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NHS Machines

Utilisation of high-value equipment at NHS Trusts

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Contents

Executive Summary	3
1. Introduction	5
2. Method	6
3. Linear accelerators	7
4. Positron Emission Tomography	9
5. Magnetic Resonance Imaging	11
6. Computerised Tomography	13
7. Lithotripters	14
8. What can be done to make better use of NHS machines?	15
Appendix	17

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Executive Summary

With the public finances in crisis, there is now acute pressure on NHS Trusts to improve efficiency. It is critical that the NHS makes full use of the resources already at its disposal, particularly as an aging population looks set to put further demands on hospitals and doctors. This report provides new evidence that many NHS Trusts are not adequately utilising expensive diagnostic and treatment equipment. If NHS Trusts are to establish genuine efficiency, the management of machines must be improved.

All of the information on machine usage provided in this report was established through a series of Freedom of Information requests to the 200 Acute NHS Trusts. Complete data sets are available in the Appendix A.

The information provided suggests there is considerable variation between NHS Trusts in the use of key machines – to the extent this carries over into differing levels of service it will produce a postcode lottery. If all Trusts just brought usage up to the national average, let alone bringing it up to the standard of the best Trusts, considerable additional capacity could be provided:

- **Linear accelerators** (Linacs) play a critical role in cancer care. The average usage of the Linacs that we found was 7,191 fractions per year. That is significantly below the recommendation from the National Radiotherapy Advisory Group of 8,000. There is also considerable variation between trusts, with trusts in Hull and London providing fewer than 5,000 fractions per machine. If all trusts below the national average brought their usage rate up to the average, an additional 128,758 fractions could be provided – equivalent to 18 additional machines.
- **Positron Emission Tomography (PET)** is extremely useful in effectively diagnosing and treating cancer. The average usage of the PET scanners that we found was 956 scans per year. That is significantly below the Department of Health target of 2,000-2,500 scans per year. There was considerable variation, and some Trusts produced fewer than 500 scans per machine while one met the Department of Health target. If all trusts below the national average brought their usage rate up to the average, an additional 2,492 scans could be provided – equivalent to three additional PET scanners.
- **Magnetic Resonance Imaging (MRI)** is a safe means of producing detailed internal scans useful in diagnosis and treatment. The average use of MRI scanners in 2008 was 4,941 scans. There is considerable variation between trusts; eight trusts used each machine less than 2,000 times while nine trusts used each machine more than 8,000 times. If all trusts below the national average brought their usage rate up to the average, an additional 265,732 scans could be provided, equivalent to 54 additional scanners running at the average annual usage.

- **Computerised Tomography (CT)** scanners provide a detailed view of different tissue types not available with traditional x-rays. The average usage of CT scanners in 2008 was 7,424 scans. There is considerable variation between trusts, with six Trusts using their CT scanners over 15,000 times, while seven had an average usage lower than 2,000. If all trusts below the national average brought their usage rate up to the average, an additional 656,647 scans could be provided, equivalent to 88 additional scanners running at the average annual usage.
- **Lithotripters** use ultrasound shock waves to break up kidney stones. The average usage of lithotripters in 2008 was 457 uses. There is considerable variation between Trusts, with three Trusts getting more than 1,000 uses per lithotripter and another just 18 uses per lithotripter. If all trusts below the national average brought their usage rate up to the average, an additional 8,528 uses could be provided, equivalent to 19 additional lithotripters running at the average annual usage.

There are a number of simple steps that could be taken to increase the use of advanced machinery in the NHS. For example, the National Radiotherapy Advisory Group has recommended that capable linear accelerators should work six rather than five days a week, and be in operation for more hours each day. Broader reforms are needed, to increase competition between Trusts and incentivise proper resource maximisation, but better management of existing equipment is something all Trusts can implement immediately, improving the quality of care provided to patients and reducing the burden placed on taxpayers.

1. Introduction

NHS budgets have grown considerably in recent years. Department of Health spending plans estimate an outturn of £98.2 billion on NHS Trusts just in England.¹ Yet despite these record levels of spending, there are still concerns over the record of the NHS, compared to peers in other Western European countries, in avoiding delays and avoidable mortality.²

Regardless of political commitments to maintain funding for the health service, there is likely to be increased pressure on budgets in the years to come. Research for the King's Fund and the Institute for Fiscal Studies has suggested that there could be a 'funding gap' – between the funding recommended by the 2002 Sir Derek Wanless review and the actual funding that the NHS receives in the years to come – of between £4 billion and £30 billion.³ In that context, and in order to avoid either crippling increases in the burden on taxpayers or serious cuts in services, it is vital that all possible efforts are made to increase efficiency and productivity in the NHS.

This report explores these issues by looking at the use NHS's use of vital diagnostic and treatment equipment. The extent to which full use has been made of these expensive machines has been raised by the National Radiotherapy Advisory Group as a critical issue in the push for improved NHS productivity. The Group noted that "some increase in capacity could be achieved by using existing equipment to its full potential", as their research suggested "a considerable range of productivity across the radiotherapy departments in England".⁴

Many NHS patients will have experienced delays in diagnosis or treatment due to a shortage of the machines covered in this study. More efficient use of existing equipment could lessen the need for new machines and save the NHS money. It could also increase the quality of service by reducing unnecessary, and sometimes dangerous, delays.

¹ HM Treasury 'Budget 2009', April 2009, Table C11: Departmental Expenditure Limits - resource and capital budgets

² Sinclair, M. 'Wasting Lives: A statistical analysis of NHS performance in a European context since 1981', TaxPayers' Alliance, January 2008

³ Appleby, J., Crawford, R. & Emmerson, C. 'How cold will it be? Prospects for NHS funding: 2011-17', King's Fund & Institute for Fiscal Studies, July 2009

⁴ National Radiotherapy Advisory Group 'Radiotherapy: developing a world class service for England: Report to Ministers from National Radiotherapy Advisory Group', 26 February 2007

2. Method

The data set on which this report is built was obtained using a series of requests to the 200 Acute NHS Trusts in the UK, made under the Freedom of Information Act (2000).

Information relates to: the number of devices found on each Trust's site; the number of uses; and which month – if any – devices were bought, replaced or disposed of in calendar year 2008. Data covers the calendar year 2008, or the financial year 2008/09 where calendar year data was not available. The full data set is available in Appendix A.

Responses from the NHS Trusts varied in quality, and many responses took longer than the statutory twenty days permitted by the Freedom of Information Act. In some cases services were outsourced to private companies and consequently information was not held by the Trust. Other Trusts had machines that were only available for a certain, and variable, number of days per month and these Trusts had to be left out as results were not comparable.

Eight Trusts, five of which are Foundation Trusts, did not provide any or acceptable information before our cut-off date for data collection:

	Trust
1	Brighton and Sussex University Hospital NHS Trust
2	Central Manchester University Hospital NHS Foundation Trust
3	Dorset County Hospital NHS Foundation Trust
4	Guys and St Thomas' Hospital NHS Foundation Trust
5	Hereford Hospital NHS Trust
6	Northern Lincolnshire and Goole NHS Foundation Trust
7	Royal Surrey County Hospital NHS Trust
8	University Hospitals Bristol NHS Foundation Trust

Five Trusts provided partial information before our cut-off date for data collection:

	Trust
1	Cwm Taf NHS Trust
2	East and North Hertfordshire NHS Trust
3	Papworth NHS Foundation Trust
4	Royal West Sussex NHS Trust
5	United Lincolnshire Hospitals NHS Trust

3. Linear Accelerators

Radiotherapy is fundamentally important to radical (curing the patient) and palliative (relieving symptoms in incurable cases) cancer care. Evidence has shown that 52 per cent of cancer patients should receive radiotherapy during their treatment, with treatment contributing in 40 per cent of the cases where cancer incidents are cured.⁵ Linear accelerators (Linacs) use ionised radiation to destroy cancer cells through fractionated treatment which allows high doses of radiation to be given over a number of days to reduce unwanted effects on normal tissue. Any delays in radiotherapy treatment can adversely affect a patient's chances of surviving.

However, in 2005 the Royal College of Radiologists estimated that 53 per cent of radical patients were seen outside recommended waiting times.⁶ Pressure on radiotherapy departments is set to rise as incidents of cancer increase with an ageing population. It has been recommended that there should be 5.5 Linacs per million people, however, in 2005 in England and Wales there were only 4.2 Linacs per million people.⁷ Linacs are very expensive, with machines costing around £1.5 million along with £1.5 million for building costs as machines have to be housed in bunkers to protect staff and the public from radiation.

In 2007, the Government's National Radiology Advisory Group (NRAG) reported to ministers that "all radiotherapy departments should ensure that their linear accelerators (Linacs) deliver at least 8,000 fractions per annum averaged across all Linacs in the department with immediate effect".⁸ The NRAG recommended that by 2010/11 Linacs should be delivering each 8,300 fractions per year, with this increasing to 8,700 by 2016.

Unfortunately, the Scottish Trusts, Royal Free Hampstead NHS Trust and Ipswich Hospital NHS Trust were excluded as information was given in uses not fractions and was therefore not comparable with the other Trusts. They have therefore been excluded from this study. University Hospitals of Leicester NHS Trust; Royal Berkshire NHS Foundation Trust and Maidstone; and Tunbridge Wells NHS Trust provided data that was not usable, as fractions could not be calculated. South Devon Healthcare NHS Foundation Trust was excluded as an outlier with an average usage of 17,188 as it was unusually high, exceeding even NRAG maximum recommendation of 11,000 fractions per machine per year.

⁵ National Radiotherapy Advisory Group 'Radiotherapy: developing a world class service for England: Report to Ministers from National Radiotherapy Advisory Group', 26 February 2007

⁶ Summers, E. & Williams, M. 'Re-audit of Radiotherapy Waiting Times 2005': The Royal College of Radiologists, 2006

⁷ Erridge, S.C., Featherstone, C., Chalmers, R., Campbell, J., Stockton, D & Black, R. 'What will be the radiotherapy machine capacity required for optimal delivery of radiotherapy in Scotland in 2015?', European Journal of Cancer, 2007, 1802-1809

⁸ National Radiotherapy Advisory Group 'Radiotherapy: developing a world class service for England: Report to Ministers from National Radiotherapy Advisory Group', 26 February 2007, pp4

The data obtained suggests that there is considerable room for improvement:

- Average usage per machine of 7,191 fractions per machine is significantly below the NRAG recommendation of 8,000. The average number of fractions per machine month was 606, as some trusts acquired or disposed of machines during the year.
- Of those which provided usable data for linac fractions, only 11 met or exceeded the NRAG recommendation of 8,000 fractions per year.
- Two Trusts, Hull and East Yorkshire Hospitals NHS Trust and University College London Hospitals NHS Foundation Trust failed to provide 5,000 fractions per machine.
- If all those trusts below the national average of 606 fractions per machine month brought their usage up to the national average, it would mean an additional 128,758 fractions could be provided. That is equivalent to the introduction of 18 machines, at the average number of fractions per year.

4. Positron Emission Tomography

PET scanning is a rapidly changing field, with evidence of the benefits of such scans only recently becoming sufficiently well established to warrant UK-wide facilities. The scanner uses short term radionuclides to highlight biochemical or functional change rather than just structural. The system therefore has a range of uses with cancer patients, providing improved diagnosis and planning for care and treatment, particularly in combination with a CT scan.⁹

In 2005, the UK lagged behind several other Western European countries in PET scanning, with other countries achieving one scanner per two million people, compared to the UK with one scanner per five million.¹⁰ The framework for development from the Department of Health in 2005 suggested that 40,000 scans per year were needed across England between 2008 and 2010, with 2,000-2,500 scans per machine per year considered reasonable.¹¹ In order to meet this demand, in 2008 the Department of Health purchased approximately 48,000 PET/CT scans from Alliance Medical, a private specialist in diagnostic imaging solutions, to be supplied over eight NHS sites in the north of England by a mobile scanner.¹²

The need for radiopharmaceuticals makes PET scanning expensive to run and maintain with capital costs including building costs in the region of £2 million to £2.6 million, and annual costs of £1.5 million to £2 million. As a result mobile services can be more quickly commissioned, as has clearly been the case in 2008.

36 Trusts had a scanner on site, and available for entire months. No Welsh Trust had PET facilities and patients were instead sent to Manchester or Cheltenham.

The data obtained suggests that there is considerable room for improvement:

- Only one Trust achieved the target number of scans for PET machines, University College London Hospitals NHS Foundation Trust.
- The average number of patients scanned across the UK was 956 per machine, far lower than the lower band of the Department of Health's target, 2,000 scans per machine, per year. The average number of patients scanned per machine month was 81, as some trusts acquired or disposed of machines during the year.
- Three Trusts scanned an average of less than 500 patients, with Cambridge University Hospitals NHS Foundation Trust only scanning 10 patients in 2008 – however, their scanner was only installed near the end of the year.

⁹ NHS Clinical Knowledge Summaries 'PET Scan', September 2009

¹⁰ Department of Health 'A Framework for the Development of Positron Emission Tomography (PET) Services in England', October 2005

¹¹ Department of Health 'A Framework for the Development of Positron Emission Tomography (PET) Services in England', October 2005

¹² Alliance Medical 'Alliance Medical appointed to tackle cancer diagnostics', 28 February 2008



- If all trusts brought their rate of scans per machine month up to the national average, that would mean 2,492 additional scans would be available, equivalent to three additional PET scanners running at the average annual usage.

5. Magnetic Resonance Imaging

Magnetic Resonance Imaging (MRI) uses a strong magnetic field and radio waves to produce detailed pictures of the inside of a patient's body. It is one of the safest imaging techniques available and is particularly useful in showing soft tissue structures such as those found in cancer tumours or brain damage, as well as diagnosing other serious disorders such as epilepsy.¹³ An MRI scanner costs approximately £600,000; however this does not include potential building costs of £1.3 million. MRI provision has been accorded a high priority since a 2002 Audit Commission report suggested that a lack of MRI machines was responsible for more than half of total waiting times.¹⁴ This prompted a massive investment in provision along with the installation of Department of Health scanners providing 80,000- 120,000 scans to reduce unequal access to machines¹⁵.

Ten Trusts did not provide any information on MRI usage. East and North Hertfordshire NHS Trust only obtains a low MRI usage rate low rate, however this is a research machine for brachytherapy so is not used for clinical scanning. Basingstoke and North Hampshire NHS Foundation Trust does not hold the data as the MRI provision was undertaken by a private company, despite other Trusts being able to provide this information.

The data obtained suggests that there is considerable room for improvement:

- NHS Trusts used MRI machines on average 4,941 times per machine in 2008. The average usage per machine month was 418, as some trusts acquired or disposed of machines during the year.
- Eight NHS Trusts had usage of less than 2,000 per machine. However, the NHS Dumfries and Galloway machine was not installed until the end of June; Burton Hospitals NHS Foundation Trust has a machine that can only be used to a limited extent; and the Liverpool Heart and Chest Hospital NHS Trust is a specialist hospital with limited capacity for MRI scans. Great Ormond Street Hospital for Children NHS Trust and Sheffield Children's NHS Foundation Trust had low utilisation due to difficulties in scanning children.
- Of those eight, three NHS Trusts had utilization rates of less than 2,000 per machine without apparent justification: The Royal Marsden NHS Foundation Trust, Bedford Hospital NHS Trust and Velindre NHS Trust.
- Nine Trusts had usage per machine rates of over 8,000: Bromley Hospitals NHS Trust, Colchester Hospital University NHS Foundation Trust, Great Western Hospitals NHS Foundation Trust, Mayday Healthcare NHS Trust, Medway NHS Foundation

¹³ NHS Clinical Knowledge Summaries 'MRI Scan', September 2009

¹⁴ BBC 'NHS to get mobile MRI scanners', 8 April 2004

¹⁵ Department of Health, 'Huge expansion in NHS scans from next month', 29 June 2004



Trust, Milton Keynes Hospital NHS Foundation Trust, North Bristol NHS Trust, Salford Royal NHS Foundation Trust and The Dudley Group of Hospitals NHS Foundation Trust.

- If all those Trusts with below average usage brought their usage rates up to the national average, that would provide more than 265,000 additional scans, equivalent to 54 additional scanners running at the average annual usage.

6. Computerised Tomography

A Computerised Tomography (CT) scanner uses cross-sectional x-ray examination to show the body in layers. CT scanning provides a detailed view of different tissue types that are not available with traditional x-rays. They are most commonly used for diagnostics, particularly checking for tumours and diagnosing conditions in internal organs. They are also important in radiotherapy planning for cancer treatment though, as they can identify normal and abnormal tissue.¹⁶ CT scanners cost between £500,000, plus building costs, for a basic scanner to £2 million for a joint PET/CT scanner.

Eight Trusts did not provide information on usage of their CT scanners. Another eight Trusts did not have CT provision due to either geographical location or their restricted capacity as a specialist hospital, which meant that patients were sent to other Trusts for scans.

The data obtained suggests that there is considerable room for improvement:

- The CT machines were used on 7,424 times on average in 2008. The average usage per machine month was 633, as some trusts acquired or disposed of machines during the year.
- Six Trusts had an average machine usage of over 15,000. These Trusts were Bromley Hospitals NHS Trust; Dartford and Gravesham NHS Trust; Great Western Hospitals NHS Foundation Trust; The Princess Alexandra Hospital Hospital NHS Trust; West Middlesex University Hospital NHS Trust; and Wrightington, Wigan and Leigh NHS Foundation Trust.
- Seven Trusts had an average usage lower than 2,000. Two of those Trusts – NHS Shetland and NHS Western Isles – are disadvantaged by low population density in the areas they serve and two Trusts – Great Ormond Street Hospital for Children NHS Trust and Sheffield Children’s NHS Foundation Trust – work with children, who are generally more difficult to scan. Moorfields Eye Hospital NHS Foundation Trust may have low usage due to its status as a specialist centre. Therefore, two Trusts had low utilisation rates that cannot easily be explained: East and North Hertfordshire NHS Trust and Queen Victoria NHS Foundation Trust. East and North Hertfordshire NHS Trust is home to the Mount Vernon Cancer Centre where CT scans should be an important part of radiotherapy treatment.
- If all those Trusts with below average usage brought their usage rates up to the national average, that would provide nearly 657,000 additional scans, equivalent to 88 additional scanners running at the average annual usage.

¹⁶ NHS Clinical Knowledge Summaries ‘CT Scan’, September 2009

7. Lithotripters

Lithotripters use shock waves formed by ultrasound to break kidney stones into small particles that will pass painlessly through the body. Kidney stones are often painful and can lead to infection or blood in the urine. Without removal, they have the potential to damage kidneys. Lithotripters remove the need for surgery and anaesthetic, and therefore the need for hospital stays and long recovery times. The machines can also be used for musculoskeletal problems. These machines can cost up to £750,000.

Thirty three Trusts have Lithotripsy facilities on site and available for entire months, with 10 not providing usage information. NHS Greater Glasgow and Clyde was left out as an anomaly as it was unclear whether machines were fixed or mobile and used over a number of sites.

The data obtained suggests that there is considerable room for improvement:

- The average usage across 41 machines in the UK was 457. Average usage per machine month was 38 uses, as some trusts acquired or disposed of machines during the year.
- There were significant differences in usage rates across the UK, with three Trusts – North Bristol NHS Trust; Royal Berkshire NHS Foundation Trust; and Royal Liverpool and Broadgreen University Hospitals NHS Trust – using each machine more than 1,000 times per year. On the other hand, one Trust – the Dudley Group of Hospitals NHS Foundation Trust – provided just 18 uses per lithotripter.
- If all those Trusts with below average usage brought their usage rates up to the national average, that would provide 8,528 additional uses, equivalent to 19 additional lithotripters running at the average annual usage.

8. What can be done to make better use of NHS machines?

With pressure on funding, the NHS needs to reverse the trend of falling productivity. There are challenges in increasing the usage of expensive NHS machines, such as shortages of qualified staff, but there are a number of ways Trusts across the NHS could use their machines more intensively in order to increase capacity. Part of this could be small administrative changes that might secure better value.

For example, the machines could be used for more hours per week. We live in a 24 hour society where people in many professions are required to work at the weekends. Patients don't stop getting sick over the weekends. This is also a time that is more convenient for patients that work. With cancer treatment, currently patients requiring radical radiotherapy from linear accelerators do not start treatment on Fridays so that they do not miss two days of treatment over the weekend. Neither radical nor palliative patients are treated on weekends at all. If the machines were used on Saturdays, there would be no need to delay treatment until the following week, although patients would still not be able to start treatment on a Saturday. Currently, most departments are open for 8 hours a day through a 5 day week. Trusts should be encouraged to increase capacity by implementing NRAG recommendations that linacs work on average 9.2 hours per day, with capable departments working an 11.5 hour days as well as working a six day week.¹⁷ These kinds of working practices could be applied to the different machines in order to increase capacity.

Deeper reforms are needed to address this and other issues though. In the earlier TaxPayers' Alliance report *Wasting Lives: A statistical analysis of NHS performance in a European context since 1981* three priorities were identified for reforms to improve the working of the NHS: decentralisation, an end to political management and increasing competition. Increased competition, in particular, could create a powerful incentive for Trusts to make better use of valuable assets like the expensive machines studied in this report.

Many businesses achieve better value by making more intensive use of expensive capital equipment. Airlines, for example, go to great lengths to ensure that their planes spend as little time on the ground as possible and carry as many passengers per flight as possible. Diluting fixed costs in this way is the only way of getting better value from such expensive resources. Unfortunately, there are presently few incentives for trusts to get better use out of machines in their care. If Trusts had to compete to secure patients it is unlikely that they would leave such valuable resources under utilised.

¹⁷National Radiotherapy Advisory Group 'Radiotherapy: developing a world class service for England: Report to Ministers from National Radiotherapy Advisory Group', 26 February 2007



There are a range of resources available to the NHS that Trusts need to get maximum value from, including staff and drugs. Effective utilisation of machines is relatively easy to monitor, and therefore manage, which means that they are a good test of the effectiveness of the NHS in delivering value for money. This report's findings confirm that there is serious work to be done improving productivity, which might yield considerable results.

Appendix

Table A.1: Linear Accelerator usage statistics

Trust	Number of devices	Fractions	Number of months in which device was not available	Average per machine month	Average per machine	Additional fractions if brought up to average usage
Abertawe Bro Morgannwg University NHS Trust	4	25,690	0	535	6,423	3,374
Barking, Havering and Redbridge University Hospitals NHS Trust	4	20,836	0	434	5,209	8,228
Barts and The London NHS Trust	4	22,806	0	475	5,702	6,258
Belfast Health and Social Care Trust	8	58,495	0	609	7,312	0
Cambridge University Hospitals NHS Foundation Trust	8	50,647	0	528	6,331	7,482
Clatterbridge Centre For Oncology NHS Foundation Trust	9	78,242	0	724	8,694	0
Colchester Hospital University NHS Foundation Trust	4	23,540	0	490	5,885	5,524
Derby Hospitals NHS Foundation Trust	3	25,797	0	717	8,599	0
East and North Hertfordshire NHS Trust	8	49,507	7	556	6,188	4,383
Gloucestershire Hospitals NHS Foundation Trust	4	37,214	0	775	9,304	0
Hull and East Yorkshire Hospitals NHS Trust	7	29,125	3	360	4,161	19,921
Imperial College Healthcare NHS Trust	6	32,140	0	446	5,357	11,457
Lancashire Teaching Hospital NHS Foundation Trust	6	44,513	0	618	7,419	0
Leeds Teaching Hospitals NHS Trust	10	61,850	6	543	6,185	7,178
Norfolk and Norwich University Hospitals NHS Foundation Trust	4	23,959	0	499	5,990	5,105
North Cumbria University Hospitals NHS Trust	2	10,252	0	427	5,126	4,280
North Wales NHS Trust	3	23,692	0	658	7,897	0
Northampton General Hospital NHS Trust	3	27,000	0	750	9,000	0
Nottingham University Hospital NHS Trust	4	40,000	0	833	10,000	0

Trust	Number of devices	Fractions	Number of months in which device was not available	Average per machine month	Average per machine	Additional fractions if brought up to average usage
Oxford Radcliffe Hospital NHS Trust	5	37,460	0	624	7,492	0
Plymouth Hospitals NHS Trust	3	18,889	0	525	6,296	2,909
Poole Hospital NHS Foundation Trust	4	30,364	0	633	7,591	0
Portsmouth Hospitals NHS Trust	3	28,904	0	803	9,635	0
Royal Cornwall Hospitals NHS Trust	2	16,002	0	667	8,001	0
Royal Devon and Exeter NHS Foundation Trust	2	21,177	0	882	10,589	0
Royal United Hospital Bath NHS Trust	2	17,103	0	713	8,552	0
Sheffield Teaching Hospitals NHS Foundation Trust	7	53,054	0	632	7,579	0
Shrewsbury and Telford Hospitals NHS Trust	2	15,928	0	664	7,964	0
South Tees Hospital NHS Trust	5	31,570	0	526	6,314	4,761
Southampton University Hospital NHS Trust	6	34,893	0	485	5,816	8,704
Southend University Hospital NHS Foundation Trust	4	30,500	0	635	7,625	0
The Christie NHS Foundation Trust	12	79,777	0	554	6,648	7,416
The Newcastle Upon Tyne Hospitals NHS Foundation Trust	9	52,667	20	598	5,852	618
The Royal Wolverhampton NHS Trust	4	28,076	0	585	7,019	988
United Lincolnshire Hospitals NHS Trust	3	27,215	0	756	9,072	0
University College London Hospitals NHS Foundation Trust	5	24,332	0	406	4,866	11,999
University Hospital Birmingham NHS Foundation Trust	8	50,419	0	525	6,302	7,710
University Hospital Of North Staffordshire NHS Trust	3	22,173	0	616	7,391	0
University Hospitals Coventry and Warwickshire NHS Trust	5	32,237	6	597	6,447	460
Velindre NHS Trust	5	49,009	0	817	9,802	0
Average				606	7,191	128,758

Table A.2: Positron Emissions Tomography (PET) usage statistics

Trust	Number of devices	Uses	Number of months in which device was not available	Average usage	Average usage per machine month	Additional uses if usage brought up to average usage
Barts and The London NHS Trust	1	649	0	649	54	321
Belfast Health and Social Care Trust	1	1,845	0	1,845	154	0
Cambridge University Hospitals NHS Foundation Trust	1	10	11	10	10	71
Imperial College Healthcare NHS Trust	1	617	0	617	51	353
Leeds Teaching Hospitals NHS Trust	1	1,183	0	1,183	99	0
NHS Grampian	1	622	0	622	52	348
NHS Greater Glasgow and Clyde	1	1,375	0	1,375	115	0
NHS Lothian	1	593	0	593	49	377
Northumbria Healthcare NHS Foundation Trust	1	68	6	68	11	417
Nottingham University Hospital NHS Trust	1	1,267	0	1,267	106	0
University College London Hospitals NHS Foundation Trust	2	4,500	0	2,250	188	0
University Hospital Birmingham NHS Foundation Trust	1	1,587	0	1,587	132	0
University Hospitals Coventry and Warwickshire NHS Trust	1	364	0	364	30	606
Average/Total				956	81	2,492

Table A.3: Magnetic Resonance Imaging (MRI) usage statistics

Trust	Number of devices	Uses	Number of months in which device was not available	Average usage	Average per machine month	Additional uses if brought up to average
Abertawe Bro Morgannwg University NHS Trust	4	20,797	0	5,199	433	0
Aintree University Hospitals NHS Foundation Trust	1	7,559	0	7,559	630	0
Airedale NHS Trust	1	3,596	0	3,596	300	1,417
Alder Hey Children's NHS Foundation Trust	1	5,600	0	5,600	467	0
Barking, Havering and Redbridge University Hospitals NHS Trust	3	17,000	0	5,667	472	0
Barnet and Chase Farm Hospitals NHS Trust	3	8,036	0	2,679	223	7,003
Barnsley Hospital NHS Foundation Trust	1	4,650	0	4,650	388	363
Barts and The London NHS Trust	4	11,417	0	2,854	238	8,635
Bedford Hospital NHS Trust	2	3,554	0	1,777	148	6,472
Belfast Health and Social Care Trust	7	24,124	0	3,446	287	10,967
Birmingham Children's Hospital NHS Foundation Trust	2	6,637	0	3,319	277	3,389
Blackpool, Fylde and Wyre Hospitals NHS Foundation Trust	1	5,940	0	5,940	495	0
Bradford Teaching Hospitals NHS Foundation Trust	2	7,848	0	3,924	327	2,178
Bromley Hospitals NHS Trust	1	8,027	0	8,027	669	0
Buckinghamshire Hospitals NHS Trust	2	13,622	0	6,811	568	0
Burton Hospitals NHS Foundation Trust	2	3,329	0	1,665	139	6,697
Calderdale and Huddersfield NHS Foundation Trust	2	10,320	0	5,160	430	0
Cambridge University Hospitals NHS Foundation Trust	5	15,560	6	3,112	288	6,999
Cardiff and Vale NHS Trust	3	15,499	0	5,166	431	0
Chelsea and Westminster Hospitals NHS Foundation Trust	1	6,668	0	6,668	556	0
Chesterfield Royal Hospital NHS Foundation Trust	1	4,602	0	4,602	384	411

Trust	Number of devices	Uses	Number of months in which device was not available	Average usage	Average per machine month	Additional uses if brought up to average
City Hospitals Sunderland NHS Foundation Trust	1	4,300	0	4,300	358	713
Clatterbridge Centre For Oncology NHS Foundation Trust	1	2,669	0	2,669	222	2,344
Colchester Hospital University NHS Foundation Trust	1	9,033	0	9,033	753	0
Countess Of Chester Hospital NHS Foundation Trust	1	6,358	0	6,358	530	0
County Durham and Darlington NHS Foundation Trust	3	14,808	0	4,936	411	231
Cwm Taf NHS Trust	2	8,805	0	4,403	367	1,221
Dartford and Gravesham NHS Trust	1	5,497	0	5,497	458	0
Derby Hospitals NHS Foundation Trust	2	8,565	0	4,283	357	1,461
Ealing Hospital NHS Trust	1	3,692	0	3,692	308	1,321
East Cheshire NHS Trust	1	5,243	0	5,243	437	0
East Kent Hospitals University NHS Trust	4	27,156	5	6,789	632	0
East Lancashire Hospitals NHS Trust	2	8,545	0	4,273	356	1,481
East Sussex Hospitals NHS Trust	2	13,806	0	6,903	575	0
Epsom and St Helier University Hospitals NHS Trust	2	7,985	0	3,993	333	2,041
Gateshead Health NHS Foundation Trust	1	5,379	0	5,379	448	0
George Eliot Hospitals NHS Trust	1	6,397	0	6,397	533	0
Gloucestershire Hospitals NHS Foundation Trust	2	13,129	0	6,565	547	0
Great Ormond Street Hospital For Children NHS Trust	4	7,594	0	1,899	158	12,458
Great Western Hospitals NHS Foundation Trust	1	9,125	0	9,125	760	0
Gwent Healthcare NHS Trust	2	11,094	0	5,547	462	0
Harrogate and District NHS Foundation Trust	1	4,533	0	4,533	378	480
Heart Of England NHS Foundation Trust	4	19,580	0	4,895	408	472

Trust	Number of devices	Uses	Number of months in which device was not available	Average usage	Average per machine month	Additional uses if brought up to average
Hinchingbrooke Health Care NHS Trust	1	4,000	0	4,000	333	1,013
Homerton University Hospital NHS Foundation Trust	1	4,087	0	4,087	341	926
Hywel Dda NHS Trust	2	5,776	0	2,888	241	4,250
Imperial College Healthcare NHS Trust	7	37,122	0	5,303	442	0
Ipswich Hospital NHS Trust	2	8,449	0	4,225	352	1,577
Isle of Wight NHS PCT	1	3,427	0	3,427	286	1,586
James Paget University Hospital NHS Foundation Trust	1	2,556	0	2,556	213	2,457
Kettering General Hospital NHS Foundation Trust	1	4,980	0	4,980	415	33
King's College Hospital NHS Foundation Trust	3	18,243	3	6,081	553	0
Kingston Hospital Trust	1	6,659	0	6,659	555	0
Lancashire Teaching Hospital NHS Foundation Trust	3	14,966	10	4,989	576	0
Leeds Teaching Hospitals NHS Trust	6	17,904	0	2,984	249	12,174
Liverpool Heart and Chest Hospital NHS Trust	1	404	0	404	34	4,609
Luton and Dunstable Hospital NHS Foundation Trust	2	6,400	0	3,200	267	3,626
Maidstone and Tunbridge Wells NHS Trust	2	10,676	0	5,338	445	0
Mayday Healthcare NHS Trust	1	8,513	0	8,513	709	0
Medway NHS Foundation Trust	1	8,702	0	8,702	725	0
Mid Cheshire Hospitals NHS Foundation Trust	1	6,207	0	6,207	517	0
Mid Essex Hospital Services NHS Trust	1	5,264	0	5,264	439	0
Mid Yorkshire Hospitals NHS Trust	2	9,265	0	4,633	386	761
Milton Keynes Hospital NHS Foundation Trust	1	10,869	0	10,869	906	0
Newham University Hospital NHS Trust	1	5,500	0	5,500	458	0
NHS Ayrshire and Arran	2	7,330	0	3,665	305	2,696
NHS Borders	1	3,897	0	3,897	325	1,116
NHS Dumfries and Galloway	1	1,065	5	1,065	152	1,859

Trust	Number of devices	Uses	Number of months in which device was not available	Average usage	Average per machine month	Additional uses if brought up to average
NHS Fife	2	4,574	8	2,287	286	2,110
NHS Forth Valley	1	4,886	0	4,886	407	127
NHS Grampian	2	8,781	0	4,391	366	1,245
NHS Greater Glasgow and Clyde	12	30,661	15	2,555	238	23,229
NHS Highland	1	4,588	0	4,588	382	425
NHS Lanarkshire	2	8,523	0	4,262	355	1,503
NHS Lothian	5	20,940	0	4,188	349	4,125
NHS Tayside	3	12,067	0	4,022	335	2,972
North Bristol NHS Trust	4	42,657	0	10,664	889	0
North Cumbria University Hospitals NHS Trust	1	5,395	0	5,395	450	0
North Middlesex University Hospital Trust	1	3,037	0	3,037	253	1,976
North Tees and Hartlepool NHS Foundation Trust	2	9,295	0	4,648	387	731
North Wales NHS Trust	2	8,462	0	4,231	353	1,564
North West London Hospitals NHS Trust	3	12,248	0	4,083	340	2,791
North West Wales NHS Trust	1	3,620	0	3,620	302	1,393
Northampton General Hospital NHS Trust	1	7,289	0	7,289	607	0
Northern Devon Healthcare NHS Trust	1	4,000	0	4,000	333	1,013
Northern Health and Social Care Trust	1	5,250	0	5,250	438	0
Nuffield Orthopaedic Centre NHS Trust	3	11,156	0	3,719	310	3,883
Oxford Radcliffe Hospital NHS Trust	4	19,061	0	4,765	397	991
Pennine Acute Hospital NHS Trust	3	16,134	0	5,378	448	0
Peterborough and Stamford Hospital NHS Foundation Trust	1	8,000	0	8,000	667	0
Plymouth Hospitals NHS Trust	3	14,297	0	4,766	397	742
Poole Hospital NHS Foundation Trust	2	11,000	0	5,500	458	0
Portsmouth Hospitals NHS Trust	2	10,260	0	5,130	428	0
Queen Elizabeth Hospital NHS Trust	1	5,345	0	5,345	445	0
Queen Mary's Sidcup NHS Trust	1	3,579	0	3,579	298	1,434

Trust	Number of devices	Uses	Number of months in which device was not available	Average usage	Average per machine month	Additional uses if brought up to average
Robert Jones and Agnes Hunt Orthopaedic and District Hospital NHS Trust	2	8,050	0	4,025	335	1,976
Royal Bolton Hospital NHS Foundation Trust	1	4,993	0	4,993	416	20
Royal Brompton and Harefield NHS Trust	2	4,352	0	2,176	181	5,674
Royal Cornwall Hospitals NHS Trust	2	14,021	0	7,011	584	0
Royal Free Hampstead NHS Trust	3	16,706	0	5,569	464	0
Royal Liverpool and Broadgreen University Hospitals NHS Trust	2	15,641	0	7,821	652	0
Royal National Orthopaedic Hospital NHS Trust	1	5,467	0	5,467	456	0
Royal United Hospital Bath NHS Trust	2	10,012	0	5,006	417	14
Royal West Sussex NHS Trust	1	4,157	0	4,157	346	856
Salford Royal NHS Foundation Trust	2	21,536	0	10,768	897	0
Salisbury NHS Foundation Trust	1	6,247	0	6,247	521	0
Sandwell and West Birmingham Hospitals NHS Trust	2	11,493	0	5,747	479	0
Scarborough and North East Yorkshire Health Care NHS Trust	1	2,191	0	2,191	183	2,822
Sheffield Children's NHS Foundation Trust	1	1,826	0	1,826	152	3,187
Sheffield Teaching Hospitals NHS Foundation Trust	5	19,161	0	3,832	319	5,904
Sherwood Forest Hospitals NHS Foundation Trust	1	6,779	0	6,779	565	0
Shrewsbury and Telford Hospitals NHS Trust	2	7,798	0	3,899	325	2,228
South Devon Healthcare NHS Foundation Trust	1	5,287	0	5,287	441	0
South Eastern Health and Social Care Trust	1	4,957	0	4,957	413	56
South Tees Hospital NHS Trust	3	19,292	0	6,431	536	0
South Tyneside NHS Foundation Trust	1	4,718	0	4,718	393	295

Trust	Number of devices	Uses	Number of months in which device was not available	Average usage	Average per machine month	Additional uses if brought up to average
South Warwickshire General Hospitals NHS Trust	1	5,099	0	5,099	425	0
Southampton University Hospital NHS Trust	5	12,935	0	2,587	216	12,130
Southend University Hospital NHS Foundation Trust	2	7,505	0	3,753	313	2,521
Southern Health and Social Care Trust	1	3,604	0	3,604	300	1,409
Southport and Ormskirk Hospital NHS Trust	1	4,959	0	4,959	413	54
St George's Healthcare NHS Trust	2	13,051	0	6,526	544	0
St Helens and Knowsley Hospitals NHS Trust	2	9,000	10	4,500	643	0
Stockport NHS Foundation Trust	1	6,351	0	6,351	529	0
Surrey and Sussex Healthcare NHS Trust	1	4,382	0	4,382	365	631
Tameside Hospital NHS Foundation Trust	1	3,977	0	3,977	331	1,036
Taunton and Somerset NHS Foundation Trust	1	4,888	0	4,888	407	125
The Christie NHS Foundation Trust	2	4,382	0	2,191	183	5,644
The Dudley Group of Hospitals NHS Foundation Trust	1	9,628	0	9,628	802	0
The Hillingdon Hospital NHS Trust	1	5,539	0	5,539	462	0
The Lewisham Hospital NHS Trust	1	6,044	0	6,044	504	0
The Newcastle Upon Tyne Hospitals NHS Foundation Trust	4	17,519	0	4,380	365	2,533
The Princess Alexandra Hospital NHS Trust	1	6,113	0	6,113	509	0
The Queen Elizabeth Hospital King's Lynn NHS Trust	1	6,691	0	6,691	558	0
The Rotherham NHS Foundation Trust	1	3,729	0	3,729	311	1,284
The Royal Marsden NHS Foundation Trust	4	7,061	0	1,765	147	12,991
The Royal Orthopaedic Hospital NHS Foundation Trust	1	7,877	0	7,877	656	0

Trust	Number of devices	Uses	Number of months in which device was not available	Average usage	Average per machine month	Additional uses if brought up to average
The Royal Wolverhampton NHS Trust	2	11,031	0	5,516	460	0
The Whittington Hospital NHS Trust	1	6,017	0	6,017	501	0
Trafford Healthcare NHS Trust	1	3,506	0	3,506	292	1,507
University College London Hospitals NHS Foundation Trust	7	28,911	0	4,130	344	6,180
University Hospital Birmingham NHS Foundation Trust	3	13,721	0	4,574	381	1,318
University Hospital Of North Staffordshire NHS Trust	3	15,601	3	5,200	473	0
University Hospital Of South Manchester NHS Foundation Trust	2	5,222	7	2,611	307	1,880
University Hospitals Coventry and Warwickshire NHS Trust	4	20,152	0	5,038	420	0
University Hospitals Of Leicester NHS Trust	6	19,854	0	3,309	276	10,224
University Hospitals Of Morecambe Bay NHS Trust	2	6,800	0	3,400	283	3,226
Velindre NHS Trust	1	1,229	0	1,229	102	3,784
Walsall Hospitals NHS Trust	1	5,100	0	5,100	425	0
Walton Centre For Neurology and Neurosurgery NHS Trust	3	7,537	11	2,512	301	2,907
Warrington and Halton Hospitals NHS Foundation Trust	1	6,474	0	6,474	540	0
West Hertfordshire Hospitals NHS Trust	1	7,323	0	7,323	610	0
West Middlesex University Hospital NHS Trust	1	7,800	0	7,800	650	0
West Suffolk Hospitals NHS Trust	1	4,562	0	4,562	380	451
Western Health and Social Care Trust	1	6,218	0	6,218	518	0
Whipps Cross University Hospital NHS Trust	1	6,169	0	6,169	514	0

Trust	Number of devices	Uses	Number of months in which device was not available	Average usage	Average per machine month	Additional uses if brought up to average
Wirral University Teaching Hospital NHS Foundation Trust	1	7,420	0	7,420	618	0
Worcestershire Acute Hospitals NHS Trust	2	11,985	0	5,993	499	0
Worthing and Southlands Hospitals NHS Trust	1	4,611	0	4,611	384	402
Wrightington Wigan and Leigh NHS Foundation Trust	1	5,837	0	5,837	486	0
Yeovil District Hospital NHS Foundation Trust	1	4,247	0	4,247	354	766
Average/Total				4,941	418	265,732

Table A.4: Computerised Tomography (CT) usage statistics

Trusts	Number of devices	Uses	Number of months in which device was not available	Average uses	Average uses per machine month	Additional scans if brought up to average usage
Abertawe Bro Morgannwg University NHS Trust	6	43,679	5	7,280	652	0
Aintree University Hospitals NHS Foundation Trust	2	16,833	0	8,417	701	0
Airedale NHS Trust	1	7,248	0	7,248	604	352
Alder Hey Children's NHS Foundation Trust	1	2,500	0	2,500	208	5,100
Ashford and St Peter's Hospitals NHS Trust	2	16,903	0	8,452	704	0
Barking, Havering and Redbridge University Hospitals NHS Trust	4	35,500	0	8,875	740	0
Barnet and Chase Farm Hospitals NHS Trust	2	19,393	0	9,697	808	0
Barnsley Hospital NHS Foundation Trust	1	12,653	0	12,653	1,054	0
Barts and The London NHS Trust	5	18,761	0	3,752	313	19,241
Basildon and Thurrock University Hospitals NHS Foundation Trust	2	13,152	0	6,576	548	2,049
Basingstoke and North Hampshire NHS Foundation Trust	1	8,249	0	8,249	687	0
Bedford Hospital NHS Trust	1	10,588	0	10,588	882	0
Belfast Health and Social Care Trust	9	36,000	0	4,000	333	32,403
Birmingham Children's Hospital NHS Foundation Trust	1	2,212	0	2,212	184	5,388
Blackpool, Fylde and Wyre Hospitals NHS Foundation Trust	2	11,444	0	5,722	477	3,757
Bradford Teaching Hospitals NHS Foundation Trust	3	21,279	0	7,093	591	1,522
Bromley Hospitals NHS Trust	1	16,206	0	16,206	1,351	0
Buckinghamshire Hospitals NHS Trust	2	26,974	0	13,487	1,124	0
Burton Hospitals NHS Foundation Trust	2	13,646	0	6,823	569	1,555
Calderdale and Huddersfield NHS Foundation Trust	2	20,437	0	10,219	852	0

Trusts	Number of devices	Uses	Number of months in which device was not available	Average uses	Average uses per machine month	Additional scans if brought up to average usage
Cambridge University Hospitals NHS Foundation Trust	3	28,264	0	9,421	785	0
Cardiff and Vale NHS Trust	3	26,402	0	8,801	733	0
Chelsea and Westminster Hospitals NHS Foundation Trust	2	8,081	5	4,041	425	3,953
Chesterfield Royal Hospital NHS Foundation Trust	1	9,356	5	9,356	1,337	0
City Hospitals Sunderland NHS Foundation Trust	2	13,000	0	6,500	542	2,201
Clatterbridge Centre For Oncology NHS Foundation Trust	3	6,541	0	2,180	182	16,260
Colchester Hospital University NHS Foundation Trust	3	14,890	0	4,963	414	7,911
Countess Of Chester Hospital NHS Foundation Trust	2	9,919	0	4,960	413	5,282
County Durham and Darlington NHS Foundation Trust	4	26,472	0	6,618	552	3,929
Cwm Taf NHS Trust	2	20,887	0	10,444	870	0
Dartford and Gravesham NHS Trust	1	15,796	0	15,796	1,316	0
Derby Hospitals NHS Foundation Trust	3	19,288	0	6,429	536	3,513
Doncaster and Bassetlaw Hospitals NHS Foundation Trust	2	23,125	0	11,563	964	0
Ealing Hospital NHS Trust	1	8,773	0	8,773	731	0
East and North Hertfordshire NHS Trust	2	3,074	0	1,537	128	12,127
East Cheshire NHS Trust	1	7,066	0	7,066	589	534
East Kent Hospitals University NHS Trust	3	34,121	0	11,374	948	0
East Lancashire Hospitals NHS Trust	3	24,085	0	8,028	669	0
East Sussex Hospitals NHS Trust	2	28,705	0	14,353	1,196	0
Epsom and St Helier University Hospitals NHS Trust	2	18,629	0	9,315	776	0
Gateshead Health NHS Foundation Trust	1	10,344	0	10,344	862	0
George Eliot Hospitals NHS Trust	1	3,938	0	3,938	328	3,662

Trusts	Number of devices	Uses	Number of months in which device was not available	Average uses	Average uses per machine month	Additional scans if brought up to average usage
Gloucestershire Hospitals NHS Foundation Trust	4	32,924	0	8,231	686	0
Great Ormond Street Hospital For Children NHS Trust	2	2,638	0	1,319	110	12,563
Great Western Hospitals NHS Foundation Trust	1	16,613	0	16,613	1,384	0
Gwent Healthcare NHS Trust	3	41,805	0	13,935	1,161	0
Harrogate and District NHS Foundation Trust	1	5,757	0	5,757	480	1,843
Heart Of England NHS Foundation Trust	5	34,343	0	6,869	572	3,659
Heatherwood and Wexham Park Hospitals NHS Foundation Trust	2	13,225	0	6,613	551	1,976
Hinchingbrooke Health Care NHS Trust	1	4,000	0	4,000	333	3,600
Homerton University Hospital NHS Foundation Trust	1	8,741	0	8,741	728	0
Hull and East Yorkshire Hospitals NHS Trust	4	28,648	0	7,162	597	1,753
Hywel Dda NHS Trust	2	13,056	0	6,528	544	2,145
Imperial College Healthcare NHS Trust	5	69,936	0	13,987	1,166	0
Ipswich Hospital NHS Trust	2	17,789	0	8,895	741	0
Isle of Wight NHS PCT	1	4,988	0	4,988	416	2,612
James Paget University Hospital NHS Foundation Trust	2	7,745	0	3,873	323	7,456
Kettering General Hospital NHS Foundation Trust	2	16,003	0	8,002	667	0
King's College Hospital NHS Foundation Trust	3	37,956	0	12,652	1,054	0
Kingston Hospital Trust	1	13,086	0	13,086	1,091	0
Lancashire Teaching Hospital NHS Foundation Trust	2	17,914	0	8,957	746	0
Leeds Teaching Hospitals NHS Trust	7	40,208	0	5,744	479	12,995
Liverpool Heart and Chest Hospital NHS Trust	1	2,017	3	2,017	224	3,683
Luton and Dunstable Hospital NHS Foundation Trust	2	10,100	0	5,050	421	5,101
Maidstone and Tunbridge Wells NHS Trust	6	25,040	0	4,173	348	20,562

Trusts	Number of devices	Uses	Number of months in which device was not available	Average uses	Average uses per machine month	Additional scans if brought up to average usage
Mayday Healthcare NHS Trust	1	11,345	0	11,345	945	0
Medway NHS Foundation Trust	2	11,605	4	5,803	580	1,062
Mid Cheshire Hospitals NHS Foundation Trust	1	9,923	0	9,923	827	0
Mid Essex Hospital Services NHS Trust	2	12,737	0	6,369	531	2,464
Mid Staffordshire NHS Foundation Trust	1	13,441	0	13,441	1,120	0
Mid Yorkshire Hospitals NHS Trust	4	18,410	0	4,603	384	11,991
Milton Keynes Hospital NHS Foundation Trust	1	12,398	0	12,398	1,033	0
Moorfields Eye Hospital NHS Foundation Trust	1	1,060	0	1,060	88	6,540
Newham University Hospital NHS Trust	1	10,000	0	10,000	833	0
NHS Ayrshire and Arran	2	16,584	0	8,292	691	0
NHS Borders	2	8,162	0	4,081	340	7,039
NHS Dumfries and Galloway	2	6,871	0	3,436	286	8,330
NHS Fife	2	13,139	0	6,570	547	2,062
NHS Forth Valley	2	14,656	0	7,328	611	545
NHS Grampian	4	28,802	0	7,201	600	1,599
NHS Greater Glasgow and Clyde	19	132,858	3	6,993	590	9,649
NHS Highland	5	13,259	7	2,652	250	20,309
NHS Lanarkshire	3	28,618	0	9,539	795	0
NHS Lothian	6	44,425	0	7,404	617	1,177
NHS Shetland	1	628	0	628	52	6,972
NHS Tayside	2	21,895	0	10,948	912	0
NHS Western Isles	1	1,241	0	1,241	103	6,359
Norfolk and Norwich University Hospitals NHS Foundation Trust	3	28,043	0	9,348	779	0
North Bristol NHS Trust	3	26,447	0	8,816	735	0
North Cumbria University Hospitals NHS Trust	2	20,126	0	10,063	839	0
North Middlesex University Hospital Trust	1	9,358	0	9,358	780	0
North Tees and Hartlepool NHS Foundation Trust	2	19,920	0	9,960	830	0
North Wales NHS Trust	3	17,928	4	5,976	560	2,340
North West London Hospitals NHS Trust	3	17,121	0	5,707	476	5,680

Trusts	Number of devices	Uses	Number of months in which device was not available	Average uses	Average uses per machine month	Additional scans if brought up to average usage
North West Wales NHS Trust	1	6,195	0	6,195	516	1,405
Northampton General Hospital NHS Trust	2	13,800	5	6,900	726	0
Northern Devon Healthcare NHS Trust	1	6,000	0	6,000	500	1,600
Northern Health and Social Care Trust	3	19,995	0	6,665	555	2,806
Northumbria Healthcare NHS Foundation Trust	4	20,138	0	5,035	420	10,263
Nottingham University Hospital NHS Trust	6	29,963	0	4,994	416	15,639
Oxford Radcliffe Hospital NHS Trust	6	36,596	0	6,099	508	9,006
Papworth NHS Foundation Trust	2	4,057	0	2,029	169	11,144
Pennine Acute Hospital NHS Trust	4	27,058	0	6,765	564	3,343
Peterborough and Stamford Hospital NHS Foundation Trust	1	14,500	0	14,500	1,208	0
Plymouth Hospitals NHS Trust	5	39,319	0	7,864	655	0
Poole Hospital NHS Foundation Trust	2	17,604	0	8,802	734	0
Portsmouth Hospitals NHS Trust	4	37,790	11	9,448	1,021	0
Queen Elizabeth Hospital NHS Trust	1	9,660	0	9,660	805	0
Queen Mary's Sidcup NHS Trust	1	5,246	0	5,246	437	2,354
Queen Victoria Hospital NHS Foundation Trust	1	468	0	468	39	7,132
Robert Jones and Agnes Hunt Orthopaedic and District Hospital NHS Trust	1	2,956	0	2,956	246	4,644
Royal Berkshire NHS Foundation Trust	2	15,732	10	7,866	1,124	0
Royal Bolton Hospital NHS Foundation Trust	2	11,006	0	5,503	459	4,195
Royal Brompton and Harefield NHS Trust	3	8,563	0	2,854	238	14,238
Royal Cornwall Hospitals NHS Trust	3	20,119	0	6,706	559	2,682
Royal Devon and Exeter NHS Foundation Trust	2	17,820	0	8,910	743	0
Royal Free Hampstead NHS Trust	3	22,202	0	7,401	617	599

Trusts	Number of devices	Uses	Number of months in which device was not available	Average uses	Average uses per machine month	Additional scans if brought up to average usage
Royal Liverpool and Broadgreen University Hospitals NHS Trust	2	28,123	0	14,062	1,172	0
Royal National Orthopaedic Hospital NHS Trust	1	2,892	0	2,892	241	4,708
Royal United Hospital Bath NHS Trust	2	16,690	0	8,345	695	0
Royal West Sussex NHS Trust	1	14,391	0	14,391	1,199	0
Salford Royal NHS Foundation Trust	2	16,023	0	8,012	668	0
Salisbury NHS Foundation Trust	1	8,850	2	8,850	885	0
Sandwell and West Birmingham Hospitals NHS Trust	3	19,086	0	6,362	530	3,715
Scarborough and North East Yorkshire Health Care NHS Trust	1	6,670	0	6,670	556	930
Sheffield Children's NHS Foundation Trust	1	1,917	0	1,917	160	5,683
Sheffield Teaching Hospitals NHS Foundation Trust	8	37,902	11	4,738	446	15,934
Sherwood Forest Hospitals NHS Foundation Trust	2	13,499	0	6,750	562	1,702
Shrewsbury and Telford Hospitals NHS Trust	3	28,485	0	9,495	791	0
South Devon Healthcare NHS Foundation Trust	2	13,235	0	6,618	551	1,966
South Eastern Health and Social Care Trust	4	16,368	0	4,092	341	14,033
South Tees Hospital NHS Trust	5	26,943	0	5,389	449	11,059
South Tyneside NHS Foundation Trust	1	6,496	0	6,496	541	1,104
South Warwickshire General Hospitals NHS Trust	1	11,662	0	11,662	972	0
Southampton University Hospital NHS Trust	5	22,763	0	4,553	379	15,239
Southend University Hospital NHS Foundation Trust	3	12,257	0	4,086	340	10,544
Southern Health and Social Care Trust	3	13,334	0	4,445	370	9,467
Southport and Ormskirk Hospital NHS Trust	2	9,304	0	4,652	388	5,897

Trusts	Number of devices	Uses	Number of months in which device was not available	Average uses	Average uses per machine month	Additional scans if brought up to average usage
St George's Healthcare NHS Trust	3	26,102	0	8,701	725	0
St Helens and Knowsley Hospitals NHS Trust	3	17,500	10	5,833	673	0
Stockport NHS Foundation Trust	1	14,831	0	14,831	1,236	0
Surrey and Sussex Healthcare NHS Trust	3	12,820	0	4,273	356	9,981
Tameside Hospital NHS Foundation Trust	1	8,947	0	8,947	746	0
Taunton and Somerset NHS Foundation Trust	2	12,591	0	6,296	525	2,610
The Christie NHS Foundation Trust	3	14,441	0	4,814	401	8,360
The Dudley Group of Hospitals NHS Foundation Trust	2	12,690	0	6,345	529	2,511
The Hillingdon Hospital NHS Trust	1	9,280	0	9,280	773	0
The Lewisham Hospital NHS Trust	1	6,150	0	6,150	513	1,450
The Newcastle Upon Tyne Hospitals NHS Foundation Trust	7	29,216	0	4,174	348	23,987
The Princess Alexandra Hospital NHS Trust	1	15,809	0	15,809	1,317	0
The Queen Elizabeth Hospital King's Lynn NHS Trust	2	11,215	0	5,608	467	3,986
The Rotherham NHS Foundation Trust	1	10,037	0	10,037	836	0
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	2	13,302	0	6,651	554	1,899
The Royal Marsden NHS Foundation Trust	2	19,495	0	9,748	812	0
The Royal Orthopaedic Hospital NHS Foundation Trust	1	2,388	0	2,388	199	5,212
The Royal Wolverhampton NHS Trust	4	23,853	0	5,963	497	6,548
The Whittington Hospital NHS Trust	2	8,266	0	4,133	344	6,935
Trafford Healthcare NHS Trust	1	3,994	0	3,994	333	3,606
University College London Hospitals NHS Foundation Trust	4	26,314	0	6,579	548	4,087

Trusts	Number of devices	Uses	Number of months in which device was not available	Average uses	Average uses per machine month	Additional scans if brought up to average usage
University Hospital Birmingham NHS Foundation Trust	4	23,159	0	5,790	482	7,242
University Hospital Of North Staffordshire NHS Trust	4	35,492	0	8,873	739	0
University Hospital Of South Manchester NHS Foundation Trust	2	13,358	0	6,679	557	1,843
University Hospitals Coventry and Warwickshire NHS Trust	3	33,016	11	11,005	1,321	0
University Hospitals Of Leicester NHS Trust	8	25,527	2	3,191	272	34,009
University Hospitals Of Morecambe Bay NHS Trust	2	18,841	0	9,421	785	0
Velindre NHS Trust	3	11,601	0	3,867	322	11,200
Walsall Hospitals NHS Trust	1	8,500	0	8,500	708	0
Walton Centre For Neurology and Neurosurgery NHS Trust	1	5,239	0	5,239	437	2,361
Warrington and Halton Hospitals NHS Foundation Trust	2	11,733	0	5,867	489	3,468
West Hertfordshire Hospitals NHS Trust	2	20,110	0	10,055	838	0
West Middlesex University Hospital NHS Trust	1	15,600	0	15,600	1,300	0
West Suffolk Hospitals NHS Trust	2	8,869	0	4,435	370	6,332
Western Health and Social Care Trust	3	16,789	0	5,596	466	6,012
Weston Area Health NHS Trust	1	7,964	0	7,964	664	0
Whipps Cross University Hospital NHS Trust	2	13,073	3	6,537	623	228
Winchester and Eastleigh Healthcare NHS Trust	1	6,000	0	6,000	500	1,600
Wirral University Teaching Hospital NHS Foundation Trust	2	21,932	0	10,966	914	0
Worcestershire Acute Hospitals NHS Trust	3	31,564	0	10,521	877	0
Worthing and Southlands Hospitals NHS Trust	1	7,713	0	7,713	643	0
Wrightington Wigan and Leigh NHS Foundation Trust	1	16,846	0	16,846	1,404	0
Yeovil District Hospital NHS Foundation Trust	1	6,881	0	6,881	573	719

Trusts	Number of devices	Uses	Number of months in which device was not available	Average uses	Average uses per machine month	Additional scans if brought up to average usage
York Hospitals NHS Foundation Trust	2	12,581	0	6,291	524	2,620
Average/Total				7,424	633	656,647

Table A.5: Lithotripter usage statistics

Trusts	Number of devices	Uses	Number of months in which device was not available	Average usage	Average per machine month	Additional uses if brought up to average
Barts and The London NHS Trust	3	788	0	263	22	583
Blackpool, Fylde and Wyre Hospitals NHS Foundation Trust	1	197	0	197	16	260
Bradford Teaching Hospitals NHS Foundation Trust	1	362	0	362	30	95
Cambridge University Hospitals NHS Foundation Trust	1	361	0	361	30	96
Dartford and Gravesham NHS Trust	1	142	0	142	12	315
Derby Hospitals NHS Foundation Trust	1	311	0	311	26	146
East Kent Hospitals University NHS Trust	2	167	0	84	7	747
Epsom and St Helier University Hospitals NHS Trust	1	1,000	0	1,000	83	0
Gwent Healthcare NHS Trust	1	818	0	818	68	0
Hywel Dda NHS Trust	1	91	0	91	8	366
Imperial College Healthcare NHS Trust	1	395	0	395	33	62
Leeds Teaching Hospitals NHS Trust	1	600	0	600	50	0
Mid Cheshire Hospitals NHS Foundation Trust	1	57	0	57	5	400
NHS Lothian	1	962	0	962	80	0
North Bristol NHS Trust	1	2,241	0	2,241	187	0
North Wales NHS Trust	1	385	0	385	32	72
North West London Hospitals NHS Trust	1	585	0	585	49	0
Nottingham University Hospital NHS Trust	2	378	0	189	16	536
Pennine Acute Hospital NHS Trust	1	284	0	284	24	173
Portsmouth Hospitals NHS Trust	1	75	0	75	6	382
Royal Berkshire NHS Foundation Trust	1	1,047	0	1,047	87	0
Royal Liverpool and Broadgreen University Hospitals NHS Trust	1	1,203	0	1,203	100	0

Trusts	Number of devices	Uses	Number of months in which device was not available	Average usage	Average per machine month	Additional uses if brought up to average
Salisbury NHS Foundation Trust	1	48	0	48	4	409
Scarborough and North East Yorkshire Health Care NHS Trust	2	46	0	23	2	868
Sheffield Teaching Hospitals NHS Foundation Trust	1	443	0	443	37	14
South Devon Healthcare NHS Foundation Trust	1	86	0	86	7	371
South Tees Hospital NHS Trust	1	163	0	163	14	294
Southern Health and Social Care Trust	1	298	0	298	25	159
The Dudley Group of Hospitals NHS Foundation Trust	2	35	0	18	1	879
The Newcastle Upon Tyne Hospitals NHS Foundation Trust	1	746	0	746	62	0
University College London Hospitals NHS Foundation Trust	1	943	0	943	79	0
University Hospital Of South Manchester NHS Foundation Trust	1	640	0	640	53	0
York Hospitals NHS Foundation Trust	3	72	0	24	2	1,299
Total/Average	41	33		457	38	8,528