Diagnostic Imaging Dataset Annual Statistical Release 2014/15

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Contents

Frequently Used Acronyms

- **DID**
  Diagnostic Imaging Dataset
- **HSCIC**
  Health and Social Care Information Centre
- **RIS**
  Radiology Information System

1 Executive summary

1.1 Introduction

The Diagnostic Imaging Dataset (DID) is a monthly data collection covering data on diagnostic imaging tests on NHS patients in England. It includes estimates of GP usage of direct access to key diagnostics tests for cancer, for example chest imaging, non-obstetric ultrasound and Brain MRI.

The DID was introduced to monitor progress on *Improving Outcomes: A Strategy for Cancer* (IOSC). This strategy, published 12th January 2011, set out how the Government, NHS and public can help prevent cancer, improve the quality and efficiency of cancer services and move towards achieving outcomes that rival the best. To achieve that ambition, it will be essential to prevent more cancers developing in the first place and to ensure they are diagnosed while the cancer is at an earlier stage to increase the scope for successful treatment. Within that, GPs need easy access to the right diagnostic tests to help them to diagnose or exclude cancer earlier. Therefore the DID reports on imaging activity, referral source and timeliness.

These data are collated from Radiology Information Systems (RISs), which are hospital administrative systems used to manage the workflow of radiology departments, and uploaded into a database maintained by the Health and Social Information Centre (HSCIC).

This publication finalises estimates of imaging activity in 2014/15. A summary of the changes from provisional estimates are given in the Revisions section of this document.

1.2 Experimental Official Statistics

These data are labelled experimental because they are still undergoing evaluation as a new collection of information from hospitals' Radiological Information Systems. Whilst efforts have been made to ensure that the data are complete and accurately reflect the activity, data issues may affect the correct analysis of data for some providers. Consequently, some data are omitted from the report and users should refer to the Technical Report and exercise care when interpreting the results.

Experimental official statistics are new official statistics undergoing evaluation. They are published in order to involve users and stakeholders in their development and as a means to build in quality at an early stage. For more information regarding the data used throughout this publication please see the Data Quality Statement at Annex 4.1. We welcome feedback to assist with evaluation, please contact us at did@dh.gsi.gov.uk

2 Headline Messages

For all imaging activity:

- 39.8 million imaging tests were reported in England in the year to March 2015, compared to 37.9 million in the year to March 2014. This is an increase of 4.9%, although the number of trusts submitting data has also increased in this period.

- Plain Radiography (X-ray) was most common with 22.6 million procedures, followed by Diagnostic Ultrasonography (Ultrasound, 8.57 million), Computerized Axial Tomography (CT Scan, 4.20 million) and Magnetic Resonance Imaging (MRI, 2.89 million).

- The median period between the request being made and the test being performed varied from the same day for X-ray, Fluoroscopy and Medical Photography up to 24 days for MRI in 2014/15, similar to 2013/14.

- Across all types of imaging, emergency admissions and inpatients have shorter waits than outpatients and referrals made under GP direct access arrangements.

- The median period from a test being performed to the report being issued varied from the same day for CT scan, Ultrasound, Fluoroscopy and Medical Photography up to 3 days for MRI in 2014/15, up from 2 days in 2013/14.

For the key tests[1] Chest X-ray, Brain MRI and Non-Obstetric Ultrasound of the Abdomen and/or Pelvis:

- In 2014/15, GPs requested over a quarter (27%) of all tests that may have been used to diagnose or discount cancer, under direct access arrangements. This is compares to 26% in 2013/14.

- The test most commonly requested by GPs was Chest X-ray with 2.12 million tests (up 10.0% from 2013/14), whilst the test with the highest proportion of GP referrals was ultrasounds that may have been used to diagnose ovarian cancer (46% of which were requested by GPs in 2014-2015).

- The median period between the request being made and the test being performed varied between each of the key tests under GP direct access arrangements. This ranged from the same day for Chest X-ray to 26 days for Brain MRI and Abdomen and/or pelvis Ultrasound.

[1] Although these tests are used to diagnose cancer, many of the tests also have wider clinical uses. Within this dataset it is not possible to distinguish the different uses of these tests.

3 Annual Data

3.1 Imaging Activity

3.1.1. 39.8 million imaging tests were reported in England in the year to March 2015, compared with 37.9 million in the previous year, an increase of 4.9%[2].

3.1.2. Plain Radiography (X-ray) had the biggest share of all tests performed during the year, with 22.6 million X-rays reported in 2014/15 compared with 21.8 million in 2013/14 (an increase of 3.4%). The next most common procedures were Ultrasound (8.57 million, up 5.2% from 2013/14), CT scans (4.20 million, up 11.1%) and MRI Scans (2.89 million, up 10.5%). Medical Photography procedures accounted for relatively little imaging activity (about 16,000 tests) but have shown the largest proportional increase (54%) as reporting of these in DID became more widespread. There is also increased coverage for SPECT scans (up 34%) and PET scans (up 18%). The imaging counts and growth for each modality can be seen in Table 1.

3.1.3. March was the month with the most reported activity, followed by July. Both months reported over 3.5 million tests, although they did have a high number of working days in the month with 22 and 23 days respectively. August had the lowest number of reported tests, with a little over 3.0 million. This seasonal fluctuation can be seen in Graph 1.

Further information on the tests included in these tables is given in the glossary at Section 4.3.

Full break-downs of activity by modality, provider and referral source setting are given in Additional Tables 1a – 6l (separate excel files), available from http://www.england.nhs.uk/statistics/statistical-work-areas/diagnostic-imaging-dataset/

[2] In this period the data completeness has increased from 97.8% in 2013/14 to 99.2% in 2014/15.

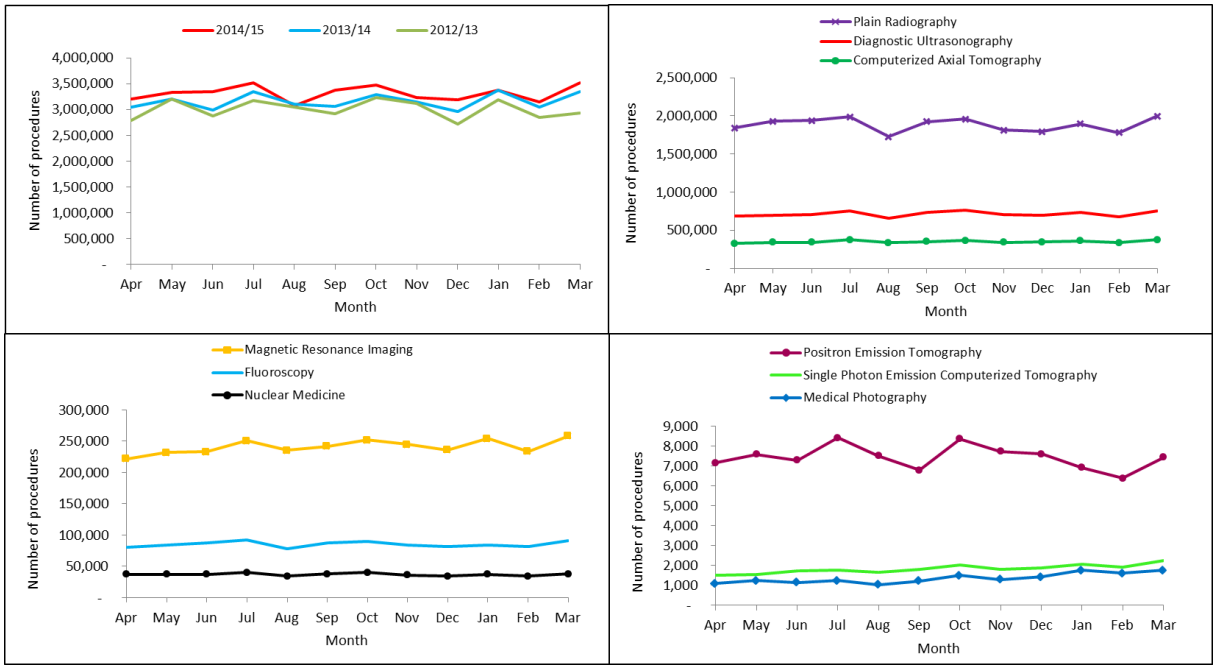
Table 1: Count of NHS imaging activity in England, 2012/13 to 2014/15

	X-ray	Ultrasound	CT Scan	MRI	Fluoro-scopy	Nuclear Medicine	PET Scans	SPECT Scans	Medical Photography	% organisations included	Total[1]
2012/13	21,154,505	7,680,705	3,344,005	2,347,915	1,017,325	436,470	71,080	11,380	6,090	93.6%	33,282,535
2013/14	21,832,985	8,140,175	3,780,405	2,614,865	1,028,735	446,365	75,255	16,350	10,530	97.8%	37,945,665
2014/15	22,576,785	8,566,470	4,199,515	2,890,310	1,018,100	439,655	89,165	21,850	16,180	99.2%	39,818,030
% Growth	3.4%	5.2%	11.1%	10.5%	-1.0%	-1.5%	18.5%	33.6%	53.7%	1.4%	4.9%
2014/15											
Apr	1,841,770	689,405	325,590	221,820	80,730	36,760	7,160	1,490	1,080	98.9%	3,205,810
May	1,929,205	700,910	340,060	231,615	83,885	36,750	7,585	1,535	1,235	99.5%	3,332,770
Jun	1,939,060	707,145	343,135	232,810	86,870	37,100	7,290	1,720	1,130	99.5%	3,356,250
Jul	1,987,980	758,130	376,275	250,250	91,365	40,040	8,420	1,775	1,230	98.9%	3,515,460
Aug	1,723,885	659,235	335,120	235,125	77,585	34,120	7,505	1,645	1,030	99.5%	3,075,255
Sep	1,924,280	730,805	350,860	241,825	87,475	37,410	6,780	1,795	1,215	99.5%	3,382,445
Oct	1,955,425	764,070	364,395	251,710	90,150	39,625	8,370	2,025	1,485	98.9%	3,477,250
Nov	1,812,515	703,185	341,750	244,420	83,225	35,795	7,725	1,795	1,275	99.4%	3,231,680
Dec	1,793,780	696,470	346,820	235,540	81,500	33,880	7,600	1,875	1,410	98.9%	3,198,870
Jan	1,894,595	732,385	362,935	253,830	83,625	36,780	6,910	2,050	1,745	98.9%	3,374,860
Feb	1,778,850	674,320	338,140	233,360	81,370	33,975	6,390	1,910	1,600	98.9%	3,149,915
Mar	1,995,430	750,415	374,440	258,015	90,325	37,420	7,435	2,230	1,755	99.4%	3,517,465

Notes:

1. Totals do not always equal the sum of parts due to rounding.
2. 2012/13 was the first year of the DID collection and as such some of the changes since then may be due to improved coverage of the dataset.
3. % Growth is between 2013/14 and 2014/15.
4. Some data for two organisations are not included for 2014/15. University Hospitals of Leicester NHS Trust was not included for April 2014 and Taunton and Somerset NHS Foundation Trust was not included for September 2014, due to data arriving after the deadline.

Graph 1: NHS imaging activity in England, April 2014 to March 2015



3.2 Imaging Activity by Age and Gender

3.2.1. Over 5.6 million more tests were performed on females than on males in 2014/15. The largest difference occurred for ultrasound procedures (almost 3.8 million more on females) and for X-rays (almost 1.7 million more). The majority of ultrasounds were on patients aged under 44 whilst the rate of X-rays increased markedly with age. Over half of the 1.7 million more X-rays for females than males was attributable to demographic differences, especially the higher number of older women compared to older men. There were more PET scans on males than females, with the rate of CT scanning on males also slightly higher than for females. Table 2 shows the age and gender of patients who have received diagnostic tests in 2014/15.

Table 2: NHS Imaging activity in England by gender and age, 2014-15

	X-ray	Ultrasound	CT Scan	MRI	Fluoro-scopy	Nuclear Medicine	PET Scan	SPECT Scan	Medical Photography	Total[1]
Female	11,958,845	6,073,310	2,063,325	1,490,490	499,390	236,865	34,890	13,140	8,480	22,378,735
Male	10,263,575	2,304,005	2,083,110	1,334,415	510,795	197,030	49,455	8,630	7,700	16,758,715
Not known / specified[2]	62,215	72,470	8,390	41,065	1,405	1,100	4,490	50	0	191,185
0-14	1,993,380	400,555	52,470	123,685	53,560	18,735	290	360	1,100	2,644,145
15-44	5,325,870	4,215,725	693,745	907,815	188,255	60,440	9,375	4,885	3,145	11,409,265
45-59	4,476,185	1,614,905	835,180	797,555	230,695	100,695	19,440	5,045	2,925	8,082,630
60-74	5,317,140	1,314,230	1,246,490	698,305	306,575	153,725	39,035	6,995	3,615	9,086,110
75+	5,109,910	928,610	1,307,710	333,095	227,940	99,670	19,775	4,345	5,360	8,036,415
Not Known	406,465	117,865	73,295	37,380	13,335	6,670	1,320	220	40	656,590

Notes:

1. Totals do not always equal the sum of parts due to rounding.
2. “Not Specified” means that the patient did not want to reveal their gender. “Not known” means that information of the patient’s gender was not available.

3.3 Patient Test Times – Request to test

3.3.1. The DID collects data on four dates that are associated with each imaging event:

- Date of Test Request (by a health care professional).
- Date of Test Request Received (by the organisation that provides the imaging necessary for the test).
- Date of Test
- Date of Test Report Issued (by a health care professional interpreting the imaging output).

3.3.2. This publication is based on all imaging which had a Date of Test between April 2014 and March 2015.

3.3.3. There were big differences in the median period between the request being made and the test being performed for the different tests. The median ranged from the same day for X-ray, Fluoroscopy and Medical Photography to 24 days for MRI scans. There was also some variability within individual tests over the course of the year, with the median for MRI varying by up to a week, from 21 to 28 days, see Table 3.

Table 3: Median number of days between date of test request and date of test, by modality, April 2014 to March 2015

	X-ray	Ultra-sound	CT Scans	MRI	Fluoro-scopy	Nuclear Medicine	PET Scans	SPECT Scans	Medical Photography
2012/13	0	13	2	23	0	15	8	14	0
2013/14	0	13	2	24	0	14	7	17	0
2014/15	0	13	2	24	0	15	8	15	0
Apr	0	14	2	25	0	15	8	17	0
May	0	14	2	26	0	15	8	17	0
Jun	0	13	2	25	0	15	8	16	0
Jul	0	13	2	24	0	15	8	15	0
Aug	0	13	1	25	0	15	8	16	0
Sep	0	13	2	24	0	15	7	14	0
Oct	0	13	2	22	0	15	7	14	0
Nov	0	13	2	24	0	15	8	14	0
Dec	0	13	1	24	0	14	7	15	0
Jan	0	14	1	28	0	18	7	17	0
Feb	0	12	2	21	0	15	7	15	0
Mar	0	13	2	22	0	15	7	14	0

Note: Median values of 0 occur where at least 50% of activity has a 'date of test request' and 'date of test' which is recorded as the same day. Records where either of these dates is missing are not used to calculate medians.

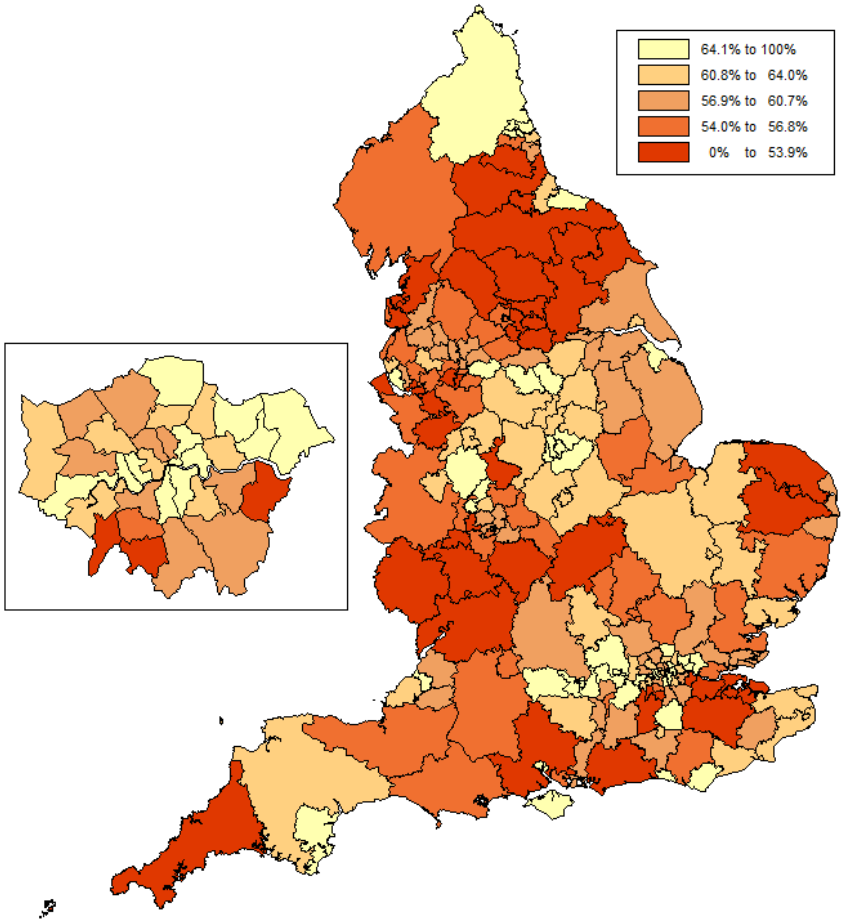
3.3.4. There were some slight changes in the median number of days between test request and date of test in 2014/15 compared to 2013/14. SPECT Scans (for which reported activity increased 34%) had the largest change decreasing by 2 days from 17 to 15 (reversing an increase in 2013/14). Nuclear Medicine and PET Scans increased by one day, whilst all other modalities remained the same as in 2013/14.

3.3.5. The figures in Table 3 should not be compared to “waiting time” statistics that measure how long patients are on a waiting list for a procedure, since these figures included both planned and unplanned imaging activity. In addition, these figures exclude any cancelled or missed appointments and they count the period for individual tests not each patient appointment.

3.3.6. There was regional variation in the proportion of imaging which occurred within seven days of the test being requested for CT Scans and within fourteen days of the test being requested for Ultrasound and MRI Scans. Maps 1-3 illustrate this for each CCG in England. The underlying data for these charts are given in Table 7a-7h (separate Excel file[3]).

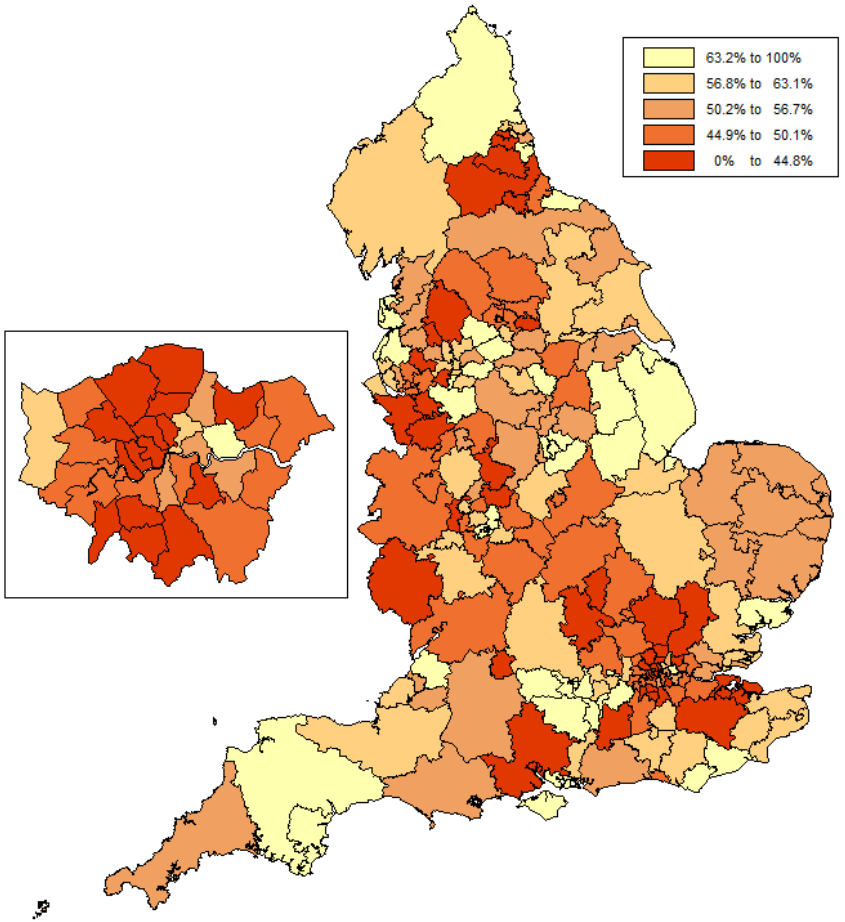
3.3.7. Emergency admissions and inpatients have shorter waits than other sources of referral. This is illustrated in Graph 2, which shows the distribution of periods from request to test for individual procedures by patient source setting, and modality. Table 9 (separate Excel file) gives the underlying figures for these charts.

Map 1: Proportion of CT scans where date of test is less than 7 days after date of referral, for each CCG, 2014/15

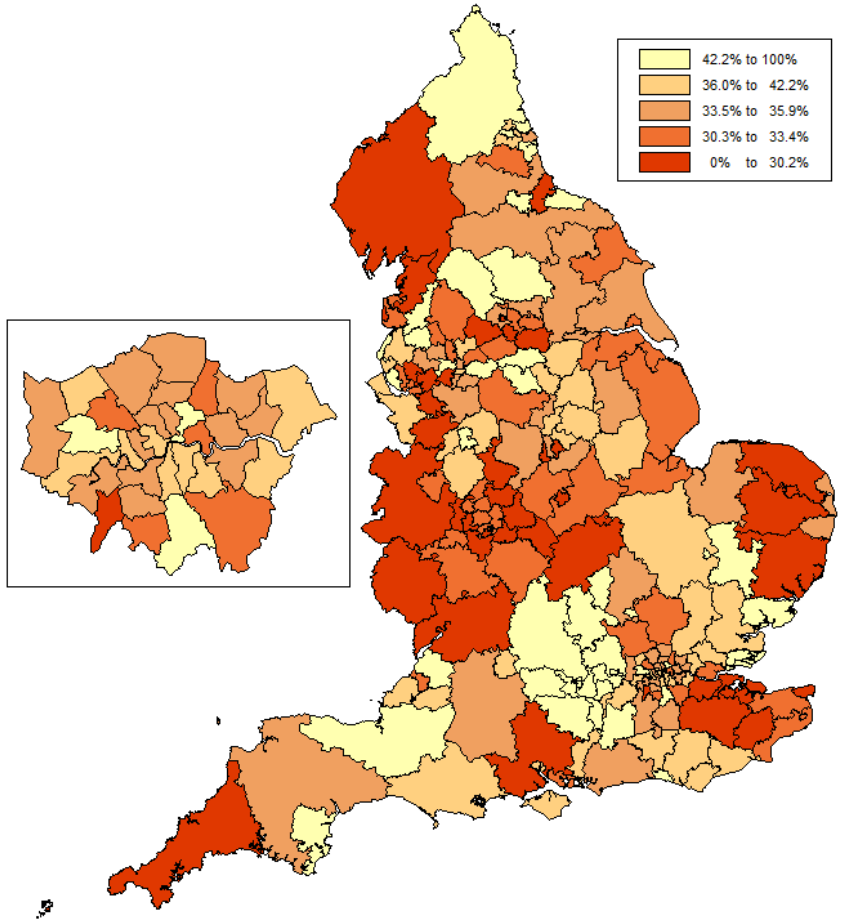


[3] Figures for some CCGs may be based on incomplete data due to missing GP practice information from which to attribute activity to CCGs. For further details see Annex 4 to the Technical Report.

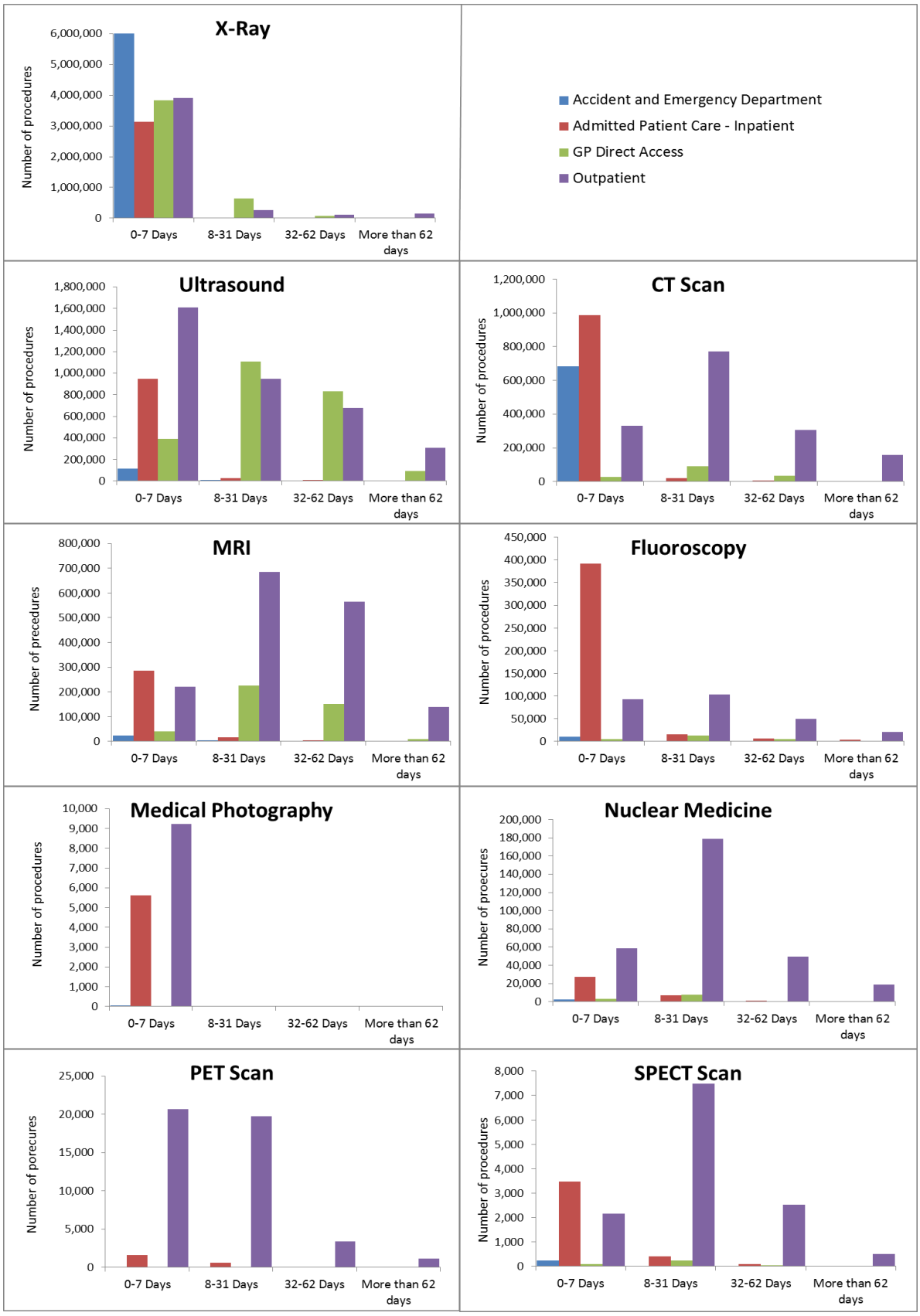
Map 2: Proportion of Ultrasounds where date of test is less than 14 days after date of request, for each CCG, 2014/15



Map 3: Proportion of MRI Scans where date of test is less than 14 days after date of request, for each CCG, 2014/15



Graph 2: Imaging activity by number of days from date of test request to date of test, by modality and source of referral, 2014/15



3.4 Patient Test Times – Test to report

3.4.1. The median number of days between the 'date of test' and the 'date of test report issued' varied between the different modalities, see Table 4. Ultrasound, CT Scans, Fluoroscopy and Medical Photography procedures reported a median difference of 0 days, that is at least half of tests (with a report issue date) were reported the same day as the test. For MRI the median difference was 3 days, for PET-scans the median difference was 2 days, and for the other modalities the median difference was 1 day. Within each modality, the elapsed period for a test report remained fairly consistent throughout the 12 months, with three modalities showing slight fluctuations of one day.

3.4.2. MRI is the only modality to show a change in median referral time from 2013/14, increasing by one day.

Table 4: Median number of days between date of test and date test report issued, by modality, April 2014 to March 2015

	X-ray	Ultra-sound	CT Scans	MRI	Fluoro-scopy	Nuclear Medicine	PET Scans	SPECT Scans	Medical Photography
2012/13	1	0	0	2	0	2	2	1	1
2013/14	1	0	0	2	0	1	2	1	0
2014/15	1	0	0	3	0	1	2	1	0
Apr	1	0	0	3	0	1	2	1	0
May	1	0	0	3	0	2	2	1	0
Jun	1	0	0	3	0	1	2	1	0
Jul	1	0	0	3	0	1	2	1	0
Aug	1	0	0	3	0	2	2	2	0
Sep	1	0	0	3	0	2	2	1	0
Oct	1	0	0	2	0	1	2	1	0
Nov	1	0	0	2	0	2	2	1	0
Dec	1	0	0	2	0	1	2	1	0
Jan	1	0	0	3	0	1	2	1	0
Feb	1	0	0	3	0	1	2	2	0
Mar	1	0	0	3	0	1	2	1	0

3.4.3. The National Imaging Board guidance states that investigations will be seen and accurately reported within as short a time as possible and stresses the importance of reporting imaging activity in a timely manner. It suggested that Inpatient and Accident & Emergency referrals should be reported the same working day whilst all other referrals should be reported by the next working day. A tolerance of 90% for this was considered reasonable.

3.4.4. Although there is some evidence of progress towards this standard between 2013/14 and 2014/15, most tests do not achieve such rapid reporting. Table 5 shows the percentage of reports that were issued the same day as the test and those issued by the end of the next day separately for Admitted patient and A&E referred tests and for Outpatient and GP direct access tests, for each modality. Tables 10a-10d (separate Excel file) gives this breakdown by provider and type of referral.

Table 5: Proportion of imaging reports that were issued, either the same day as the test or by the end of the following day, by modality, April 2014 to March 2015.

		X-ray		Ultrasound		CT Scans		MRI		Fluoroscopy		Nuclear Medicine		PET Scans		SPECT Scans		Medical Photography	
		Same day	By next day	Same day	By next day	Same day	By next day	Same day	By next day	Same day	By next day	Same day	By next day	Same day	By next day	Same day	By next day	Same day	By next day
Inpatient and A&E	2012/13	25%	50%	91%	94%	81%	92%	64%	81%	70%	79%	58%	76%	23%	54%	75%	84%	20%	59%
	2013/14	25%	51%	92%	96%	84%	94%	65%	81%	71%	80%	59%	78%	28%	52%	73%	84%	48%	76%
	2014/15	26%	53%	93%	96%	85%	95%	66%	82%	72%	81%	60%	78%	29%	57%	67%	87%	49%	73%
	Apr	25%	50%	93%	96%	84%	94%	64%	81%	73%	81%	61%	78%	31%	51%	73%	84%	51%	71%
	May	25%	51%	93%	96%	84%	94%	65%	81%	72%	80%	59%	78%	32%	59%	65%	84%	38%	70%
	Jun	25%	52%	93%	96%	84%	95%	65%	82%	72%	80%	58%	77%	16%	45%	66%	86%	38%	70%
	Jul	26%	53%	92%	96%	83%	94%	64%	81%	72%	80%	58%	77%	23%	56%	62%	86%	40%	73%
	Aug	26%	52%	93%	96%	85%	95%	64%	81%	72%	80%	59%	76%	34%	56%	68%	85%	37%	68%
	Sep	25%	52%	93%	96%	85%	95%	65%	82%	71%	80%	59%	77%	23%	56%	64%	87%	32%	65%
	Oct	27%	55%	93%	97%	85%	95%	66%	82%	72%	81%	62%	78%	23%	54%	68%	87%	45%	68%
	Nov	27%	55%	94%	96%	85%	95%	65%	81%	72%	81%	61%	78%	34%	61%	67%	87%	57%	75%
	Dec	28%	54%	94%	97%	86%	96%	69%	84%	72%	82%	63%	80%	33%	60%	67%	86%	55%	75%
	Jan	28%	55%	94%	97%	86%	96%	68%	83%	71%	80%	62%	79%	27%	55%	68%	86%	53%	73%
	Feb	29%	56%	94%	97%	87%	96%	67%	83%	72%	81%	62%	79%	35%	63%	63%	90%	63%	78%
	Mar	27%	55%	94%	97%	86%	96%	64%	81%	72%	82%	60%	77%	37%	60%	69%	89%	62%	81%
Outpatients & GP Direct Access	2012/13	37%	53%	84%	90%	34%	50%	20%	35%	54%	68%	23%	45%	9%	39%	23%	46%	25%	70%
	2013/14	38%	53%	87%	91%	32%	47%	19%	34%	56%	70%	25%	46%	9%	35%	22%	43%	66%	90%
	2014/15	38%	54%	88%	93%	29%	45%	18%	33%	59%	72%	26%	47%	10%	38%	20%	44%	70%	86%
	Apr	37%	52%	88%	92%	30%	44%	19%	32%	58%	72%	26%	48%	11%	42%	22%	47%	70%	90%
	May	37%	51%	88%	92%	31%	45%	18%	31%	58%	71%	25%	46%	10%	38%	19%	44%	66%	86%
	Jun	36%	52%	88%	92%	30%	46%	18%	33%	58%	71%	24%	47%	8%	32%	20%	44%	60%	83%
	Jul	37%	53%	88%	93%	31%	45%	19%	33%	58%	72%	24%	46%	9%	35%	23%	46%	61%	80%
	Aug	38%	54%	89%	93%	29%	43%	19%	32%	59%	72%	25%	46%	11%	39%	19%	39%	67%	86%
	Sep	37%	54%	88%	93%	29%	44%	20%	33%	59%	71%	24%	45%	8%	40%	18%	44%	67%	85%
	Oct	38%	55%	88%	93%	30%	46%	21%	35%	59%	71%	25%	47%	10%	41%	21%	44%	70%	84%
	Nov	38%	56%	88%	93%	28%	45%	21%	35%	59%	71%	26%	47%	8%	35%	19%	44%	75%	86%
	Dec	42%	59%	89%	93%	30%	46%	18%	34%	61%	73%	27%	50%	12%	39%	23%	46%	64%	87%
	Jan	39%	56%	89%	93%	29%	45%	17%	33%	59%	71%	27%	48%	11%	39%	20%	42%	79%	91%
	Feb	38%	54%	88%	93%	28%	43%	16%	31%	59%	72%	26%	47%	11%	37%	16%	36%	77%	90%
	Mar	37%	52%	89%	93%	29%	44%	16%	31%	61%	73%	27%	48%	12%	36%	22%	45%	73%	87%

3.5 Imaging Tests that could contribute to Early Diagnosis of Cancer

Definition of the tests

3.5.1. One of the main drivers for the creation of the DID is to assess the use of diagnostic imaging that could contribute to the early diagnosis of cancer and, in particular, General Practitioner (GP) direct access to these tests. To enable this analysis, a subset of procedures that are often used to identify or discount a diagnosis of cancer has been identified:

Brain (MRI)

- This may diagnose brain cancer, this includes – MRI of brain (often with contrast);

Kidney or bladder (Ultrasound)

- This may diagnose kidney or bladder cancer, this includes – ultrasound of kidney, ultrasound scan of bladder or ultrasound and Doppler scan of kidney;

Chest and/or abdomen (CT)

- CTs which may diagnose lung cancer, this includes - chest + abdominal CT, CT of chest (high resolution or other), CT thorax + abdomen with contrast, CT thorax with contrast or CT chest + abdomen;

Chest (X-ray)

- This may diagnose lung cancer, this includes – plain chest X-ray only;

Abdomen and/or pelvis (Ultrasound)

- This may diagnose ovarian cancer, this includes – ultrasonography of pelvis, ultrasonography of abdomen (upper, lower or other) or abdomen + pelvis.

3.5.2. Although these tests are used to diagnose cancer, many of the tests also have wider clinical uses. Within this data, it is not possible to distinguish between the different uses of these tests.

3.5.3. Brain MRI, chest X-ray, and ultrasounds of the abdomen and pelvis to diagnose Ovarian Cancer were three of the key tests outlined in *Improving Outcomes: a Strategy for Cancer*.

Imaging activity and GP referral

3.5.4. In 2014/15, 10.8 million tests that may have been used to diagnose or discount cancer were performed, up from 10.1 million (+6.2%) in 2013/14. The increase in MRI, Ultrasounds, CT and X-rays appears to be more a result of monthly variation than an ongoing yearly increase, as seen in graph 3.1.

3.5.5. The most common test requested through all source settings was Chest X-rays, with 8.1 million tests being requested in 2013/14 compared to 7.7 million in 2013/14 (+6.0%) This was also the most common test requested by GPs

(2.1 million, 10.0% more than in 2013/14). The next most common tests were ones that may have been used to diagnose ovarian cancers (abdominal or pelvic ultrasound, 1.3 million), with 46% of such tests being requested by a GP. Table 6 shows the total number of tests suitable for diagnosing cancer, with the subset of these that had a referral source of GP direct access.

Table 6: Imaging activity for groups of tests suitable for diagnosing cancer, for all patients referred and for those directly referred by a GP, April 2014 to March 2015

	Brain (MRI)		Kidney or bladder (Ultrasound)		Chest and/or abdomen (CT)		Chest (X-ray)		Abdomen and/or pelvis Ultrasound)	
	All	GP	All	GP	All	GP	All	GP	All	GP
2012/13	472,755	31,030	220,230	67,460	388,655	32,185	7,723,410	1,991,705	1,165,345	536,930
2013/14	528,870	39,540	220,075	65,450	438,245	39,180	7,691,055	1,931,250	1,246,225	570,235
2014/15	582,905	50,090	228,525	67,035	489,195	46,620	8,149,525	2,124,255	1,300,660	598,910
Growth	10.2%	26.7%	3.8%	2.4%	11.6%	19.0%	6.0%	10.0%	4.4%	5.0%
2014/15										
Apr	44,480	3,655	18,580	5,405	38,885	3,700	675,505	190,890	104,695	48,760
May	47,030	3,655	18,935	5,165	39,625	3,865	690,395	189,105	107,155	48,870
Jun	47,075	3,860	18,845	5,425	40,390	3,975	652,235	166,535	108,355	49,125
Jul	49,480	3,825	20,265	5,730	43,010	4,190	654,935	158,415	115,400	52,930
Aug	46,090	3,715	17,710	5,040	38,230	3,700	586,230	128,710	100,765	45,670
Sep	48,110	3,680	19,930	5,705	40,195	3,625	629,965	150,290	110,815	51,005
Oct	49,335	4,020	20,000	6,080	42,135	3,685	679,980	172,355	117,320	54,590
Nov	48,150	4,015	18,685	5,795	38,400	3,455	660,450	161,910	107,690	50,295
Dec	48,120	5,010	18,325	5,450	39,420	3,655	722,110	171,515	101,915	46,575
Jan	52,220	5,290	19,935	6,040	43,005	4,060	761,630	213,530	111,380	51,565
Feb	48,655	4,625	18,010	5,470	40,610	4,090	688,625	201,930	102,845	47,455
Mar	54,170	4,740	19,300	5,720	45,285	4,625	747,455	219,065	112,325	52,075

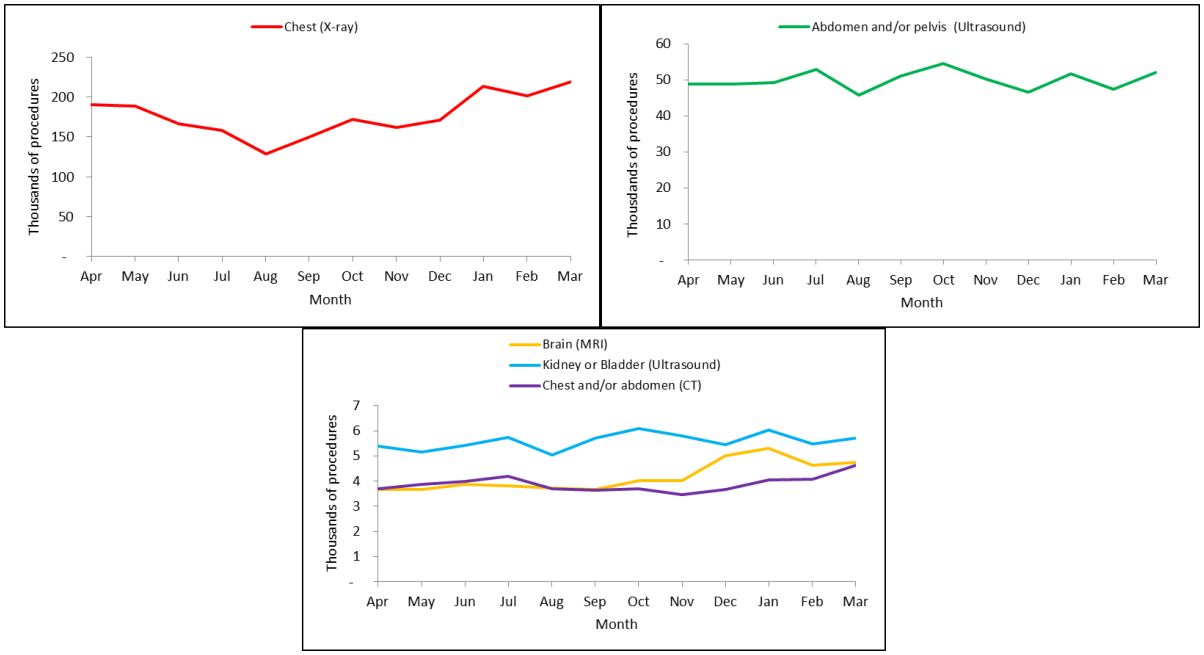
Totals do not always equal the sum of parts due to rounding

3.5.6. Of the 10.8 million tests requested in 2014/15, 27% of tests were requested by GPs under direct access arrangements, compared with 26% in 2013/14. Graph 3.2 shows the proportion of tests requested by GPs by test.

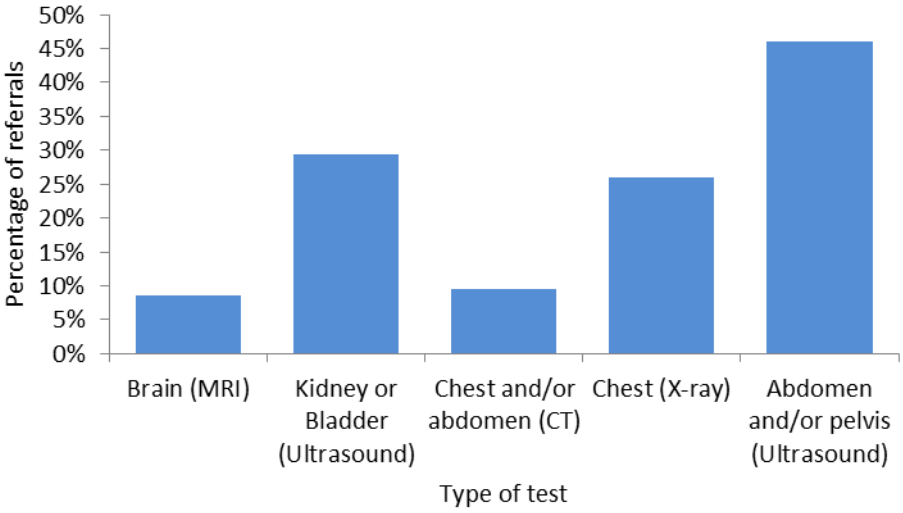
3.5.7. For all tests apart from kidney or bladder ultrasound, there is a larger increase for GP referrals than for all referrals. From 2013/14 the number of all GP referrals for this group of tests has increased 9.1% and the overall increase is 6.2%.

3.5.8. Brain MRI and Chest and/or abdomen CT have shown the largest increase in GP referred tests, 27% and 19% respectively. Both of these tests showed significantly larger increases in GP referrals than all referral sources.

Graph 3.1: Imaging activity for patients directly referred by a GP, April 2014 to March 2015



Graph 3.2: Percentage of referrals made by GPs by type of test, 2014/2015



Patient test times – Request to test

3.5.9. For the key tests that may be used to diagnose or discount cancer, the median period from a test being requested to being performed is longer for GP direct access than for all referrals. The exception is Chest X-ray, where the median is zero (same day) for GP and all referrals. The main reason for this difference is that 'all referrals' includes tests on emergency admissions and inpatients, which have shorter waits. The median number of days between date of request and date of test for all referrals and GP referrals in 2014/15 can be seen in Table 7.

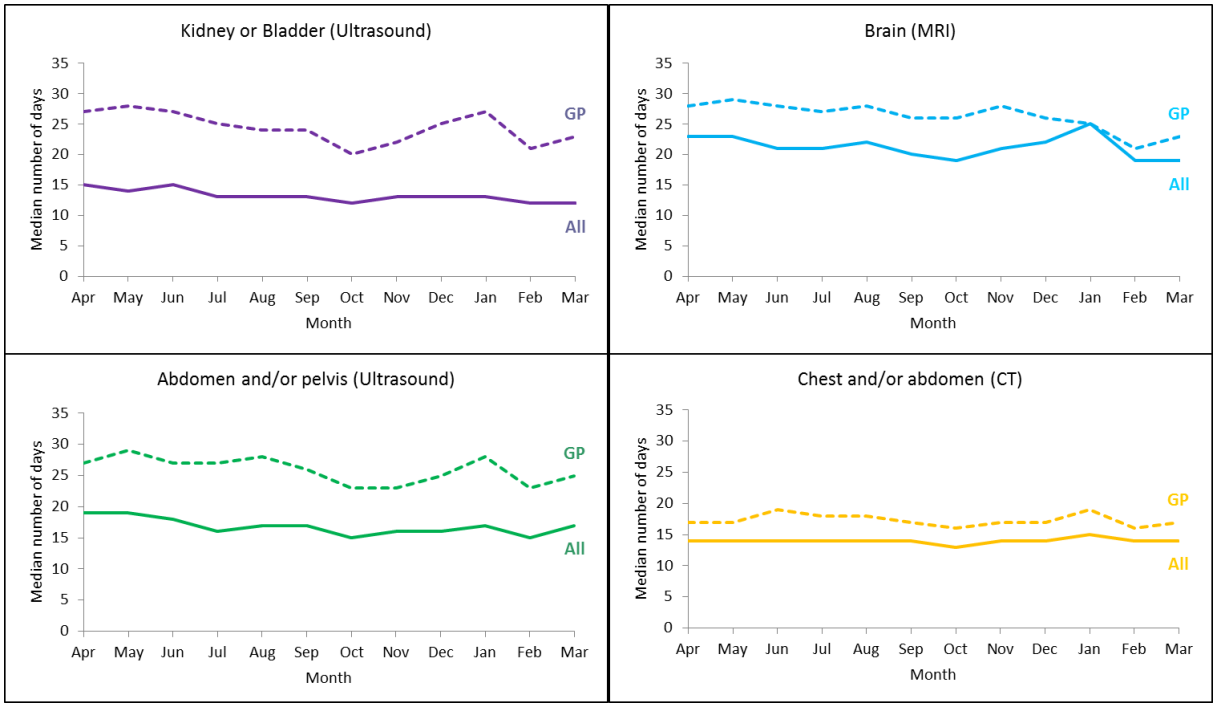
Table 7: Median number of days between date of test request and date of test for groups of tests suitable for diagnosing cancer, overall and for GP Direct Access, April 2014 to March 2015

	Brain (MRI)		Kidney or bladder (Ultrasound)		Chest and/or abdomen (CT)		Chest (X-ray)		Abdomen and/or pelvis (Ultrasound)	
	All	GP	All	GP	All	GP	All	GP	All	GP
2012/13	21	25	13	23	13	17	0	0	14	22
2013/14	21	25	13	23	13	16	0	0	15	24
2014/15	21	26	13	24	14	17	0	0	17	26
Apr	23	28	15	27	14	17	0	0	19	27
May	23	29	14	28	14	17	0	0	19	29
Jun	21	28	15	27	14	19	0	0	18	27
Jul	21	27	13	25	14	18	0	0	16	27
Aug	22	28	13	24	14	18	0	0	17	28
Sep	20	26	13	24	14	17	0	0	17	26
Oct	19	26	12	20	13	16	0	0	15	23
Nov	21	28	13	22	14	17	0	0	16	23
Dec	22	26	13	25	14	17	0	0	16	25
Jan	25	25	13	27	15	19	0	0	17	28
Feb	19	21	12	21	14	16	0	0	15	23
Mar	19	23	12	23	14	17	0	0	17	25

3.5.10. Four out of the five tests for GP referrals had a longer median period from request to test in 2014/15 than in 2013/14. GP referred abdomen and/or pelvic ultrasounds increased by two days (as did the median for all referral sources), whilst the median time for GP referred brain MRI, kidney or bladder ultrasound and chest and/or abdomen CT all increased by one day.

3.5.11. The median number of days between date of request and date of test has shown some fluctuation throughout 2014/15 for tests that are suitable for diagnosing cancer, as shown in Graph 4. Brain MRI and kidney or bladder ultrasound both have shown the largest variation throughout 2014/15 with a range of 8 days (21-29 days for brain MRI and 20-28 days for kidney or bladder ultrasound).

Graph 4: Median number of days between date of test request and date of test for groups of tests suitable for diagnosing cancer, overall and for GP Direct Access, April 2014 to March 2015



Patient test times – Test to report

3.5.12. There is generally little difference in the time taken for a test report to be issued for GP direct access and all referrals, as shown in Table 8. However, the median period between the date of test and the date the report was issued was 2 days for GP-referred chest and/or abdomen CT, compared with 1 day overall, and 3 days for GP-referred brain MRI, compared with 2 days overall.

3.5.13. The median time between test and report issued has not changed between 2013/14 and 2014/15 for tests that could be used to diagnose or discount cancer.

3.5.14. Throughout 2014/15 there has been only minor fluctuation of the median test to report period. The only variation is for Brain MRI, which varies by one day for all referrals and two days for GP direct access, and GP referred chest and/or abdomen CTs and chest x-rays, which vary by one day.

Table 8: Median number of days between date of test and date test report issued and Percentage of records where report issued on day of test, for groups of tests suitable for diagnosing cancer, for All referrals and GP Direct Access, April 2014 to March 2015

	Brain (MRI)				Kidney or bladder (Ultrasound)			
	All Median	All % Same day	GP Median	GP % Same day	All Median	All % Same day	GP Median	GP % Same day
2012/13	2	32%	3	17%	0	85%	0	80%
2013/14	2	34%	3	18%	0	89%	0	85%
2014/15	2	33%	3	18%	0	91%	0	88%
Apr	2	32%	4	15%	0	90%	0	86%
May	2	33%	3	15%	0	90%	0	87%
Jun	2	34%	3	18%	0	90%	0	87%
Jul	2	33%	4	15%	0	91%	0	87%
Aug	2	32%	4	16%	0	91%	0	86%
Sep	2	34%	3	17%	0	91%	0	87%
Oct	1	35%	3	18%	0	91%	0	88%
Nov	2	33%	3	17%	0	90%	0	88%
Dec	1	35%	2	22%	0	92%	0	90%
Jan	2	34%	2	22%	0	91%	0	88%
Feb	1	34%	3	16%	0	91%	0	89%
Mar	2	34%	3	16%	0	92%	0	90%

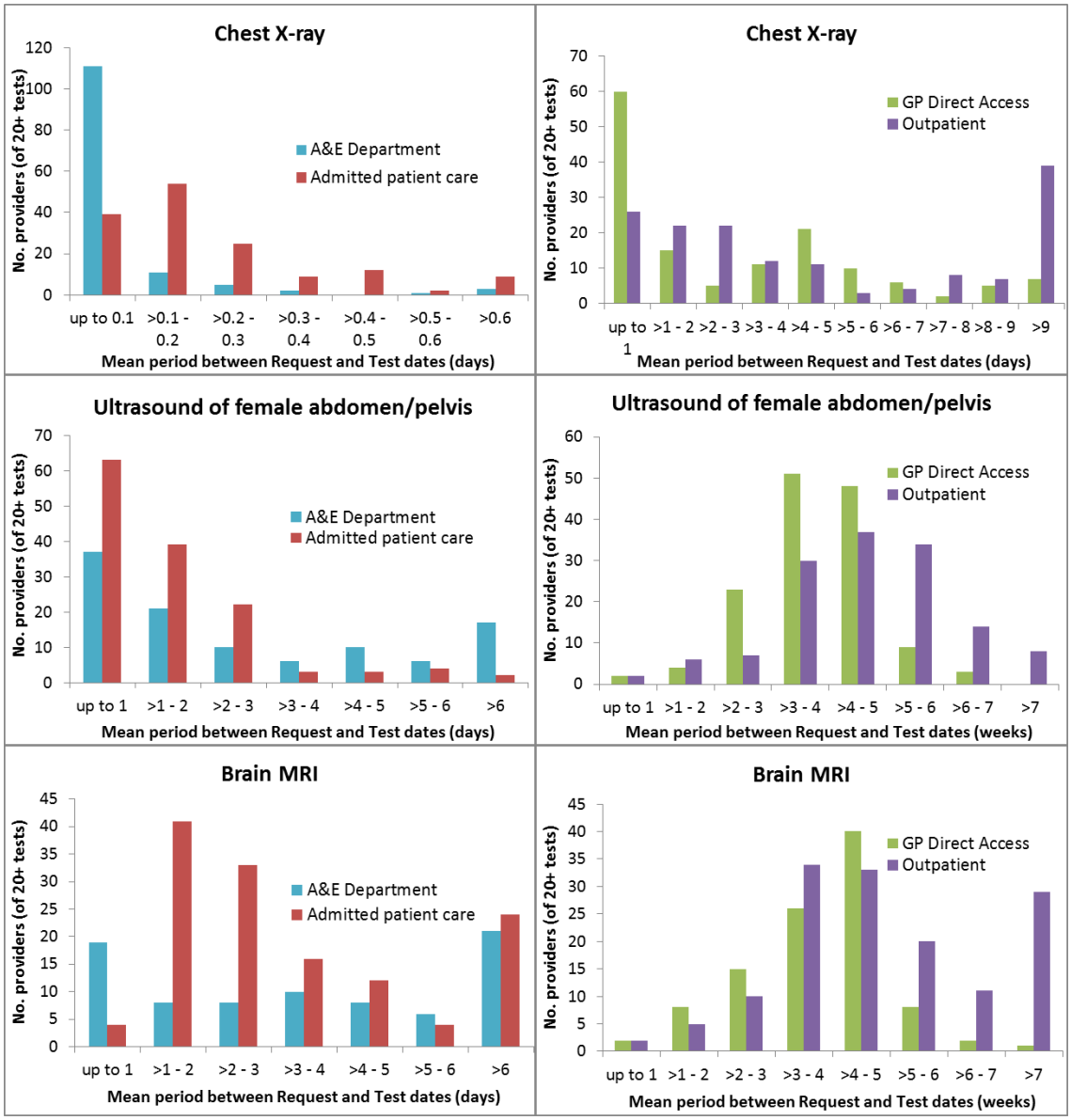
	Chest and/or abdomen (CT)				Chest (X-ray)				Abdomen and/or pelvis (Ultrasound)			
	All Median	All % Same day	GP Median	GP % Same day	All Median	All % Same day	GP Median	GP % Same day	All Median	All % Same day	GP Median	GP % Same day
2012/13	1	42%	2	32%	2	25%	2	29%	0	86%	0	84%
2013/14	1	40%	2	29%	2	25%	2	28%	0	89%	0	88%
2014/15	1	38%	2	27%	2	25%	2	28%	0	90%	0	89%
Apr	1	39%	3	27%	2	24%	2	25%	0	90%	0	88%
May	1	40%	2	29%	2	24%	2	27%	0	90%	0	88%
Jun	1	38%	2	27%	2	24%	2	26%	0	90%	0	88%
Jul	1	38%	3	27%	2	24%	2	26%	0	90%	0	89%
Aug	1	37%	3	25%	2	25%	2	29%	0	90%	0	89%
Sep	1	37%	2	26%	2	24%	1	28%	0	90%	0	89%
Oct	1	38%	2	28%	2	26%	1	30%	0	91%	0	89%
Nov	1	37%	2	25%	2	25%	1	30%	0	91%	0	89%
Dec	1	40%	2	30%	2	26%	1	33%	0	91%	0	89%
Jan	1	38%	2	26%	2	26%	1	29%	0	90%	0	89%
Feb	1	36%	3	25%	2	26%	2	27%	0	90%	0	88%
Mar	1	37%	3	25%	2	25%	2	27%	0	90%	0	88%

Variation by provider

3.5.15. The mean period between date of test request and date of test varies by provider, see Graph 5.1. For these three imaging tests suitable for diagnosing cancer: Chest X-ray, Ultrasound of the abdomen and/or pelvis in females and Brain MRI, the mean period varies both by test and by referral source. For chest X-ray, there is less variation by provider for admitted patients or those referred by A&E, where most providers average less than

one day[4] between request and test, than for GP referrals and outpatients, where averages range from less than one day to over 9 days. For female ultrasound there is also more variation for GP referrals and outpatients, with providers differing in their mean request to test period by several weeks. For brain MRI, there is variation between providers for A&E and admitted patients (of several days) as well as for GP referrals and outpatients (of several weeks).

Graph 5.1 Average period from date of test request to date of test for procedures suitable for diagnosing cancer, by provider, 2014-15

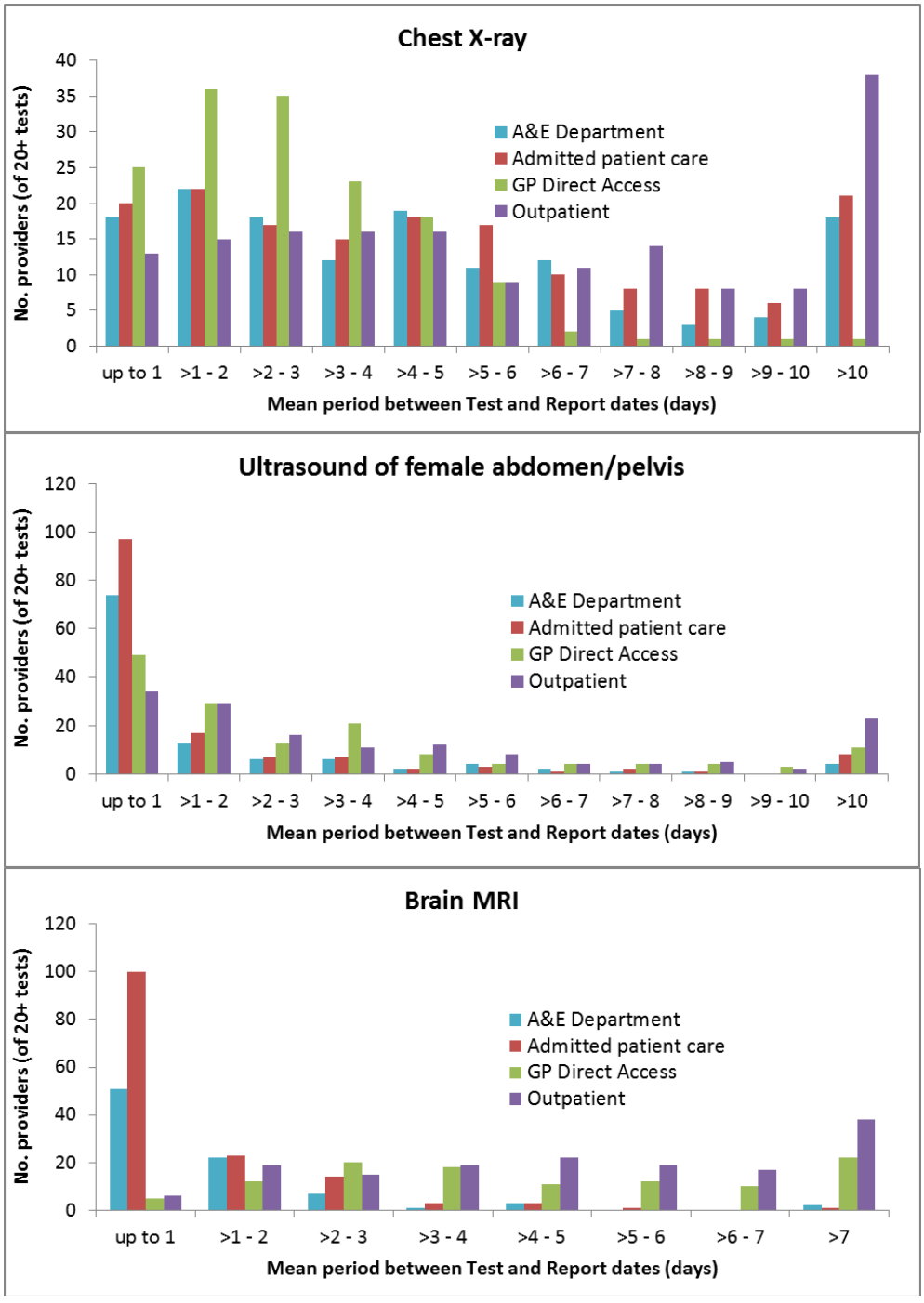


3.5.16. The mean period between date of test and date of test report also varies by provider for Chest X-ray, Ultrasound of the abdomen and/or pelvis in females and Brain MRI, see Graph 5.2. There is less variation in test to report

[4] Period measured between dates and not times of day.

periods by source of referral than for the period from test request to test, but there are still big differences between the diagnostic types, with female ultrasound generally reported same day but chest X-ray and brain MRI up to a week or more later. No significant correlation was observed between the mean request to test period and the mean test to report period at provider level, neither were the provider means for either period related to the volume of imaging tests performed for these three diagnostics.

Graph 5.2 Average period from date of test to date test report issued for procedures suitable for diagnosing cancer, by provider, 2014-15



4 Annex

4.1 Data Quality Statement

Although data from Radiology Information Systems (RISs) were not originally intended for statistical purposes and have some shortfalls, they do provide a rich resource with great potential. This data collection is aligned with the code of practice for official statistics in making better use of administrative data and evaluating existing data sources to limit the burden on respondents. Some RIS systems cover additional test activity not reported in this publication.

There are a large number of validations built into the DID upload system, verifying that the data provided by organisations makes sense. Whilst validations and other checks have been made to ensure that the data are complete and accurately reflect activity, data issues may affect activity for some providers.

Some providers have not submitted completed data for every month and in these cases there may be shortfalls for these organisations. Some final data for two organisations arrived after the deadline and are not included for 2014/15: University Hospitals of Leicester NHS Trust was not included for April 2014 and Taunton and Somerset NHS Foundation Trust was not included for September 2014.

Nevertheless, the coverage and quality has continued to improve in 2014/15, as data providers become more familiar and the information is further evaluated. Provider data completeness is now 99.2% (although, within this, some data submissions may be incomplete). The Technical Report gives more information on the differences in data completeness in provisional and final monthly data extracts, in section 4.3.

Reported times from test request to test should not be compared to diagnostic test waiting time statistics, as these are collected using different definitions. Unlike these statistics, the DM01 diagnostic test waiting times statistics exclude records where, for example:

- The patient is waiting for a planned (or surveillance) diagnostic test/procedure, that is a procedure or series of procedures as part of a treatment plan which is required for clinical reasons to be carried out at a specific time or repeated at a specific frequency, such as 6-month check cystoscopy;
- The patient is currently admitted to a hospital bed and is waiting for a diagnostic test/procedure as part of their inpatient treatment.

In addition, for the data published here, approximately 83% of tests had a date of test request included and approximately 87% of tests had a date of test report issue included.

Some patient records have no known commissioner as this is derived from patient registered GP practice which is not a mandatory field. Data are submitted by provider, so data quality is better for providers than for commissioners.

Details of coverage, completeness, comparability with other data sources and a discussion on the types of data quality issues encountered are provided in the Technical Report which is available on the NHS England Statistics website.

4.2 Revisions

In the provisional publications, several Trusts did not provide data on time and their figures were either blank or "0" for all or selected fields. All but two subsequently submitted revised data, improving the quality and completeness of the information. These data are now finalised and revisions will only be made in exceptional circumstances. For more detail of the revisions policy, see the Technical Report.

4.3 Glossary

Computerised Axial Tomography (CT Scan)
Computed tomography (CT), sometimes called CAT scan, uses special X-ray equipment to obtain image data from different angles around the body, then uses computer processing of the information to show a cross-section of body tissues and organs. In the DID this means all codes mentioning CAT or computed tomography.

Diagnostic Ultrasonography (Ultrasound)
The use of ultrasonic waves for diagnostic or therapeutic purposes, specifically to image an internal body structure, monitor a developing foetus or generate localised deep heat to the tissues. In the DID this means any code relating to ultrasound.

Fluoroscopy
Fluoroscopy is an imaging technique commonly used by physicians to obtain real-time images of the internal structures of a patient through the use of a fluoroscope. In its simplest form, a fluoroscope consists of an X-ray source and fluorescent screen between which a patient is placed. In the DID this is a collection of codes mentioning fluoroscopy or using fluoroscopic guidance, Barium enema or swallow. Interventional procedures are classified under imaging modalities which provide guidance. Almost all interventional procedures are under fluoroscopy procedure. A very small number of interventional procedures are under CT or MRI procedures.

Magnetic Resonance Imaging (MRI)
Magnetic resonance imaging (MRI) is a method of producing extremely detailed pictures of body tissues and organs without the need for X-rays. The electromagnetic energy that is released when exposing a patient to radio waves in a strong magnetic field is measured and analysed by a computer, which forms two- or three-dimensional images that may be viewed on a TV monitor. In the DID this means all codes mentioning MRI.

Plain Radiography (X-ray)
A Radiograph is an image produced on a radiosensitive surface, such as a detector, by radiation other than visible light, especially by X-rays passed through an object or by photographing a fluoroscopic image. In the DID this means any code referring to radiography or X-ray.

Medical Photography
A Photograph is an image recorded on sensitised material by energy from the light spectrum, which is then processed to create a print that can be viewed clearly. Medical Photography is used in order to document a variety of different medical conditions and their treatment.

Nuclear Medicine
Nuclear medicine (NM) is a branch of medicine and medical imaging that uses unsealed radioactive substances in diagnosis and therapy. These substances consist of radionuclides, or pharmaceuticals that have been labelled with radionuclides (radiopharmaceuticals). In diagnosis, radioactive substances are administered to patients and the radiation emitted is measured.

Nuclear medicine imaging tests differ from most other imaging modalities in that the tests primarily show the physiological function of the system being investigated, as opposed to the anatomy. It has both diagnostic and therapeutic uses, such as planning cancer treatments and evaluating how well a patient has responded to a treatment. It can be used with other diagnostic methods, including CT scans and MRI, where the images are superimposed to produce complex cross-sectional, three-dimensional scans.

Position Emission Tomography (PET Scans)
Position Emission Tomography (PET Scans) is an imaging technique used in the diagnosis and treatment of cancer. The method is similar to CT scans, but uses gamma cameras to produce three-dimensional images highlighting radionuclide concentration in a specific part of the body. PET scans can be used to show how far a cancer has spread, and can determine if a patient is responding positively to a treatment.

Single Photon Emission Computerised Tomography (SPECT scans)
Single Photon Emission Computerised Tomography (SPECT scans) is an imaging method that allows for analysis of internal organs. Gamma photon-emitting radionuclides are administered to a patient prior to being exposed to gamma cameras that rotate around a patient to produce cross-sectional slices that can then be reformatted into a true three-dimensional image of the patient.

Median
The median is the preferred measure of the average time between pairs of dates within records as it is less susceptible to extreme values than the mean. The median number of days between pairs of dates is calculated by ordering the values obtained by subtracting the dates for each record and selecting the middle value when all records are ranked by these numbers of days.

Modality
The broad procedure or method used for examination, for example MRI. This may include procedures assisted by the method, e.g. biopsy or injection. In the DID the modality of the examination is derived from SNOMED CT (Systematised Nomenclature of Medicine – Clinical Terms) or NICIP (National Interim Clinical Imaging Procedure) codes.

Referral source setting
This is a categorisation of the department or organisation making the referral for the imaging activity. It includes categories for admitted patient care, outpatients, GP Direct Access, A&E and health care providers other than the organisation providing the imaging activity.

4.4 Contact Us

4.4.1 Feedback

We welcome feedback on this publication. Please contact us at did@dh.gsi.gov.uk

4.4.2 iView

The HSCIC allow health sector colleagues to access DID information through their web-based reporting tool, iView. Registered users may access anonymised data at aggregate level in a consistent and flexible format:

- **Access Information** – choose from a variety of data areas.
- **Build Reports** – select data to suit your needs.
- **Generate Charts** – customise report tables and graphs.
- **Export Data** – copy to Excel and manipulate data your way.
- **Save Reports** – store your favourite views for future use.

If you would like to register to use iView for DID, please email enquiries@hscic.gov.uk (subject: DID iView Access). For more information, please visit the iView website http://www.hscic.gov.uk/iview

4.4.3 Websites

The DID information website can be found here: http://www.hscic.gov.uk/DID

Those who submit data to DID do so via a secure submission portal here: https://did.hscic.gov.uk/

The DID Additional Tables and Technical Report can be found here: http://www.england.nhs.uk/statistics/diagnostic-imaging-dataset/

4.4.4 Additional Information

For press enquiries contact the NHS England Media team on 0113 825 0958 or 0113 825 0959. Email enquiries should be directed to nhsengland.media@nhs.net

The Government Statistical Service (GSS) statistician responsible for producing these data is:

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