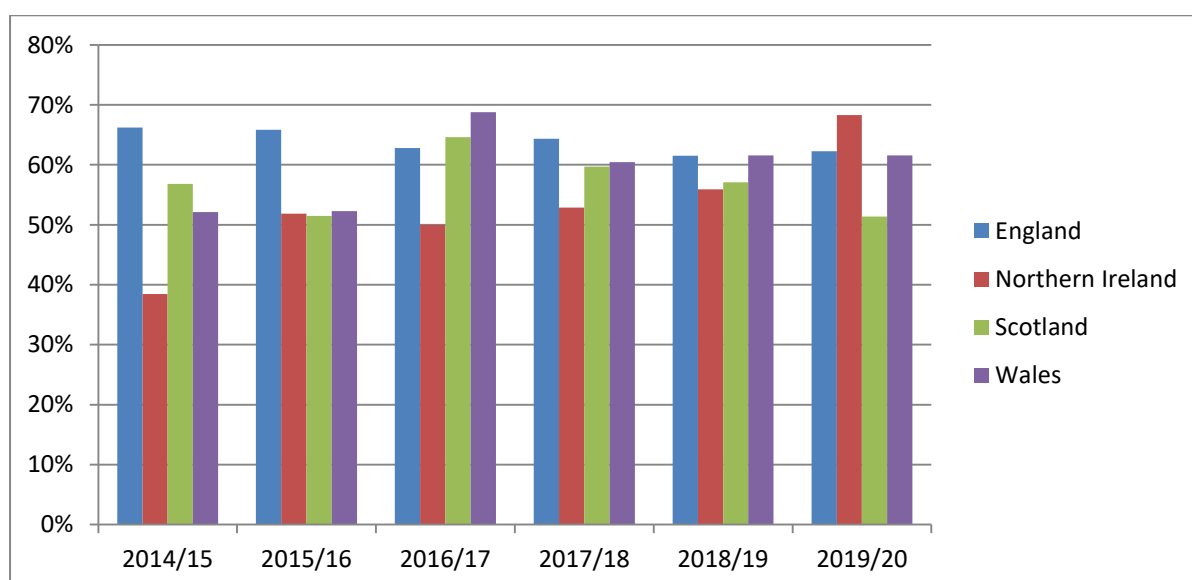
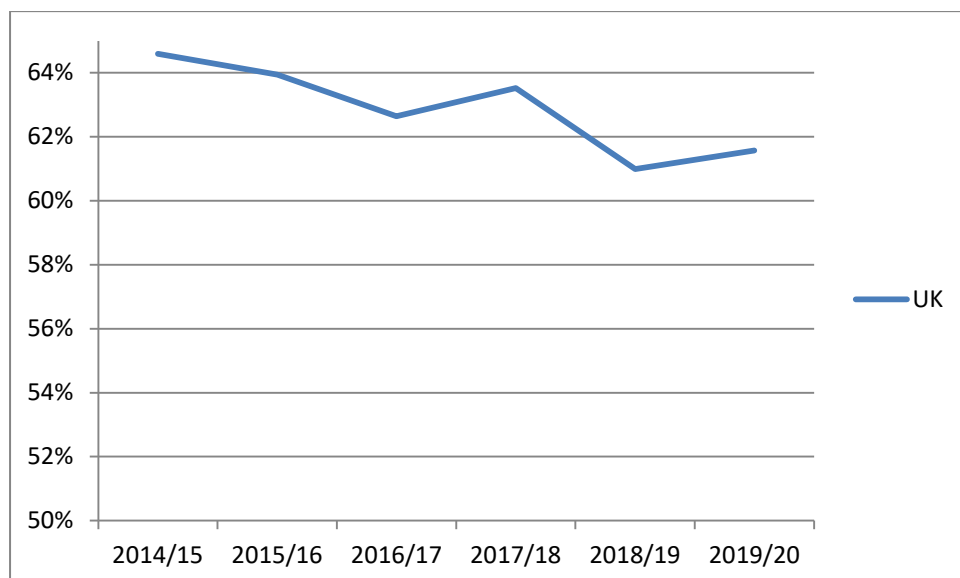
Total for each year exceeds 100% as multiple options possible

UK Aggregate Numbers and % for all 3 years (2017/18 to 2019/20)

Incision	2017/20 (Number)	2017/20 (%)
Median sternotomy	3824	85.6
Partial sternotomy	66	1.5
Thoracotomy	108	2.4
Mini thoracotomy	477	10.7
Robot assisted	32	0.7
Other	42	0.9

Total exceeds 100% as multiple options possible

Mitral valve repair rates (%) as proportion of all isolated mitral procedures



Nations	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
UK	64.6%	63.9%	62.6%	63.5%	61.0%	61.6%
England	66.2%	65.8%	62.8%	64.3%	61.5%	62.2%
Northern Ireland	38.5%	51.9%	50.0%	52.9%	55.9%	68.3%
Scotland	56.8%	51.5%	64.6%	59.7%	57.1%	51.4%
Wales	52.1%	52.3%	68.8%	60.4%	61.5%	61.5%

Excludes cases with concomitant procedures (CABG etc).

MV repair rate (for isolated procedures) based on ratio of MV repair as a proportion of all isolated mitral operations – aggregate data for 3 years 2017 to 2020

Hospital	2017/20 MVR (n)	2017/20 MV repair (n)	Repair rate (%)
WAL. University Hospital Coventry	23	236	91%
RAD. John Radcliffe Hospital	48	150	76%
HHW. Wellington Hospital North (PP)	2	6	75%
NHB. Royal Brompton Hospital	58	162	74%
BAS. Basildon Hospital	62	170	73%
ERI. Royal Infirmary of Edinburgh	80	204	72%
SCM. James Cook University Hospital	49	124	72%
QEB. Queen Elizabeth Hospital	37	92	71%
RSC. Royal Sussex County Hospital	27	66	71%
ANT. Spire St Anthony's Hospital (PP)	5	12	71%
VIC. Blackpool Victoria Hospital	73	174	70%
PLY. Derriford Hospital	75	177	70%
PAP. Papworth Hospital	165	379	70%
STH. St Thomas Hospital	85	182	68%
WYT. Wythenshawe Hospital	45	92	67%
SGH. Southampton General Hospital	53	108	67%
KCH. King's College Hospital	59	118	67%
NGS. Northern General Hospital	94	181	66%
NCR. New Cross Hospital	64	116	64%
HSC. Harley Street Clinic (PP)	5	9	64%
HH. Harefield Hospital	83	143	63%
FRE. Freeman Hospital	57	94	62%
GEO. St George's Hospital	37	61	62%
MOR. Morriston Hospital	44	69	61%
GRL. Glenfield Hospital	89	131	60%
RVB. Royal Victoria Hospital	89	131	60%
BHL. Liverpool Heart and Chest Hospital	172	242	58%
STO. University Hospital of North Staffordshire	53	61	54%
CHH. Castle Hill Hospital	36	38	51%
GJH. Golden Jubilee Hospital	122	106	46%
HAM. Hammersmith Hospital	120	103	46%
CHN. Nottingham City Hospital	72	54	43%
BAL. Barts and the London	298	201	40%
LGI. Leeds General Infirmary	113	69	38%
LBH. London Bridge Hospital (PP)	5	3	38%
MRI. Manchester Royal Infirmary	94	38	29%
RIA. Aberdeen Royal Infirmary	51	14	22%
BRI. Bristol Royal Infirmary	NA	NA	NA
CBS. Spire Southampton Hospital (PP)	NA	NA	NA
CRO. Cromwell Hospital (PP)	NA	NA	NA
UHW. University Hospital of Wales	NA	NA	NA

MVR (mitral valve replacement); MV (mitral valve) repair. Excludes cases with concomitant procedures (CABG etc). Ranked by highest repair rate aggregate 2017/20. (Top quartile >70.6% Green; Bottom quartile <53.5% Red)

Aortic Valve Surgery

See also case numbers and mortality earlier in report (including TAVI).

Data completeness of Incision used for Isolated AVR

	2017/18	2018/19	2019/20
UK	38.0%	63.4%	73.2%

NB. Incision was a new variable added to NACSA dataset in 2017

Proportion (%) of Isolated AVR performed through incision other than a median sternotomy (by nation, 3 year data 2017/20)

Nation	2017/20 (%)
UK	12.2
England	12.4
Northern Ireland	No data
Scotland	7.9
Wales	13.8

NB Data on incision was available for 57.7% of AVR operations during this 3 year period

Proportion (%) of Isolated AVR performed through incision other than a median sternotomy (by hospital, 3 year data 2017/20)

Hospital	2017/20 (%)
LBH. London Bridge Hospital	62.5
KCH. King's College Hospital	48.5
STH. St Thomas' Hospital	38.2
HH. Harefield Hospital	36.8
HHW. Wellington Hospital North	36.4
VIC. Blackpool Victoria Hospital	28.5
NGS. Northern General Hospital	28.5
SCM. James Cook University Hospital	28.5
BAS. Basildon Hospital	20.7
GEO. St George's Hospital	20.5
NHB. Royal Brompton Hospital	15.9
WYT. Wythenshawe Hospital	14.6
HSC. Harley Street Clinic	13.8
MOR. Morriston Hospital	13.8
QEB. Queen Elizabeth Hospital	11.8
CHN. Nottingham City Hospital	10.6
GJH. Golden Jubilee National Hospital	10.1
BHL. Liverpool Heart and Chest Hospital	9.8
ANT. Spire St Anthony's Hospital	9.1
SGH. Southampton General Hospital	8.2
FRE. Freeman Hospital	6.9
NCR. New Cross Hospital	5.9
BAL. Bart's and the London	4.8
PAP. Royal Papworth Hospital	4.6
STO. Royal Stoke University Hospital	3.6
GRL. Glenfield Hospital	2.7
MRI. Manchester Royal Infirmary	0.4
CHH. Castle Hill Hospital	0
CRO. Cromwell Hospital	0
HAM. Hammersmith Hospital	0
RAD. John Radcliffe Hospital	0
RIA. Aberdeen Royal Infirmary	0
WAL. University Hospital Coventry	0
BRI. Bristol Royal Infirmary	No data
CBS. Spire Southampton Hospital	No data
ERI. Royal Infirmary of Edinburgh	No data
LGI. Leeds General Infirmary	No data
PLY. Derriford Hospital	No data
RSC. Royal Sussex County Hospital	No data
RVB. Royal Victoria Hospital	No data
UHW. University Hospital of Wales	No data

Appendix

NICOR Hospital Codes

ANT. Spire St Anthony's Hospital (PP)
BAL. Barts and the London
BAS. Basildon Hospital
BHL. Liverpool Heart and Chest Hospital
BRI. Bristol Royal Infirmary
CBS. Spire Southampton Hospital (PP)
CHH. Castle Hill Hospital
CHN. Nottingham City Hospital
CRO. Cromwell Hospital (PP)
ERI. Royal Infirmary of Edinburgh
FRE. Freeman Hospital
GEO. St George's Hospital
GJH. Golden Jubilee Hospital
GRL. Glenfield Hospital
HAM. Hammersmith Hospital
HH. Harefield Hospital
HHW. Wellington Hospital North (PP)
HSC. Harley Street Clinic (PP)
KCH. King's College Hospital
LBH. London Bridge Hospital (PP)
LGI. Leeds General Infirmary
MOR. Morriston Hospital
MRI. Manchester Royal Infirmary
NCR. New Cross Hospital
NGS. Northern General Hospital
NHB. Royal Brompton Hospital
PAP. Papworth Hospital
PLY. Derriford Hospital
QEB. Queen Elizabeth Hospital
QEP. Queen Elizabeth Hospital (private) (PP)
RAD. John Radcliffe Hospital
RIA. Aberdeen Royal Infirmary
RSC. Royal Sussex County Hospital
RVB. Royal Victoria Hospital
SCM. James Cook University Hospital
SGH. Southampton General Hospital
STH. St Thomas' Hospital
STO. University Hospital of North Staffordshire
UCL. University College Hospital
UHW. University Hospital of Wales
VIC. Blackpool Victoria Hospital
WAL. University Hospital Coventry
WYT. Wythenshawe Hospital

PP Private (Patient) Hospitals

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NICOR is a partnership of clinicians, IT experts, statisticians, academics and managers who, together, are responsible for six cardiovascular clinical audits (the National Cardiac Audit Programme – NCAP) and a number of new health technology registries, including the UK TAVI registry. Hosted by Barts Health NHS Trust, NICOR collects, analyses and interprets vital cardiovascular data into relevant and meaningful information to promote sustainable improvements in patient well-being, safety and outcomes. It is commissioned by the Healthcare Quality Improvement Partnership (HQIP) with funding from NHS England and GIG Cymru /NHS Wales, and additional support from NHS Scotland.

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Society of Cardiothoracic Surgeons in Great Britain & Ireland



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