

Access to Cardiac Care the UK

A Report on
Recent Trends,
Variations in Access
& Future Need

Executive Summary

Oxford Healthcare Associates
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Commissioned by:



Cardio & Vascular Coalition

Access to Cardiac Care in the UK – Executive Summary

BACKGROUND AND CONTENTS

This report presents the results of a study commissioned by the British Cardiovascular Society, the British Heart Foundation and the Cardio & Vascular Coalition (CVC) and has been undertaken by Oxford Healthcare Associates, an independent healthcare services consultancy.

The study assesses and compares population access to the main cardiac interventions for the four countries of the UK – England (and English Strategic Health Authorities), Northern Ireland, Scotland and Wales. Where data exists, more detailed local area analysis has been undertaken.

The assessment is based on geographical resident populations and does not make projections for the likely future workload associated with catchment populations of NHS Trusts and their constituent hospitals.

The study reports on

1. Trends in access to cardiac interventions over the period 2000 to 2006/07. (Section 2)
2. The actual numbers and rates of intervention in 2006 or 2007 compared to expected – based on relative need. (Section 3)
3. Estimates of future projected need (for 2010, 2015 and 2020) for the main cardiac interventions modelled on a range of different possible growth scenarios. (Section 4)

It focuses on the following main cardiac interventions

- ◆ **Angiography** (Trends in access only - Section 2)
- ◆ **Revascularisation:** Angioplasty (PCI) and Coronary Artery Bypass Grafts (CABG)
- ◆ **Valve Surgery**
- ◆ **Electrophysiology (EP) and Arrhythmia interventions**
 - ❖ **Devices:** New Pacemakers (PM), New Implantable Cardioverter Defibrillators (ICD) and New Cardiac Resynchronisation Therapy (CRT)
 - ❖ Electrophysiology Studies (EPS) and Ablation.

In summary – the study tries to answer the following questions

- ◆ How far has access to cardiac services improved since 2000?
- ◆ Have national and local increases in cardiac services yet been able to meet local need and how far are we from addressing regional or local variations in access?
- ◆ What levels of cardiac intervention is needed to meet future local need?

This report can help cardiac networks, commissioners, cardiac specialists and professional associations, in their work to organise and plan their services into the future.

THE WIDER CONTEXT

Tackling heart disease – still one of the most significant health problems in the UK - has been an ongoing NHS priority in each of the four UK countries over many years and for successive governments. Different national approaches to cardiac service improvement have been developed in each UK country, and they are at various stages of implementation.

In England, the National Service Framework for Coronary Heart Disease was published in 2000. An additional NSF section (Chapter 8) on Arrhythmias and Sudden Cardiac Death was published in 2005. In Northern Ireland, a Service Framework for Cardiovascular Health and Well-being was published for consultation in 2008. In Scotland, the Coronary Heart Disease and Stroke Strategy for Scotland was published in 2002. In Wales, the National Service Framework for Coronary Heart Disease was published in 2001.

In support of the implementation of the CHD NSF in England, there have been a wide range of national and regional programmes to modernise and improve cardiac services, including

- ◆ Major central funding allocated to improve and extend the facilities (building and equipment) of existing cardiothoracic centres in order to increase capacity.
- ◆ A nationally funded programme to replace and increase the number of catheter laboratories in both cardiac centres and in district general hospitals, with the aim of improving local access to diagnosis and treatment.
- ◆ An increase in the number of consultant cardiologists in England from 483 full time equivalents (fte) in 2000 to 783 fte in 2008 (up 62%). An increase in the number of cardiothoracic surgeons in England from 183 full time equivalents (fte) in 2000 to 270 fte in 2008 (up 47%).

In their national cardiac plans, England, Wales and Scotland included estimates of the likely future need for revascularisation. In the English NSF the initial rates were 750 pmp for PCIs and at least 750 pmp for CABGs. For Scotland the proposed target in their 2001 Strategy was 1400 pmp, but in the 2004 Strategy Update it was recognised that if the PCI rate continued to increase they would exceed that target in 2004-05. For Wales the National Service Framework aimed to provide 750 per million PCIs and 750 per million CABG, by 2004/5 but with plans to rise to a minimum of 1100 pmp of each. All three countries more than achieved their initial projected rates by 2006.

As the English national programme to increase the number of catheter laboratories was not completed until December 2005 and a number of the major capital schemes were only completed in 2006 or later, this study will not yet reflect the full use of this additional capacity and its impact on access to services.

All four countries have had successful programmes to reduce waiting list numbers and waiting times for cardiac interventions.

Cause of variation in access

Variation in access, different levels of local provision within and across the UK, and associated inequity is not a new issue to the NHS. It is often a reflection of historical local service development over a number of decades. Different local areas set different service or financial priorities and where service development requires significant increases in physical capacity or new workforce, this necessarily can only be phased over time and may depend on workforce availability and training, which is in turn affected by local recruitment and retention issues.

Successive governments have acknowledged and have focussed attention on local or national inequities - in cardiac services, in other clinical areas, or on the underlying determinants of ill-health. The Chief Medical Officer's Annual Report for England, published in 2006, drew attention to the regional variation in access to revascularisation and the need for substantial future increases in order for some local health communities to provide their populations with an equitable level of service¹. More recently, in its 2009 Annual Report, the Arrhythmia Task Force also highlighted variation in access to devices².

Understanding the underlying causes for inequity, let alone the impact on patients and populations, is complex and has not been the subject of this study.

¹ The Chief Medical Officer on the state of the public health. Annual report 2005 pp. 19-21 (Department of Health, 2006).

² The Arrhythmia Task Force. Heart Rhythm Devices: UK National Survey 2007 (January 2009) <http://www.devicesurvey.com/>

The International Context

Obtaining reliable up-to-date data about access to cardiac care in different countries is not straightforward and there are issues about the comparability of population data-collection systems, data quality and universal coverage. However, when using published data from the Organisation for Economic Co-operation and Development (OECD) and the European Heart Rhythm Association, the UK is near the bottom or in the lower quartile for the main cardiac interventions (with the exception of total CRT) when compared to other similar countries.

- ◆ For revascularisation, the UK ranked 20th out of 22 OECD countries
- ◆ For total pacemaker implants, the UK ranked 12th out of 16 European countries.
- ◆ For total ICD implants, the UK ranked 14th out of 16 European countries.
- ◆ For total CRT, the UK ranked 8th out of 15 European countries.
- ◆ For ablation, the UK ranked 16th out of 16 European countries.

METHODS AND DATA

The Data and Data Warnings

To create a robust and all-UK comparative assessment requires the availability of good, consistent data across measures of cardiac care in all four countries.

The study has used three main groups of data

- ◆ **Population Estimates & Projections**
- ◆ **Mortality Data**
- ◆ **Cardiac Intervention Numbers and Rates**

Population Estimates & Projections

For England and Wales population data in five- year age bands (for males and females) was obtained from the UK Statistics Authority. For Northern Ireland and Scotland, population data were obtained from each country's General Register Offices. The data covered: population estimates for the UK and the four individual countries for the years 2000 to 2007; and, population projections for the UK and the four individual countries for the years 2010, 2015 and 2020.

Mortality Data

Data on the numbers of deaths from Ischaemic Heart Disease were obtained from the UK Statistics Authority (England & Wales), the Department of Health and Social Services for Northern Ireland and the General Register Office for Scotland.

Cardiac Intervention Numbers and Rates

The main sources of data for access to cardiac interventions are Hospital Episode Statistics (HES) for angiography, PCI, CABG and valve surgery and the Central Cardiac Audit Database (CCAD) for EP/Arrhythmia interventions. The HES data have been checked against clinical databases and adjustments made where there were substantial differences. Data were requested on the numbers of each intervention undertaken by age, sex and local authority of residence.

With the exception of the demographic and mortality data, these data have been variable in quality and completeness. Information and warnings about data quality and how these have been handled are outlined in more detail in Section 1 (Methods and Data).

The data used for this report were from the latest available year at the time the analysis was undertaken. Across the four UK countries, data on angiography, revascularisation and valve surgery are reported for different annualised periods. Data for England and Northern Ireland are for the *financial* year (latest year 2006/07) and for Scotland and Wales are reported by *calendar* year (2006). For simplicity the 2006/07 financial data is reported as 2006 data.

However, for pacemakers, ICD and CRT the year of comparison is the *calendar* year 2007 as more recent data was available.

Methods

Section 3 compares the actual access (numbers and rates) to cardiac interventions with expected interventions.

For revascularisation, the expected interventions rates for specific populations have been calculated by first weighting the population by relative mortality from Ischaemic Heart Disease (as a proxy for levels of heart disease in the population), and UK national age/sex revascularisation rates, and then applying the UK national all-age intervention rate to the weighted populations.

For valve surgery, the expected interventions rates for specific populations have been calculated by first weighting the population by UK national age/sex valve surgery rates, and then applying the UK national all-age valve surgery rate to the weighted populations.

For new pacemakers, new ICD and new CRT expected intervention (numbers and rates) are calculated by applying national age/sex specific rates to the age/sex structure of each population.

In Section 4, the estimates and projections of future need (for the years 2010, 2015 and 2020) are based on different possible growth scenarios for each cardiac intervention, which were specified by the commissioners of the study.

- ◆ Revascularisation - three possible growth projections have been modelled (each with a plateau in the rate pmp from 2016 to 2020) - 1900 revascularisations pmp by the year 2015, 2200 revascularisations pmp by the year 2015 or 2500 revascularisations pmp by the year 2015.
- ◆ Valve surgery - a projected growth of 5% per year for the overall rate pmp from 2006 to 2020.
- ◆ New Pacemakers - two possible growth projections have been modelled - 5% per year and 10% per year from 2007 to 2020.
- ◆ New ICD – a single growth projection of 7.2% growth per year from 2007 to 2020.
- ◆ New CRT – two growth projections have been modelled, 5% per year and 10% per year, from 2007 to 2020.
- ◆ EPS/Ablation - three growth projections have been modelled - 5%, 10% and 15% per year from 2007 to 2020.

SUMMARY OF RESULTS

1. There was a significant year-on-year increase in access to the main cardiac interventions (numbers and population rates) over the six year period from 2000 to 2006/07 for the UK as a whole and for each of the four countries.
2. Despite these increases, the UK was in the lower quartile for the main cardiac interventions (with the exception of total CRT) when compared to other similar developed countries.
3. Parts of the UK in 2006-07 had significantly lower rates of cardiac interventions than would be expected - based on estimates of relative need.
4. The future projections model the numbers of interventions that will be required in order to match provision to estimated need and reduce variations in access. By 2020, there may need to be a significant increase in the numbers of cardiac procedures provided across the UK.
5. Some parts of the country will need to plan for higher increases than others because of their local population characteristics, and because some of their current intervention rates are lower than expected.

SECTION 2. TRENDS IN ACCESS TO CARDIAC TREATMENTS 2000-2007

There was a significant year-on-year increase in access to the main cardiac interventions (numbers and population rates) over the six year period from 2000 to 2006/07 for the UK as a whole and for each of the four countries.

Table E1 shows the change in the number of interventions at a UK level, the change in intervention rates pmp and the average annual growth for angiography, revascularisation and valve surgery.

Table E1 Angiography, Revascularisation and Valve Surgery – Summary of growth in numbers and rates pmp 2000 -2006, UK									
Intervention	Numbers					Rates pmp			
	2000	2006	Change 2000-06	Change (%) 2000-06	Average Change p.a.	2000	2006	Change 2000-06	Average Change p.a.
Angiography	130,411	194,762	64,351	49%	7%	2,215	3,215	1,000	7%
Revascularisation	59,047	100,418	41,371	70%	9%	1,003	1,657	655	9%
CABG	28,756	26,543	-2,214	-8%	-1%	488	438	-50	-2%
PCI	30,291	73,875	43,584	144%	16%	514	1,219	705	16%
Valve Surgery	9,062	13,080	4,018	44%	6%	154	216	62	6%

For all the main cardiac interventions there have been substantial increases in access over this period.

Angiography

- ◆ For the UK as a whole, between 2000 and 2006, the numbers of angiography increased by 49% (an average of 7% a year), with rates per million population increasing from 2,215 pmp to 3,215 pmp. Angiography numbers increased by 53% in Northern Ireland, 51% in England, 44% in Scotland and 30% in Wales.

Revascularisation (PCI and CABG combined)

- ◆ For the UK as a whole, between 2000 and 2006, the numbers of revascularisation (PCI and CABG combined) increased by 70% (an average of 9% a year), with rates per million population increasing from 1,003 pmp to 1,657 pmp. Revascularisation increased by 72% in Northern Ireland, 71% in England, 64% in Scotland and 63% in Wales.
- ◆ For the UK as a whole, between 2000 and 2006, the numbers of PCIs increased by 149% (an average 16% a year), with a 156% increase in Scotland, 149% increase in England, 106% increase in Northern Ireland and 82% in Wales.
- ◆ For the UK as a whole, between 2000 and 2006 CABG surgery reduced overall by 9% (an average 1% a year reduction). However, in Northern Ireland CABG numbers increased by 11% and in Wales by 30%, whilst reducing in Scotland by 17% and in England by 11%.

Valve surgery

- ◆ For the UK as a whole valve surgery increased by 44% (an average of 6% a year) with rates per million population increasing from 154 pmp to 216 pmp.
- ◆ Within the UK valve surgery increased by 66% in Wales, 47% in England, 27% in Scotland and 2% in Northern Ireland.

Table E2 shows the change in number of interventions at UK level, the change in intervention rates pmp and the average annual growth for new pacemakers, new ICD and new CRT.

Table E2 UK – New Pacemakers, New ICD and New CRT - Summary of growth in numbers (2002-07) and rates pmp (2000-07), UK									
Intervention	Numbers					Rates pmp			
	2002	2007	Change 2002-07	Change (%) 2000-06	Average Change p.a	2000	2007	Change 2000-07	Average Change p.a
New Pacemakers	21,561	27,154	5,593	26%	5%	363	451	81	3%
New ICD	2,007	3,084	1,077	54%	9%	19	52	31	16%
New CRT	705	2,867	2,162	307%	35%	3	51	49	55%

N.B This summary understates the true position because there is missing data for (a) Northern Ireland – New Pacemakers prior to 2006 and (b) Scotland – incomplete data submissions 2005-07.

Arrhythmia Interventions

- ◆ For the UK as a whole New Pacemaker implants have increased by 25% (an average of 5% a year), with rates per million population increasing from 363 pmp in 2000 to 451 pmp in 2007.
- ◆ New ICD implants have increased by an average of 9% a year, with rates per million population increasing from 19 pmp in 2000 to 51 pmp in 2007.
- ◆ New CRT implants have increased by an average of 35% a year, with rates per million population increasing from 3 pmp in 2000 to 51 pmp in 2007.

EPS/Ablation

Data for EPS/Ablation has not been available for all centres over this period. Data for five English centres combined, over the period 2003-2007, show an annual increase of 53% between 2003 and 2004 which then reduced to 15% between 2006 and 2007.

This growth in all interventions has occurred largely because of the national focus on heart disease as a key clinical priority, exemplified by the National Service Framework (NSF) or equivalent national programmes, together with a focus on reducing waiting lists and waiting times

SECTION 3. ACCESS TO CARDIAC INTERVENTIONS – ACTUAL COMPARED TO EXPECTED (2006 OR 2007)

Parts of the UK in 2006-07 had significantly lower rates of cardiac interventions than would be expected - based on estimates of relative need.

The pattern of variation in access was different for each cardiac intervention, but there were some consistent geographic variations

At a national and regional level there were eight parts of the UK with significantly lower access to at least one of the main cardiac interventions

- ◆ **East Midlands.** Revascularisation was 11% below expected levels and new CRT 42% below expected.
- ◆ **North East.** Revascularisation was 18% below expected and new CRT 25% below expected.
- ◆ **North West.** Revascularisation was 33% below expected.
- ◆ **Scotland.** Revascularisation was 29% below expected and valve surgery 10% below expected.
- ◆ **South Central.** New CRT was 23% below expected.
- ◆ **Wales.** Revascularisation was 29% below expected and new pacemakers 17% below expected.
- ◆ **West Midlands.** New pacemakers was 23% below expected and new ICD 16% below expected.
- ◆ **Yorkshire and Humber.** Revascularisation was 12% below expected, valve surgery 20% below expected, new ICD 33% below expected and new CRT 18% below expected.
- ◆ Yorkshire and Humber has the largest challenge with four interventions with significantly lower access than expected.
- ◆ The position for Scotland in relation to arrhythmia interventions could not be fully assessed because of incomplete data.

Table E3 shows the actual (observed) and expected rates per million population for revascularisation and valve surgery and the percentage difference between the two. Statistical significance is indicated by the following colour coding

Significantly lower than expected	Not significant	Significantly higher than expected
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Table E3 Revascularisation – Rates per Million Population - Observed, Expected and Percentage Variance, 2006, UK Countries and English Health Authorities							
Revascularisations - pmp – 2006				Valve Operations pmp - 2006			
Country/HA	Observed	Expected	% Variance	Country/HA	Observed	Expected	% Variance
London	1651	1183	28%	East Midlands	240	221	8%
N Ireland	2111	1670	21%	North West	235	219	7%
South West	1883	1461	22%	East of England	239	224	7%
South Central	1548	1253	19%	South West	256	241	6%
East of England	1670	1415	15%	North East	237	226	5%
South East Coast	1614	1413	12%	London	178	172	3%
England	1642	1577	4%	England	219	215	2%
West Midlands	1754	1726	2%	South Central	211	209	1%
East Midlands	1504	1669	-11%	South East Coast	233	231	1%
Yorkshire & Humber	1588	1784	-12%	West Midlands	212	220	-4%
North East	1721	2031	-18%	Wales	218	233	-7%
Wales	1514	1961	-29%	Scotland	200	221	-10%
Scotland	1732	2231	-29%	N Ireland	173	195	-11%
North West	1515	2016	-33%	Yorkshire & Humber	174	217	-20%

The observed and expected rates per million for new pacemakers, new ICD and new CRT in 2007 are summarised in Table E4.

Table E4 EP/Arrhythmia Interventions – Rates per Million Population - Observed, Expected and Percentage Variance, 2006, UK Countries and English Health Authorities											
New Pacemakers - pmp - 2006				New ICD - pmp - 2006				New CRT - pmp - 2006			
Country/HA	Observed	Expected	% Variance	Country/HA	Observed	Expected	% Variance	Country/HA	Observed	Expected	% Variance
South West	623	531	17%	N Ireland	71	46	53%	North West	73	48	50%
South Central	503	434	16%	London	51	41	23%	London	49	36	36%
East of England	536	473	13%	North East	64	54	20%	West Midlands	66	49	34%
North East	490	460	7%	East Midlands	62	53	17%	South East Coast	55	51	7%
London	360	339	6%	South Central	56	50	11%	N Ireland	44	42	5%
N Ireland	399	377	6%	South East Coast	56	54	4%	England	50	48	5%
South East Coast	531	508	5%	England	51	51	-1%	East of England	49	50	-3%
England	462	448	3%	South West	56	57	-2%	Wales	46	52	-11%
North West	442	445	-1%	Wales	53	55	-3%	South West	46	54	-15%
Yorkshire & Humber	431	444	-3%	East of England	50	53	-6%	Yorkshire & Humber	39	48	-18%
East Midlands	434	457	-5%	North West	47	52	-9%	South Central	36	46	-23%
Wales	410	492	-17%	West Midlands	44	52	-16%	North East	37	50	-25%
West Midlands	349	455	-23%	Yorkshire & Humber	34	51	-33%	East Midlands	29	50	-42%

SECTION 4. PROJECTED FUTURE NEED FOR CARDIAC INTERVENTIONS

The future projections model the numbers of interventions that will be required in order to match provision to estimated need and reduce variations in access. By 2020, there may need to be a significant increase in the numbers of cardiac procedures provided across the UK.

Some parts of the country will need to plan for higher increases than others because of their local population characteristics, and because some of their current intervention rates are lower than expected.

The projections of future need for **revascularisation** and **valve surgery** are summarised in Table E5 for each UK country and for the English Health Authorities and are listed in descending order of relative need, for:

- ◆ The actual number of revascularisations (using the medium scenario of 2200 pmp by 2015) and valve operations (5% growth scenario) in 2006 and 2020
- ◆ The percentage increase per year which would be required between 2006 and 2020;
- ◆ The rates pmp required in to achieve equitable access; and
- ◆ An index comparison of those 2020 rates with the UK =100.

Revascularisation - 2200 pmp by 2015						Valve Surgery - 5% per year Growth Scenario					
Country/Health Authority	2006 - No.	2020 - No.	Increase per year 2006-20	2020 rate pmp	Index (UK=100)	Country/Health Authority	2006 - No.	2020 - No.	Increase per year 2006-20	2020 rate pmp	Index (UK=100)
Scotland	8,862	17,298	5%	3254	140	South West	1,312	2,793	5.5%	485	113
North East	4,400	7,693	4%	2875	124	Wales	647	1,520	6.3%	473	110
North West	10,381	20,799	5%	2833	122	South East Coast	989	2,165	5.8%	459	107
Wales	4,491	8,961	5%	2790	120	Scotland	1,021	2,433	6.4%	458	107
N Ireland	3,676	4,709	2%	2464	106	North East	605	1,213	5.1%	453	106
Yorkshire & Humber	8,165	14,290	4%	2456	106	East of England	1,342	2,850	5.5%	444	104
West Midlands	9,411	13,880	3%	2397	103	East Midlands	1,046	2,227	5.6%	444	104
East Midlands	6,563	11,842	4%	2362	102	West Midlands	1,135	2,531	5.9%	437	102
England	83,369	123,980	3%	2200	95	North West	1,609	3,188	5.0%	434	101
South West	9,647	11,998	2%	2085	90	England	11,111	23,903	5.6%	424	99
South East Coast	6,858	9,451	2%	2004	86	Yorkshire & Humber	895	2,449	7.5%	421	98
East of England	9,365	12,755	2%	1989	86	South Central	841	1,855	5.8%	420	98
South Central	6,175	7,871	2%	1781	77	N Ireland	301	774	7.0%	405	95
London	12,405	13,401	1%	1653	71	London	1,336	2,631	5.0%	324	76
UK	100,399	154,949	3%	2320	100	UK	13,080	28,631	5.8%	429	100

- ◆ For revascularisation - based on achieving a level of 2200 revascularisations (PCI and CBAG combined) per million population - by year 2015, the overall UK growth required will be 3% per year (ranging from 5% per year in Scotland to 1% per year in London.).
- ◆ The future relative need for revascularisation ranges from 40% above the UK average in Scotland, to 29% below the UK average in London.
- ◆ For valve surgery - based on a general 5% annual increase in rates, the growth required ranges from 5.0% per year in London to 7.5% per year in Yorkshire and Humber.
- ◆ The future relative need for valve surgery ranges from 13% above the UK average in the South West to 24% below the UK average in London.

Similar comparisons are summarised for new pacemakers, new ICD in Table E6 and for New CRT and EPS/Ablation in Table E7. For EPS/Ablation baseline numbers for 2007 were not available so the results shown in the table are for 2020 only.

Table E6 New Pacemakers, New ICD - Numbers in 2007 and 2020, Percentage Increase per year and Equitable Rates pmp in 2020											
New Pacemakers - 5% growth per year to 2020						New ICD - 7.2% growth per year to 2020					
Country/ Health Authority	2007 - No.	2020 - No.	Increase per year 2007-20	2020 rate pmp	Index (UK=100)	Country/ Health Authority	2007 - No.	2020 - No.	Increase per year 2007-20	2020 rate pmp	Index (UK=100)
South West	3,224	7,011	6%	1,203	118	South West	288	898	9%	154	111
Wales	1,221	3,678	9%	1,145	112	Wales	159	489	9%	152	109
South East Coast	2,274	5,377	7%	1,140	112	South East Coast	241	698	9%	148	106
East of England	3,033	6,935	7%	1,081	106	Scotland		785		148	106
North East	1,256	2,873	7%	1,073	105	North East	165	392	7%	147	105
Scotland		5,692		1,071	105	East Midlands	272	730	8%	146	104
East Midlands	1,911	5,274	8%	1,052	103	East of England	283	923	10%	144	103
West Midlands	1,877	6,086	10%	1,051	103	West Midlands	236	819	10%	141	101
North West	3,035	7,450	7%	1,015	100	North West	323	1,037	9%	141	101
South Central	2,023	4,478	6%	1,013	99	England	2,594	7,787	9%	138	99
England	23,585	56,929	7%	1,010	99	Yorkshire & Humber	177	800	13%	137	99
Yorkshire & Humber	2,231	5,733	8%	985	97	South Central	225	603	8%	136	98
N Ireland	702	1,761	7%	921	90	N Ireland	125	252	6%	132	95
London	2,721	5,720	6%	687	67	London	384	886	7%	106	76
UK	27,154	68,061	7%	1,019	100	UK	3,084	9,313	9%	139	100

New Pacemakers

- ◆ UK growth per year for new pacemakers for the 5% growth scenario is 7% per year, ranging from 6% per year in the South West, South Central and London to 10% per year in West Midlands.
- ◆ The relative need for new pacemakers ranges from 18% above the UK average in the South West to 33% below the UK average in London

New ICD

- ◆ UK growth per year for new ICD for the 7.2% growth scenario is 9% per year, ranging from 6% per year in Northern Ireland, to 13% per year in Yorkshire and Humber.
- ◆ The relative need for new ICD ranges from 11% above the UK average in the South West to 24% below the UK average in London.

Table E7 New CRT and EPS/Ablation – Numbers in 2007 and 2020, Percentage Increase per year and Equitable Rates pmp in 2020

New CRT - 5% growth per year to 2020						EPS/Ablation - 5% growth per year to 2020					
Country/ Health Authority	2007 - No.	2020 - No.	Increase per year 2007-20	2020 rate pmp	Index (UK=100)	Country/ Health Authority	2007 - No.	2020 - No.	Increase per year 2007-20	2020 rate pmp	Index (UK=100)
South West	239	676	8%	116	113	Scotland		1,781		335	105
Wales	412	1,101	8%	114	112	South West		1,944		334	105
South East Coast	236	521	6%	110	108	Wales		1,065		331	104
Scotland		1,747		110	107	North East		880		329	103
North East	96	291	9%	109	106	South East Coast		1,545		328	103
East Midlands	127	539	12%	108	105	East Midlands		1,633		326	102
East of England	276	685	7%	107	104	East of England		2,067		322	101
West Midlands	354	605	4%	105	102	North West		2,357		321	101
North West	499	763	3%	104	101	West Midlands		1,839		318	100
England	7,641	17,128	6%	101	99	England		17,878		317	99
Yorkshire & Humber	204	585	8%	101	98	Yorkshire & Humber		1,840		316	99
South Central	144	442	9%	100	98	South Central		1,390		315	99
N Ireland	154	549	10%	96	93	N Ireland		593		310	97
London	372	602	4%	72	71	London		2,379		286	90
UK	2,867	6,842	7%	102	100	UK		21,317		319	100

N.B There is missing data for Scotland for the 2007 baseline.

New CRT

- ◆ UK growth per year for new CRT for the 5% growth scenario is 7% per year, ranging from 3% per year in the North West, to 12% per year in the East Midlands.
- ◆ The relative need for new CRT ranges from 13% above the UK average in the South West to 29% below the UK average in London.

EPS/Ablation

- ◆ The relative need for EPS/Ablation ranges from 5% above the UK average in Scotland to 10% below the UK average in London.

CONCLUSIONS

This study potentially provides commissioners, NHS Trusts, lead clinicians and the professional societies, with useful information which will support ongoing work to address current variations in access across the UK and plan to meet future need.

In recent years in order to improve cardiac care, increase intervention rates and improve patient experience and outcomes, there has been substantial investment in cardiac services, including in new buildings and equipment and the appointment of additional staff. Whilst overall access to cardiac interventions has increased substantially since 2000, the results from this study identify parts of the UK where access was significantly below expected current levels in 2006 and 2007.

The UK is still providing lower rates of access to most of the main cardiac interventions than in comparable developed countries.

The future projections and assumptions about potential growth in the numbers of interventions, will need to be reviewed regularly. This needs to be done in the context of changing population growth patterns and demography, new technologies and medical/surgical techniques, new pharmaceuticals, and the impact of health-promotion and prevention strategies.

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