



**Diagnostic Imaging
Dataset
Annual Statistical
Release 2013/14**

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Annual Statistical Release 2013/14

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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 2013/14. 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:

- 37.9 million imaging tests were reported in England in the year to March 2014, compared to 36.1 million in the year to March 2013. This is an increase of 5.1%, although the number of trusts submitting data has also increased in this period.
- Plain Radiography (X-ray) was most common with 21.8 million procedures, followed by Diagnostic Ultrasonography (Ultrasound, 8.14 million), Computerized Axial Tomography (CT Scan, 3.78 million) and Magnetic Resonance Imaging (MRI, 2.61 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 2013/14, similar to 2012/13.
- 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 2 days for MRI and PET-scans in 2013/14, little changed from 2012/13.

For the key tests¹ Chest X-ray, Brain MRI and Non-Obstetric Ultrasound of the Abdomen and/or Pelvis:

- In 2013/14, GPs requested over a quarter (26%) of all tests that may have been used to diagnose or discount cancer, under direct access arrangements. This compares to 27% in 2012/13.
- The test most commonly requested by GPs was Chest X-ray with 1.93 million tests (down 3.0% from 2012/13), 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 2013-2014).
- 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 25 days for Brain MRI.

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. 37.9 million imaging tests were reported in England in the year to March 2014, compared with 36.1 million in the previous year, an increase of 5.1%².
- 3.1.2. Plain Radiography (X-ray) had the biggest share of all tests performed during the year, with 21.8 million X-rays reported in 2013/14 compared with 21.1 million in 2012/13 (an increase of 3.1%). The next most common procedures were Ultrasound (8.14 million, up 5.9% from 2012/13), CT scans (3.78 million, up 13.0%) and MRI Scans (2.61 million, up 11.3%). Medical Photography procedures accounted for relatively little imaging activity (about 10,500 tests) but have shown the largest proportional increase in reported activity with a growth of 73.0%. This reflects increased coverage, also evident for SPECT scans (up 43.5%). The imaging counts and growth for each modality can be seen in Table 1.
- 3.1.3. January was the month with the most reported activity, followed by July. Both months reported over 3.3 million tests, although they did have a high number of working days in the month with 23 and 22 days respectively. December had the lowest number of reported tests, with a little under 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 93.6% in 2012/13 to 97.8% in 2013/14.

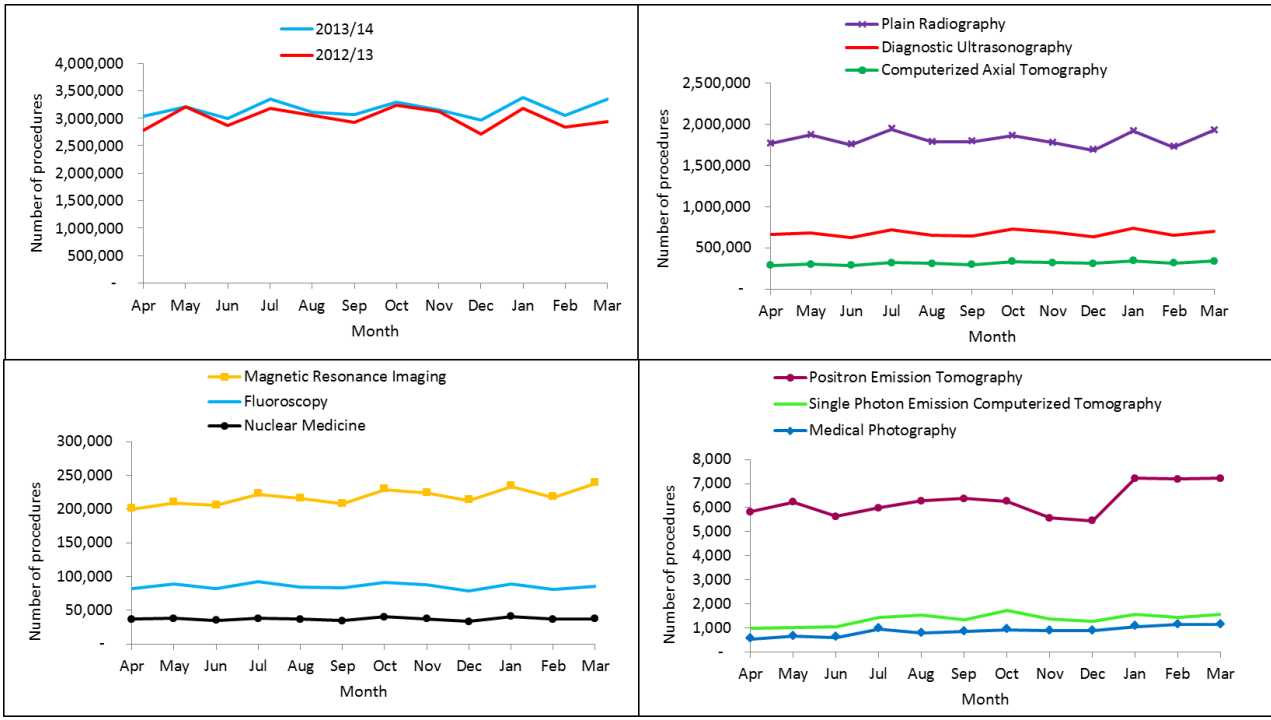
Table 1: Count of NHS imaging activity in England, 2012/13 and 2013/14

	X-ray	Ultrasound	CT Scan	MRI	Fluoro- scopy	Nuclear Medicine	PET Scans	SPECT Scans	Medical Photography	% organisations included	Total
2012/13	21,174,005	7,687,850	3,346,840	2,349,160	1,018,620	437,155	71,080	11,390	6,085	93.6%	36,102,195
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
% Growth	3.1%	5.9%	13.0%	11.3%	1.0%	2.1%	5.9%	43.5%	73.0%	4.2%	5.1%
2013/14											
Apr	1,769,400	660,215	288,250	200,025	82,100	36,655	5,835	975	550	94.7%	3,044,005
May	1,874,485	680,285	304,415	209,595	89,140	38,345	6,230	1,030	665	97.3%	3,204,180
Jun	1,753,415	629,395	286,305	205,150	82,080	35,395	5,635	1,040	610	96.3%	2,999,020
Jul	1,944,840	718,775	321,475	222,320	92,965	38,055	5,990	1,445	970	97.9%	3,346,835
Aug	1,787,430	658,420	312,285	215,465	84,240	37,060	6,285	1,530	785	98.4%	3,103,490
Sep	1,791,675	643,055	295,995	207,605	83,400	34,815	6,375	1,355	860	98.4%	3,065,130
Oct	1,862,440	728,745	333,800	228,755	91,700	40,450	6,270	1,745	930	96.8%	3,294,835
Nov	1,780,285	692,465	322,570	223,550	88,080	37,215	5,565	1,375	890	98.4%	3,152,000
Dec	1,688,655	633,300	310,470	212,880	78,565	33,550	5,450	1,290	890	98.4%	2,964,950
Jan	1,922,165	736,050	346,835	233,815	89,340	40,780	7,215	1,580	1,070	99.5%	3,378,840
Feb	1,726,405	657,235	317,735	217,570	81,175	36,630	7,180	1,435	1,150	98.9%	3,046,510
Mar	1,931,795	702,240	340,275	238,135	85,945	37,410	7,225	1,565	1,150	98.9%	3,345,745

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 in 2013/14 may be due to improved coverage of the dataset.

Graph 1: NHS imaging activity in England, April 2013 to March 2014



3.2 Imaging Activity by Age and Gender

3.2.1. Over 5.7 million more tests were performed on females than on males in 2013/14. The largest difference occurred for ultrasound procedures (3.7 million more on females) and for X-rays (1.8 million more). The majority of ultrasounds were on patients aged under 44 whilst the rate of X-rays increased markedly with age. Around half of the additional X-ray, MRI and nuclear medicine tests on females were found to be attributable to population differences, especially more older women than 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 2013/14.

Table 2: NHS Imaging activity in England by gender and age, 2013-14

	X-ray	Ultrasound	CT Scan	MRI	Fluoro-scropy	Nuclear Medicine	PET Scan	SPECT Scan	Medical Photography	Total ¹
Female	11,596,590	5,814,090	1,868,875	1,349,940	518,810	240,180	30,655	10,395	5,645	21,435,185
Male	9,791,035	2,123,295	1,845,100	1,186,890	505,450	198,820	40,265	6,735	4,810	15,702,400
Not known / specified ²	446,065	225,020	62,960	78,030	12,070	6,575	4,490	95	75	835,380
0-14	1,901,300	378,905	52,470	112,020	55,905	18,945	290	335	605	2,520,775
15-44	5,267,550	4,027,580	631,650	826,720	192,800	62,020	8,135	3,745	2,325	11,022,540
45-59	4,304,280	1,523,755	745,360	720,555	231,900	102,160	16,505	4,050	2,040	7,650,585
60-74	5,139,530	1,246,425	1,123,175	627,655	308,665	156,705	33,560	5,730	2,380	8,643,815
75-89 ³	4,277,575	809,570	1,038,795	287,160	209,830	96,225	15,895	3,045	2,665	6,740,750
Not Known	113,755	30,905	19,660	9,450	4,560	2,410	290	95	0	181,130

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. Imaging activity on patients aged 90+ is omitted from the table because of data quality issues at the start of 2013/14, whereby some missing dates of birth appeared as 01/01/1901 (see Technical Report)

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 2013 and March 2014.

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 fluctuation within individual tests over the course of the year, with the medians for MRI and SPECT scans varying by up to a week, from 22-28 and 14-21 days respectively, see Table 3.

Table 3: Median number of days between date of test request and date of test, by modality, April 2013 to March 2014

	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
Apr	0	14	2	23	0	15	7	20	0
May	0	13	2	22	0	15	7	19	0
Jun	0	13	1	24	0	15	7	19	0
Jul	0	12	1	22	0	14	7	18	0
Aug	0	12	1	24	0	14	7	16	0
Sep	0	13	2	23	0	14	7	17	0
Oct	0	12	2	22	0	14	7	17	0
Nov	0	13	2	24	0	14	7	16	0
Dec	0	12	1	24	0	14	7	14	0
Jan	0	13	2	28	0	17	8	21	0
Feb	0	12	3	22	0	14	8	15	0
Mar	0	13	2	24	0	14	7	17	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.

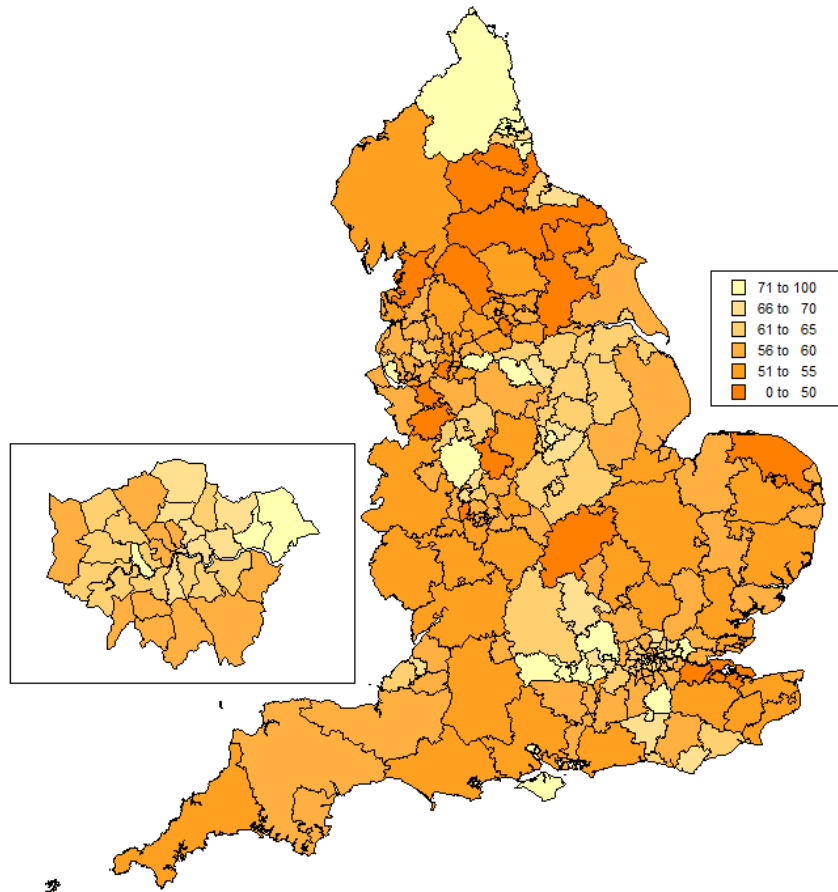
3.3.4. There were some slight changes in the median number of days between test request and date of test in 2013/14 compared to 2012/13. SPECT Scans (for which reported activity increased 43.5%) had the largest change increasing by 3 days from 14 to 17. MRI also increased by one day, whilst Nuclear Medicine and PET Scans both decreased by one day.

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

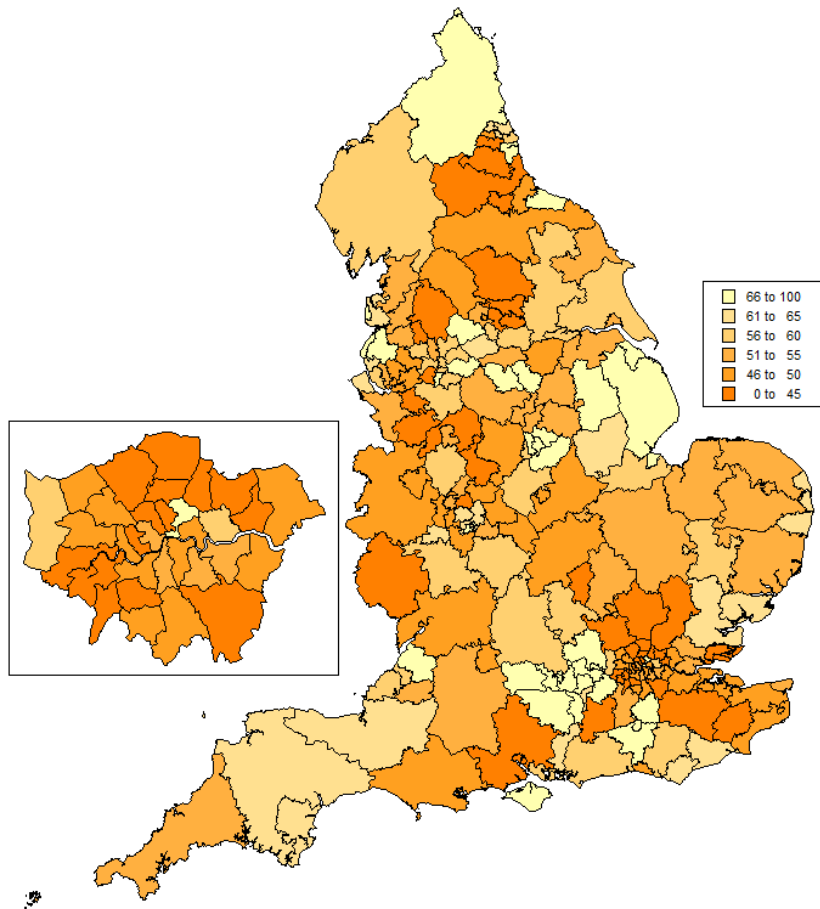
figures included both planned and unplanned imaging activity. In addition, these figures exclude any cancelled or missed appointments and they count the period for individual tests not each patient appointment.

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

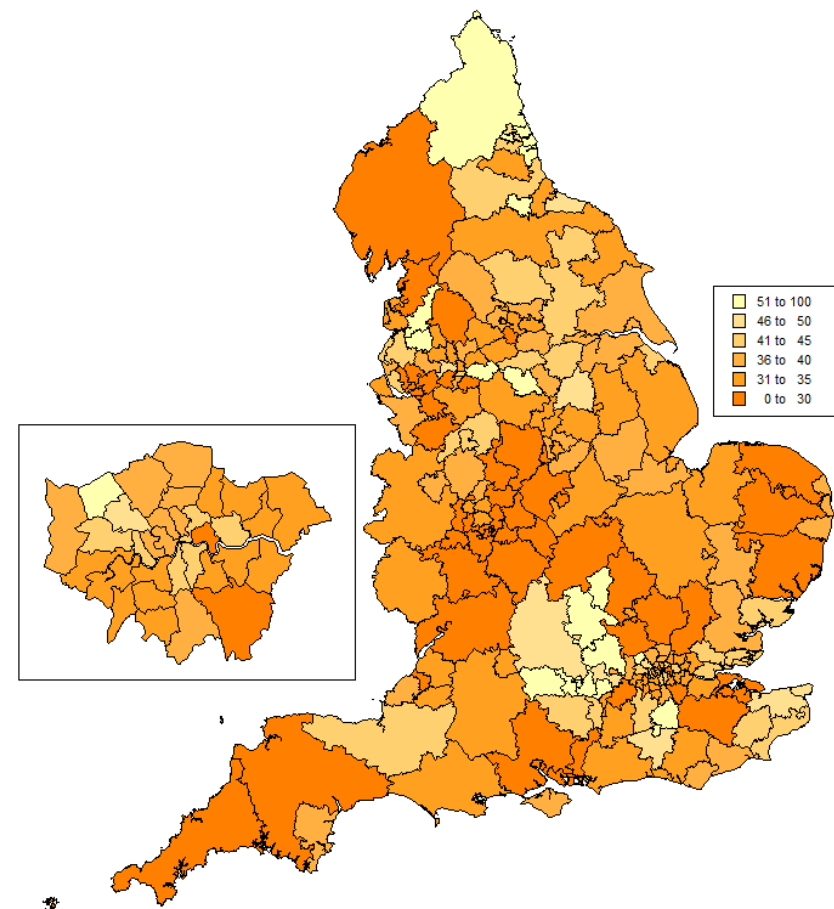
Map 1: Proportion of CT scans where date of test is less than 7 days after date of referral, for each CCG, 2013/14



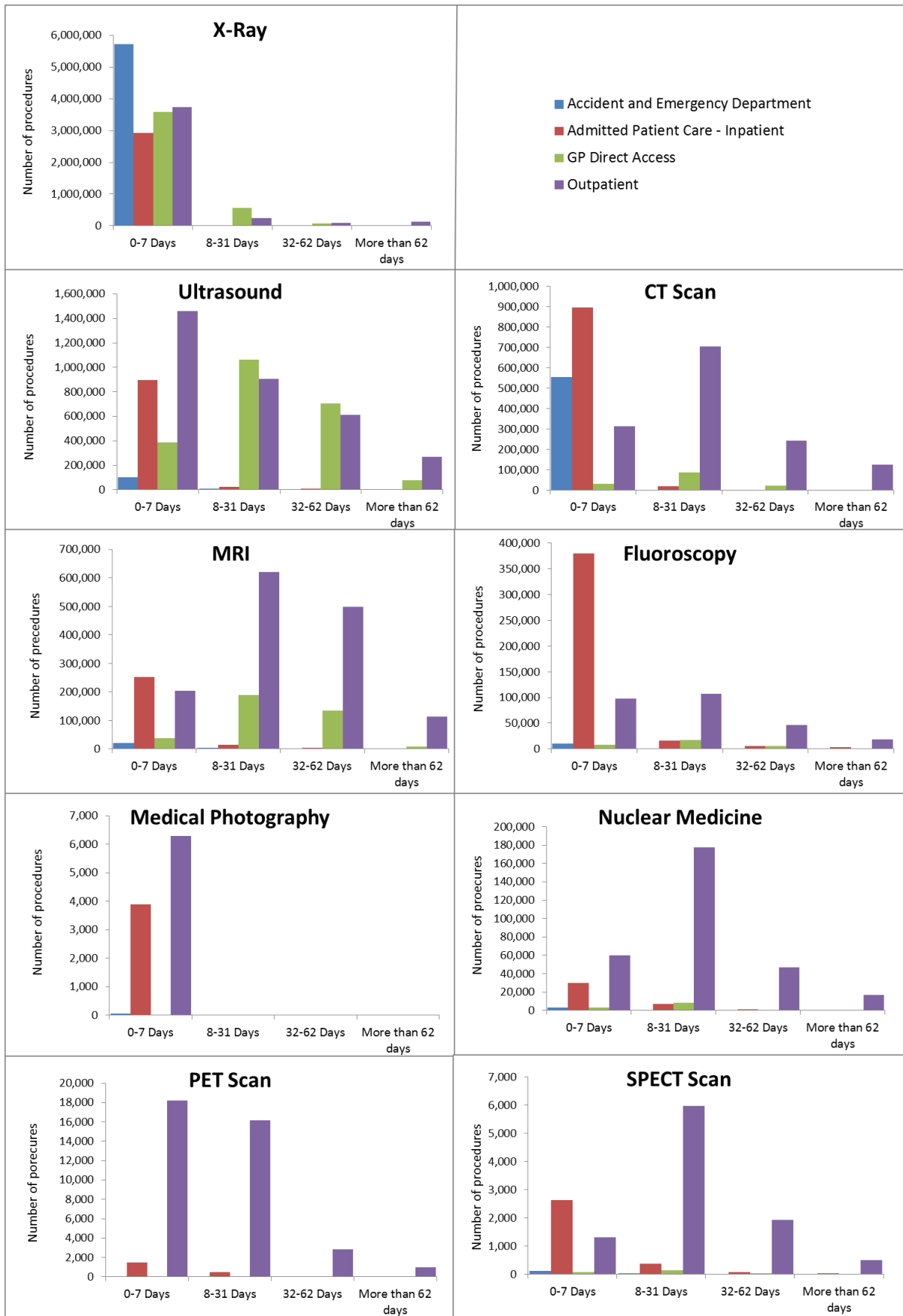
Map 2: Proportion of Ultrasounds where date of test is less than 14 days after date of request, for each CCG, 2013/14



Map 3: Proportion of MRI Scans where date of test is less than 14 days after date of request, for each CCG, 2013/14



Graph 2: Imaging activity by number of days from date of test request to date of test, by modality and source of referral, 2013/14



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 and PET-scans the median difference was 2 days. For the other modalities the median difference was one day. Within each modality, the elapsed period for a test report remained fairly consistent throughout the 12 months, with five modalities showing slight fluctuations of one day.
- 3.4.2. Nuclear Medicine and Medical Photography are the only modalities to show a change in median referral time from 2012/13, both decreasing by one day.

Table 4: Median number of days between date of test and date test report issued, by modality, April 2013 to March 2014

	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
Apr	1	0	0	2	0	1	2	1	1
May	1	0	0	2	0	2	2	1	1
Jun	1	0	0	2	0	1	2	1	1
Jul	1	0	0	2	0	1	2	1	0
Aug	1	0	0	3	0	2	2	1	0
Sep	1	0	0	3	0	2	2	2	0
Oct	1	0	0	2	0	1	2	2	0
Nov	1	0	0	3	0	2	2	1	0
Dec	1	0	0	2	0	1	2	1	0
Jan	1	0	0	2	0	1	2	1	0
Feb	1	0	0	3	0	1	2	1	0
Mar	2	0	0	3	0	2	2	2	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 2012/13 and 2013/14, 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 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 2013 to March 2014.

		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%
	Apr	25%	52%	93%	96%	84%	94%	67%	83%	71%	79%	60%	80%	14%	39%	77%	85%	17%	48%
	May	26%	51%	93%	96%	84%	94%	67%	83%	71%	80%	61%	79%	16%	32%	64%	75%	22%	68%
	Jun	25%	50%	91%	95%	82%	92%	64%	80%	72%	81%	57%	77%	25%	47%	70%	82%	41%	72%
	Jul	25%	51%	92%	95%	83%	93%	65%	82%	71%	80%	57%	76%	24%	54%	73%	84%	41%	77%
	Aug	25%	50%	93%	96%	84%	94%	67%	82%	71%	80%	58%	77%	33%	58%	68%	82%	37%	68%
	Sep	24%	50%	92%	96%	84%	94%	65%	82%	70%	78%	58%	77%	30%	59%	73%	82%	42%	71%
	Oct	27%	54%	92%	96%	85%	95%	64%	81%	70%	79%	59%	78%	27%	52%	66%	81%	47%	78%
	Nov	27%	53%	91%	94%	84%	94%	64%	81%	70%	78%	60%	77%	29%	43%	78%	86%	69%	85%
	Dec	26%	53%	93%	96%	85%	95%	67%	82%	72%	80%	63%	79%	34%	61%	67%	80%	71%	91%
	Jan	27%	54%	93%	96%	84%	94%	64%	80%	72%	80%	61%	79%	27%	55%	72%	87%	58%	80%
	Feb	28%	47%	93%	96%	84%	94%	63%	80%	71%	80%	49%	69%	29%	49%	68%	83%	70%	87%
Mar	23%	49%	93%	96%	84%	94%	65%	81%	71%	80%	58%	77%	28%	50%	69%	81%	54%	83%	
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%
	Apr	37%	53%	86%	91%	33%	48%	20%	35%	55%	69%	24%	46%	7%	34%	22%	44%	14%	61%
	May	38%	54%	86%	91%	33%	49%	21%	35%	56%	69%	24%	45%	8%	34%	28%	49%	41%	87%
	Jun	37%	53%	85%	90%	31%	46%	19%	33%	55%	68%	25%	46%	8%	33%	31%	49%	57%	79%
	Jul	37%	53%	86%	91%	31%	47%	20%	35%	56%	69%	25%	46%	11%	38%	32%	52%	63%	91%
	Aug	37%	52%	87%	92%	32%	47%	21%	35%	58%	71%	25%	45%	10%	37%	29%	47%	61%	92%
	Sep	38%	53%	86%	91%	31%	46%	19%	34%	56%	69%	24%	45%	9%	35%	21%	39%	64%	89%
	Oct	39%	55%	87%	91%	32%	49%	20%	36%	56%	70%	24%	47%	12%	42%	26%	46%	62%	92%
	Nov	39%	55%	87%	91%	32%	48%	19%	33%	57%	69%	25%	46%	9%	33%	20%	41%	75%	93%
	Dec	41%	56%	88%	92%	33%	48%	20%	34%	57%	70%	27%	48%	10%	36%	33%	53%	74%	94%
	Jan	39%	55%	87%	92%	32%	48%	19%	34%	58%	71%	26%	47%	9%	34%	21%	43%	77%	90%
	Feb	34%	54%	87%	92%	30%	46%	17%	32%	56%	70%	27%	49%	9%	35%	30%	52%	69%	87%
Mar	35%	50%	87%	92%	30%	45%	18%	31%	57%	70%	24%	44%	7%	36%	18%	41%	78%	94%	

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 2013/14, 9.7 million tests that may have been used to diagnose or discount cancer were performed, down from 10.0 million (-2.6%) in 2012/13. The reduction in these tests appears to be more a result of monthly variation than an ongoing yearly drop, as seen in graph 4.1.

3.5.5. The most common test requested through all source settings was Chest X-rays, with 7.4 million tests being requested in 2013/14 compared to 7.7 million in 2012/13 (down 4.6%). This was also the most common test requested by

GPs (1.9 million). The next most common tests were ones that may have been used to diagnose ovarian cancers (abdominal or pelvic ultrasound, 1.2 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 2013 to March 2014

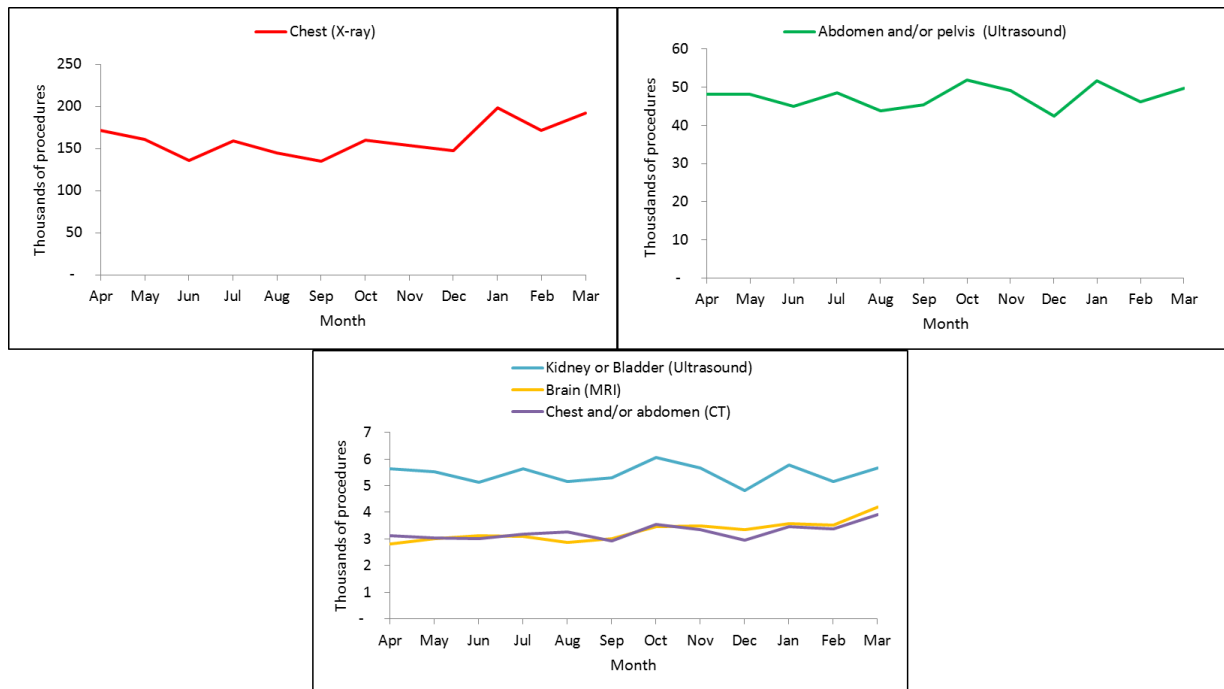
	Brain (MRI)		Kidney or bladder (Ultrasound)		Chest and/or abdomen (CT)		Chest (X-ray)		Abdomen and/or pelvis Ultrasound	
	All	GP	All	GP	All	GP	All	GP	All	GP
2012/13	472,755	31,030	220,230	67,460	388,655	32,185	7,723,410	1,991,705	1,165,345	536,930
2013/14	504,740	39,540	214,265	65,450	422,545	39,180	7,369,800	1,931,250	1,198,120	570,235
Growth	6.8%	27.4%	-2.7%	-3.0%	8.7%	21.7%	-4.6%	-3.0%	2.8%	6.2%
2013/14										
Apr	41,070	2,800	17,700	5,620	34,210	3,130	642,320	171,930	100,855	48,085
May	43,155	3,025	18,230	5,520	35,325	3,040	648,920	160,945	104,310	48,215
Jun	41,510	3,115	16,745	5,125	32,880	3,000	583,430	135,545	98,095	44,935
Jul	44,635	3,105	19,030	5,620	36,960	3,190	635,780	158,875	107,105	48,595
Aug	43,070	2,865	17,320	5,160	34,910	3,265	602,520	145,170	98,860	43,840
Sep	41,280	3,020	17,145	5,305	33,525	2,940	581,915	134,720	99,220	45,335
Oct	46,485	3,470	19,470	6,050	39,145	3,535	644,835	160,415	112,975	51,955
Nov	45,065	3,480	19,120	5,660	37,430	3,355	634,445	153,830	106,575	49,230
Dec	42,830	3,360	17,655	4,805	35,045	2,960	647,015	147,595	94,975	42,375
Jan	47,960	3,580	20,475	5,770	40,920	3,470	728,055	198,545	113,290	51,695
Feb	43,880	3,525	18,200	5,165	37,705	3,380	645,465	171,260	101,805	46,250
Mar	48,040	4,185	18,985	5,650	40,190	3,910	696,355	192,415	108,160	49,725

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

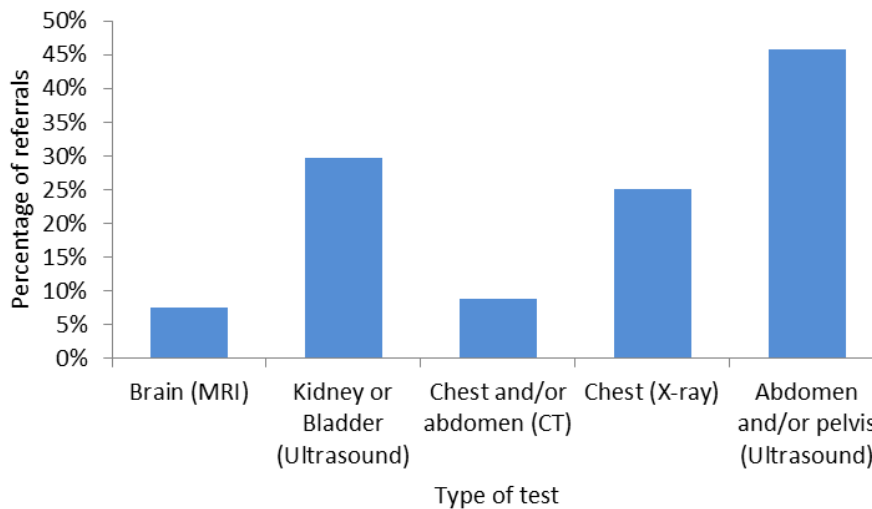
3.5.6. Of the 9.7 million tests requested in 2013/14, almost 26% of tests were requested by GPs under direct access arrangements, compared with 27% in 2012/13. Graph 4.2 shows the proportion of tests requested by GPs by test.

3.5.7. Brain MRI and Chest and/or abdomen CT have shown the largest increase in GP referred tests, 27.4% and 21.7% respectively. Both of these tests showed significantly larger increases in GP referrals than all referral sources.

Graph 4.1: Imaging activity for patients directly referred by a GP, April 2013 to March 2014



Graph 4.2: Percentage of referrals made by GPs by type of test, 2013/2014



Patient test times – Request to test

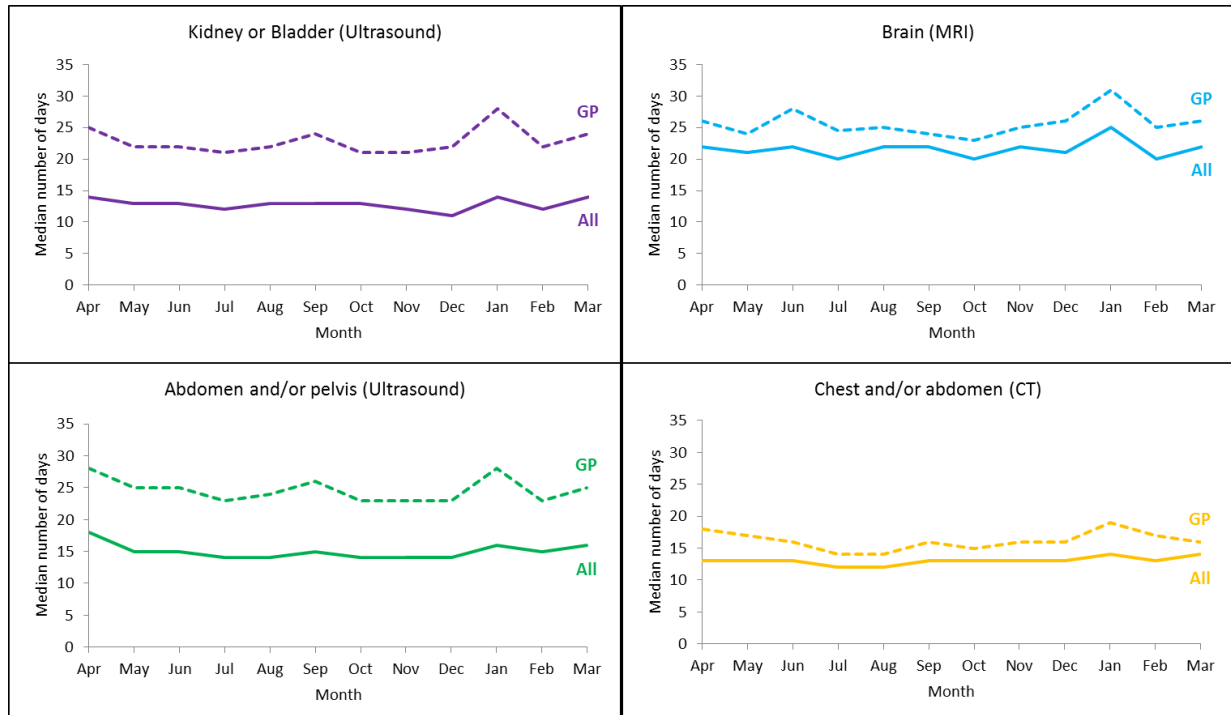
3.5.8. For the key tests that may be used to diagnose or discount cancer, the median period from a test being requested to being performed is longer for GP direct access than for all referrals. The exception is Chest X-ray, where the median is zero (same day) for GP and all referrals. The main reason 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 2012/13 and 2013/14 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 2013 to March 2014

	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
Apr	22	26	14	25	13	18	0	0	18	28
May	21	24	13	22	13	17	0	0	15	25
Jun	22	28	13	22	13	16	0	0	15	25
Jul	20	24.5	12	21	12	14	0	0	14	23
Aug	22	25	13	22	12	14	0	0	14	24
Sep	22	24	13	24	13	16	0	0	15	26
Oct	20	23	13	21	13	15	0	0	14	23
Nov	22	25	12	21	13	16	0	0	14	23
Dec	21	26	11	22	13	16	0	0	14	23
Jan	25	31	14	28	14	19	0	0	16	28
Feb	20	25	12	22	13	17	0	0	15	23
Mar	22	26	14	24	14	16	0	0	16	25

- 3.5.9. Only two tests have shown any change in 2013/14 compared to 2012/13. The median time for GP referred chest and/or abdomen CT has decreased by one day. Abdomen and/or pelvic ultrasound has seen an increase of one day for all referrals and two days for GP referrals.
- 3.5.10. The median number of days between date of request and date of test has shown some fluctuation throughout 2013/14 for tests that are suitable for diagnosing cancer, as shown in Graph 5. Brain MRI has shown the largest variation throughout 2013/14 with a range of 8 days (23 – 31).

Graph 5: 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 2013 to March 2014



Patient test times – Test to report

- 3.5.11. There is little difference in median number of days between date of test and date of test report issued between tests and for GP referrals compared to all referrals, as shown in Table 8.
- 3.5.12. The median time between test and report issued has shown no change from 2012/13 for tests that could be used to diagnose or discount cancer.
- 3.5.13. Throughout 2013/14 there has been only minor fluctuation of the median test to report period, for Chest X-ray and Brain MRI.

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 2013 to March 2014

	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%
Apr	1	41%	2	28%	2	25%	2	27%	0	87%	0	85%
May	1	42%	2	30%	2	26%	1	29%	0	88%	0	86%
Jun	1	39%	2	27%	2	25%	2	29%	0	88%	0	87%
Jul	1	39%	2	29%	2	25%	2	28%	0	89%	0	88%
Aug	1	40%	2	29%	2	24%	2	28%	0	90%	0	89%
Sep	1	39%	2	28%	2	24%	2	28%	0	90%	0	89%
Oct	1	41%	2	31%	2	26%	1	30%	0	90%	0	88%
Nov	1	41%	2	30%	2	26%	1	30%	0	89%	0	88%
Dec	1	42%	2	32%	2	26%	1	33%	0	90%	0	89%
Jan	1	41%	2	29%	2	25%	1	29%	0	90%	0	88%
Feb	1	39%	2	28%	2	24%	2	28%	0	90%	0	88%
Mar	1	39%	2	28%	2	22%	2	25%	0	89%	0	88%

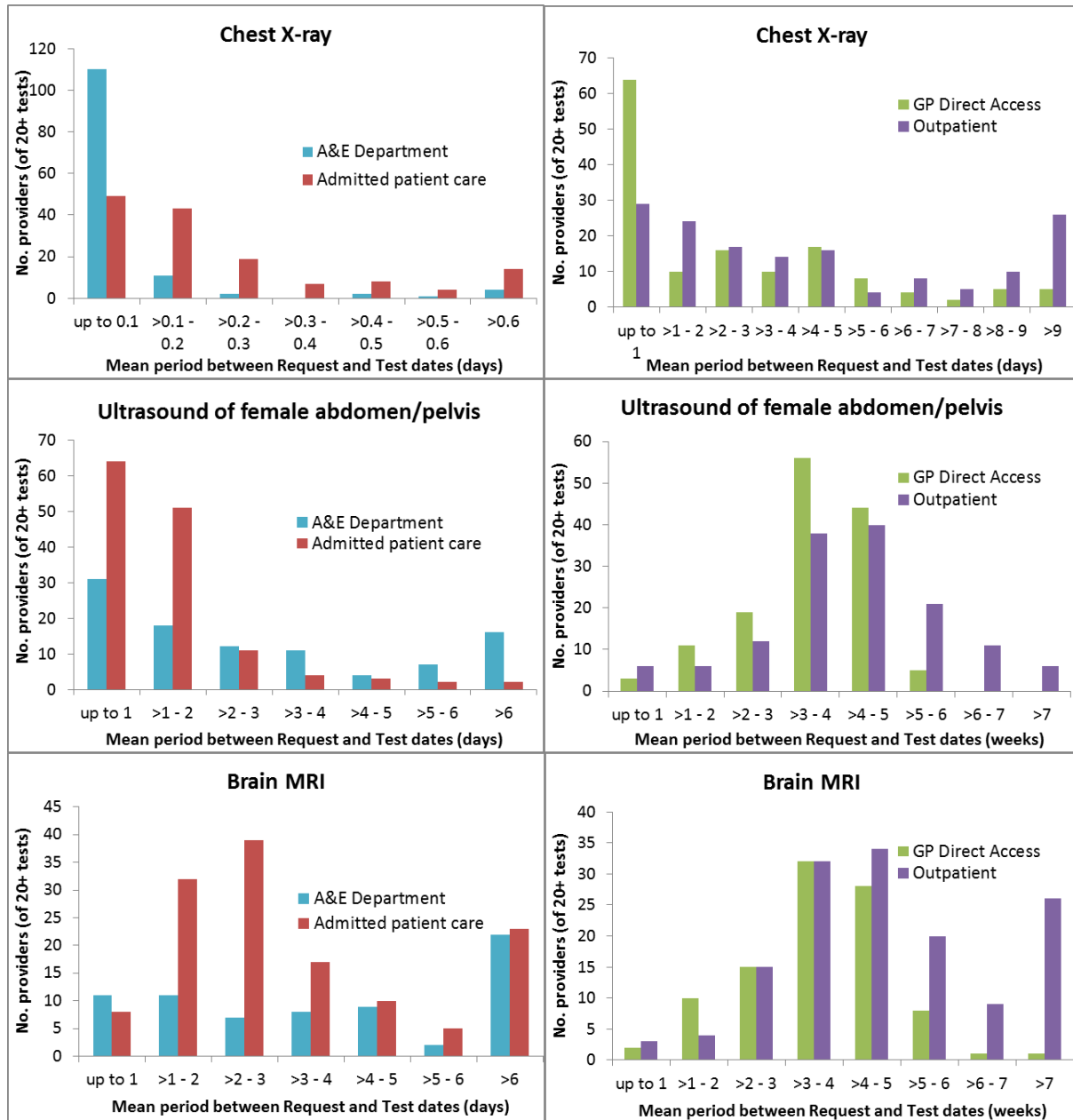
	Brain (MRI)				Kidney or bladder (Ultrasound)			
	All Median	All % Same day	GP Median	GP % Same day	All Median	All % Same day	GP Median	GP % Same day
2012/13	2	32%	3	17%	0	85%	0	80%
2013/14	2	34%	3	18%	0	89%	0	85%
Apr	2	34%	3	18%	0	87%	0	82%
May	1	35%	2	20%	0	88%	0	82%
Jun	2	32%	2	17%	0	87%	0	82%
Jul	1	34%	2	18%	0	88%	0	84%
Aug	1	35%	3	20%	0	88%	0	85%
Sep	2	33%	2	17%	0	88%	0	86%
Oct	1	34%	2	20%	0	89%	0	87%
Nov	2	33%	3	18%	0	90%	0	87%
Dec	2	35%	3	19%	0	91%	0	87%
Jan	2	34%	3	20%	0	90%	0	88%
Feb	2	32%	3	15%	0	90%	0	86%
Mar	2	32%	3	16%	0	89%	0	86%

Variation by provider

3.5.14. The mean period between date of test request and date of test varies by provider, see Graph 7.1. 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. There is less variation by provider for A&E or admitted patient Chest

X-ray, where most providers average less than one day³ between request and test, than for female ultrasound and brain MRI, where the variation is measured in weeks.

Graph 7.1 Average period from date of test request to date of test for procedures suitable for diagnosing cancer, by provider, 2013-14

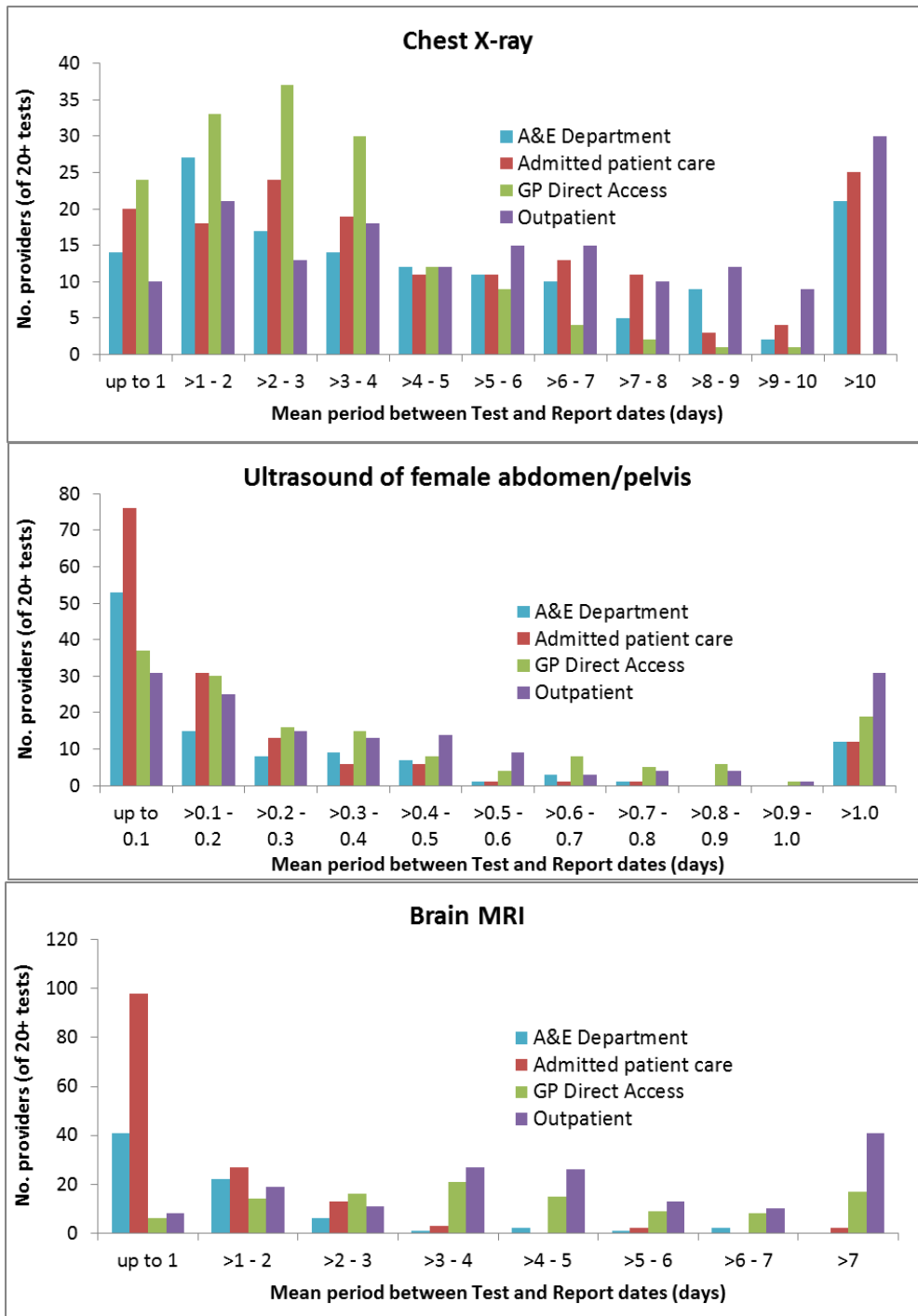


3.5.15. The mean period between date of test and date of test report also varies by provider for Chest X-ray, Ultrasound of the abdomen and/or pelvis in females and Brain MRI, see Graph 7.2. There is less variation in test to report periods by source of referral than for the period from test request 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

³ Period measured between dates and not times of day.

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 7.2 Average period from date of test to date test report issued for procedures suitable for diagnosing cancer, by provider, 2013-14



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. In addition, data for Royal Liverpool and Broadgreen Hospitals NHS Foundation Trust was omitted from modality counts in October 2013 because there appeared to be errors in their test codes. Therefore, users should exercise care when interpreting the results.

It is anticipated that the coverage and quality of records submitted will continue to improve as data providers become more familiar and the information is further evaluated.

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, i.e. 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, e.g. 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 81% of tests had a date of test request included and approximately 89% 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. Many of these 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.nhs.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

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