

11. Referrals and admissions

A referral is defined as the process by which the responsibility for part or all of the care of a patient is temporarily transferred to another health care provider. Only new referrals arising at the encounter were included (i.e. continuations were not recorded). For every problem managed, GPs could record up to two referrals. These included referrals to specialists, to allied health professionals, to hospitals for admission or to the accident and emergency department. Referrals to hospital outpatient clinics were classified as specialist referrals. Referrals for certain clinical assessments such as endoscopies and ECGs without nomination of the provider, were also included in this Chapter. (Note that orders for imaging and pathology are described in Chapter 12 – Investigations).

11.1 Number of referrals and admissions

At least one referral was given at 7.8% encounters. There were 10,860 referrals made at a rate of 11.2 per 100 encounters. The most frequent were referrals to a medical specialist (7.4 per 100 encounters), followed by referrals to allied health services (3.0). Very few patients were referred to hospital for admission (0.7 per 100 encounters) or to the emergency department of a hospital (0.06 per 100). For every 100 problems managed, a referral to a specialist was made for 5.1, while a referral to an allied health professional was given for 2.1 (Table 11.1). A very small number of encounters (0.6%) resulted in two referrals.

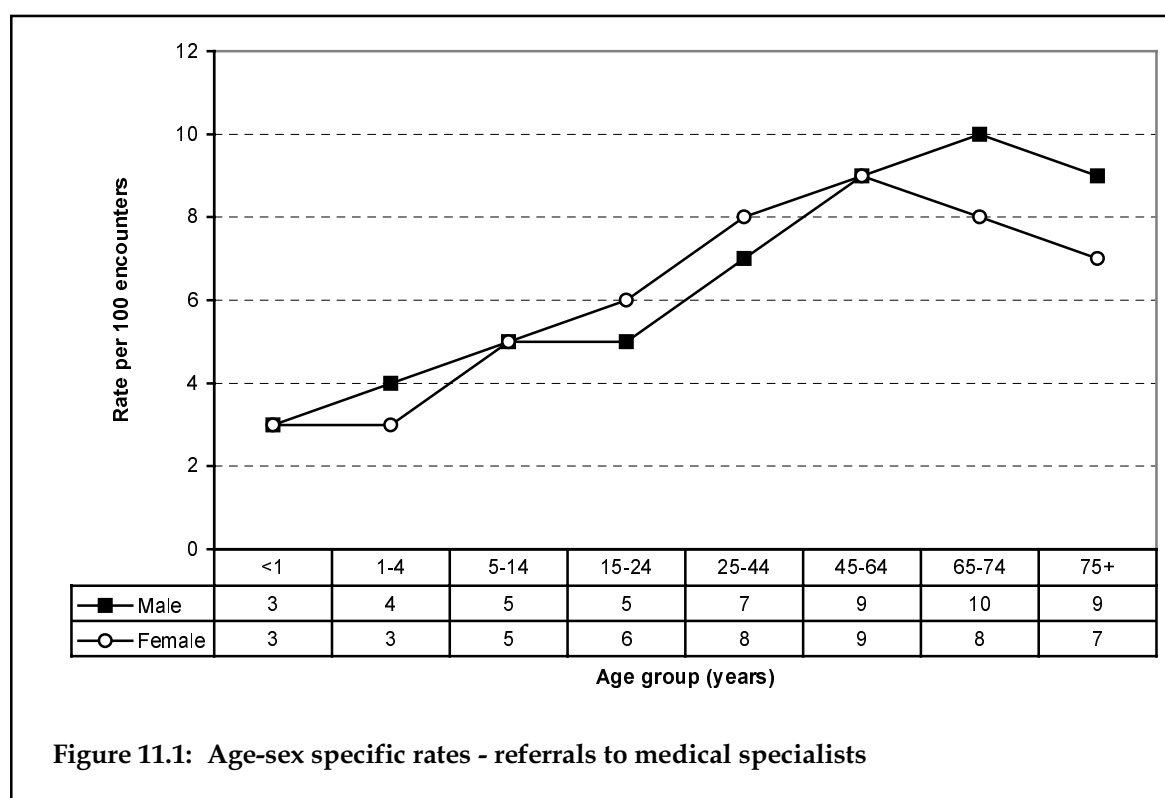
Table 11.1: Referrals and admissions – summary table

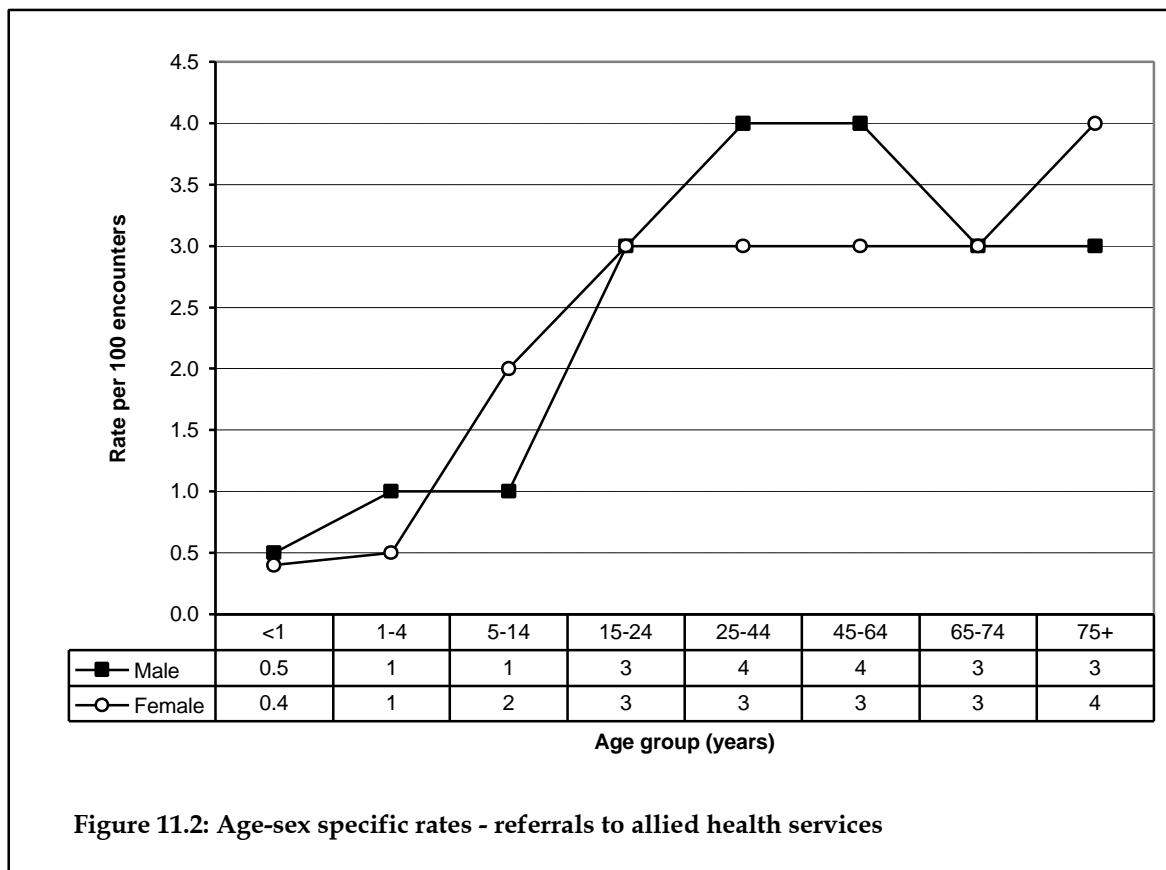
	Number	Rate per 100 encs	95% LCI	95% UCI	Rate per 100 problems	95% LCI	95% UCI
At least one referral	10,258	7.8	7.4	8.2	5.7	5.4	6.0
Referrals	10,860	11.2	10.8	11.6	7.7	7.4	8.0
Specialist	7,147	7.4	7.1	7.7	5.1	4.9	5.3
Allied health service	2,935	3.0	2.8	3.2	2.1	2.0	2.2
Hospital	717	0.7	0.6	0.9	0.5	0.4	0.6
Emergency department	61	0.06	0.0	0.6	0.04	0.0	0.4

Note: Abbreviations: Encs – encounters, UCI – Upper confidence interval, LCI – Lower confidence interval.

11.2 Age–sex specific rates of referrals

Relative rates of referrals to both medical specialists (Figure 11.1) and allied health services (Figure 11.2) increased with age. The rate of new referrals to specialists showed a slight decline in women over 65 year old patients, but this could reflect the fact that many women of this age have already been referred to specialists appropriate to their needs. The referral rate was slightly higher for males than for females in these older age groups. Referral rates to allied health services did not show any consistent trend. Males aged 25–64 years, and females aged 75 years or more, had the highest rate of referral to allied health services.





11.3 Most frequent referrals

Of the 10,860 referrals, 93% (n=10,082) were referrals to specialists or allied health services. The top ten provider types in each category accounted for 69.5% of all referrals to medical specialists and 59.8% of those to allied health services respectively (Table 11.2 – Note that this table does not show referrals where the GP did not specify the type of provider – e.g. referral to specialist).

The most frequent referrals made to specialist medical practitioners were to surgeons (11.2% of all referrals to medical specialists), ophthalmologists (9.8%), orthopaedic surgeons (8.1%) and gynaecologists (7.5%).

The majority of referrals to allied health services were to physiotherapists, and these accounted for 30.7% of all referrals of this type, and 8.3% of all referrals. Referrals to podiatrists and chiropodists (1.4% of all referrals), dentists (1.3%) and psychologists (1.3%) followed (Table 11.2).

Table 11.2: Most frequent referrals to specialists and allied health professionals

Professional to whom patient referred	Number	% of all referrals	% of referral group	Rate per 100 encs (N=96,901)	95% LCI	95% UCI
Medical specialist	7,147	70.8	100.0	7.4	7.1	7.7
Surgeon	804	7.4	11.2	0.8	0.7	0.9
Ophthalmologist	701	6.5	9.8	0.7	0.6	0.8
Orthopaedic surgeon	582	5.4	8.1	0.6	0.5	0.7
Gynaecologist	539	5.0	7.5	0.6	0.4	0.7
Ear, nose and throat specialist	514	4.7	7.2	0.5	0.4	0.7
Dermatologist	504	4.6	7.1	0.5	0.4	0.7
Gastroenterologist	396	3.7	5.5	0.4	0.3	0.6
Cardiologist	355	3.3	5.0	0.4	0.2	0.5
Urologist	305	2.8	4.3	0.3	0.2	0.5
Psychiatrist	270	2.5	3.8	0.3	0.1	0.4
<i>Subtotal: top 10 specialist referrals</i>	<i>4,970</i>	<i>49.3</i>	<i>69.5</i>	<i>..</i>	<i>..</i>	<i>..</i>
Allied health professional	2,935	29.1	100.0	3.0	2.8	3.2
Physiotherapy	902	8.3	30.7	0.9	0.8	1.1
Podiatrist/chiropracist	147	1.4	5.0	0.2	0.0	0.4
Dentist	142	1.3	4.8	0.2	0.0	0.4
Psychologist	141	1.3	4.8	0.2	0.0	0.4
Dietician/nutrition	114	1.1	3.9	0.1	0.0	0.4
Acoustic testing	111	1.0	3.8	0.1	0.0	0.5
Drug & alcohol	70	0.7	2.4	0.1	0.0	0.5
Counsellor	50	0.5	1.7	0.1	0.0	0.5
Optometrist	44	0.4	1.5	0.1	0.0	0.4
Aged care assessment	34	0.3	1.2	0.0	0.0	0.5
<i>Subtotal: top 10 allied health services</i>	<i>1,755</i>	<i>17.4</i>	<i>59.8</i>	<i>..</i>	<i>..</i>	<i>..</i>
Total specialist and allied health referrals	10,082	100.0

Note: Abbreviations: Encs – encounters, UCI – Upper confidence interval, LCI – Lower confidence interval.

11.4 Problems that were referred

A referral to a specialist was provided for a total of 7,084 problems managed. The 30 problems most commonly associated with a referral to a specialist accounted for a third of all problems associated with specialist referrals. The problems most frequently being managed with these referrals were malignant neoplasms of the skin (2.6% of problems managed), depression (2.4%), oesophageal disease (1.7%), pregnancy (1.7%) and diabetes (1.6%) (Table 11.3).

Referrals to allied health services were fewer in number (n=2,935), possibly because formal referrals to such services are not always required. There were 2,894 problems associated with a referral to an allied health professional or service. Table 11.4 shows the 30 most frequent problems associated with allied health referrals and these accounted for more than half of all problems referred to allied health services.

Back complaints were most frequently referred to allied health services (7.6% of problems managed), followed by sprains and strains (5.9%). Musculoskeletal injuries (2.4%), osteoarthritis and shoulder syndromes also featured in the top 30 problems managed. These problems are those that would be likely to be referred to physiotherapists. It is interesting to note that depression, one of the most common problems managed by GPs, was referred relatively frequently to both allied health professionals (4.0%) and medical specialists (2.4%).

Of the 717 referrals to hospital, the associated problems under management were often acute in nature. These included fractures (3.7% of problems managed), pneumonia (3.0%), appendicitis (2.8%) and asthma (2.5%). Acute cardiovascular problems such as heart failure, chest pain and strokes were also referred to hospital. Referrals to psychiatric units/hospitals were also included in this category and these would appear to be largely accounted for by depression (3.0%) (Table 11.5).

Table 11.3: Top 30 problems associated with a specialist referral

Problem managed	Number	% of problems managed	Rate per 100 encs (N=96,901)	95% LCI	95% UCI
Malignant neoplasm skin	182	2.6	0.2	0.0	0.4
Depression*	167	2.4	0.2	0.0	0.4
Oesophageal disease	123	1.7	0.1	0.0	0.4
Pregnancy*	123	1.7	0.1	0.0	0.4
Diabetes*	111	1.6	0.1	0.0	0.3
Osteoarthritis*	106	1.5	0.1	0.0	0.3
Menstrual problems*	92	1.3	0.1	0.0	0.4
Cataract	92	1.3	0.1	0.0	0.4
Back complaint*	87	1.2	0.1	0.0	0.3
Abdominal pain*	79	1.1	0.1	0.0	0.4
Skin complaint	78	1.1	0.1	0.0	0.4
Abnormal test results*	71	1.0	0.1	0.0	0.4
Naevus/mole	70	1.0	0.1	0.0	0.4
Haemorrhoids	70	1.0	0.1	0.0	0.4
Eye/adnexa disease, other	66	0.9	0.1	0.0	0.4
Solar keratosis/sunburn	66	0.9	0.1	0.0	0.4
Visual disturbance, other	64	0.9	0.1	0.0	0.3
Acute internal damage knee	63	0.9	0.1	0.0	0.4
Cardiovascular disease	63	0.9	0.1	0.0	0.4
Ischaemic heart disease without angina	63	0.9	0.1	0.0	0.4
Inguinal hernia	61	0.9	0.1	0.0	0.3
Fracture*	60	0.9	0.1	0.0	0.4
Carpal tunnel syndrome	60	0.8	0.1	0.0	0.4
Contact dermatitis	58	0.8	0.1	0.0	0.3
Bursitis/tendonitis/synovitis NOS	57	0.8	0.1	0.0	0.4
Refractive error	53	0.8	0.1	0.0	0.4
Musculoskeletal disease	51	0.7	0.1	0.0	0.4
Pre/post natal check-up*	51	0.7	0.1	0.0	0.4
Cholecystitis, cholelithiasis	51	0.7	0.1	0.0	0.4
Hypertension*	50	0.7	0.1	0.0	0.4
<i>Subtotal: top 30 problems referred to specialist</i>	<i>2,388</i>	<i>33.7</i>	<i>..</i>	<i>..</i>	<i>..</i>
Total problems managed with a specialist referral	7,084	100.0	7.3	7.0	7.6

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix V).

Note: Abbreviations: Encs – encounters, UCI – Upper confidence interval, LCI – Lower confidence interval.

Table 11.4: Top 30 problems associated with a referral to allied health services

Problem managed	Number	% of problems managed	Rate per 100 encs (N=96,901)	95% LCI	95% UCI
Back complaint*	219	7.6	0.2	0.0	0.4
Sprain/strain*	171	5.9	0.2	0.0	0.4
Depression*	116	4.0	0.1	0.0	0.4
Teeth/gum disease	73	2.5	0.1	0.0	0.4
Injury musculoskeletal	69	2.4	0.1	0.0	0.4
Osteoarthritis*	68	2.3	0.1	0.0	0.3
Pain, chest NOS	64	2.2	0.1	0.0	0.5
Diabetes*	62	2.1	0.1	0.0	0.4
Drug abuse	52	1.8	0.1	0.0	0.5
Anxiety*	52	1.8	0.1	0.0	0.4
Shoulder syndrome	51	1.8	0.1	0.0	0.4
Bursitis/tendonitis/synovitis NOS	47	1.6	0.1	0.0	0.3
Neck syndrome	44	1.5	0.1	0.0	0.4
Musculoskeletal disease	44	1.5	0.1	0.0	0.5
Fracture*	44	1.5	0.1	0.0	0.8
Neck complaint	40	1.4	0.0	0.0	0.5
Hearing complaint	39	1.3	0.0	0.0	0.5
Obesity (BMI>30)	38	1.3	0.0	0.0	0.5
Hypertension*	38	1.3	0.0	0.0	0.4
Injury skin	37	1.3	0.0	0.0	0.4
Acute stress reaction	35	1.2	0.0	0.0	0.5
Teeth/gum complaint	32	1.1	0.0	0.0	0.5
Sleep disturbance	28	1.0	0.0	0.0	0.5
Ischaemic heart disease with angina	28	1.0	0.0	0.0	0.4
Deafness	27	0.9	0.0	0.0	0.6
General check-up*	25	0.9	0.0	0.0	0.5
Acute internal damage knee	24	0.8	0.0	0.0	0.5
Dementia (incl senile, Alzheimer)	24	0.8	0.0	0.0	0.5
Muscle pain	23	0.8	0.0	0.0	0.5
Back syndrome without radiating pain	23	0.8	0.0	0.0	0.5
<i>Subtotal: top 30 problems referred to allied health services</i>	<i>1,636</i>	<i>56.5</i>	<i>..</i>	<i>..</i>	<i>..</i>
Total problems	2,894	100.0	3.0	2.8	3.2

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix V)

Note: Abbreviations: Encs – encounters, UCI – Upper confidence interval, LCI – Lower confidence interval

Table 11.5: Top 30 problems associated with a referral to hospital

Problem managed	Number	% of problems managed	Rate per 100 encs (N=96,901)	95% LCI	95% UCI
Fracture*	26	3.7	0.03	0.0	0.5
Depression*	22	3.0	0.02	0.0	0.6
Pneumonia	22	3.0	0.02	0.0	0.5
Appendicitis	20	2.8	0.02	0.0	0.5
Asthma	18	2.5	0.02	0.0	0.6
Heart failure	14	1.9	0.01	0.0	0.6
Hypertension*	14	1.9	0.01	0.0	1.1
Diabetes*	13	1.9	0.01	0.0	1.0
Pain, chest NOS	12	1.7	0.01	0.0	0.7
Abdominal pain*	12	1.7	0.01	0.0	0.7
Pregnancy*	12	1.7	0.01	0.0	0.6
Stroke/cerebrovascular accident	10	1.4	0.01	0.0	1.2
Pre/post natal check-up*	10	1.4	0.01	0.0	0.9
UTI*	9	1.3	0.01	0.0	0.7
Malignant neoplasm skin	9	1.2	0.01	0.0	0.8
Tonsillitis*	9	1.2	0.01	0.0	0.8
Acute myocardial infarction	8	1.2	0.01	0.0	0.7
Disease digestive system, other	8	1.1	0.01	0.0	0.7
Viral disease	8	1.1	0.01	0.0	0.8
Concussion	8	1.1	0.01	0.0	5.2
Ischaemic heart disease without angina	8	1.1	0.01	0.0	0.8
Acute bronchitis/bronchiolitis	8	1.1	0.01	0.0	0.7
Diverticular disease	8	1.1	0.01	0.0	0.9
Malignant neoplasm bronchus, lung	7	1.0	0.01	0.0	1.0
Complication of treatment	7	1.0	0.01	0.0	0.9
Phlebitis and thrombophlebitis	7	1.0	0.01	0.0	0.7
Cholecystitis, cholelithiasis	7	1.0	0.01	0.0	0.9
Genital disease (female)	7	0.9	0.01	0.0	1.1
Foreign body in eye	7	0.9	0.01	0.0	1.7
Skin infection	6	0.9	0.01	0.0	0.8
<i>Subtotal: top 30 problems referred to hospital</i>	<i>335</i>	<i>46.8</i>	<i>..</i>	<i>..</i>	<i>..</i>
Total problems	717	100.0	0.7	0.6	0.9

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see AppendixV).

Note: Abbreviations: Encs – encounters, UCI – Upper confidence interval, LCI – Lower confidence interval.

11.5 The inter-relationship of referrals with other variables

11.5.1 Example 1: Referrals to a psychiatrist

Referrals can be directly linked (solid lines in Figures 11.3 and 11.4) to all other encounter variables apart from RFEs (shown as dotted lines). There were 295 referrals to psychiatrists, including hospital clinics and psychiatric wards, and these constituted 2.5% of all referrals. The proportions of males and females referred to psychiatrists exactly matched the overall distribution, with 58% female. Patients aged 25–44 years were over-represented in this subgroup (49.9% compared with approximately 25% in the total dataset); those aged 15–24 years were under-represented (15.5%).

Reasons for encounter

Patients receiving a referral to a psychiatrist presented to the GP with a range of psychological RFEs including depression (37.2 per 100 encounters at which there was a psychiatry referral), and anxiety (9.7). The patient actually requested a referral at 12.8 per 100 of these encounters, and a prescription was requested at 2.7 per 100 of these encounters. Acute stress (4.9), sleep disturbances (2.7), and suicidal ideation or attempts (2.6) were also described in the top ten RFEs.

Problems managed

Depression (55.7 per 100 problems referred to a psychiatrist) and anxiety (9.3) were the labels most frequently used by GPs to describe the problem being managed, while psychotic disorders were also diagnosed. Hyperkinetic disorder (mostly accounted for by the relatively new diagnosis of attention deficit hyperactivity disorder) was relatively frequent, (3.3 per 100 problems referred to a psychiatrist), while stress disorders and drug abuse also appeared.

Prescriptions and other treatments

Overall, the management of problems that were referred to a psychiatrist differed from those seen across all problems. Prescription rates for these problems were notably less (49.5 per 100 problems) than those provided for all problems (64.4), while non-pharmacological treatments were used more frequently (36.6 per 100 problems) than those in the total dataset (29.7).

Concurrent drug prescriptions were most frequently for anti-depressants (30.8 per 100 problems referred to a psychiatrist). Anti-psychotic drugs (phenothiazines – 6.6 per 100 problems), anti-anxiolytics (5.2) and sedative hypnotics (2.3) were also prescribed. GPs also provided psychological or problem-related counselling (27.5 per 100 problems associated with a psychiatry referral), and advice about relaxation (1.6) and of a general nature (1.5).

Other referrals, tests and investigations

Only a few other referrals (n=6) and pathology orders (n=22) were recorded for problems where a referral to a psychiatrist was made. The pathology ordering rate was half (7.5) that seen in the total dataset (17.0). This can be explained by the nature of problems presented at these encounters.

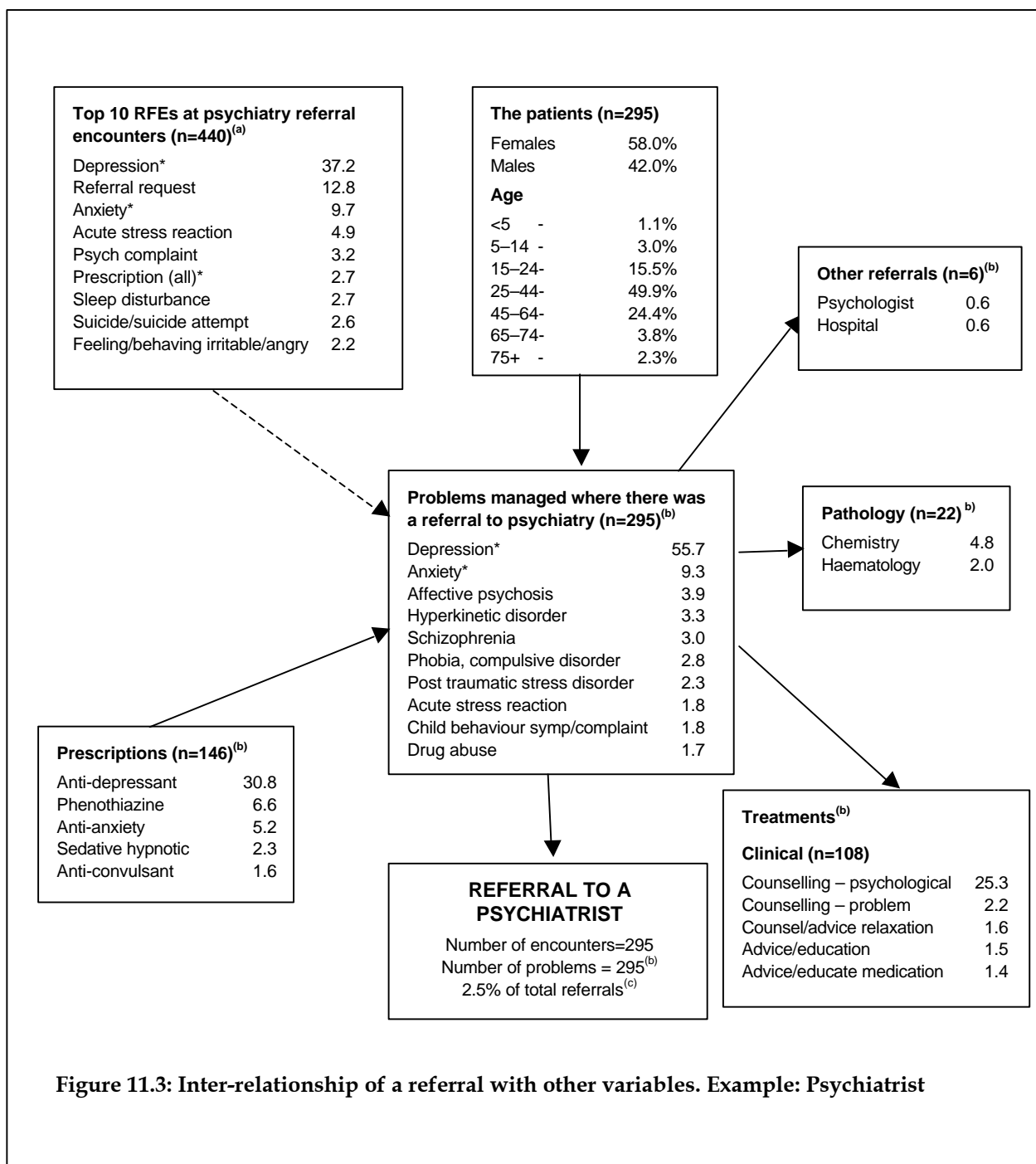


Figure 11.3: Inter-relationship of a referral with other variables. Example: Psychiatrist

* Indicates multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix V)

(a) Results are presented as rates per 100 encounters at which this referral was given (N=295).

(b) Results are presented as rates per 100 problems at which this referral was given (N=295).

(c) All instances of referral to psychiatrist as a proportion of all referrals

11.5.2 Example 2: Referrals to a physiotherapist

There were 902 problems (at 894 encounters) for which a referral to a physiotherapist was made, accounting for 8.3% of total referrals and occurring at a rate of 0.9 per 100 encounters. Of the 894 patients referred to a physiotherapist, 54.6% were female. Young adults were over-represented in this sub-group, representing 37.1% of patients referred to a physiotherapist, compared with 25% in the overall sample. The elderly were slightly less likely to receive a referral to a physiotherapist, with 21% of these patients aged 65 and over, compared with 24% in the overall sample.

Reasons for encounter

Not surprisingly, the majority of patient RFEs were musculoskeletal in nature, with undifferentiated back (25 per 100 problems referred to a physiotherapist), neck (10.7), shoulder (10.4), and knee complaints accounting for 34% of all RFEs associated with a physiotherapy referral.

Problems managed

The diagnoses, or problem labels assigned by GPs where a physiotherapy referral was provided were most commonly for back complaints (18.1 per 100 problems referred to a physiotherapist), sprain/strain (17.6) and musculoskeletal injuries (6.1). Overall the rate of problems managed for this group was notably less (100.9) than that recorded across the total dataset (145.3).

Prescriptions and other treatments

While prescribing rates for problems with a physiotherapy referral were similar to those seen across the entire dataset, less non-pharmacological treatments were provided for these problems. Advice and counselling were more common than procedural treatments in the management of these referred problems. However, some GPs administered some physical medicine (3.7 per 100 problems referred to a physiotherapist), dressed the injury (1.4) or repaired a suture or cast (1.2). Advice about the treatment (5.4) including advice to exercise (3.4) was also given.

More than a quarter (29.6%) of these referred problems were also managed with a prescription for NSAIDs while compound (11.9) and simple analgesics (9.5) were also prescribed relatively often.

Other referrals, tests and investigations

There were few concurrent referrals, with those made to orthopaedic surgeons (1.2 per 100) and hydrotherapy (0.4) the most frequent. As expected, the high frequency of musculoskeletal problems associated with a physiotherapy referral generated a high rate of imaging orders (16.3 compared to 4.9 in the total dataset), and low rates of pathology orders.

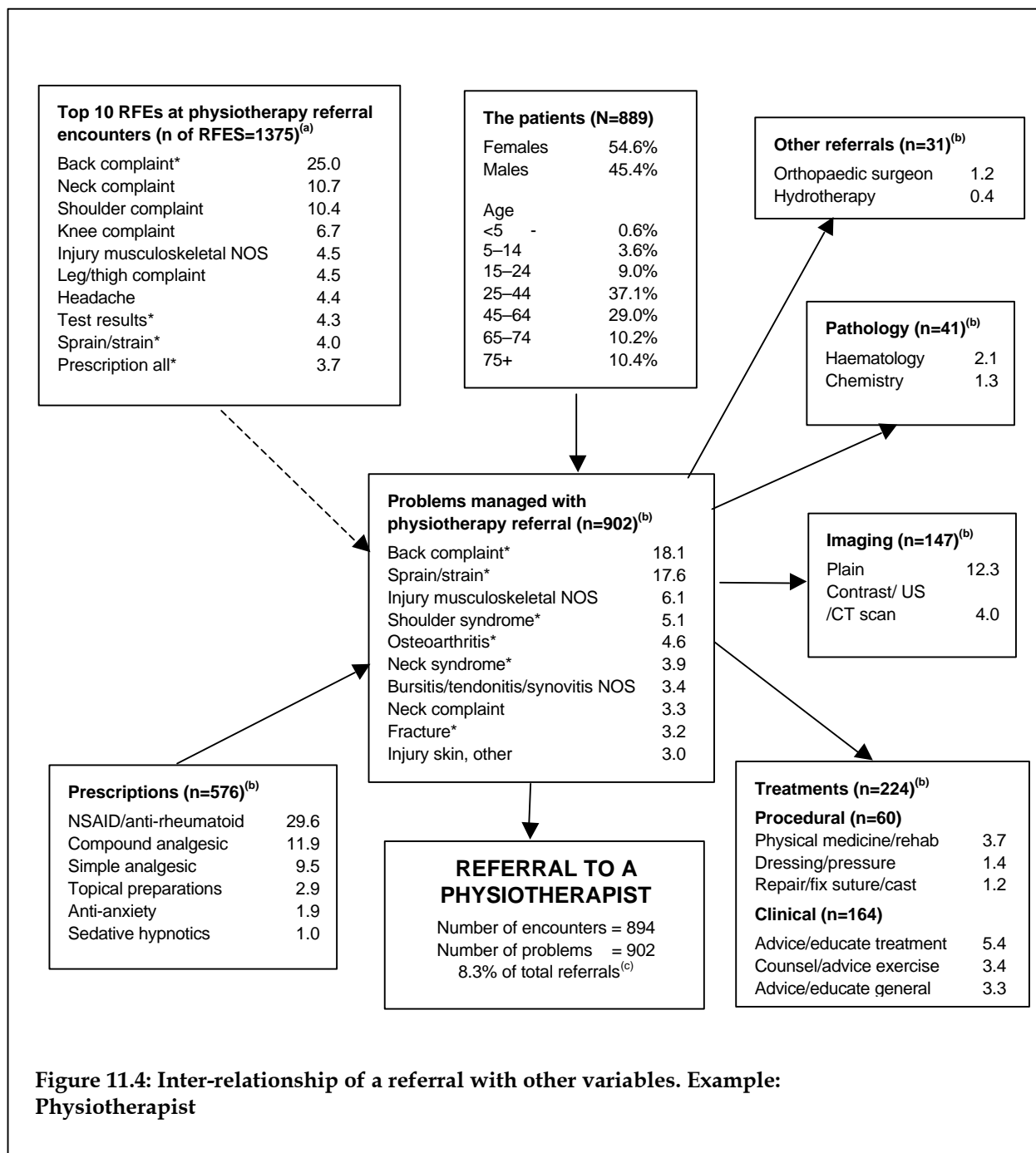


Figure 11.4: Inter-relationship of a referral with other variables. Example: Physiotherapist

- * Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix V)
- (a) Results are presented as rates per 100 encounters at which this referral was given (N=894).
- (b) Results are presented as rates per 100 problems at which this referral was given (N=902).
- (c) All instances of referral to physiotherapist as a proportion of all referrals