

# HIV infection and Scottish general practice: knowledge and attitudes

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**SUMMARY.** *To assess the knowledge and attitudes of general practitioners about HIV infection, a postal survey was undertaken of one in three of all principals in Scotland; 834 (77.6%) responded.*

*Respondents' knowledge about HIV was often limited, and they found the discussion of sexual behaviour difficult. Most were in favour of routine HIV testing being offered to patients, but against testing without consent. Most general practitioners considered consent unnecessary for the passing of information about HIV status between medical colleagues, but necessary for informing others, in particular the patient's family and sexual partners. Most general practitioners would accept high-risk and HIV-positive patients onto their lists but less than half would accept intravenous drug users. Most respondents did not feel at significant personal risk of HIV infection, but expressed reservations about many other aspects of HIV infection in general practice.*

*If practitioners are to fulfil their potential for tackling the problems of HIV infection, they need increased resources and a policy for education and training that is responsive to local needs.*

## Introduction

THE inevitable spread of HIV infection and AIDS necessitates that general practitioners be ready to respond to the demands that will be made on them. Unfortunately, comments made to the House of Commons Social Services Committee on problems associated with AIDS portrayed general practitioners as ignorant about HIV infection and sometimes unwilling to provide care to AIDS patients.<sup>1</sup> Furthermore, local studies have suggested that many practitioners have little interest in providing health education about HIV infection and have gaps in their knowledge about HIV infection and AIDS.<sup>2-4</sup> In response, the Royal College of General Practitioners has reaffirmed the importance of the practitioner's role in the prevention and manage-

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ment of HIV infection and emphasized that 'general practitioners are keen to demonstrate that they are both willing and competent to care for AIDS patients'.<sup>5</sup>

Apart from the local studies cited,<sup>2-4</sup> there has been little evidence about general practitioners' knowledge of, and attitudes to, HIV infection and AIDS. A postal survey was therefore undertaken of one in three of all principals in Scotland. At the same time, the health care research unit of Newcastle University undertook an identical survey of one in five of all principals in England and Wales.<sup>6</sup> The main aims of the Scottish study were to assess general practitioners' knowledge of HIV infection and AIDS, to examine their attitudes to the demands and problems which HIV infection creates in general practice, and to estimate the current workload related to HIV in general practice. This paper reports the findings about knowledge and attitudes; a previous paper reported the findings about workload and current practice.<sup>7</sup>

## Method

A full description of the method is given in the previous paper,<sup>7</sup> and is summarized here.

A random sample was drawn of one in three of all principals in Scottish general practice, stratified by health board and the number of principals in the practice. During May 1988, each of the 1096 practitioners sampled was sent a postal questionnaire covering aspects of HIV infection in relation to general practice. Three and six weeks after the initial questionnaire, reminders were sent to non-responders, yielding a final response rate of 77.6% (834 general practitioners out of 1075 still in practice when questionnaires were sent).<sup>7</sup>

Differences between health boards were analysed by chi-squared tests. Data from Orkney, Shetland and the Western Isles were combined under the heading of Islands to give a sample size comparable to those of the mainland health boards.

## Results

### *Knowledge about HIV and AIDS*

Table 1 shows the 15 statements about HIV infection and AIDS that respondents were invited to classify as 'true', 'false' or 'uncertain'. The correct responses are shown boxed. The mean number of correct responses for the group was 9.3 (standard deviation 2.3). This method of scoring has the disadvantage that respondents get no more credit for showing uncertainty than for giving an incorrect response. Incorrect responses were therefore rescored as -1, and uncertainty as 0, thereby giving an expected score of zero to the hypothetical respondent who answers 'true' or 'false' at random to each question. This method gave a mean score of 6.7 (standard deviation 3.3) out of 15, showing that the knowledge of most respondents was limited.

The 240 practitioners in practices reporting known HIV-infected patients had a mean score of 7.4; they were significantly better informed than the 542 in practices reporting no known HIV-infected patients, who had a mean score of 6.5. In particular, they were more often right about the risk of infection from needlesticks (66% versus 56%,  $P < 0.01$ ), the possibility that HIV-positive infants may become HIV negative (41% versus 28%,  $P < 0.01$ ), and the latent period between infection and detectable antibodies (98% versus 93%,  $P < 0.05$ ). The mean scores within health boards ranged from 4.8 in Islands to 8.0 in Lothian.

**Table 1.** Response to factual statements about HIV and AIDS (correct response in box).

Statement	Responses to statements (% of respondents <sup>a</sup> )		
	True	False	Uncertain
All blood intended for transfusion in the UK is tested for HIV antibodies	96.0	2.3	1.7
HIV cannot be transmitted in breast milk	19.4	53.5	27.1
Spills of HIV-infected material can be inactivated by simple disinfectants such as household bleach	79.8	10.3	9.9
The risk of acquiring HIV infection after a needlestick contaminated by HIV-infected blood is less than 1%	58.3	20.2	21.5
Procedures for avoiding hepatitis B infection are also appropriate for avoiding HIV infection	96.0	2.6	1.4
Over 75% of people with HIV infection have developed AIDS within five years of infection	37.5	43.9	18.6
Newborn infants who are initially HIV positive may, over time, become HIV negative	31.8	31.6	36.6
The HIV blood test in routine use detects the presence of antibodies to the virus that causes AIDS	84.5	8.0	7.6
After HIV infection it can take three months until antibodies can be detected in the blood	94.4	2.5	3.1
The HIV blood test is inevitably positive in someone with AIDS	42.7	37.6	19.7
In someone who is HIV positive, shortness of breath, dry cough and night sweats are symptoms suggestive of <i>Pneumocystis carinii</i> pneumonia	92.1	0.4	7.5
Weight loss, fevers, profound lethargy and oral thrush confirm a diagnosis of AIDS in someone who is HIV antibody positive	56.3	25.9	17.8
In intravenous drug users, the most common presenting symptom of AIDS is Kaposi's sarcoma	19.9	32.6	47.5
Encephalopathy is more likely to occur in people who are HIV positive than people who are HIV negative	49.2	7.3	43.5
Zidovudine (AZT) is a drug which inhibits HIV replication	66.6	2.9	30.5

<sup>a</sup> Number of valid responses ranged from 761 to 769.

In particular Lothian respondents were better informed than those practising elsewhere about the inactivation of HIV-infected material by simple disinfectants, the possibility that HIV-positive infants may become HIV negative, and the most common presenting symptom of HIV infection in intravenous drug users.

The mean score for the 159 women practitioners was significantly higher at 7.4 than for men at 6.5. In particular,

women were better informed about the possible transmission of HIV through breast milk, the possibility that HIV-positive infants may become HIV negative, and the possibility of a negative HIV blood test in a person with AIDS. The mean score for the 422 practitioners below the mean age of 43.4 years was significantly higher at 7.5 than for those above the mean age at 5.7. In particular, younger practitioners were better informed about the possibility that HIV-positive infants may become HIV negative, what the HIV blood test detects, the possibility of a negative HIV blood test in a person with AIDS, the symptoms characteristic of *Pneumocystis carinii* pneumonia, the criteria for a diagnosis of AIDS, and the most common presenting symptom of HIV infection in intravenous drug users; but they were less well-informed about the action of zidovudine. Although female responders were on average younger than male respondents, two-way analysis of variance shows that the effects of age and sex on knowledge scores were independent; even so, age accounted for a much greater proportion of the variation in scores.

#### Discussion of sexual practices and drug use

Respondents found it difficult to discuss sexual practices with patients in general terms and to discuss patients' own sexual practices — particularly homosexual practices, both male and female (Table 2). However, fewer respondents in practices with known HIV-infected patients than in other practices said that the discussion of sexual practices in general terms was always difficult with homosexual or bisexual men (24% versus 36%,  $P<0.01$ ), heterosexual men (7% versus 11%,  $P<0.05$ ), homosexual women (29% versus 42%,  $P<0.01$ ), and heterosexual women (6% versus 10%,  $P<0.05$ ). Similarly, fewer respondents in practices with

**Table 2.** Perceived ease of discussing sexual practices with patients.

Patient group	Ease of discussing sexual practices in general (% of respondents <sup>a</sup> )		Ease of discussing patients' own sexual practices (% of respondents <sup>a</sup> )	
	Always easy	Never easy	Always easy	Never easy
Heterosexual men	37.0	9.3	30.9	11.8
Heterosexual women	38.9	8.6	33.9	12.2
Homosexual men	20.8	32.2	16.7	37.0
Homosexual women	17.0	37.4	13.9	41.2

<sup>a</sup> Number of valid responses ranged from 764 to 772. Those not tabulated were all 'Sometimes easy'.

known HIV-infected patients said that discussion of patients' own sexual practices was always difficult with homosexual or bisexual men (30% versus 40%,  $P<0.01$ ), homosexual women (33% versus 45%,  $P<0.05$ ) and heterosexual women (9% versus 14%,  $P<0.05$ ).

Women respondents experienced more difficulty with the discussion of sexual behaviour than men, and older practitioners experienced more difficulty than younger ones; the principal difficulties for women arose with male patients, while older practitioners experienced more difficulty with all types of patient.

Fifty five per cent of respondents said the discussion of intravenous drug use was always easy, 41% that it was sometimes easy, and 4% that it was never easy. Respondents in Lothian reported less difficulty than those in other health boards.

#### Provision of HIV-related materials

Most, but by no means all, general practitioners said they would be willing to provide condoms from their surgeries and to

prescribe zidovudine (Table 3). Considerably fewer said they would be willing to provide needles and syringes or to prescribe oral methadone. On all of these questions there was substantial uncertainty. Fewer practitioners in practices with known HIV-infected patients than in other practices said they were willing to provide needles and syringes (28% versus 37%,  $P<0.01$ ) and to prescribe oral methadone (54% versus 64%,  $P<0.01$ ). Taken together, the 207 Lothian and Tayside respondents were less willing than those elsewhere to provide needles and syringes (26% versus 37%,  $P<0.01$ ) and to prescribe oral methadone (8% versus 23%,  $P<0.01$ ). Only 44% of older practitioners were willing to provide condoms, compared with 72% of younger practitioners ( $P<0.001$ ); and men were less willing (57%) than women (66%) to do so ( $P<0.05$ ).

**Table 3.** Respondents willing to provide HIV-related materials.

	Willingness to provide materials (% of respondents <sup>a</sup> )	
	Yes	Uncertain
Provide condoms from surgery	59.6	14.9
Prescribe zidovudine (AZT)	55.7	32.8
Give out sterile needles and syringes for intravenous drug users	34.0	23.7
Prescribe oral methadone as a substitute for intravenous drugs	20.4	22.0

<sup>a</sup> Number of valid responses ranged from 772 to 774. Those not tabulated were all 'No'.

### HIV blood testing

As shown in Table 4, most respondents were in favour of HIV blood tests being offered routinely to those groups usually thought to be at greatest risk. However, 59% also favoured HIV tests being offered to pregnant women. In comparison with respondents in other practices, those in practices with known HIV-infected patients were more in favour of testing being offered routinely to pregnant women (65% versus 56%,  $P<0.05$ ) and to partners of HIV-positive patients (95% versus 89%,  $P<0.05$ ).

Table 4 also shows that few practitioners were in favour of testing blood taken from specified patients without consent, although the proportion in favour rose with the patients' likely risk, ranging from 13% for health workers to 35% for intravenous drug users. More of those in practices with known

**Table 4.** Respondents in favour of routine HIV testing.

Patient group	In favour of testing with consent (% of respondents <sup>a</sup> )		In favour of testing without consent (% of respondents <sup>a</sup> )	
	Yes	Uncertain	Yes	Uncertain
Partners of HIV-positive patients	90.9	6.1	Not appropriate	
Intravenous drug users	88.6	5.8	35.2	8.9
Prostitutes	88.2	6.9	34.6	9.1
Homosexuals and bisexuals	78.5	10.0	29.6	8.5
Partners of 'at risk' patients	76.0	14.7	Not appropriate	
Pregnant women	59.0	15.4	27.9	9.6
Everybody	18.4	16.2	Not appropriate	
Health workers	17.3	47.6	12.9	10.5

<sup>a</sup> Number of valid responses ranged from 755 to 764. Those not tabulated were all 'No'.

HIV-infected patients than in other practices were in favour of blood testing without consent for pregnant women (32% versus 26%,  $P<0.05$ ) and for intravenous drug users (41% versus 32%,  $P<0.05$ ). More practitioners from Lothian and Tayside than from elsewhere were in favour of blood testing without consent for all five groups. Women were less in favour than men of blood testing without consent for homosexual or bisexual men (24% versus 31%,  $P<0.05$ ), intravenous drug users (30% versus 36%,  $P<0.05$ ), and prostitutes (29% versus 36%,  $P<0.05$ ).

Fifty six per cent of respondents were in favour of anonymous testing of all blood taken, in order to monitor the distribution of HIV infection; 26% were not in favour, and 18% were uncertain. There was more support for such testing in Lothian and Tayside (64% versus 53%,  $P<0.05$ ).

### Confidentiality and consent

When a patient is tested for HIV infection outside general practice, 99% of general practitioners thought that they should be informed of the result, and only 33% considered the patient's consent necessary; however, as many as 45% of Lothian general practitioners considered that consent was necessary. If a patient were known to them to be HIV positive, most respondents said they would inform other health care professionals (Table 5). The proportion of general practitioners regarding consent from the

**Table 5.** Respondents who would inform about patient's positive HIV status.

Would inform:	Informing about patient's HIV status (% of respondents <sup>a</sup> )			
	Never	Only with consent	Without seeking consent	Even against patient's wishes
<i>Health professionals</i>				
Practice partners	0.1	16.2	43.4	40.2
Hospital surgeons	0.9	23.1	36.5	39.4
Other hospital doctors	1.5	32.3	31.7	34.5
Dentists	1.9	41.0	25.4	31.6
Practice nurses	2.4	38.8	29.3	29.5
Community nurses	9.5	49.1	21.2	20.3
<i>Others</i>				
Patient's sexual partners registered with practice	7.1	75.5	7.7	9.7
Patient's family	14.1	80.7	2.7	2.5
Practice receptionists	59.3	30.6	6.1	4.0
Patient's employers	64.2	34.9	0.4	0.5

<sup>a</sup> Number of valid responses ranged from 743 to 757.

patient as unnecessary for the practitioner to inform others ranged from 1% for informing the patient's employer and 10% for practice receptionists to 76% for informing hospital surgeons and 84% for practice partners. The great majority of general practitioners would give information to insurance companies only after obtaining the patient's consent to the specific request (Table 6).

### Care and management of patients

Seventy seven per cent of respondents would wish to be involved in the care of a patient of theirs who had developed AIDS, 18% were uncertain, and 5% would not want to be involved. The percentages wishing to be involved ranged from 67% in Tayside to 92% in Highland. Only 68% of older respondents wanted to be involved, compared with 83% of younger respondents ( $P<0.001$ ). Seventy four per cent of practitioners thought that a patient of theirs requiring terminal care for AIDS

**Table 6.** Respondents who would provide insurance companies with information.

Type of information	Informing insurance companies (% of respondents <sup>a</sup> )			
	Never	Only with specific consent	Without seeking specific consent	Even against patient's wishes
Patient's antibody status	6.2	85.0	6.6	2.1
Patient's at risk behaviour	11.9	78.1	8.6	1.3
Patient's request for HIV blood test	13.0	79.2	6.5	1.3

<sup>a</sup> Number of valid responses ranged from 753 to 755.

should be managed in a setting of the patient's own choosing; 13% thought that management should be in a hospice, 9% in the community and 4% in hospital. Relative to younger practitioners, older ones more frequently favoured hospice management (22% versus 6%,  $P<0.001$ ) and less frequently said the patient should decide. Thirty two per cent of respondents thought that this terminal care should be provided separately from people without AIDS, 30% said it should not be separate, and 38% were uncertain; however 43% of older respondents favoured separate management.

The large majority of practitioners said they would accept onto their lists patients known to be in high-risk groups or to be HIV-positive (Table 7). However, only 48% said they would knowingly accept an intravenous drug user onto their lists, with 26% refusing to do so, and 26% being uncertain. Those in practices with known HIV-infected patients were more willing than those in other practices to accept onto their lists prostitutes (95% versus 88%,  $P<0.05$ ), HIV-positive patients (88% versus 78%,  $P<0.01$ ), and patients with AIDS (83% versus 75%,  $P<0.05$ ). Lothian practitioners were more willing than others to accept onto their lists homosexual or bisexual men (99% versus 91%,  $P<0.05$ ), intravenous drug users (57% versus 46%,  $P<0.05$ ), and patients with AIDS (85% versus 75%,  $P<0.05$ ). Younger practitioners were more willing than older ones to accept onto their lists homosexual or bisexual men (95% versus 89%,  $P<0.05$ ), prostitutes (93% versus 87%,  $P<0.05$ ), HIV-positive patients (84% versus 77%,  $P<0.05$ ) and patients with AIDS (81% versus 72%,  $P<0.01$ ). Women general practitioners (95%) were more willing than men (89%) to accept prostitutes onto their lists ( $P<0.05$ ).

Very few respondents said they would remove from their lists patients discovered to be in one of these six groups (Table 7).

**Table 7.** Respondents who would accept or remove patients.

Patient group	Acceptance of patients onto list (% of respondents <sup>a</sup> )		Removal of patients from list (% of respondents <sup>a</sup> )	
	Yes	Uncertain	Yes	Uncertain
Haemophiliacs	98.7	1.0	0.6	0.6
Homosexual or bisexual men	92.4	5.8	0.5	0.9
Prostitutes	89.9	6.3	0.8	1.0
HIV positives	80.8	15.3	0.8	1.9
Diagnosed as AIDS	77.0	18.4	0.8	2.3
Intravenous drug users	48.1	25.5	4.2	12.3

<sup>a</sup> Number of valid responses ranged from 765 to 777. Those not tabulated were all 'No'.

Intravenous drug users were the only group that a number of respondents would remove from their lists; only 84% said they would not remove such a patient.

### Perception of own risk

Respondents were asked to estimate their own risk of HIV infection on a five-point scale. Twenty seven per cent rated their risk in general practice as 'nil' and 68% as 'slight'; 36% rated their risk in medical activities outside general practice as 'nil', 48% as 'slight', and 13% as 'moderate'. There were no significant differences between health boards, nor by age or sex.

### Personal reservations

Finally, respondents were asked whether they had any reservations about the aspects of HIV infection or AIDS in general practice listed in Table 8. They expressed high levels of concern, especially about their own knowledge, demands on their time, and 'confidentiality and consent'. Lothian general practitioners were less likely to be concerned about their knowledge and about confidentiality and consent.

**Table 8.** Respondents with reservations about HIV infection in general practice.

	Reservations about HIV infection (% of respondents <sup>a</sup> )	
	Considerable	Slight
Own knowledge	40.7	52.8
Demands on time	30.2	51.6
Confidentiality and consent	24.6	50.8
Patient care and management	14.4	49.5
Health education and counselling	8.4	38.1
Discussing patient lifestyle and behaviour	5.8	41.8

<sup>a</sup> Number of valid responses ranged from 768 to 770. Those not tabulated were all 'None'.

### Discussion

Together with a parallel survey in England and Wales,<sup>6</sup> this postal survey of one in three of the principals in Scottish general practice has been the first to describe on a national scale the knowledge of general practitioners about HIV infection, and their attitudes to it. Both the response rate of 78% and the quality of the resulting data exceeded our expectations. Nevertheless, we acknowledge the inherent limitations of multiple-choice questionnaires and the resulting need for cautious interpretation.

Our survey suggests that many general practitioners are not well-informed about HIV and AIDS. Fortunately, knowledge was rather better in areas where HIV infection is already a significant problem. Personal characteristics of the practitioner such as age and sex, had a marked effect. We conclude that there is a need to build up educational programmes for general practitioners, possibly for specific groups. This is especially important in the light of the high levels of opportunistic health education and counselling which practitioners are, and will increasingly be, offering to patients.<sup>7</sup>

Many practitioners, especially women and those aged over 45 years, experience difficulty in discussing sexual behaviour with patients. Our data suggest that they are becoming less uneasy about such discussion in areas where HIV infection is already a major problem; in other words, they are learning the skills in response to demand, rather than in anticipation of that demand. In the absence of a cure or vaccine for this disease,

patient education is the primary means of prevention. If practitioners are to fulfil their role in this task, they must be both well-informed and skilled in imparting information to a wide variety of patients. Thus training in sexual counselling may be required.

While most of this sample would be prepared to provide condoms and to prescribe zidovudine (AZT), they would be unwilling to give out needles and syringes or to prescribe oral methadone. Informal comments from some respondents suggest a belief that these last two changes would do little to prevent the spread of HIV infection and would create new problems.

Most respondents clearly favoured routine blood testing for HIV infection being offered much more widely to recognized risk groups, especially in areas where HIV infection is already a significant problem. However, they found the question of blood testing without consent much more difficult. The General Medical Council (GMC) has emphasized the need to obtain consent in all but 'the most exceptional circumstances'.<sup>8</sup> However, the Royal College of General Practitioners has highlighted the conflict between this advice and the concept of beneficence, which permits the practitioner to invoke 'implied consent'.<sup>5</sup> Guidelines to resolve this conflict are urgently needed.

There has been considerable disquiet, both public and professional, about the confidentiality of HIV-related information. Most of our sample did not regard the patient's consent as necessary before they could be informed about the HIV status of their patients tested outside general practice. Where a patient's status was already known to them, most did not consider consent as necessary before that information could be passed to medical colleagues; many would pass it on even if the patient explicitly withheld consent. Certainly, King<sup>9</sup> has shown that many HIV-positive patients do not inform their practitioners, often because of fears about confidentiality, and our study also suggests substantial hidden morbidity.<sup>7</sup> This hidden morbidity may lead to misdiagnosis, inappropriate management, and increased potential for the transmission of infection.

If those who are or may be infected are to be encouraged to confide in their general practitioners, then a more uniform attitude among practitioners is necessary.<sup>10</sup> Where patients cannot be sure about the confidentiality of information which has profound social consequences, many will be discouraged from being tested. Again, therefore, clear guidelines are needed. However, the advice of the GMC is not entirely clear: it states that where a patient refuses to consent to disclosure to other medical practitioners, such wishes 'should be respected except where the doctor judges the failure to disclose would put the health of any of the health care team at serious risk'.<sup>8</sup> In contrast, the GMC statement is quite clear about informing sexual partners, stating that where consent is withheld 'the doctor may consider it a duty to seek to ensure that any sexual partner is informed'. Among our respondents, however, consent was regarded as much more important before informing sexual partners than before informing members of the health care team. Finally on confidentiality, few respondents would inform insurance companies about a patient's 'at risk' behaviour, his or her request for an HIV test, or antibody status without specific consent to do so.

Most practitioners, particularly the younger ones, want to be involved in the care of their patients who develop AIDS, and would accept HIV-infected or high-risk patients onto their lists. The fact that less than half would definitely accept intravenous drug users probably reflects the widely held view that such patients are difficult and uncooperative.<sup>11</sup> However, intravenous drug users constitute the predominant seropositive group in Scotland,<sup>12</sup> and represent the most likely source of HIV infection in the heterosexual population. It is essential therefore that

practitioners should acquire the skills to deal with this group.

In conclusion, our survey has shown that practitioners are responding positively to the considerable demands generated by HIV infection, and that they are striving to educate and counsel patients on a wide scale.<sup>7</sup> It has also suggested, however, that their efforts are often individualistic and inconsistent, not least because there are few coherent policies, either national or local. Furthermore, practitioners' knowledge about HIV infection, so important to the effectiveness of their response, is limited; and their confidence in discussing important elements of patient behaviour is weak. We have also seen a diversity of attitudes about confidentiality and consent that may discourage patients from approaching general practice. Of particular concern is the evidence that a substantial number of practitioners are unwilling to work with intravenous drug users — the group most at risk of HIV infection and of spreading HIV infection in Scotland.

Fortunately, our survey also suggests that practitioners are already aware of many of the problems; and are concerned that, while they wish to meet the challenge of HIV infection, they are not fully equipped or resourced to do so. If general practitioners are to fulfil their potential for tackling the problems of HIV infection, especially through prevention, the problems we have illustrated will need to be addressed both by increased resources and by a national policy for education and training that is responsive to local needs.

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