

## 12 Investigations

The GPs participating in the study were asked to record (in free text) any pathology, imaging or other tests ordered or undertaken at the encounter and to nominate the patient problem(s) associated with each test order placed. This allows the linkage of test orders to a single problem or multiple problems. Up to five orders for pathology and two for imaging and other tests could be recorded at each encounter. A single test may have been ordered for the management of multiple problems, and multiple tests may have been used in the management of a single problem.

A pathology test order may be for a single test (for example Pap smear, HbA1c) or for a battery of tests (for example lipids, full blood count). Where a battery of tests was ordered, the battery name was recorded rather than each individual test. GPs also recorded the body site for any imaging ordered (for example X-ray chest, CT head).

### 12.1 Annual results, 2006–07

#### Numbers of investigations

Table 12.1 shows the number of encounters and problems at which a pathology or imaging test was ordered. There were no tests recorded at a large majority (77.0%) of encounters.

At least one pathology test order was recorded at 17.4% of encounters (for 13.4% of problems managed) and at least one imaging test was ordered at 7.9% of encounters (for 5.5% of problems managed).

**Table 12.1: Number of encounters and problems for which pathology or imaging ordered, 2006–07**

Variable	Number of encounters	Per cent of encounters (n = 91,805)			Number of problems	Per cent of problems (n = 136,333)		
		95% LCL	95% UCL	95% LCL		95% UCL		
Pathology and imaging ordered	2,032	2.2	2.1	2.4	1,477	1.1	1.0	1.2
Pathology only ordered	13,906	15.1	14.6	15.7	16,819	12.3	11.9	12.7
Imaging only ordered	5,178	5.6	5.4	5.9	5,982	4.4	4.2	4.6
No tests ordered	70,688	77.0	76.3	77.7	112,055	82.2	81.7	82.7
At least one pathology ordered	15,939	17.4	16.8	18.0	18,296	13.4	13.0	13.9
At least one imaging ordered	7,210	7.9	7.6	8.2	7,459	5.5	5.3	5.7
At least one other investigation ordered	929	1.0	0.9	1.1	945	0.7	0.6	0.8

Note: LCL—lower confidence limit; UCL—upper confidence limit.

#### Pathology ordering

A comprehensive report on pathology ordering by GPs in Australia in 1998, written by the then General Practice Statistics and Classification Unit (GPSCU) using BEACH data, was published on the Internet by the Diagnostics and Technology Branch of the Department of Health and Aged Care during 2000.<sup>63</sup> A report on changes in pathology ordering by GPs

from 1998 to 2001 was also produced by the GPSCU as an AIHW – University of Sydney book in the GP series in 2003.<sup>64</sup> Readers may wish to compare those results with the information presented below.

## Nature of pathology orders at encounter

The distribution of pathology tests by MBS group and the most common tests within each group are presented in Table 12.2. Each group and individual test is expressed as a percentage of all pathology tests, as a percentage of the group and as a rate per 100 encounters with 95% confidence limits.

The pathology tests recorded were grouped according to the categories set out in Appendix 4, <[www.aihw.gov.au/publications/index.cfm/subject/19](http://www.aihw.gov.au/publications/index.cfm/subject/19)>. The main pathology groups reflect those used in previous analyses by Medicare Australia of pathology tests (MBS groups).<sup>65</sup>

Test orders classed as 'Chemistry' accounted for more than half of all pathology test orders, the most common being Lipids for which there were 4.3 orders per 100 encounters, EUC (3.3), Liver function (2.9) and Glucose tolerance (2.7 per 100 encounters).

**Table 12.2: Distribution of pathology orders across MBS pathology groups and most frequent individual test orders within group, 2006–07**

Pathology test ordered	Number	Per cent of all pathology	Per cent of group	Rate per 100 encounters (n = 91,805)	95% LCL	95% UCL
<b>Chemistry*</b>	<b>22,502</b>	<b>57.8</b>	<b>100.0</b>	<b>24.5</b>	<b>23.3</b>	<b>25.7</b>
Lipids*	3,959	10.2	17.6	4.3	4.0	4.6
EUC*	2,983	7.7	13.3	3.3	3.0	3.5
Liver function*	2,679	6.9	11.9	2.9	2.7	3.2
Glucose/tolerance*	2,441	6.3	10.8	2.7	2.4	2.9
Thyroid function*	2,138	5.5	9.5	2.3	2.1	2.5
Multibiochemical analysis*	1,699	4.4	7.5	1.9	1.6	2.1
Chemistry; other*	1,084	2.8	4.8	1.2	1.1	1.3
Ferritin*	1,032	2.7	4.6	1.1	1.0	1.2
HbA1c*	992	2.6	4.4	1.1	1.0	1.2
Prostate specific antigen*	719	1.9	3.2	0.8	0.7	0.9
Hormone assay*	704	1.8	3.1	0.8	0.6	0.9
C reactive protein	563	1.4	2.5	0.6	0.5	0.7
<b>Haematology*</b>	<b>7,217</b>	<b>18.5</b>	<b>100.0</b>	<b>7.9</b>	<b>7.5</b>	<b>8.3</b>
Full blood count*	5,289	13.6	73.3	5.8	5.5	6.1
ESR	860	2.2	11.9	0.9	0.8	1.0
Coagulation*	805	2.1	11.2	0.9	0.8	1.0
<b>Microbiology*</b>	<b>5,368</b>	<b>13.8</b>	<b>100.0</b>	<b>5.9</b>	<b>5.4</b>	<b>6.3</b>
Urine M,C&S*	1,651	4.2	30.8	1.8	1.7	1.9
Microbiology; other*	716	1.8	13.3	0.8	0.7	0.9
Hepatitis serology*	540	1.4	10.1	0.6	0.5	0.7
HIV*	348	0.9	6.5	0.4	0.3	0.5

(continued)

**Table 12.2 (continued): Distribution of pathology orders across MBS pathology groups and most frequent individual test orders within group, 2006–07**

Pathology test ordered	Number	Per cent of all pathology	Per cent of group	Rate per 100 encounters (n = 91,805)	95% LCL	95% UCL
Chlamydia*	313	0.8	5.8	0.3	0.3	0.4
Faeces M,C&S*	303	0.8	5.6	0.3	0.3	0.4
Vaginal swab and M,C&S	296	0.8	5.5	0.3	0.3	0.4
<b>Cytology*</b>	<b>1,557</b>	<b>4.0</b>	<b>100.0</b>	<b>1.7</b>	<b>1.5</b>	<b>1.9</b>
Pap smear*	1,514	3.9	97.3	1.7	1.5	1.8
<b>Other NEC*</b>	<b>748</b>	<b>1.9</b>	<b>100.0</b>	<b>0.8</b>	<b>0.7</b>	<b>1.0</b>
Blood test	299	0.8	39.9	0.3	0.2	0.4
<b>Tissue pathology*</b>	<b>663</b>	<b>1.7</b>	<b>100.0</b>	<b>0.7</b>	<b>0.6</b>	<b>0.8</b>
Histology; skin	631	1.6	95.0	0.7	0.6	0.8
<b>Immunology*</b>	<b>566</b>	<b>1.5</b>	<b>100.0</b>	<b>0.6</b>	<b>0.5</b>	<b>0.7</b>
Immunology, other*	280	0.7	49.5	0.3	0.3	0.4
Antinuclear antibodies	139	0.4	24.5	0.2	0.1	0.2
<b>Infertility/pregnancy*</b>	<b>188</b>	<b>0.5</b>	<b>100.0</b>	<b>0.2</b>	<b>0.2</b>	<b>0.3</b>
<b>Simple basic tests*</b>	<b>153</b>	<b>0.4</b>	<b>100.0</b>	<b>0.2</b>	<b>0.1</b>	<b>0.2</b>
<b>Total pathology tests</b>	<b>38,963</b>	<b>100.0</b>	<b>—</b>	<b>42.4</b>	<b>40.7</b>	<b>44.2</b>

\* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 4, <www.aihw.gov.au/publications/index.cfm>).

Note: LCL—lower confidence limit; UCL—upper confidence limit; NEC—not elsewhere classified.

## Problems for which pathology tests were ordered

Table 12.3 describes, in decreasing frequency order of problem–pathology combinations, the most common problems for which pathology was ordered. Diabetes, hypertension, lipid disorders and general check-ups were the most common problems for which pathology tests were ordered. The two right-hand columns show the proportion of each problem that resulted in a pathology order and the rate of pathology orders per 100 specified problems when at least one test is ordered. For example, 30.8% of contacts with diabetes resulted in pathology orders, and when at least one pathology test was ordered for diabetes, 277 tests were ordered per 100 diabetes contacts that resulted in a pathology test order. In contrast, only 11.6% of contacts with hypertension problems resulted in a pathology test, but the resulting test orders accounted for almost as many tests (6.7%) as did diabetes.

**Table 12.3: The 10 problems for which pathology was most frequently ordered, 2006–07**

Problem managed	Number of problems	Number of problem–path combinations <sup>(a)</sup>	Per cent of problem–path combinations <sup>(a)</sup>	Per cent of problems with test <sup>(b)</sup>	Rate of path orders per 100 problems with pathology <sup>(c)</sup>
Diabetes—all*	3,387	2,894	7.2	30.8	277.0
Hypertension*	8,768	2,717	6.7	11.6	266.5
Lipid disorders	3,176	2,137	5.3	30.3	221.8
General check-up*	2,236	2,093	5.2	29.8	314.4
Female genital check-up*	1,580	1,441	3.6	75.1	121.4
Weakness/tiredness general	562	1,408	3.5	66.0	379.6

(continued)

**Table 12.3 (continued): The 10 problems for which pathology was most frequently ordered, 2006–07**

<b>Problem managed</b>	<b>Number of problems</b>	<b>Number of problem–path combinations<sup>(a)</sup></b>	<b>Per cent of problem–path combinations<sup>(a)</sup></b>	<b>Per cent of problems with test<sup>(b)</sup></b>	<b>Rate of path orders per 100 problems with pathology<sup>(c)</sup></b>
Urinary tract infection*	1,512	959	2.4	54.1	117.2
Pregnancy*	1,156	891	2.2	36.9	208.9
Blood test NOS	311	877	2.2	86.8	324.7
Abnormal test results*	835	692	1.7	49.8	166.4
<i>Subtotal</i>	<i>23,523</i>	<i>16,109</i>	<i>40.0</i>	<i>—</i>	<i>—</i>
<b>Total</b>	<b>136,333</b>	<b>40,458</b>	<b>100.0</b>	<b>13.4</b>	<b>221.1</b>

(a) A test was counted more than once if it was ordered for the management of more than one problem at an encounter. There were 38,963 pathology test orders and 40,458 problem–pathology combinations.

(b) The percentage of total contacts with the problem that generated at least one order for pathology.

(c) The rate of pathology orders placed per 100 contacts with that problem generating at least one order for pathology.

\* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 4, <www.aihw.gov.au/publications/index.cfm>).

Note: Path—pathology; NOS—not otherwise specified.

## Imaging ordering

Readers wanting a more detailed study of imaging orders should consult the comprehensive report on imaging orders by GPs in Australia in 1999–00, written by the GPSCU using BEACH data, published by the AIHW and the University of Sydney in 2001.<sup>66</sup>

### Nature of imaging orders at encounter

The distribution of imaging tests by MBS group and the most common tests within each group are presented in Table 12.4. Each group and individual test is expressed as a percentage of all imaging tests, as a percentage of the group and as a rate per 100 encounters with 95% confidence limits. Diagnostic radiology accounted for half of all imaging test orders while ultrasound accounted for a further 35.2%.

**Table 12.4: The most frequent imaging tests ordered, by MBS group, 2006–07**

<b>Imaging test ordered</b>	<b>Number</b>	<b>Per cent of all imaging</b>	<b>Per cent of group</b>	<b>Rate per 100 encounters (n = 91,805)</b>	<b>95% LCL</b>	<b>95% UCL</b>
<b>Diagnostic radiology*</b>	<b>4,199</b>	<b>51.0</b>	<b>100.0</b>	<b>4.6</b>	<b>4.4</b>	<b>4.8</b>
X-ray; chest	960	11.7	22.9	1.1	1.0	1.1
X-ray; knee	385	4.7	9.2	0.4	0.4	0.5
Mammography; female	315	3.8	7.5	0.3	0.3	0.4
X-ray; shoulder	221	2.7	5.3	0.2	0.2	0.3
X-ray; hip	203	2.5	4.8	0.2	0.2	0.3
X-ray; foot/feet	191	2.3	4.6	0.2	0.2	0.2
X-ray; ankle	187	2.3	4.4	0.2	0.2	0.2
Test; densitometry	164	2.0	3.9	0.2	0.1	0.2
X-ray; spine; lumbosacral	141	1.7	3.4	0.2	0.1	0.2

(continued)

**Table 12.4 (continued): The most frequent imaging tests ordered, by MBS group, 2006–07**

Imaging test ordered	Number	Per cent of all imaging	Per cent of group	Rate per 100 encounters (n = 91,805)	95% LCL	95% UCL
X-ray; wrist	136	1.7	3.2	0.2	0.1	0.2
X-ray; hand	113	1.4	2.7	0.1	0.1	0.1
X-ray; finger(s)/thumb	103	1.3	2.5	0.1	0.1	0.1
X-ray; spine; cervical	101	1.2	2.4	0.1	0.1	0.1
X-ray; spine; lumbar	97	1.2	2.3	0.1	0.1	0.1
X-ray; spine; thoracic	66	0.8	1.6	0.1	0.1	0.1
<b>Ultrasound*</b>	<b>2,898</b>	<b>35.2</b>	<b>100.0</b>	<b>3.2</b>	<b>3.0</b>	<b>3.3</b>
Ultrasound; pelvis	479	5.8	16.5	0.5	0.5	0.6
Ultrasound; abdomen	321	3.9	11.1	0.4	0.3	0.4
Ultrasound; obstetric	270	3.3	9.3	0.3	0.2	0.3
Ultrasound; shoulder	265	3.2	9.1	0.3	0.2	0.3
Ultrasound; breast; female	255	3.1	8.8	0.3	0.2	0.3
Ultrasound; renal tract	128	1.6	4.4	0.1	0.1	0.2
Echocardiography	108	1.3	3.7	0.1	0.1	0.1
Test; doppler	103	1.3	3.6	0.1	0.1	0.1
Ultrasound; abdomen upper	88	1.1	3.0	0.1	0.1	0.1
Ultrasound; leg	68	0.8	2.3	0.1	0.1	0.1
Test; doppler carotid	66	0.8	2.3	0.1	0.0	0.1
<b>Computerised tomography*</b>	<b>1,009</b>	<b>12.3</b>	<b>100.0</b>	<b>1.1</b>	<b>1.0</b>	<b>1.2</b>
CT scan; brain	185	2.3	18.3	0.2	0.2	0.2
CT scan; abdomen	122	1.5	12.1	0.1	0.1	0.2
CT scan; spine; lumbar	107	1.3	10.6	0.1	0.1	0.1
CT scan; head	95	1.2	9.4	0.1	0.1	0.1
<b>Nuclear medicine imaging*</b>	<b>86</b>	<b>1.0</b>	<b>100.0</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
Scan; bone(s)	61	0.7	70.9	0.1	0.0	0.1
<b>Magnetic resonance imaging</b>	<b>36</b>	<b>0.4</b>	<b>100.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>
<b>Total imaging tests</b>	<b>8,229</b>	<b>100.0</b>	<b>—</b>	<b>9.0</b>	<b>8.6</b>	<b>9.3</b>

\* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 4, <[www.aihw.gov.au/publications/index.cfm](http://www.aihw.gov.au/publications/index.cfm)>).

Note: LCL—lower confidence limit; UCL—upper confidence limit; CT—computerised tomography.

## Problems for which imaging tests were ordered

Table 12.5 describes, in decreasing frequency order of problem–imaging combinations, the most common problems for which imaging was ordered. The most common problem for which imaging was ordered was back complaint at 5.1% of orders, followed by fracture (4.9%), and osteoarthritis (4.7% of orders). The two right-hand columns show the proportion of each problem that resulted in an imaging test and the rate of imaging tests per 100 specified problems when at least one test is ordered – for example, 39.7% of contacts with fractures resulted in an imaging test and 107.6 tests were ordered per 100 fracture contacts when at least one test was ordered.

**Table 12.5: The 10 problems for which an imaging test was most frequently ordered, 2006–07**

<b>Problem managed</b>	<b>Number of problems</b>	<b>Number of problem–imaging combinations<sup>(a)</sup></b>	<b>Per cent of problem–imaging combinations</b>	<b>Per cent of problems with test<sup>(b)</sup></b>	<b>Rate of imaging orders per 100 problems with imaging<sup>(c)</sup></b>
Back complaint*	2,403	421	5.1	15.7	111.9
Fracture*	960	410	4.9	39.7	107.6
Osteoarthritis*	2,403	388	4.7	14.2	113.4
Sprain/strain*	1,423	304	3.6	18.9	113.1
Injury musculoskeletal NOS	792	278	3.3	31.1	112.5
Pregnancy*	1,156	257	3.1	19.6	113.7
Abdominal pain*	539	204	2.4	34.7	108.6
Breast lump/mass (female)	193	197	2.4	69.2	147.5
Shoulder syndrome	442	170	2.0	27.5	139.9
Bursitis/tendonitis/synovitis NOS	723	155	1.9	18.1	118.4
<i>Subtotal</i>	<i>11,034</i>	<i>2,784</i>	<i>33.4</i>	<i>—</i>	<i>—</i>
<b>Total</b>	<b>136,333</b>	<b>8,323</b>	<b>100.0</b>	<b>5.4</b>	<b>112.1</b>

(a) A test was counted more than once if it was ordered for the management of more than one problem at an encounter. There were 8,229 imaging test orders and 8,323 problem–imaging combinations.

(b) The percentage of total contacts with the problem that generated at least one order for imaging.

(c) The rate of imaging orders placed per 100 contacts with that problem generating at least one order for imaging.

\* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 4, <[www.aihw.gov.au/publications/index.cfm](http://www.aihw.gov.au/publications/index.cfm)>).

Note: NOS—not otherwise specified.

## Other investigations ordered

Other investigations include diagnostic procedures ordered by the GP at the encounter. There were a total of 971 other investigations ordered by GPs during the study year (Table 12.6).

### Most frequent procedures

Table 12.6 lists the most common other investigations ordered by GPs. Each investigation is expressed as a percentage of all ‘other investigations’ and as a rate per 100 encounters with 95% confidence limits.

To find the total number of these investigations ordered or performed by the GP, the numbers of investigations in Table 12.6 need to be added to those in Table 10.5, which reports the diagnostic procedures performed by the GP at the encounter.

**Table 12.6: Most frequent other investigations, 2006–07**

<b>Treatment</b>	<b>Number</b>	<b>Per cent of other investigations</b>	<b>Rate per 100 encounters (n = 91,805)</b>	<b>95% LCL</b>	<b>95% UCL</b>
Electrical tracings*	484.6	49.9	0.5	0.5	0.6
Diagnostic endoscopy*	315.3	32.5	0.3	0.3	0.4
Physical function test*	159.1	16.4	0.2	0.1	0.2
<i>Subtotal</i>	<i>959.0</i>	<i>98.8</i>	<i>—</i>	<i>—</i>	<i>—</i>
<b>Total other investigations</b>	<b>970.8</b>	<b>100.0</b>	<b>1.1</b>	<b>1.0</b>	<b>1.2</b>

\* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 4, <[www.aihw.gov.au/publications/index.cfm](http://www.aihw.gov.au/publications/index.cfm)>).

Note: LCL—lower confidence limit; UCL—upper confidence limit.

## 12.2 Changes over time, 1998–99 to 2006–07

### Numbers of encounters where pathology/imaging was ordered

Table 12.7 shows that there has been an increase in the proportion of encounters at which pathology and/or imaging was ordered, from 18.1% in 1998–99 to 23.0% in 2006–07, equating to an increase of over 4.9 million encounters at which tests were ordered in 2006–07. The likelihood of ordering at least one pathology test increased from 13.2% of encounters in 1998–99 to 17.4% in 2006–07, which is just over 4.2 million additional encounters at which pathology was ordered in 2006–07. The proportion of encounters generating imaging orders increased from 6.3% in 1998–99 to 7.9% in 2006–07, resulting in an estimated 1.6 million more encounters nationally at which imaging was ordered in 2006–07.

### Pathology test orders by MBS groups

Table 12.8 shows the changes in the total number of pathology test orders, and in the distribution of these by MBS pathology groups. These can only be compared from 2000–01 onwards because of the change in coding methodology introduced in 2000–01. The number of tests ordered increased from 29.7 tests (or battery of tests) per 100 encounters in 2000–01 to 42.4 in 2006–07, which extrapolates to approximately 13.5 million more test orders in 2006–07 than in 2000–01 nationally.

The largest increase was in orders for chemical pathology, which increased from 15.6 per 100 encounters in 2000–01 to 24.5 in 2006–07. This extrapolates to an estimated 9.4 million additional chemistry test orders in 2006–07 than 8 years earlier. Haematology increased at a slower rate, rising from 5.8 tests per 100 encounters in 2000–01 to 7.9 in 2006–07, a national increase of approximately 2.3 million tests. Microbiology test orders increased from 4.6 per 100 encounters in 2000–01 to 5.9 in 2006–07, extrapolating to an increase of about 1.4 million additional test orders in 2006–07. There were far smaller increases in order rates for tissue pathology and simple tests, and there were no increases in the other test groups.

As shown in Figure 12.1, both the likelihood of ordering pathology and the total number of tests ordered have significantly increased over the last 7 years. However, the growth in the number of tests/batteries ordered has been larger than the growth in likelihood of ordering at the encounter, because the number of tests ordered, once a decision to order has been made, has increased from an average of 2.15 tests/batteries per tested encounter to 2.45.

### Imaging test orders by MBS group

Table 12.9 shows the changes in imaging orders by imaging group from 2000–01 to 2006–07. The first 2 years of imaging group data cannot be compared with subsequent years because of coding changes introduced in 2000.

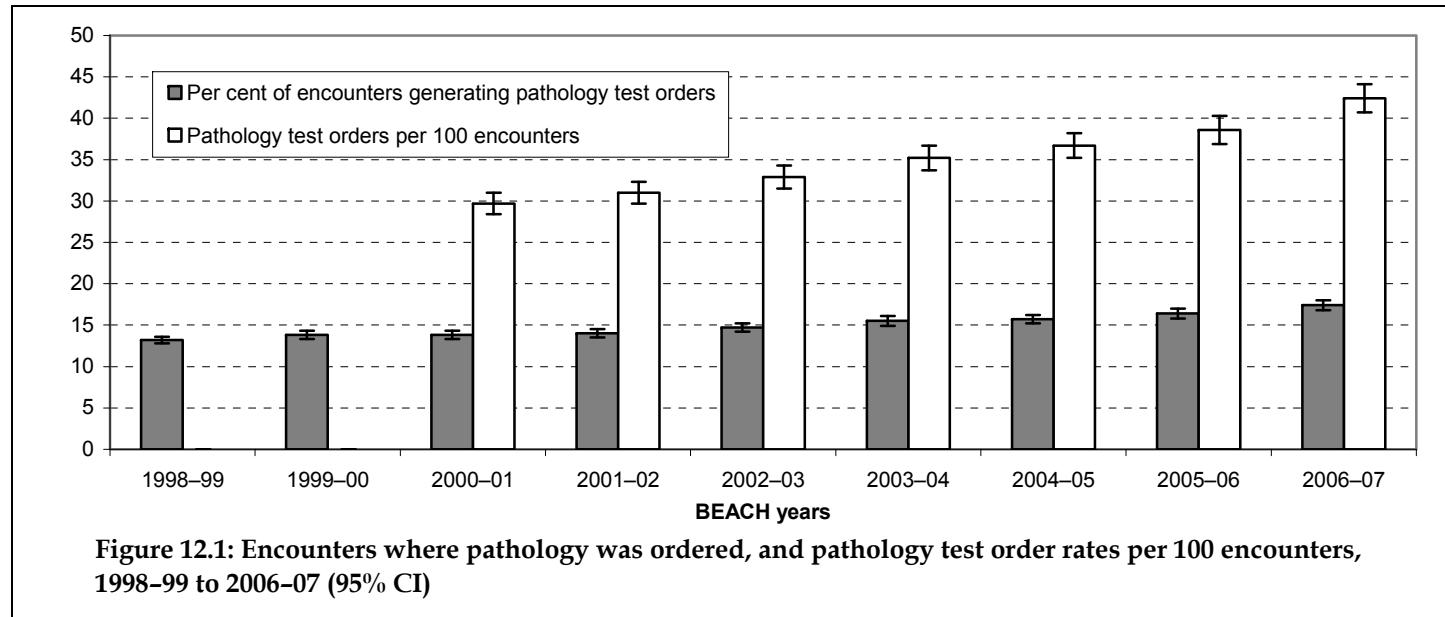
Total test orders increased significantly from 7.7 per 100 encounters in 2000–01 to 9.0 in 2006–07, suggesting a national increase of almost 1.5 million encounters with imaging. Ultrasound imaging increased from 2.1 tests per 100 encounters in 2000–01 to 3.2 per 100 in 2006–07, an increase of over 1 million encounters nationally with ultrasound orders. Computerised tomography increased from 0.7 per 100 encounters in 2000–01 to 1.1 in 2006–07, equating to 420,000 encounters. Diagnostic radiology, nuclear medicine imaging and magnetic resonance imaging did not change significantly during this period.

**Table 12.7: Number of encounters where pathology/imaging ordered, summary of annual results, BEACH, 1998–99 to 2006–07**

	Per cent of encounters (95% CI)									Change <sup>(a)</sup>	
	1998–99 (n = 96,901)	1999–00 (n = 104,856)	2000–01 (n = 99,307)	2001–02 (n = 96,973)	2002–03 (n = 100,987)	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	↑ ↓	('000)
At least one test ordered	18.1 (17.5–18.7)	18.9 (18.3–19.5)	19.3 (18.7–19.9)	19.2 (18.6–19.8)	20.3 (19.7–21.0)	20.8 (20.1–21.5)	21.2 (20.6–21.8)	22.1 (21.4–22.7)	23.0 (22.3–23.7)	↑	+4,910
At least one pathology test ordered	13.2 (12.8–13.7)	13.8 (13.3–14.3)	13.8 (13.3–14.3)	14.0 (13.5–14.5)	14.7 (14.2–15.3)	15.5 (14.9–16.1)	15.7 (15.2–16.3)	16.4 (15.8–16.9)	17.4 (16.8–18.0)	↑	+4,230
At least one imaging test ordered	6.3 (6.0–6.6)	6.7 (6.4–7.0)	6.8 (6.5–7.1)	6.9 (6.6–7.2)	7.5 (7.1–7.8)	7.2 (6.9–7.5)	7.3 (7.0–7.6)	7.8 (7.4–8.1)	7.9 (7.6–8.2)	↑	+1,600

(a) The direction and type of change from 1998–99 to 2006–07 is indicated for each variable: ↑/↓ indicates a statistically significant change. Statistically significant linear changes have been extrapolated to estimate the national average annual change and are reported in thousands in the far right column.

Note: CI—confidence interval.



Note: Data collection method and coding system changed in 2000–01. Data from 1998–99 and 1999–00 are not comparable with data from 2000–01 to 2006–07 in regard to pathology test orders.



**Table 12.8: Distribution of pathology orders across pathology groups, summary of annual results, BEACH, 2000–01 to 2006–07**

Pathology test ordered	Rate per 100 encounters <sup>(a)</sup> (95% CI)									Change <sup>(b)</sup>	
	1998–99 (n = 96,901)	1999–00 (n = 104,856)	2000–01 (n = 99,307)	2001–02 (n = 96,973)	2002–03 (n = 100,987)	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,804)	↑ ↓	('000)
Chemistry*	NAv	NAv	15.6 (14.8–16.5)	16.5 (15.6–17.3)	17.7 (16.8–18.6)	19.1 (18.1–20.1)	20.4 (19.5–21.4)	21.8 (20.6–22.9)	24.5 (23.3–25.7)	↑	+9,400
Haematology*	NAv	NAv	5.8 (5.5–6.1)	6.2 (5.8–6.5)	6.3 (5.9–6.6)	6.8 (6.4–7.2)	7.0 (6.6–7.3)	7.3 (6.9–7.7)	7.9 (7.5–8.3)	↑	+2,250
Microbiology*	NAv	NAv	4.6 (4.3–4.9)	4.9 (4.5–5.2)	5.1 (4.8–5.5)	5.3 (4.9–5.7)	5.2 (4.9–5.6)	5.6 (5.2–5.9)	5.9 (5.4–6.3)	↑	+1,410
Cytology*	NAv	NAv	1.5 (1.3–1.7)	1.6 (1.4–1.7)	1.7 (1.5–1.8)	1.8 (1.5–2.0)	1.6 (1.5–1.8)	1.7 (1.6–1.9)	1.7 (1.5–1.9)	—	—
Other NEC*	NAv	NAv	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.8 (0.6–0.9)	0.8 (0.7–0.9)	0.8 (0.7–1.0)	0.7 (0.6–0.8)	0.8 (0.7–1.0)	—	—
Tissue pathology*	NAv	NAv	0.5 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.7 (0.5–0.8)	0.8 (0.6–0.9)	0.6 (0.5–0.7)	0.7 (0.6–0.8)	↑	+210
Immunology*	NAv	NAv	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.6)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	—	—
Infertility/pregnancy*	NAv	NAv	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	—	—
Simple test; other*	NAv	NAv	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	↑	+100
<b>Total pathology tests</b>	NAv	NAv	<b>29.7</b> <b>(28.4–30.9)</b>	<b>31.0</b> <b>(29.7–32.4)</b>	<b>32.9</b> <b>(31.5–34.4)</b>	<b>35.2</b> <b>(33.7–36.7)</b>	<b>36.7</b> <b>(35.2–38.2)</b>	<b>38.6</b> <b>(36.9–40.3)</b>	<b>42.4</b> <b>(40.7–44.2)</b>	<b>↑</b>	<b>+13,530</b>

(a) Data collection method and coding system changed at the end of the second year of BEACH. Years 1 and 2 are not comparable with years 3 to 9 in regard to pathology groups.

(b) The direction and type of change from 2000–01 to 2006–07 is indicated for each variable: ↑/↓ indicates a statistically significant change, ↑/↓ indicates a marginal change, and — indicates there was no change. Statistically significant linear changes have been extrapolated to estimate the national average annual change and are reported in thousands in the far right column.

\* Includes multiple ICP-2 and ICPC-2 PLUS codes (see Appendix 4, <[www.aihw.gov.au/publications/index.cfm](http://www.aihw.gov.au/publications/index.cfm)>).

Note: CI—confidence interval; NAv—not available; NEC—not elsewhere classified.

**Table 12.9: Most frequent imaging tests ordered, summary of annual results, BEACH, 1998–99 to 2006–07**

Imaging test ordered	Rate per 100 encounters <sup>(a)</sup> (95% CI)									Change <sup>(b)</sup>	
	1998–99 (n = 96,901)	1999–00 (n = 104,856)	2000–01 (n = 99,307)	2001–02 (n = 96,973)	2002–03 (n = 100,987)	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	↑ ↓	('000)
Diagnostic radiology*	NAv	NAv	4.7 (4.5–5.0)	4.5 (4.3–4.7)	5.0 (4.8–5.3)	4.6 (4.3–4.8)	4.5 (4.3–4.7)	4.8 (4.5–5.0)	4.6 (4.4–4.8)	—	—
Ultrasound*	NAv	NAv	2.1 (2.0–2.3)	2.5 (2.3–2.6)	2.6 (2.5–2.8)	2.7 (2.5–2.8)	2.7 (2.5–2.8)	2.9 (2.7–3.1)	3.2 (3.0–3.3)	↑	+1,160
Computerised tomography*	NAv	NAv	0.7 (0.6–0.7)	0.8 (0.7–0.8)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.1 (1.0–1.2)	↑	+420
Nuclear medicine imaging*	NAv	NAv	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	—	—
Magnetic resonance imaging*	NAv	NAv	0.0 <sup>‡</sup> (0.0–0.0)	0.0 <sup>‡</sup> (0.0–0.0)	0.0 <sup>‡</sup> (0.0–0.0)	0.0 <sup>‡</sup> (0.0–0.1)	0.0 <sup>‡</sup> (0.0–0.0)	0.1 (0.0–0.1)	0.0 <sup>‡</sup> (0.0–0.1)	—	—
<b>Total imaging tests</b>	NAv	NAv	<b>7.7</b> <b>(7.3–8.0)</b>	<b>7.9</b> <b>(7.6–8.2)</b>	<b>8.6</b> <b>(8.2–9.0)</b>	<b>8.2</b> <b>(7.8–8.6)</b>	<b>8.3</b> <b>(8.0–8.6)</b>	<b>8.8</b> <b>(8.4–9.2)</b>	<b>9.0</b> <b>(8.6–9.3)</b>	↑	<b>+1,460</b>

(a) Data collection method and coding system changed at the end of the second year of BEACH. Years 1 and 2 are not comparable with years 3 to 9 in regard to imaging groups.

(b) The direction and type of change from 2000–01 to 2006–07 for imaging is indicated for each variable: ↑/↓ indicates a statistically significant change and — indicates there was no change. Statistically significant linear changes have been extrapolated to estimate the national average annual change and are reported in thousands in the far right column.

‡ Rates are reported to one decimal place. This indicates that the rate is < 0.05 per 100 encounters.

\* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 4, <[www.aihw.gov.au/publications/index.cfm](http://www.aihw.gov.au/publications/index.cfm)>).

Note: CI—confidence interval; NAv—not available.